Integrated Business Modelling for Developing Digital Internationalising Firms in Nigeria

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DECLARATION

I certify that the substance of this thesis has not been already submitted for any degree and is not currently being submitted for any other degree. I also certify that to the best of my knowledge any assistance received in preparing this thesis, and all sources used, have been acknowledged and referenced in this thesis.

Abstract

Integrated Business Modelling for Developing Digital Internationalising Firms in Nigeria

This research explores integrated business modelling, international entrepreneurship and internationalisation business development aspects of digital firms in Nigeria. This combination of perspectives is a new line of research in Nigeria. Specifically, the research examines: 1) the international entrepreneurial characteristics of digital firms; 2) how digital internationalisation patterns emerge; 3) current developments in the digital economy and their influences on the development and internationalisation activities of digital firms in Nigeria; 4) business model characteristics of digital firms, and 5) the challenges faced by digital firms in their internationalisation activities.

Theoretically, the research integrates pertinent ideas from the international entrepreneurship, digital internationalisation, and business model literature, to develop a conceptual framework for the research. The existing models from these fields tend to be oriented towards developing international business and engaging in international markets generally, and so may be not suitable for digital internationalising firms. Building on the conceptual framework, the research therefore developed an integrated business template (IBMT) for Nigerian digital internationalising firms. This is the first research to explore the research objectives to this depth.

The research adopts a qualitative and case study research methodology to explore the associated research questions and objectives. This methodology consists of critical review of key constructs associated with the research, construction of suitable interview questions related to the gaps in knowledge and research objectives. These questions supported the interview of founders and senior of five selected digital internationalising firms in Nigeria. This primary data is complemented by secondary data from related websites. This is the first research to explore the research objectives to this depth.

The main findings from the research are as follows. Nigerian firms use: a hybrid approach which combines online and offline customer engagement strategies; data-driven decision making (big data analytics, for example); multifaceted platforms and third-party internationalisation to localise their offerings; in addition to strategies explored in the literature such as founders' international experience, international market awareness and orientation.

The research generates new knowledge and understanding about the development and internationalisation of these firms within the Nigerian context related business modelling, international entrepreneurship, and internationalisation research themes. Theoretically, the revised conceptual framework and resulting IBMT will support continuing work in this important area of research. Practically, the IBMT can be applied to other subunits of the selected case study firms, other emerging digital firms in Nigeria and Africa, and across different sectors, since the subunits explored in the thesis are mainly e-commerce and e-platform business lines. Methodologically, the approach adopted in the research can be replicated in the above contexts. The insights from the findings can also support effective government policies towards enhancing the development of digital firms, especially by creating enabling digital economy environment for their growth.

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Dedication

This dissertation is dedicated to all the members of the family for all their moral support, love and advice.

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Abbreviations

B2B	Business to Business
B2C	Business to Consumer
BGEC	Born Global Entrepreneurial Capabilities
BGFs	Born Global Firm
C2B	Consumer to Business
C2C	Consumer to Consumer
CEO	Chief Executive Officer
CF	Conceptual Frameworks
CLV	Customer Lifetime Value
CRM	Customer Relationship Management
CsTK	Contributions to Knowledge
DIF	Digital Internationalising Firms
DK	Doman Knowledge
EOs	Entrepreneurial Orientations
FDI	Foreign Direct Investment
IBMT	Integrated Business Model Template
ICT	Information Communication and Technology
IEO	International Entrepreneurial Orientation
INV	International New Ventures
MNC	Multinational Companies
MO	Market Orientation
MSME	Micro, Small and Medium Enterprises
PESTEL	Political, Economic, Social, Technological, Environmental, and Legal

PS|W	Problem Study Why
RBV	Resource-Based View
SCRM	Social Customer Relationship Management
SHU	Sheffield Hallam University
SME	Small and Medium Enterprise
SSA	Sub-Sahara Africa
TF	Traditional Firm
TNC	Transnational Companies
TOE	Technology, Organisation and Environmental
UNCTAD	United Nations Conference on Trade and Development

List of publications from the thesis

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Ezepue, P. O., & Ochinanwata, N. (2017). Business development frameworks for establishing innovative born-global firms in Nigeria and Sub-Saharan Africa. *Journal of Advances in Management Sciences & Information Systems*, Vol. **3** (2) 9-26.

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Chapter 1: Introduction

1.1. Synopsis

This chapter presents the background to the research with links to the growth in the digital economy in developed and developing countries, e-commerce, digital business models, and the core research problem. The chapter also develops the rationale for the study, including the aims and objectives, an overview of the research methodology, summary of contributions to knowledge, an organising framework for the research, structure of the thesis, summary and conclusion.

1.2. Background to the research

Growth in the digital economy

The World Economic Forum (2015) finds that internet and digital economy grew at 10% a year in the G20 countries, with 15%-20% higher growth in developing countries. The digital economy is growing faster than the overall economy, especially in the Global South (Bukht & Heeks, 2017). The digital economy is "that part of economic output derived solely or primarily from digital technologies with a business model based on digital goods or services" (Bukht & Heeks, 2017).

The African countries that have highest mobile phone penetration in general are Nigeria, Egypt, South Africa, Ethiopia, Kenya, the Democratic Republic of Congo, Mali, Gambia, Gabon and Botswana (Bonorchis, 2016; Rice-Oxley & Flood, 2016). The fastest growing mobile ecosystems are Sub-Sahara African countries; for example, statistics suggest that the mobile ecosystem alone contributed US$8.3 billion to the Nigerian economy as of 2013 (de Silva, 2014). The mobile ecosystem contributed US$102 billion to Sub-Sahara African GDP in 2014 and this is expected to rise to US$160 billion by 2020 (GSMA, 2015).

As noted later in this chapter, despite the increasing internet access in developing countries such as Nigeria, there is inadequate research on how emerging digital firms in this context recognise and exploit opportunities for reaching wider local and international customers with their products and services (offerings). This requires an understanding of the underpinning business models and related constructs from international entrepreneurship and the digital economy. This study addresses this gap in knowledge by developing an Integrated Business Model Template (IBMT) for digital internalising firms, and a complementary

Internationalisation Template for Digital Firms (ITDF). These templates integrate ideas from the literature on international entrepreneurship and business modelling. They will enhance the development of such digital firms by entrepreneurs in Nigeria and Africa. The notes below provide further perspectives on the growth of internet penetration in Nigeria and Africa, which supports the development of digital internationalising firms.

According to McKinsey & Company, the internet will add about US$300 billion to Africa's GDP by 2025. This is because of the above-mentioned increasing mobile and broadband penetration in developing countries compared to developed countries (World Bank, 2009). Nigeria has 48.8 percent internet penetration as of 2017 (Fawcett, 2015; Internet World Stats, 2017). The high mobile and internet penetration is because reductions in mobile data and broadband tariffs have made mobile phones and broadband access more affordable.

Consequently, Nigeria, Rwanda, Uganda and Ghana have experienced high growth in internet penetration from the period 2000-2013 (Banga & te Velde., 2018). However, developing countries like Nigeria still have a need for wider access to internet services across the populations. The digital economy also needs to add more value to the economies than obtain in developed countries. For example, internet-related technologies and activities contributed about 1.5% of Nigerian GDP, and internet retailing value was about US$ 4 billion in 2013. Compared to a base population of 180 million Nigerians, about 93 million mobile users accessed the internet from their devices in 2015 (International Trade Centre, 2015).

According to McKinsey & Company, internet penetration in Africa is expected to reach 50% by 2025, and Africa will account for 1 billion out of 50 billion devices projected to be connected globally by 2020 (Liquide Telecom). Increased access to internet will have great effect how on the people in Africa live and work and transform the way firms operate and deliver their offerings to customers (Liquide Telecom).

In Nigeria, mobile phone services were introduced in 2001 and the market has grown rapidly since then, with connectivity reaching over 83 million subscribers, equivalent of 45% of the population as of 2015 (GSMA, 2015). "Mobile services are driving digital inclusion and supporting socioeconomic development in Nigeria" (GSMA, 2015, p.4), by enabling individuals and businesses in Nigeria to benefit from the exchange of information, goods and services online.

E-commerce

UNCTAD (2016) estimates that globally e-commerce has grown speedily from $16 trillion in 2013 to $22.5 trillion in 2015, again with the fastest growth shown in developing countries. Business-to-business transactions are estimated to be $19.9 trillion and business-to-consumer transactions at around $2.2 trillion. These transactions are more within-border or domestic, even though international e-commerce is fast growing as well.

The value of international e-commerce is estimated at $1.6 trillion which accounts for 14% of the e-commerce market. There is a vast disparity of international e-commerce across border in both developed and developing countries, apart from China. Only six countries in the world have 85% of the international e-commerce market; these countries are China, UK, Germany, US, Japan, and France (UNCTAD). Other developed and developing countries (except China) have around 18%. Globally, e-commerce contributed 6% of the total retail market in 2014. China and the US are leading in the e-commerce market in the world, accounting for 55% of global e-commerce sales in 2014, Dahlman, Mealy & Wermelinger (2016).

The relatively lower contribution of e-commerce and digital economy to the economies of developing countries compared to developed countries motivates the need to create an integrated business model for developing digital internationalising firms in the former. As noted above, this study fills this gap in Nigeria based on the experiences of selected digital internationalising firms in the country. Insights from the research findings and business model will help to increase the value of national and international e-commerce in Nigeria and Africa.

Furthermore, Frost & Sullivan (2014) estimate that African e-commerce will grow from US$8 billion in 2013 to US$ 50 billion by 2018 and to $75 billion by 2025 (Liquide Telecom). This rapid growth is because the e-commerce market in Africa is yet untapped, since only 26.5% of Africa's population are connected to the internet as at 2014 (International Trade Centre 2015).

African countries such as Nigeria, Kenya, Senegal, South Africa and Mozambique are leading in e-commerce markets. Online retailers in these countries are bringing both local and international brands to transact business in cyberspace. Africa's digital economy is primarily based on its mobile market, and this market has massive potential for growth which is considered second to that of the Asia-Pacific region (Abba-Goni & Bidan, 2016).

This has brought in several digital investments in Nigeria which have risen from 13 deals as at 2010 to more than 84 deals as at October 2017, with value estimated at US$2.3 billion. These digital investments are in various market sectors, including retail, media, financial technology, health management, data management, transportation, IT consulting and related services (KPMG, 2017).

However, there is low digital-readiness in Nigeria and African countries because they "face the problem of slower diffusion in ICT and automation equipment", compared with developed countries. This is due to several challenges which include inadequate power supply, poor road infrastructure, low access and ability to adapt software and hardware equipment, and poor digital and technical skills. All these challenges make Nigeria and African countries less digitally ready than should be expected at this state in their economies post-independence (Banga & te Velde, 2018, p.15).

The low digital-readiness is a consequence of poor digital infrastructure and services which result in digital divide among individuals and firms. The digital divide refers to the fact that "gap in usage and access to digital infrastructure and services between individuals, households, businesses, geographical areas, remains significantly wide for emerging economies" (Shenglin, Simonelli, Ruidong, Bosc & Wenwei, 2017, p.2). This challenge has more effect on low-income countries and rural areas due to inadequate digital infrastructure and lack of digital skills. The challenge includes lack of or inadequate "access to network connections to devices and to software and applications" (Shenglin et al., 2017). A study has shown that in emerging economies, particularly rural areas, more than 4 billion people are unconnected to the internet (Facebook, 2016).

The high digital divide in Nigeria and Africa means that businesses in Nigeria may find it difficult to finance robots, automation and other digital economy tools such as big data analytics. There is need for African countries to address the constraints to digital economy to enhance enterprise development, create jobs, and enable small businesses to expand their offerings in both local and international markets.

Also, the low digital-readiness facing Nigeria, and Africa generally, hinders the digitalisation of firms in these contexts. "Digitalisation refers to leveraging digital technology and insights from data for concrete customer benefits" (Dall'Omo, 2017 from Semen report). Thus, government needs to prepare for the digital future to provide digital infrastructure and equip individuals with digital skills (Banga & te Velde, 2018). Although Nigeria is rapidly adapting to the digital future, there is need to develop industrial capabilities that can effectively enable digital value-added activities. Some African countries like Nigeria, Kenya, and South Africa are on the list of fast-growing digital economies (Chakravorti, Tunnard & Chaturvedi, 2015). However, digital literacy rate is still low in Nigeria and Africa generally. Both formal and informal training will enable businesses and individuals in these environments to engage in and benefit from the digital economy.

To reiterate the benefits of a digital economy in a country, Vital Wave & Caribin Digital (20014, p.12) note that "a digital economy has a great impact on socioeconomic development by supporting SME growth and creating jobs. A digital economy stimulates competition and innovation, leading to the development, localization, and delivery of new products and services". For example, the adoption of digital payments in Africa has led to productivity gains in companies and facilitates transaction of products and services, the potential estimated to be £300 billion in Sub-Saharan Africa as of 2014 (Vital Wave & Caribin Digital, 2014).

Digital firms and digital business models

The digital economy has led to the emergence of new digital business firms and models across different industry sectors, for example retail, banking, energy access, telecommunication, and freelancing. Digital economy is creating opportunities for business-to-business (B2B) transactions in Nigeria; an example is the way "Cokodeal" is fostering the connectivity between thousands of small independent business to enable them to engage in international markets through its online marketplace. "Jumia" is the largest and fastest growing online retail firm in Nigerian business-to-consumer (B2C) market and is expanding to other African countries since its founding in 2012.

The most valuable businesses in the world have embraced digital business models. According to Financial Times UK, seven out of the ten most valuable companies in the globe in 2010 and 2017 are digital businesses. Digital business model is transforming several businesses around the world examples of which are Alphabet (Google), Facebook, and Amazon. As noted above, digital businesses are emerging in Nigeria and using digital business models to develop innovative digital products and services. However, as noted earlier in this section, there is limited academic research in Nigeria and Africa on how those digital firms develop, grow and engage in international markets. To fill this gap, more research needs to be carried out on digital enterprises (Boateng, Budu, Mbrokoh, Ansong, Boateng & Anderson, 2017), especially to explore how entrepreneurs in Nigeria and Africa will take advantage of the digital economy. Therefore, the present study fills this gap by developing integrated business models (IBMT and ITDF) that will enable entrepreneurs to create more digital internationalising firms in Nigeria and Africa. This is because digital technologies enable firms to operate and reach customers in both domestic and global markets (Todd & Javalgi, 2007). Madsen & Gervais (1997) are among the first studies concerning the links between internet and internationalisation and emphasise the impact of technological development in market entry.

Reiterating the research problem

The internet has been identified as a crucial resource that helps companies to achieve operational and performance efficiency internationally (Li &Ye, 1999). As hinted above, from developing country perspectives such as Nigeria and the African continent, there is limited research that explains how Nigerian digital firms emerge and engage in international market activities.

Therefore, this research aims to contribute new knowledge on business modelling that supports the development and internationalisation of cyber-mediated firms in Nigeria. However, there are many challenges that impede such businesses from achieving outsized growth. Such challenges are associated with deficient entrepreneurial orientation which permits firms to innovate, adapt more easily to a diverse market, and manage change more effectively (Covin & Slevin, 1991).

The core research problem addressed in this thesis is the fact that despite the emergence of digital firms in Nigeria and African countries, which create thousands of jobs and grow the economies of these countries, there are relatively few studies that discuss how these firms develop and engage in international market activities, particularly the underpinning business models and international entrepreneurship capabilities.

1.3. Rationale for the research

The key rationale of this research is that despite the emergence of e-commerce and e-marketplace firms such as Cokodeal, Fashpa, Jumia, Konga and Wakanow in Nigeria, there have not been enough studies that integrate insights from business modelling, international entrepreneurship and digital internationalisation, to facilitate a better understanding of how such digitally internationalising firms operate.

The focus of the research is on understanding how Nigerian digital economy firms exploit current developments in the digital economy in creating successful offerings and engaging in early internationalisation activities. These developments in the digital economy include increasing penetration of mobile and internet services, use of Big Data techniques in customer engagement and acquisition, cryptocurrency, robotics and artificial intelligence. A key outcome of the research is to create an Integrated Business Model Template (IBMT) for developing Nigerian digital economy firms. This model is complemented by an International Template for Digital Firms (ITDF). Subsequently, reference to the IBMT includes the ITDF even if the latter is not explicitly mentioned.

Conceptually, the research reviews the literature on business modelling, international entrepreneurship, and digital internationalisation which provide guides on how the digital economy firms demonstrate capabilities like international entrepreneurial orientations (EOs) in different industry sectors.

The research will help entrepreneurs in Nigeria to develop more digital firms that create jobs and enhance the overall socio-economic development of Nigeria. It can be extended to other African countries such that the IBMT will be further contextualised in those countries.

1.4. Research aims

The aim of this research is to develop an integrated business model template (IBMT), which enhances development and internationalisation of digital firms in Nigeria. The model will enable more digital firms to be developed successfully by concerned stakeholders (individual entrepreneurs, digital companies and their management, and governments) in Nigeria, and by extension similar African and developing countries.

1.5. Research objectives

1. To explore international entrepreneurship characteristics that facilitate the development and internationalisation of digital firms

2. To explore digital internationalisation process in e-commerce and e-marketplace firms in Nigeria

3. To examine the current developments in the digital economy and how they influence Nigerian digital internationalising firms

4. To examine the business model characteristics of e-commerce and e-marketplace firms and develop an integrated business model template (IBMT) for digital Nigerian digital economy firms

5. To examine the challenges faced by Nigerian e-commerce and e-marketplace firms, and how they overcome them.

1.6. Research questions

1. How does knowledge of international entrepreneurship influence the development of emerging digital economy firms in Nigeria?

2. How do Nigerian digital economy firms successfully internationalise their offerings?

3. How do digital economy characteristics influence the development and internationalisation of digital firms in Nigeria?

4. What are the defining business modelling characteristics of digital firms?

5. What challenges are faced by Nigerian e-commerce and e-marketplace firms?

1.7. Overview of the research methodology

This section summarises the methods used to explore the research questions. For the theoretical underpinnings of research objectives and questions 1-4 above, the researcher critically reviews the literature on international entrepreneurship, digital internationalisation and business models which are relevant to cyber-mediated firms. The reviews clarify the concepts from these fields which explain how such firms develop their offerings and engage in early internationalisation activities.

To understand the digital economy contexts in which Nigerian digital internationalising firms operate, case studies of some emerging digital firms in Nigeria in different industry sectors are used. The case studies are based on interview questions which probe the experiences of owners and managers of the firms, in light of the above research questions, and the challenges they face in the Nigerian business environment (objectives 1-5).

The research methodology is therefore qualitative and based on interpretive understanding of the digital firms' experiences in international entrepreneurship, early internationalisation and business modelling. Using case study firms in different industry sectors (fashion, retail and travelling, for example) provides multiple sources of evidence that will enhance the robustness of the resulting IBMT.

Particular attention is paid on how best to triangulate the research evidence. For this reason, the researcher combines the critical review of the research concepts and primary data from the case studies with analysis of relevant secondary data the on the case study firms, including website information and presentations made by senior management of the firms within selected periods.

The researcher reiterates the fact that the above approaches constitute a robust methodology for the research, which triangulates the evidence base for the research across different case firms.

To ensure validity in the research methodology, the research team held a brainstorming session which further examined the nature of interview questions that should be used to explore the research objectives and questions. A more detailed report of the methodology is presented in chapter 5 of the thesis.

1.8. Contributions of the research to knowledge

This section summarises the contributions to knowledge of this research, in terms of the overall theoretical and practical benefits of the research findings. The research contributes new knowledge to the understanding of how digital firms develop and internationalise within the Nigerian context. This is the first research to take an-depth look at what constitutes the elements of digital internationalising firms' business model, by combining insights from international entrepreneurship, digital internationalisation and business modelling literature.

Theoretically, therefore, the research developed a revised conceptual framework for exploring digital internationalising firms. The framework which is presented in chapter 7 (Figure 7.1) manifests key constructs for continuing this line of research on the development of digital internationalising firms. These constructs are summarised under key themes, namely: international entrepreneurship, digital internationalisation, digital economy, related contextual influences, elements of digital business model, and integrated business model template for digital internationalising firms.

Since this is the first time such a conceptual framework is presented for linking these areas of research on digital internationalising firms in Nigeria, it is a foundation for future investigations on the development of such firms in Nigeria and similar developing countries.

Using the revised conceptual framework and insights from case studies of selected Nigerian digital economy firms produced an Integrated Business Model Template (IBMT) for the development and internationalisation of digital firms in Nigeria, presented in figure 7.2. Taken together, the revised conceptual framework and the IBMT provide a more complete understanding of the process for establishing and internationalising digital firms in Nigeria and similar developing country contexts.

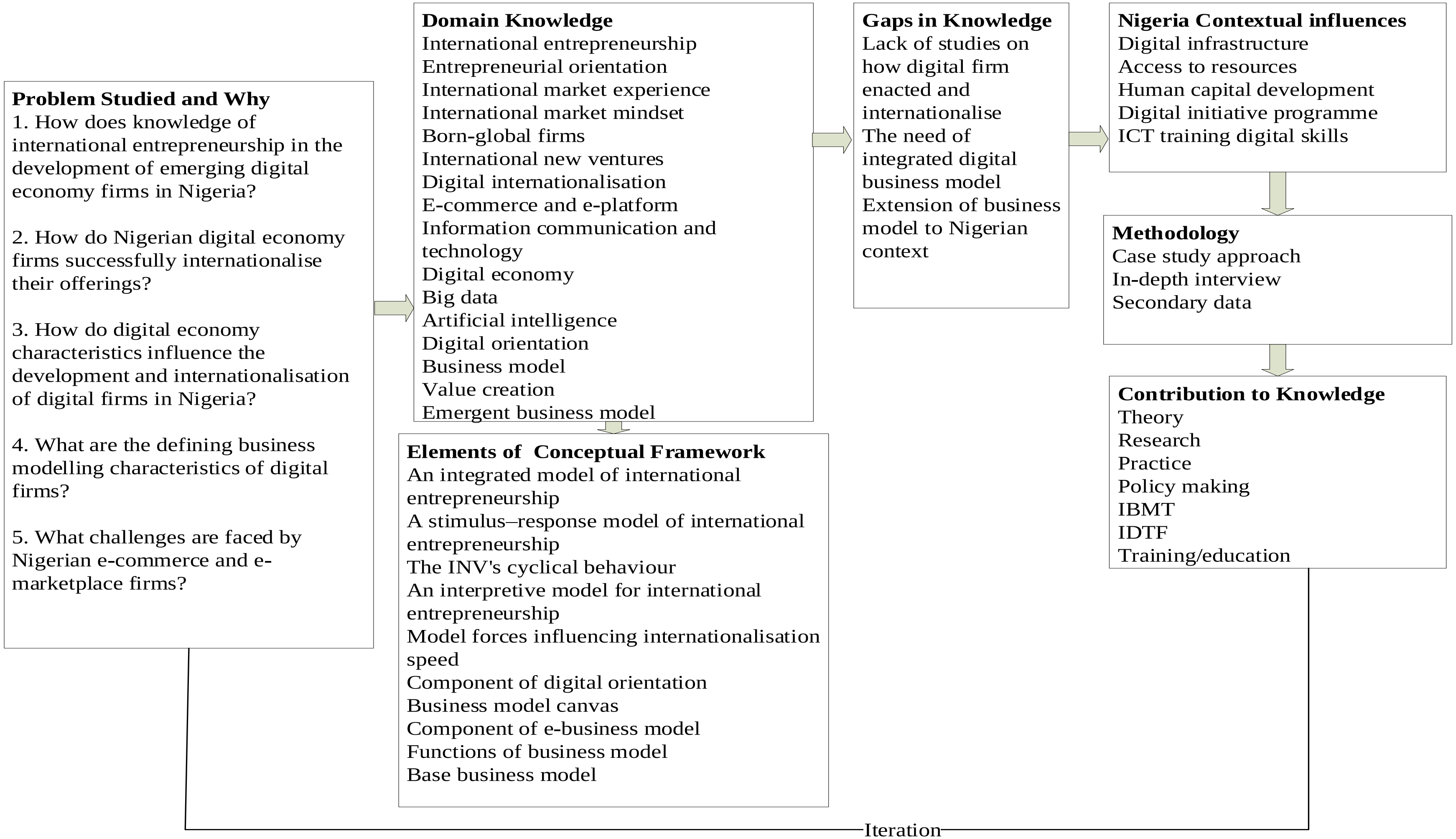
The research will practically enable individuals, firms and governments to create and grow digital internationalising firms, a goal that is sorely needed in developing countries. The findings have the potential to enhance internationalisation process of Nigerian firms. The research can be extended to other developing country contexts, for example Sub-Sahara African countries. A more detailed discussion of the contributions to knowledge is presented in chapter 8 (Table 8.1).

1.9. Organising framework for the research

Figure 1.1 is the organising framework for the research and represents the researcher's understanding of what is required to develop and internationalise digital firms in Nigeria. Hence, the framework elucidates key considerations that should be borne in mind in the research. Column 1 of the framework depicts the Problem Studied and Why in form of the five research questions. Column 2 contains key elements of the Domain Knowledge for the research – the main Literature Review themes and Elements of the Conceptual Framework for the research. These are high-level summarises that are developed in appropriate chapters of the thesis. Column 3 indicates the Gaps in Knowledge and column 4 the Nigerian context. The panel below the Gaps in Knowledge summarises the Research Methodology which leads to the Expected Contributions to Knowledge. The framework is iterated back to the Problem Studied and Why.

Whilst the other panels consist of the stages of the research, the Contributions to knowledge emphasises the implications of the research findings to Theory, Research and Practice, and the key outcomes of the research made up of the Integrated Business Model Template for Digital Internationalising Firms (IBMT) and the supporting Internationalisation Template for Digital Firms (ITDF). These elements are explored in detail in appropriate chapters of the thesis as shown in the chapter outlines below.

Figure 1.1: Organising framework for the research



Source: the author's own

1.9. Structure of the thesis

The thesis is structured into eight chapters as shown in Table 1.1. This first chapter is the introduction and the summary of the thesis. It explains and summarises the research background, aim of the research, research questions and objectives, justification for the research focus, the methodology, and the contributions to knowledge.

Table 1.1: Thesis structure

Thesis Chapters	**Title**
Chapter 1	Introduction
Chapter 2	Literature Review
Chapter 3	Digital Economy
Chapter 4	Conceptual Framework
Chapter 5	Methodology
Chapter 6	Case Study Analysis
Chapter 7	Discussions of Findings
Chapter 8	Conclusion and Recommendations

Source: the author’s own

Chapter 2 provides a critical literature review of the contributing theoretical constructs from international entrepreneurship and digital internationalisation.

Chapter 3 reviews the literature on current developments in the digital economy which influence the context in which emerging and developing market e-commerce/e-platform/cyber mediated firms operate and engage in early internationalisation activities in Nigeria. This includes digital economy context in Nigeria, use of big data, artificial intelligence, internet of things, World Wild Web and sharing economy.

Chapter 4 focuses on the theoretical underpinnings of and conceptual frameworks for the research. The frameworks are drawn from international entrepreneurship, digital internationalisation, digital economy and business model literature. From these integrated underpinnings, a conceptual framework for the research is built, specifically for e-commerce and e-platform firms.

In chapter 5 the philosophical underpinnings of qualitative research, especially interpretivism and critical realism are discussed. The research design is described in sufficient details so that data collection could be repeated. The qualitative research methodology and its rationale are discussed.

Chapter 6 focuses on the data analysis, including anonymised descriptions of the five case study firms, their development, and internationalisation process. Section 1 of the chapter contains the individual case analysis. Section 2 presents the cross-case analysis and explores the patterns and processes of establishing and internationalising digital firms.

Chapter 7 discusses the findings presented in chapter 6 and positions these within current debates concerning how digital firm develop and internationalise. The chapter links the conceptual framework (chapter 4) and emerging findings from the research. Importantly, it presents and discusses the revised conceptual framework, the Integrated Business Model Templates (IBMT and ITDF), and how they will enhance development and internationalisation of digital firms.

The final chapter 8 presents the contributions of the findings to knowledge, limitations of the research, conclusion, and recommendations for future research. The contributions to knowledge are summarised table in Table 8.1 of the chapter and how they relate to existing theories and gaps in knowledge from the literature.

1.10. Summary and conclusion

This chapter discussed the key aspects of the research which include a brief introduction to the study, the rationale, background, research aims, objectives and questions, brief overview of the methodology, and contributions to knowledge. It also presented the thesis structure and the key contents of the chapters. The key theoretical constructs introduced in this chapter 1 are: international entrepreneurship, digital internationalisation, e-commerce and e-platform, big data, artificial intelligence, and business model.

With respect to the rationale, it was noted that the research puzzle investigated in the study is the fact that, to the researcher’s best knowledge, this is the first research on Nigerian digital internationalising firms which combines insights from international entrepreneurship, digital internationalisation and business modelling. Hence, it is worthwhile to explore the possible socio-cultural, technological, and business environment factors which either impede or facilitate the establishment and internationalisation of such firms in the Nigerian context, and the nature of integrated business modelling which underpin them.

Chapter 2: Literature Review

2.1. Introduction

This chapter reviews relevant theoretical constructs on international entrepreneurship and digital internationalisation which mainly underpin research questions and objectives 1 and 2. With regards to the strategy for organising the review, the researcher uses a distributed model of literature review, whereby additional literature on current developments in the digital economy are presented in chapter 3 (mainly related to research objectives 3 and 5). Also, further literature on business modelling templates and their application in international entrepreneurship (mainly related to research objective 4) are presented in chapter 4 on conceptual framework for the research.

2.2. Foundations and definitions of international entrepreneurship

The globalisation of the international business and world economy has led to increased interest in international entrepreneurship study for the past decade (Brush, 1993, 1995; Oviatt & McDougall, 1995; Hitt & Bartkus, 1997). International entrepreneurship emerged three decades ago in the field of international business and was introduced first by Morrow (1988). McDougall (1989) was one of the initial empirical studies in international entrepreneurship on the international sales of new ventures. McDougall (1994) offered a theoretical foundation for the study of international new ventures, which it defined as firms "that, from inception, [seek] to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries".

International entrepreneurship starts with an interest in new ventures and broadened from its initial studies to how new ventures internationalise. McDougall's (1989) study compares domestic and international new ventures that paved way for academics to study international entrepreneurship. The term international entrepreneurship first appeared in Morrow (1988)'s short article; it highlighted how new technological advances and cultural awareness help new ventures to engage in foreign markets. Thus, the focus of this research is how digital technologies are supporting development and internationalisation of digital firms in Nigeria.

International entrepreneurship has allowed researchers to focus interest on the motivations and patterns of speedy internationalisation of new ventures; this mode of internationalisation is contrasted to the prevalent notion that firms take gradual process to engage in international activities. International new ventures were initially defined as “business organisations that from inception seek to derive significant competitive advantages from the use of resources and sale of outputs in multiple countries” (Oviatt & McDougall, 1994). This definition encompasses “born global firms”, which start their international activities by selling products and services in different countries from birth (McKinsey & CO 1993; Cavusgil & Knight, 2009).

International entrepreneurship is a concept that describes the development of international new ventures that seek international markets from inception. The term has been used to describe firms that are pursuing innovative activities in international business environments, regardless of size or age (Oviatt & McDougall, 2005). McDougall & Oviatt (2000, 2003) view international entrepreneurship as the intersection of international business (IB) and entrepreneurship. The following definitions of international entrepreneurship are relevant to this research.

A widely-used definition of international entrepreneurship formulated by Oviatt and McDougall (2005b, p. 540) is “the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services.” This is consistent with the definition of entrepreneurship put by Shane and Venkataraman (2000): “the processes of discovery, evaluation, and exploitation of opportunities” (p. 218). The definition is relevant to this research because the research explores the business model characteristics of Nigerian digital economy firms and how they engage in early internationalisation of their products and services across national borders.

Styles & Seymour (2006, p.134) define international entrepreneurship as the “behavioural processes associated with the creation and exchange of value through the identification and exploitation of opportunities that cross-national borders” (Sainio, Saarenketo, Nummela & Eriksson, 2011). Researchers have proposed such dimensions of international entrepreneurship as international motivation, innovation propensity, risk attitude, market orientation and proactiveness (Dimitratos, Voudouris, Plakoyiannaki & Nakos, 2012). Zahra (1993) suggests that research on international entrepreneurship should include both established and new enterprises, describing international entrepreneurship as a natural attribute of a firm’s risk-taking behaviour as it seeks international markets.

International entrepreneurship derives from entrepreneurial orientation (EO) of founders and firms interested in exploiting opportunities in international markets. The main dimensions of entrepreneurial orientation are innovativeness, proactiveness, and propensity to take risks. Covin & Slevin (1991, p.7) thus describe entrepreneurial orientation as an attribute of a firm which exhibits "risk-taking, innovative and proactive" behaviour. This definition supports the idea that entrepreneurship is not just an individual trait but as well a firm-level attribute. International entrepreneurship is an application of EO traits in international markets. Hence, it is defined as the "combination of innovative, pro-active, and risk-seeking behaviour that crosses national borders and is intended to create value in organizations" (McDougall & Oviatt, 2000, p. 903).

International entrepreneurship theory emphasises three major research subjects which include a) the entrepreneurs b) the external business environment and c) the entrepreneurial process (Coviello, McDougall & Oviatt, 2011; Wach, 2012). Zahra (1991, 1993) suggest that business environment plays a significant role in determining entrepreneurial activities and influencing their returns to capital (Zahra & Covin, 1995). This view justifies the need to explore how the Nigerian business context and developments in digital economy influence the activities of Nigerian digital internationalising firms.

Zucchella & Sciabini (2007) suggest that international entrepreneurship "typically develops internationalisation process sequence starting from opportunities recognition and ending with corporate performance, in which resources mobilisation and dynamic capabilities play a major role". Therefore, international entrepreneurship and digital internationalisation are adopted as the main theoretical constructs for understanding digital internationalising firms in Nigeria.

2.3. International entrepreneurship orientation

International entrepreneurial orientation (IEO) is a multi-dimensional concept that describes a firm's overall proactiveness and aggressiveness in pursuing international markets (Covin & Slevin, 1991; Knight, 2001). In other words, IEO extends entrepreneurial orientation into the field of international entrepreneurship as a means of explaining a firm's internationalisation (Knight, 2001; Ripolles-Melia, Menguzzato-Boulard & Sanchez-Peinado, 2007; Slevin & Terjesen, 2011).

Dess & Lumpkins (2005) outline five components of entrepreneurial orientation (EO) as follows: innovativeness, proactiveness, risk-taking, autonomy, and competitive aggressiveness. These constructs build on prior entrepreneurship literature (Mintzberg, 1973; Miller and Friesen, 1978; Miller, 1983). Firms need to engage in internationalisation behaviour in order to succeed in foreign markets (Slevin & Terjesen, 2011). International entrepreneurial orientation of firms enables them to identify and exploit international business opportunities.

Slevin & Terjesen (2011) suggest that SMEs need to engage in internationalisation behaviour in order to survive and continually succeed in international markets. A firm's international entrepreneurial orientation enables the firm to identify and exploit internationalisation opportunities.

Sullivian, Mort & Weerawardena (2006) argue that behavioural characteristics such as proactiveness, innovativeness, and risk-taking are fundamental drivers of internationalisation. International entrepreneurship characteristics are worthwhile studying in this research regarding the interplay between entrepreneurship and digital internationalisation processes in Nigerian firms. Therefore, firms' international motivation, innovativeness, proactiveness and risk-taking propensity are discussed in the following sub-sections.

2. 3.1. International motivation

International motivation focuses on the interest shown by founders and firms on international business opportunities. It is crucial for developing products and services that seek early international market penetration. From the cognitive perspective of entrepreneurs in general, motivation describes a distinctive attribute of people who positively evaluate opportunities compared to those who do not do the same (Shane, Locke, & Collins, 2003). Entrepreneurial motivation has been differently seen as positive or negative (Deakins & Whittam, 2000), intrinsic or extrinsic (Benzing, Chu, & Kara, 2009), dissatisfiers and motivators (Greenbank, 2006), necessity-driven or opportunity-driven (Williams & Round, 2009), and involving push or pull factors (Wilson, Kickul, & Marlino, 2007).

International motivation is demonstrated when entrepreneurs venture abroad in order to seek market opportunities, acquire knowledge about foreign markets, build networks, access tangible and intangible resources, reduce risk and improve business performance (Autio, Sapienza, & Almeida, 2000; De Clercq, Sapienza, & Crijns, 2005; Wilson, Kickul, &

Marlino, 2007; Ellis, 2010; Kontinen & Ojala, 2011; Voudouris, Dimitratos, & Salavou, 2011). The cognitive viewpoint of internationalisation provides crucial ideas about how entrepreneurs conceive of and exploit opportunities in their domestic and international markets.

Previous studies suggest that international entrepreneurship motivation may be divided into two dimensions (Dimitratos, Buck, Fletcher & Li, 2016). The first dimension addresses the "why" question concerning the reason entrepreneurs aggressively promote the international business vision, because "maintaining international vision can affect international performance'' (Segaro, Larimo, & Jones, 2014). The second dimension comes from the implementation of an internationalisation strategy, and how actively employees at senior and junior levels participate in internationalisation decisions making, which shapes a firm's internationalisation path and performance (Dimitratos et al., 2012; Segaro, Larimo & Jones, 2014).

Other group of studies suggest that international motivation is based on internal and external dimensions. The internal dimension includes within-firm possession of unique products, slack resources, and opportunities for economies of scale, while the external dimension includes presence of opportunities, government incentives, and unsolicited orders from clients (Brooks & Rosson 1982; Kaynak and Stevenson, 1982).

Bolzani, & Foo (2017) examine how personal values motivate international entrepreneurs to link their individual and firm-level internationalisation goals. Their findings outline the following goals: proactive-external goals (e.g., fiscal savings, opportunity pursuit); reactive-external stimuli (e.g. better contractual conditions, better business environment); proactive-internal stimuli (e.g. increased turnover, personal satisfaction, personal growth, and innovation); and reactive-internal stimuli (e.g. diversification, personal security) (Bolzani & Foo, 2017). The overall findings suggest that entrepreneurs that want to achieve high social status perceive internationalisation as a way to achieve potential growth and satisfy their needs (Bolzani & Foo, 2017).

2.3.2. International innovativeness

Firms engage in innovative international behaviour to attain competitive and international objectives such as successful firm internationalisation. The innovativeness by which digital entrepreneurs and firms recognise a market opportunity, how to identify customer needs, and ways to reach and engage potential customers in cyberspace is an important focus of this research (Zahra & George, 2002). International innovativeness of firms has many advantages. It enables entrepreneurial firms to be more competitive in the way they engage and compete in international markets. Focusing on the innovativeness, firms can create novelty in products and services, develop new ways to serve existing customers better, create value by being first in the market, and commercialise the values in effective and efficient ways (Tidd & Bessant, 2014).

Several studies indicate that people are major innovative assets rather than products and technology, since a company's innovative potential depends on employees' imagination, intelligence and creativity (Kanter, 1989; Mumford 2000; Zahra, Ucbasaran & Newy, 2009). It is believed that multiple ideas have great potential to achieve breakthrough innovation through stakeholders' direct and indirect ideas and suggestions (Johnson, Whittington, Scholes, Angwin & Regner, 2014). Firms that combine entrepreneurial and learning/market orientations engage in 'the type of generative learning that leads to innovations in products, procedures, and systems' (Baker & Sinkula, 1999, p. 411). A common feature of both market orientation and entrepreneurial orientations is that they use external and internal networks to learn about and achieve innovative processes (Verdu-Jover, Alos-Simo & Gomez-Gras, 2017).

Entrepreneurial firms' competitive advantages lie in frequent innovation activities, and ability to sustain innovations is important for a firm's viability because it makes it difficult for competitors to easily imitate this entrepreneurial capability (Zahra & George, 2002). Laanti, Gabrielsson & Gabrielsson (2007) suggest that innovation in firms is often developed before the establishment of such firms; an example is when an innovative product is developed through research before a company is established to exploit it. The innovative capabilities of such companies keep playing a crucial role in their business performance regardless of the industry sector in which the companies establish and compete. For example, Weerawardena, Mort, Liesch, & Knight. (2007) suggest that firms need to be innovative to create values, whether in high-tech, low-tech, or non-tech industry sectors.

An example of innovativeness in this research context is “new product or services development in an online context and opening new market via the internet” (Glavas & Mathews, 2014, p.231). Internet and digital tools can help new firms to create new value customer propositions which other companies can find difficult to copy or master. International innovativeness facilitates successful international outcomes and technology adoption (Knight, 2001; Ripolles-Melia, Menguzzato-Boulard, & Sánchez-Peinado, 2007; Jantunen et al., 2005; Mostafa, Wheeler, & Jones, 2006).

Glavas & Mathews (2014, p.232) suggest that “due to the increasing importance and number of firms using the internet to pursue international markets, it is expected that standardised use of the internet will no longer be sufficient for competitive advantage. Instead, firms are often forced to become innovative to take advantage of online international market opportunities”. Innovativeness is crucial for digital businesses operating in dynamic and globalised world. Digital businesses that operate in an online business environment need to find new ways for developing innovative offering to remain competitive in such environments. Thus, this research explores how Nigerian digital firms achieve innovation in online contexts which enable them to engage in international market activities.

2.3.3. International proactiveness

The literature suggests that businesses which engage proactively in foreign business activities in online environments are more likely to achieve profitable growth (Loane, 2006). The online environment enables such firms to have fast-mover advantages, thereby understanding customer wants quicker and developing new products and services to meet their needs (Knight & Cavusgil, 2004; Mostafa et al., 2006; Glavas & Mathews, 2014). Wiklund and Shepherd (2005) indicate that proactive firms tend to become pioneers in the industry sectors they operate in, by speedily taking advantage of emerging international market opportunities. International proactiveness in an internet business environment refers to international opportunity-seeking behaviour to achieve a firm’s international market goals (Glavas & Mathews, 2014).

2.3.4. International risk-taking propensity

The international risk-taking aspect of international entrepreneurship orientation is related with the overall planning and implementation of a new business that involves chances of financial loss (Miller & Friesen 1984; Knight, 2001). The risk taking refers to international entrepreneurs' willingness to commit financial resources and time to new businesses that have uncertain results and may have high profits or losses (Lumpkin & Dess, 1996; Knight, 2001; Lee et al., 2001).

Venturing into unknown new businesses and environments hoping to succeed or fail is a typical risk-taking attitude of entrepreneurs. From an online perspective, Mostafa et al. (2006) indicate that managers that have high level of entrepreneurial orientation are more innovative, proactive and risk-taking are more likely to identify and exploit business and market opportunities provided by digital technologies.

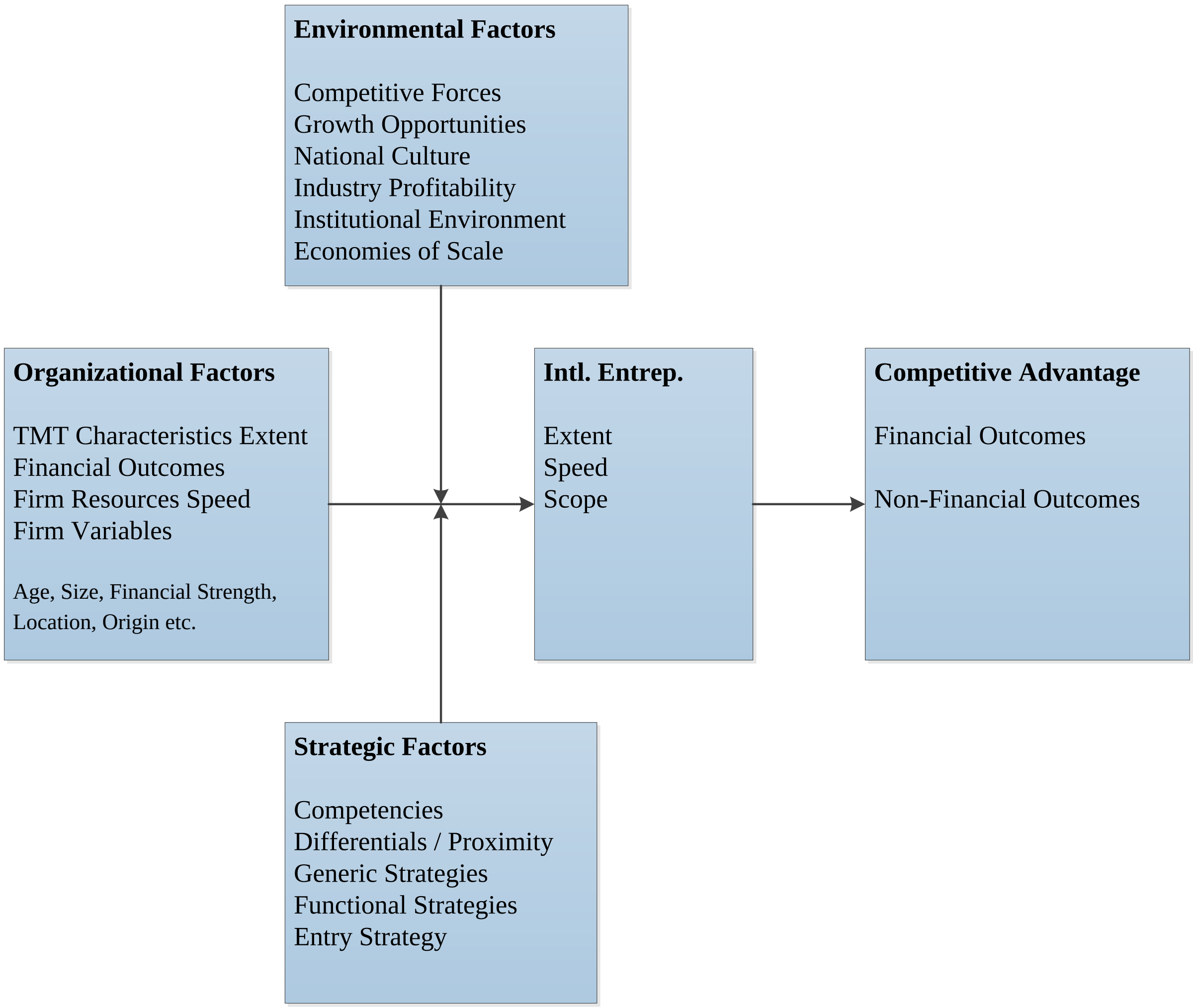
Studies have shown that internationalisation is an imprecise procedure that can expose entrepreneurs to short-terms growth and high financial returns but also to huge risks (Carr, Haggard, Hmieleski, Zahara, 2010). Pezderka & Sinkovics (2011) conceptualise an international e-risk framework into three categories which include: traditional international business risks which relate to physical environment and emerging e-risk framework; operational risks include domestic brick-and-mortar business as well domestic e-businesses; and online media risks.

Digital internationalisation may enable smaller firms that internationalised from their host countries without being present in foreign countries to avoid traditional international risks such as political and trade risks, because they operate in cyberspace (Pezderka & Sinkovics, 2011). However, digital firms do not completely avoid risks within domestic or international markets as they face e-risk which concerns both firms and customers. Examples of e-risks include payment transaction risks and information security risks (Scott, 2004). IT and cyber security experts continuously develop new technologies to protect electronic transaction protocols from online risks (Scott, 2004). Firms that engage in digital internationalisation are more likely to incur these risks compared to traditional internationalisation firms (Pezderka & Sinkovics, 2011). Online risks may vary in different countries depending on the legal infrastructure and degree of awareness of the consumers and user populations of their rights.

2.4. Models of international entrepreneurship

Zahara & George (2002) propose an integrated model of international entrepreneurship (depicted in Figure 2.1 below) for answering two fundamental questions which inform parts of the conceptual framework for the present research: "*who, why and when do entrepreneurial firms discover and exploit opportunities outside their home country?*" and "*what context factors influence the internationalisation of entrepreneurial firms?*".

Figure 2.1: An integrated model of international entrepreneurship



Source: Zahara & George (2002)

The *who* aspect of the first question relates to such organizational factors as the motivation for firms to seek for international market opportunities beyond domestic markets, the top management team (TMT) characteristics, firm resources, expected financial outcomes, and firm related variables (e.g. size, age, location, and financial strength). The personal qualities of the founders and top management team members are part of their competencies. As shown in the Competitive Advantage element of Figure 2.1, the reason (*why*) the firms engage in international business is to achieve competitive advantage and earn commensurate financial and non-financial outcomes better than if they are nationally localised. The timing of the international engagements (*when*) depends also on all the strategic factors listed in Figure 2.1. This first question therefore relates mainly to the organisational factors, strategic factors and competitive advantage goals in Figure 2.1 below.

The second question on the context factors that influence the internationalisation of entrepreneurial firms relates mainly to the environmental factors in Figure 21. The factors determine the context in which international entrepreneurial firms operate. Hence, (Nigerian) digital internationalising firms, for example, consider the competitive forces facing their success within and across national borders, the growth opportunities, the effect of national cultures in the countries they do business in, and the institutional environment (e.g. effectiveness of the legal and financial regulatory frameworks, and state of development of the digital infrastructure).

In Figure 2.1, the extent, speed and scope of a firm's international entrepreneurship engagements are influenced by the organisational, strategic and environmental factors which help to explore these two questions.

To reiterate the above contextual notes, Zahara & George (2002) highlight the main environmental factors affecting international entrepreneurship to include industry characteristics, country institutional and regulatory environments. For example, from the opinions of top management of Nigerian digital internationalising firms, environmental characteristics such as technological advancement and role of government or non-government institutions need to be examined in this present research to see how they influence the development of Nigerian digital firms and their internationalisation process. Studies have shown that some countries' institutions provide opportunities for firm internationalisation (George & Prabhu, 2000; Zahara & George, 2002).

Again, organisational factors are important influences when it comes to how firms internationalise, particularly top management team experience such as having global vision and understanding products and services that are needed in international markets. Previous studies note that managers' international work or business experience enable speedy and successful internationalisation (Oviatt & McDougall, 1995). As part of the organisational factors in Figure 2.1, tangible and intangible resources are important for firm internationalisation, especially technological know-how (digital skills and competence for digital firms). Oviatt & McDougall (1995) suggest that new ventures with special intangible resources internationalise rapidly and successfully.

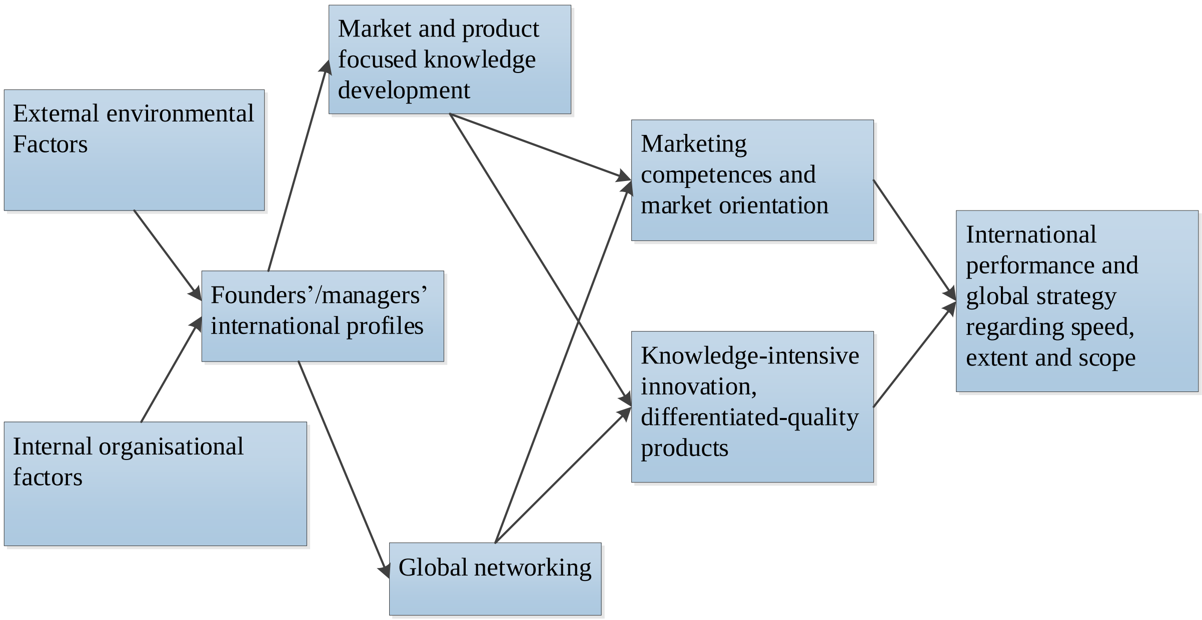
Firm's variables such as age, size, location and origin seem to not be important factors for digital internationalisation. The type and choice of industry sectors in which entrepreneurs in Nigeria wish to establish firms that follow digital mode of internationalisation need to be considered, since not all businesses have the potential to internationalise through digital mode.

The extent, speed and scope are important factors to consider for digital firm’s internationalisation. Extent refers to the number of new markets that firms enter; speed relates to how quickly firms enter international foreign markets from inception; and scope includes the number of offerings, target markets or countries.

Whilst the above model identifies five key aspects of international entrepreneurship, it does not directly emphasise the importance of business models, which are connoted by generic, functional and entry strategies under Strategic Factors. However, understanding a firm’s digital internationalisation requires an integration of insights from international entrepreneurship theory, digital internationalisation frameworks, and business model concept. Hence, this is the focus of this research, on business modelling for developing digital internationalising firms in Nigeria.

Figure 2.2 presents a stimulus-response model of international entrepreneurship proposed by Rask & Servais (2015).

Figure 2.2: A stimulus–response model of international entrepreneurship



Source: Rask & Servais (2015)

Some elements of the model are similar to those in Figure 2.1 above. The external environmental factors include favourable/unfavourable domestic/foreign market conditions, and industry/sector trends, which are subsumed under the Environmental Factors part of Figure 2.1.

The internal organisational factors are broadly equivalent to the organisational factors part of Zahara & George (2002)'s model in Figure 2.1. These factors include firm's human and financial resources, management competences, and knowledge base. The founders'/managers' international profiles include their prior international experiences which define the top management team (TMT) characteristics in Figure 2.1.

The model in Figure 2.2 additionally emphasises factors such as market and product focused knowledge development, marketing competencies (capability) and market orientation, knowledge-intensive innovation/differentiated-quality products, and global networking. These factors stimulate such global performance measures (response) as speed, extent and scope mentioned above in Figure 2.1.

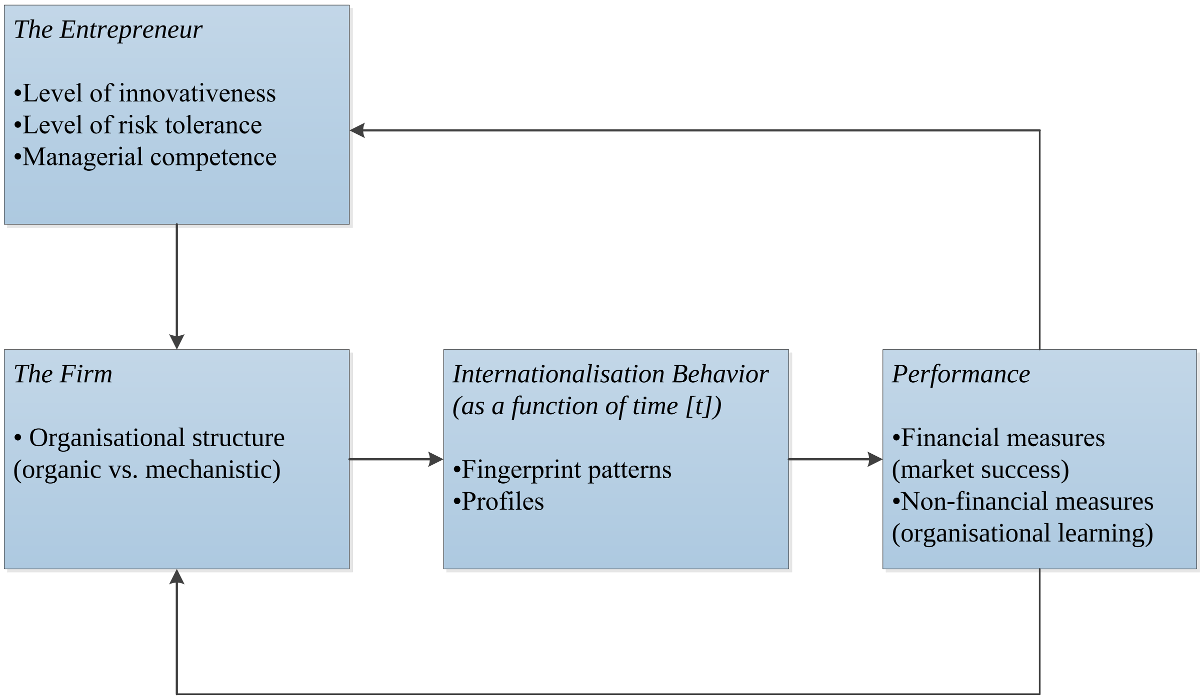
Some studies on the stimulus-response model of international entrepreneurship focus on four dimension of rapid internationalisation: a) time between year of establishment and first international market sales, b) degree/extent of internationalisation of firms sales, c) scope of internationalisation which involves number of target markets or countries, and d) drivers of internationalisation which include managerial and firm characteristics (Bloodgood, Sapienza, & Almeida, 1996; Knight & Cavusgil, 1996; Zahara & George, 2002).

Bell, McNaughton, Young & Crick (2003) findings suggest that external environmental factors such as domestic and foreign market conditions, industry trend and economic activities, inward technology transfer, combined with internal environmental factors such as firm knowledge base, financial and human resources shape the managers' characteristics and mental model.

The above factors have therefore been explored in the international entrepreneurship literature. The extent to which they drive the business development and internationalisation experience of Nigerian digital economy firms has not been adequately addressed in the literature. Also, international entrepreneurship studies, to the researcher's knowledge, have not combined business model templates and digital internationalisation perspectives within the Nigerian context, as in this current study. Thus, the present research explores the application of business model templates in digital firm internationalisation in Nigeria, which may apply to similar developing countries. The model will enable entrepreneurs to establish and develop digital internationalising firms. These ideas are expanded upon in the discussions in Chapter 4 of the thesis on conceptual framework of the research.

Jones & Coviello (2005) propose a general model of INVs' cyclical behaviour that includes factors affecting internationalisation, with special focus on entrepreneurs, firm organisational structure, firm internationalisation behaviour as a function of time, and firm performance. Figure 2.3 depicts an entrepreneurial cyclical behaviour. Financial measures such as how digital firms achieve growth and profitability, and non-financial measures such as learning and experiential knowledge creation are important aspects of firm performance in the model (Covin & Slevin, 1990; Bloodgood, Sapienza, & Almeida 1996; Autio, Sapienza & Almeida, 2000).

Figure 2.3: The INV's cyclical behaviour



Source: Jones & Coviello (2005)

The authors suggest that "the evidence of internationalisation occurs as value-creating events that is, behaviour manifests at points in time (as events), in locations (countries), consisting of cross-border business modes established between the firm and organisations/individuals in foreign countries" (Jones & Coviello, 2005, p. 297). Oviatt & McDougall (2005) note that environmental influences, industry situations, and entrepreneurial thinking are believed to be crucial features that influence the speed of international involvement.

The model in Figure 2.3 is relevant for this research as follows. The entrepreneur and firm organisational structure elements of the model inform the need to explore why-type case study interview questions in the research methodology. Such questions provide a firm's top management evidence of the founders' (entrepreneurs')/top management profiles, why they established the firms and the structure of the case study firms which facilitate their digital internationalisation activities. The internationalisation behaviour element of the model motivates the need to also frame how-type questions that will elicit from the top management of case study firms 'stories' (fingerprints and profiles) of how the firms' digital internationalisation activities developed over time, for example which offerings they started with initially, and how they developed other offerings over time. Hence, the model informs the research methodology as explained. The model is therefore potentially useful for interpreting the research findings. A relevant question for such interpretation is: to what extent does the development of Nigerian digital internationalising firms fit the characteristics of the model?

To reiterate the relevance of the above models of international entrepreneurship, all the models in Figures 2.1-2.3 serve as theoretical approaches for discussing the research findings and inform the framing of the interview questions for the case studies.

2.5. International entrepreneurship and environment

Huang, Ye, Zhou & Jin (2017, p. 231) examine the influencing factors of the "interaction between institutional environments in the home and host country on the accelerated internationalisation of entrepreneurial enterprises from emerging economies (EE). They "found that for EE entrepreneurial firms from home country with well-established institutional environments, the inhibition effect of under-developed institutions in the host country on their initial accelerated internationalization will be smaller. However, for EE entrepreneurial firms from the home country with under-developed institutional environments, the incentive effect of well-established institutions in the host country on their initial accelerated internationalization will be bigger" (p.254).

The institution-based view of international entrepreneurship argues that international approaches of emerging entrepreneurial firms are influenced by institutional systems to an extent (Peng, Vall, Wei, Minichilli, & Corbetta, 2018). The resources commitment strategy and the speed of internationalisation are as influenced by institutional environments in host countries and inform the international market choices by international entrepreneurial firms (Kiss & Danis, 2008).

An important part of the institutional environment is the quality of institutional networks which support the development of businesses, including government agencies, business incubators, research institutes, and international development and advisory services.

The institutional network focuses on a firms' interaction with public, government and private agencies to take advantage of resources that they cannot acquire through social exchanges or relationship (Audet & St-Jean, 2007). Oparaocha (2015) suggests that aim of institutional networks create enabling environments that foster cross-border business opportunities and investments and enhances business success in both local and foreign markets (Gibb, 1993).

Some of the services offered by government in support of domestic and foreign business development are either free of charge or incentivised at reduced costs in favour of target businesses (Martin and Scott, 2000). The overall benefits are mirrored on firms' growth and performance, industry sector and economic growth of national economy (Audet & St-Jean, 2007; Oparaocha, 2015).

Another aspect of the business environment of interest in (international) business studies is how stable the environment is over time. Stable and unstable environments determine how firms adapt and pursue international business opportunities. In a stable environment firms adopt current and previously successful behaviours (Liu, 2013; Nelson & Winter, 1982). For example, a firm can adopt existing strategy for products diversification in a new market because of environmental stability. However, merely replicating strategies may result in failure in dynamic environments. Therefore, firms need to identify types of strategies needed in particular business environments in order to be sustainable. For example, in stable environments firms can use formally planned business strategies, whilst in dynamic environments they can apply emergent business strategies which adapt to new experiences in the environment are more suitable.

In dynamic business environments, firms need to match their capabilities with the environments and restructure the formal strategies if need be, in order to adapt the present business approaches to future circumstances that may arise in that business environment (Bosch, Volberda & Boer, 1999).

The above insights have different impacts in both developed and developing economies. Firms in developed economies have less environmental change compared to those in developing economies which experience highly dynamic environmental change because of weak institutional capacities. Firms that operate in developing economies need to change their strategies rapidly to gain competitive edge; otherwise they will be outperformed by their competitors. For example, Yuan, Zhongfeng, Yi & Mingfang (2011) found that Chinese firms often change their strategy to enable them to adapt in different business environments.

As mentioned earlier, to establish digital firms that internationalise early in developing economies like Nigeria, there is a need to combine emergent and planned business strategies. Digital firms need to adopt emergent business strategies in highly dynamic environments, because they facilitate new product and markets development (Stalk & Hout, 1990).

2.5.1. International entrepreneurship in emerging and developing countries

Kiss, Danis & Cavusgil (2011) critically review international entrepreneurship research in emerging economies and suggest that international entrepreneurs in emerging economies are less likely to adopt strategies that they will commit high level of resources to; they are also more likely to focus on nearby geographical markets. Internationalising firms from emerging economies tend to focus on less technological industries that require low development cost. This may suggest that internationalisation approach may vary from advanced, emerging and developing economies respectively.

Because firms in developed countries have higher level of resources and capabilities, they will be able to develop novel and sophisticated products and services, in contrast to firms in developing countries like Nigeria that have low level resources and capabilities. These types of firms equally develop new offerings, but mainly focus on low-cost products and services. Therefore, this may affect international entrepreneurship and internationalisation process of firms in emerging economies, especially in Nigeria and Africa with smaller firms facing severe resource constraints (Elango & Pattnaik, 2007; Luo & Tung, 2007; Cuervo Cazurra & Genc, 2008).

Small and large firms from both emerging market and developing countries that gain access to institutional and economic resources may have develop high technological products and services and compete in diverse international markets (Kiss, Danis & Cavusgil, 2011).

Sozuer, Altuntas & Semercioz (2017) examine international entrepreneurship as a predictor of export market performance in an emerging country context using evidence from 326 firms in Turkey. Their results did not show significant relationship with dimensions of international entrepreneurship such as risk taking, business networking and proactiveness. This shows that resources are important for small firms to pursue operations in international markets. In contrast, Gil-Pechuan, Exposito-Langa & Tomas-Miquel (2013) examine Spanish firms' corporate entrepreneurship activities in foreign markets; the findings highlight that firms that develop innovative attitude and innovative products realise superior international market ventures. Prior studies have found positive relationship between international entrepreneurship and international performance (McDougall & Oviatt 2000; Dimitratos & Plakoyiannaki, 2003).

International entrepreneurs need to have management team with specific skills that are required for international new ventures. Hence, there is a need for skills development for smaller firms or entrepreneurs wishing to develop international new ventures to enable them to succeed in diverse international markets. The IBMT and ITDF models created in this research will facilitate such skills development.

Dana & Ratten (2017) examine the role of international entrepreneurship in African countries using literature review and content analysis from Botswana, Zambia and Zimbabwe. The analysis suggests that culture and institutional environments affect the internationalisation modes of firms from this geographic area. Their research proposition suggests that smaller firms in African countries should focus on informal networks and cultural characteristics to differentiate their products and services in the international markets. However, international entrepreneurship may seem not viable for some firms in emerging and developing economies because of resources and time limitation. There is a need to understand the factors that influence the success or failure of entrepreneurial firms in emerging economies (Ngo, Janssen & Falize, 2016). For example, the narratives from managers of selected case companies in this research may reveal the challenges they face in their target countries, how they overcome the challenges, hence the success factors that underpin their internationalisation

Entrepreneurs need to identify gaps and related novel offerings in the markets before deciding whether to pursue international opportunities. Felzensztein et al. (2016) suggests that entrepreneurial orientations are more likely to enable firms internationalise and increase their growth and financial performance. Hence, there is need to develop international entrepreneurial orientation among entrepreneurs and firms in Nigeria in order to expand their businesses through internationalisation modes.

2.5.2. Debates around international entrepreneurship research in Nigeria and Africa

According to Valliere (2015:244) "there has been very little examination of entrepreneurship in Africa and the degree to which developed country theories apply to Africa." This is because most of the entrepreneurship studies in this continent focus on South Africa; this has created a missing diversity of entrepreneurial research in other countries in Africa (Kiss et al., 2011). This research partly fills this gap by focusing on the Nigerian context.

African countries have different cultures and this difference affects entrepreneurs' and firms' business philosophies. Some studies suggest that Africa and similar regions should be studied in the same way, while others emphasise that Africa has specific historical factors and unique culture which require international entrepreneurship research to be contextualised in Africa (Dana 1997; Elbanna & Child 2007; Dutt et al., 2015). Dana & Ratten (2017) suggest that international entrepreneurship differs within African continent due to differences in national cultural and historical contexts. Thus, there is a need to examine the factors that enhance (international) entrepreneurship development in Africa.

To fill the above-mentioned gaps in (international) entrepreneurship studies, it is important, as in this research, to understand how the cultural contexts of Africa and Nigeria affect the development of Nigerian international entrepreneurial firms (Sheriff & Muffatto 2015). The findings can help researchers and policy makers to provide a good framework for international entrepreneurship development.

Edoho (2015b) has a different perspective by suggesting that entrepreneurship has been restrained in Africa because of the rooted belief of state capitalism, whereby state-owned enterprises dominate the economy. However, given the phenomenon of privatisation in Nigeria during the previous government by the People Democratic Party (1999-2015), it can be argued that state capitalism does not pose serious challenges to digital economy firms in the country. Moreover, some digital firms engage in retailing and providing digital marketplaces which bring sellers and buyers together. Hence, the focus of international entrepreneurship research in the current study is the experience of Nigerian digital internationalising firms, with regards to the business approaches they deploy to overcome challenges they face in internationalising their offerings.

A major impediment to firms from emerging markets is the lack of enabling environments and inadequate frameworks for explaining how such firms go to international markets (Mathews & Zander, 2007). Khvual, Bruton, & Wood (2009) found that African entrepreneurs often use family and community ties to start new business due to institutional challenges such as weak legal and financial markets. Valliere (2015) found that entrepreneurial intention in Cameroon is comparable to developed countries and can be even higher in some places. Similarly, Kiss et al. (2011) note that the factors that facilitate SME internationalisation from Africa appear similar to those found in more advanced countries. The lack of human capital development and resources seems to result in the difference between levels of entrepreneurial intention and rates of establishment of new businesses in developed and developing economies.

2.6. International entrepreneurship in the digital context

Glavas & Mathews (2014) use eight in-depth case studies to explore relationship between international entrepreneurship characteristics and use of internet capabilities for the international business process of firms. The findings show that firms' international proactiveness and innovativeness enable the integration of internet capabilities in a business. Whilst internet adoption may not reduce the risk in internationalisation processes, the internet has made entrepreneurs to perceive internationalisation as a lower risk business practice. This is because with the capacity to reach many customers instantly in cyberspace, the internet has minimised the constraints that are associated with internationalisation process. Internet also facilitates real-time learning about changing customer habits and needs and thereby enables firms to gain knowledge about distant and international markets.

Mostafa, Wheeler & Jones (2006) examine the extent to which entrepreneurial orientation relates to commitment to the internet from 71 UK manufacturing SMEs. Their findings show that market orientation and learning orientation are connected to the adoption of internet. The adoption of internet is indirectly connected to international "sales intensity through perceptions of information relevance and knowledge internalisation".

Loane and Bell (2006) find in their study of international entrepreneurship that internet may influence the behaviour of SMEs in several ways such as the capacity to recognise and assess competitors and develop networks and partners in international markets. Studies have shown that entrepreneurial firms create valuable benefits and high customer value through communication and information gathering from internet (Saimee, 1998; Loane, 2006). It is important whether a firm is digitally oriented or not, to develop internet presence from inception in support of their international activities. However, there might be constraints in terms of logistical management of online transactions for those firms in Nigeria which seek internationalisation through digital modes.

Chandra & Coviello (2010) indicate that the internet offers opportunities for individuals to be international entrepreneurs, and it is crucial for speed and early internationalisation in internet-enabled market. Thus, this research examines entrepreneurship in internet-enabled markets in the Nigerian context and how the internet facilitates internationalisation of products and services. However, having technological advancement and various digital mechanisms for reaching international markets quickly might not be sufficient for success in (international) entrepreneurship activities, without innovative offerings that meet customers' needs. Thus, firms need to develop innovative products and services that will fulfil customer unmet needs in foreign markets. From resources-based theory perspective, intangible resources such as innovation capability have a crucial impact and can enhance digital internationalisation.

Ziyae, Sajadi & Mobaraki (2014) examine how entrepreneurs' international experience, innovation and market capability affect the internationalisation of digital businesses. The results indicate a positive and significant relationship among international experience, innovation and market capability and internationalisation speed. Hence, firms can improve their internationalisation speed more than competitors by enhancing entrepreneurs' international experience, innovation, and marketing capabilities.

Reuber & Fischer (2011) review previous research in international entrepreneurship, broader field of entrepreneurship, international business and marketing; they identify that firm-level digital resources determine how entrepreneurs and firms pursue international market opportunities. The resources include online technology, online branding, and online reputation. Online reputation is important because there are numerous competitors in internet-enabled markets. Having a good online reputation from inception can provide extensive competitive advantage in international internet-enabled markets, because it influences purchasing behaviours from previous buyers. Being visible online and being seen as providing high-quality products and services have been identified as two desirable measures of good online reputation (Rindova, Williamson, Petkova & Sever, 2006). Also, signals of quality such as online ratings and reviews are important attributes of online reputation which enhance a firm's international market opportunities indirectly through perceived trustworthiness. Examples of these practices are the quality reviews and ratings of goods bought in Amazon.

Online technological capabilities facilitate international market opportunities because they help firms to learn, discover and exploit international opportunities faster than competitors. Reuber & Fischer (2011) highlight three crucial aspects of a firm's online technological capabilities which include "the extent to which web applications are integrated with back-end databases and systems; the firm's ability to customize the online experience for particular markets; and the firm's technological opportunism" (ibid, 661). The impact of these digital technological capabilities on firms' performance is based on how top management value online initiatives and apply the capabilities from the inception of firms. Thus, managers of digital firms need to have digital skills and capabilities in order to facilitate cyber-mediated internationalisation.

An important aspect of online promotion of goods and services across national borders is the development of online brand communities who provide information (ratings and reviews) about their experiences using the offerings. Reuber & Fischer (2011, p 661) note that

> "online brand communities can help firms discover, evaluate and exploit international opportunities because they can provide information about buyers, support the buying process and build positive brand meanings. Potential foreign buyers can monitor the community to learn about the firm's offerings from the customer point-of-view or ask questions of existing buyers. The existence of engaged community members from diverse geographic regions can signal to potential international buyers that the firm can and does serve foreign clients effectively. The firm can use the online community to monitor and reach out to geographically dispersed audiences, thereby avoiding the danger of becoming too isolated from their online foreign markets".

2.6.1. Digital entrepreneurship, ICT and local context

Current developments in the digital economy enable digital entrepreneurs to set up online businesses and bring about changing entrepreneurship behaviour in Africa. This creates opportunities for African entrepreneurs to internationalise their offerings to target global markets in addition to their domestic markets (Dana & Ratten, 2017). Some examples of industry sectors that have recorded successful digital internationalisation in Africa include fintech (mobile money that was adopted in Kenya (Adner, 2012)), and entertainment industry such as Nigerian Nollywood, which is equivalent of Hollywood in the USA (Klingebiel & Stadler 2015; Dana & Ratten, 2017).

Local context can be referred as business context, technology context and geographic context which contextually influence the success of (digital) entrepreneurs (Autio, Kenney, Mustar, Siegel & Wright, 2014). The contextual influences shape the way entrepreneurs pursue business opportunities and related challenges. The geographic context in this research includes how the Nigerian environment impacts the development of digital firms, while technology context represents how ICT industry, technology advancement, and ICT skills entrepreneurs have affect the development and internationalisation of digital firms in Nigeria.

How ICT resources impact digital entrepreneurship and digital internationalisation modes depends on the entrepreneur's and top managers' ICT skills, competencies and international market orientation. It is important to consider the local context digital entrepreneurs operate in, and how it affects the development and internationalisation of digital firms, especially in Nigeria.

Javalgi, Todd, Johnston, & Granot (2012) highlight how technological advancement provide a technology context that allows entrepreneurs in India to engage in digital entrepreneurship and innovative activities, while country context such as government policies enable them to tap into local and global business opportunities. Thus, local contextual factors are imperative for the success of digital entrepreneurs and digital firms, the factors can be related to country-specific and industry-specific opportunities and challenges that face digital entrepreneurs and internationalisation activities. In a nutshell, the context influences the entrepreneur's choices on the types of industry sectors to invest in new ventures, considering availability of resources, ICT skills and competence (Adeboye, 1996), to engage in digital businesses ((Beeka & Rimmington, 2011; Liñán, Urbano & Guerrero, 2011), and business strategies and procedures they adopt to create successful enterprise (Woldesenbet, Ram, & Jones, 2012).

As a further motivation for this research, Javalgi et al. (2012: 743) note that 'academic enquiry to date has merely skimmed the surface as to how small internet firms in emerging markets' establish and develop. The use of ICT has been a challenge facing many African firms over the past few years. Gathege & Moraa (2003) suggest that studies need to explore the nature of digital entrepreneurship in Africa. Thus, this research explores how the local contexts of Nigeria and those of host countries in which Nigerian digital firms operate influence their development and digital internationalisation activities.

2.6.2. Digital entrepreneurship orientation

Quintona, Canhotoa, Molinillob, Perac & Budhathokid (2017, p.4) define digital orientation (DO) as a "deliberate strategic positioning of a firm to take advantage of the opportunities presented by digital technologies. This positioning includes the attitudes and behaviours that support the generation and use of market insight, proactive innovation, and openness to new ideas".

Quintona et al. (2017) conceptually examine the extent digital technologies have changed the organisation and marketing orientation of firms. Their review highlights five factors that support the development of digital orientation in SMEs, namely individual characteristics, environmental factors, organisational capabilities, internal value assessment, and cross-functional integration.

In line with Quintona et al. (2017), Davidson & Vaast (2010, p.8) suggest that digital entrepreneurship is the practice of pursuing new venture opportunities presented by new media and internet technologies". It has similar business performance goals to traditional entrepreneurship since "digital ventures aim at generating a financial profit and are directly inscribed into the economic realm, such as creation of a new company or commercialization of an innovation" (Davidson & Vaast, 2010, p.2). In digital entrepreneurship "some or all of the entrepreneurial venture takes place digitally instead of in more traditional formats" (Hair, Wetsch, Hull, Perotti & Hung, 2012: 3). As will be seen in the review of business modelling in chapter 4 of this thesis, these views suggest that a digital business model should incorporate aspects of traditional business models (Bossidy & Charan, 2005) and the digital enhancements that extend such models for fast and flexible internationalisation activities.

Digital businesses are different from traditional entrepreneurial firms because they use different business models which help them to develop their offerings, marketing logistic and distribution activities using digital constructs like e-platform and e-marketplace (Hair et al., 2012). Hair et al. (2012) highlight three elements of market orientation in digital entrepreneurship, namely: technological skills to maintain the digital enterprise; digital techniques for information-rich business environments; and knowledge to understand a wider marketplace and opportunities for digital business and marketing (Chaffey & Ellis-Chadwick, 2016), compared to non-digital enterprise.

Entrepreneurial, market, and learning orientations are characteristics which help firms to succeed in the digital economy (Quintona et al., 2017). These complementary orientations create intangible resources that enable firms to have a unique competitive advantage (Hult & Ketchen, 2001). Similarly, Lonial & Carter (2015, p.94) suggest that ‘market, entrepreneurial, and learning orientations jointly give rise to positional advantage, which, in turn, is positively related to the performance of the organisation”. Thinking about how digital firms should develop these orientations, we hope that the IBMT and ITGF frameworks explored in this this thesis will provide dashboards that highlight key constructs from international entrepreneurship, digital internationalisation, and business modelling literature which will inform training of firms’ employees on the orientations.

2.7. Entrepreneurial orientation and market orientation

Entrepreneurial orientation refers to the inclination for entrepreneurs, managers and firms to engage and pursue in entrepreneurial activities (Lumpkin & Dess, 2001). The entrepreneurial orientation (EO) of founders and owner managers are of key interest in this research since the innovation potential of these firms depends on the EO. The notes here summarise the main ideas linking innovation and EO and differentiate between EO and market orientation (MO), mainly by way of the nature of organisational learning required for these orientations.

"…Firms with an entrepreneurial orientation (EO) are more likely to develop both market driving and market driven-innovation, while firms with a market orientation (MO) are more likely to develop market-driven innovations" (Zortea -Johnston, Darroch & Matear, 2012, p.145).

Market orientation firms focus more on learning what customers want and adapting to changing business environments warranted by these needs and preferences. They perfect existing products and services which provide a certain degree of value proposition (Kumar, Scheer & Kotler, 2000; Leavy, 2017). In contrast, entrepreneurial orientation firms create radical and breakthrough innovations. They create novel markets and products, to acquire new customers and reshape existing market spaces (Jaworski, Kohli & Sahay, 2000; Harris & Cai 2002).

Entrepreneurial orientation firms have different forms of innovative characteristics that enable them to develop different uncontested products and services simultaneously. For example, Apple is developing a self-driving car and digital watch in order to maintain competitive edge and profitable growth. Combining EO and MO is good practice since any created services must be continually focused on meeting the changing needs and preferences of customers. The aim is to develop competences and strategies that are difficult to imitate (Slater & Narver, 1995; Atuahence -Gima & Ko 2001; Zortea-Johnston et al., 2012).

Compared to EO firms, MO firms have limited new business idea generation capacity, and this prevents them from achieving radical and breakthrough innovation which leads to low growth and profitability (Zortea -Johnston et al., 2012).

As noted earlier, digital firms achieve profound real-time understanding of customer needs 24/7 through e-marketing, social media, and business networks. Digital firms which excel in customer understanding this way will benefit from launching products in underserved mass markets like Nigeria and developing countries. Entrepreneurs may not therefore have to rely on technology as a core competitive advantage.

In support of these points, Crittenden & Crittenden (2012) argue that firms that are knowledgeable about customers' needs and future preferences will be entrepreneurially successful, because entrepreneurial orientation (EO) enabled them to create new markets, perfect existing ones, and launch new products/services that meet customers’ needs (Zortea - Johnston, Darroch & Matear, 2012).

2.8. International entrepreneurship approach to internationalisation: Born-global firms (BGFs) and international new ventures (INVs)

Born global firms (BGFs) are small (usually technology-oriented companies that operate in international markets from the earliest days of their establishment" (Knight & Cavusgil 1996:1). The term “born global” was first coined by Rennie (1993) when studying Australian manufacturers' exporting companies for McKinsey and Co. BGFs were identified as companies that export their products within two years of establishment to international markets. Knight & Cavusgil (1996) operationalized BGFs as companies that export twenty-five per cent or more of their products within the first three to six years of their foundation.

An international new venture (INV) is defined as ‘a business organisation that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries (Oviatt & McDougall, 1994). This definition is closely related to that of BGFs because both BGFs and INVs aim to exploit opportunities in multiple markets as quickly as possible. It is noted in the literature that some authors use the two terms interchangeably to “characterise firms that internationalised rapidly’’ (Crick, 2009). However, BGFs are characterised by more global outlook across major regions of the world (America, Europe/Africa/Middle East, and South East Asia, for example), whilst INVs are regional in focus and may target selected countries in those regions (Crick, 2009; Spence & Crick, 2009).

These descriptions have been widely employed by many researchers and subsequently described within a cross-border and cross-industry perspective (Rasmussen & Madsen 2001; Rialp et al., 2005; Gleason & Wiggeenhorn, 2007). Madsen & Servais (1997) studied the emergence of BGFs and found several factors that permit BGFs growth. These factors are associated with entrepreneurial orientation, international market mind-set and high innovative skills on the part of founders and top management of firms.

Furthermore, Spence & Crick (2009) highlight the overlap between BGFs and INV approaches to internationalisation. They posit that BGFs products and services involve multiple continents while INVs at times focus on regional and near geographical markets that have similar cultural business environments. INVs and SMEs internationalise through a gradual process by focusing on the domestic market. These types of firms focus on domestic markets to acquire financial resources before pursuing a global market share (Bell et al., 2003).

As noted in chapter 6 of the thesis, one of the case study firms (Firm 1) in this research started as an online marketplace that ‘was created to help connect Nigerian and African traders to international markets. The platform allows Nigerian and African small businesses to sell their products and commodities to international buyers and enables people from different parts of the world to source for products and other commodities in Nigeria and Africa’. Hence, Nigerian digital internationalising firms may share the characteristics of BGFs in their quest to exploit digital technologies in selling their offerings internationally, and more closely the characteristics of INVs in selecting targeted countries in Africa, for example.

Research on BGFs and INVs largely employs an entrepreneurship approach (Oviatt and McDougall, 1994; Knight & Cavusgil, 1996; Madesn & Servais, 1997; Asplund et al., 2017). Researchers have suggested that international entrepreneurship orientation has a positive impact on the establishment and growth of international new firms (McDougall & Oviatt, 2000; Acs, Dana & Jones, 2003; Sozuer, Altuntas & Semercioz, 2017). This is because international experience is increasingly important for creating new firms, especially firms that use digital technologies and social media to market their offerings across national borders.

International entrepreneurship focuses attention on new firms that internationalise from onset e.g. born-globals, global start-ups, international new ventures, and digital firms, Karra, et al. (2008). As noted above, there is no agreed definition of what constitutes these types of firms. They have been researched in different industry sectors and perspectives in developed and emerging market countries. However, in developing countries like Nigeria there are limited studies which discuss how digital firms are established and internationalised, especially in light of the enabling business model templates, hence this research.

In sum, Karra et al. (2008) suggest that identifying business opportunities for value creation depends on entrepreneurial orientation and capabilities of individuals. Entrepreneurship literature suggests that business opportunities are identified in three ways: 1) through active search which involves superior search skills and ability to scan the environment to identify gaps in the market; 2) passive search or fortuitous search which is through experience and existing knowledge; and 3) creativity and imagination that allow entrepreneurs to foresee new opportunities and harness combinations of resources that could lead to development of new products and services.

2.8.1. BGF/INV theory and digital internationalising firms

Researchers have paid much attention in the past decades to firms that have rapid international development and have their presence in international markets from inception (Johanson & Vahlne, 1977; 1990; Fletcher, 2001; Crick, 2009; Madsen, 2013; Puig & Gonzalez-Loureiro, 2014). It was noted that above that Nigerian digital internationalising firms may share the characteristics of BGFs and INVs to some extent. Table 2.1 below summarises the characteristics of BGFs which seem to apply to digital internationalising firms such as Firm 1 in this research.

2.8.2. Characteristics of BGF

As noted earlier, international entrepreneurial, international market and innovation mind-sets differentiate BGFs from traditional SMEs and firms (Knight & Cavusgil 1996). Loustrainen & Gebrielsson (2002) identify seven factors that constitute the key characteristics of born-global firms. These characteristics are summarised in Table 2.1. These characteristics are different from traditional firms that focus on domestic customer needs and markets, and gradually seek international markets if need be.

Table 2.1: Seven characteristics of born-global firms

Item no.	**Description**
1	They start international operations even before, or simultaneously with, domestic operations. Thus, the emphasis is on the international rather than the domestic markets.
2	They base their vision and mission on global markets and customers from inception, i.e. they start from a global focus rather than a domestic one.
3	They plan their products, structures, systems, and finance for a global market place.
4	They grow exceptionally fast in the global market place.
5	A plan to become global market leaders is a part of their vision.
6	They utilise different product, operation, and market strategies than firms have traditionally done.
7	They follow different global marketing strategies.

Sources: Compiled from Loustarinen & Gabrielsson (2002)

Since digital internationalising firms have international focus like BGFs and INVs, BGF/INV theories are potentially useful for exploring their internationalisation activities. Hence, in looking at the notes, the reader could, for example, replace BGFs with ‘digital internationalising firms’, and ‘learning’ with ‘digital customer learning’.

Knight & Cavusgil (2004) found that learning process equips BGFs with a certain culture that allows them to innovate and adapt. BGFs are young, flexible, agile, and have an organisational culture which permits them to adapt easily into targeted diverse markets, adjust and change rapidly (Nemkova, 2017). Such characteristics are associated with a firm’s entrepreneurial orientation (Covin & Slevin, 1991; Sozuer, Altuntas & Semercioz, 2017). A differentiating feature of BGFs from traditional firms is that the latter learn to internationalise their offerings more slowly (Johanson & Vahlne, 1977; 1990), while BGFs are deliberately designed from inception to do so (Madsen & Servais, 1997).

Learning how goods and services are exchanged in diverse business environments would help entrepreneurs to identify how their new products and services will be served in different international markets. This is even more important for Nigerian digital firms, start-ups, INVs and SMEs. It will enable entrepreneurs in these countries to establish digital firms that will aspire to achieve the growth trajectories of BGFs and digital firms in developed countries. Coviello & Munro (1995) point out that international market initiation opportunity develops through network interaction and information flow.

Ferrrira, Ribeiro-Serra & Reis (2010) find that born-globalism and global market awareness are achievable through the internet and social networks (Leite, Moraes & Salazar, 2016). The point of this research is that businesses in Nigeria are not taking enough advantage of such internet and network effects. Hence, individuals and entrepreneurs in Nigeria and Sub-Sahara African countries should overcome these barriers by learning social cultural behaviours of distinct international markets through social and business networks.

It can be argued that lack of business networks is one of the factors that hinder the establishment of BGFs in some developing countries, especially in Nigeria and Africa. This undermines individuals’ and entrepreneurs’ quest to identify and grow global business opportunities. It also restricts internationalisation of SMEs and start-ups, because such firms are unable to identify agents, buyers, and suppliers in international markets, Ferrrira, Santos & Ribeiro-Serra (2010).

Dimitatos, Liokas & Carter (2004) argue that entrepreneurs who understand different business environments are more likely to have superior performance in both domestic and international market environments. Having opportunity to travel to new environments and foreign countries may help them to develop new business ideas, which is one of the crucial factors for identifying niche and global business opportunities (Child et al., 2017).

2.8.3. Product and services characteristics of BGFs

Uniqueness and differentiation of products and services enable BGFs from inception or few years after the establishment to internationalise into foreign markets (Taylor & Jack, 2016). However, differentiation and uniqueness of products and services may not be fully realised from the inception in some firms; they develop as business grows and understands customers and business environments. From these insights BGFs can be better understood from “learning by doing" (King, 2012).

Strategic thinking is one of the key drivers that enable individuals and entrepreneurs to develop BGFs. The recombination of new and old ideas is significantly important for establishing BGFs because the founder will use his/her experience to understand the trends in both domestic and international markets. This enables them to invent niche unique products or services which will be widely demanded in global market because they are highly beneficial to customers (Leite & De Moraes, 2015).

Despite the lack of resources that face new businesses, BGFs develop innovative products through partnerships, outsourcing agreements, technical collaborations, joint research projects, shared new product development, shared manufacturing agreements, cross-selling arrangements, and franchising (Grant & Baden-Fuller 2004; Capik & Brockerhoff 2017). These forms of strategic alliance enable BGFs to gain different competitive advantages from existing firms and achieve their goals within a short time. The core assumption of strategic alliances is that they facilitate organisational learning (Grant & Baden-Fuller, 2004). This plays an important role in BGF products and services development.

2.8.4. Significance of BGF/INV theory

Some authors have presented the phenomenon of INVs/BGs as a challenge emphasising the need for a new theory, whereas Madsen & Servais (1997) argue that even though the firms have different internationalisation models, they may vary from other firms with respect to more traditional development process such as stages models (Johanson & Vahlne, 1977; 2009). Also, as noted earlier, INVs and BGFs have similar but subtly different innovative, proactive and risk-taking behaviours. These are results of international entrepreneurial orientation and strategic thinking which make BGF entrepreneurs more proactive than reactive in pursuing business opportunities, whilst INVs may engage with closer markets in geographical business environments that have similar market characteristics (Mcdougall, Shane, & Oviatt, 1994; Mcdougall, Oviatt, & Shrader, 2003; Madsen, 2013; Garcia-Canal, & Valdes-Llaneza, 2015).

Spence & Crick (2009) highlight the overlap between BGFs and INV approaches to internationalisation. They posit that BGFs' products and services involve multiple continents while INVs at times focus on regional and near geographical markets that have similar cultural business environments. INVs internationalise through a gradual process by focusing on the domestic markets to acquire financial resources before pursuing a global market share (Bell, McNaughton, Young & Crick, 2001).

Born-global concept and internationalisation are seen as entrepreneurial acts. This link between BGFs, internationalisation and entrepreneurship is not new (Ibeh & Young, 2001). Born-global entrepreneurs combine innovative, proactive and risk-taking behaviours that permit them to develop global products and services. The extent to which Nigerian digital internationalising firms manifest similar international entrepreneurial acts is additionally of interest in the current research.

2.8.5. Entrepreneurship approach to BGFs

Several researchers find founders' previous experiences and background as crucial factors for establishing BGFs and other international new ventures (Knight & Cavisgil, 2004; Detienne & Chandler, 2004; Weerawardena, Mort, Liesch & Knight, 2007; Hagen & Zucchella, 2014; Hagen, Denicolai & Zucchella, 2014). To successfully establish BGFs requires an understanding of born-global entrepreneurial capabilities (BGECs) such as BGF market gaps and opportunities, international markets awareness, international entrepreneurial orientation.

This could be achieved through experience, skills and combination of existing and new knowledge from different industry sectors.

BGF market gaps rely on international markets awareness and international entrepreneurial orientation (Detienne & Chandler, 2004). Also, individuals and entrepreneurs need to consider information flow and resources as key mechanisms to establish and grow BGFs (Capik & Brockerhoff, 2017). This is even more important for individuals and entrepreneurs in Nigeria and Sub-Sahara Africa for example, as it will help them to acquire explicit knowledge and conceive ideas how to establish these types of firms (Gerschewski, Rose, & Lindsay, 2015).

It is important to educate individuals and entrepreneurs who may not have previous experiences and global business initiative on how to benefit from these types of emerging modern global businesses, for example BGFs, International New Ventures (INVs) and digital economy firms. This is more important in emerging markets and developing countries, because these types of firms create jobs and enhance economic development (Tambunan, 2008; Abdul-kemi, 2014). These individuals can achieve this by participating in social and business networks which equip individuals with creative ideas and expose them to different international business activities.

Karra et al (2008) identify three entrepreneurial competencies that are crucial for establishing successful international new ventures (INVs): "international opportunity identification, institutional bridging, and a preference and capacity for cross-cultural collaboration" (Karra et al., 2008, p.440). The above insights are crucial ways of capturing and creating born-global (digital) entrepreneurial opportunities, especially in Nigeria where there are very few digital internationalising firms. Hence, the problem of not having international entrepreneurial capabilities needs to be fundamentally addressed at national levels, especially in Nigeria and Africa (Ezepue, 2007; Ibeh, Wilson & Chizema, 2012). The conceptual frameworks and findings from this research will therefore facilitate related training of potential digital enterprise entrepreneurs and firm staff.

Born-global entrepreneurial capabilities (BGECs) could be acquired through virtual and physical environments. For the physical, individuals and entrepreneurs in developed and developing countries can learn skills and acquire international business awareness directly through transnational companies (TNCs) and multinational companies (MNCs) operating in these countries (Karra et al., 2008). Start-ups and digital companies in these countries would benefit from these types of organisations and existing digital firms by their day-to-day operational activities and adapting them to different contexts. Therefore, it is important learning for policy-makers to provide good business incentives that attract foreign direct investment (FDI), which enables individuals and entrepreneurs in emerging markets and developing countries to learn and acquire skills needed to establish and grow digital firms (BGFs and INVs). Virtually, aspiring digital entrepreneurs can learn BGECs through focused study of the websites and digital activities of established firms that manifest such capabilities.

Empirical evidence has shown that entrepreneurs or founders' previous work experience in foreign markets play a crucial impact on establishing BGFs (Madsen & Servais, 1997; Kuivalainen, Sundqvist & Servais, 2007; Gleason & Wiggenhorn, 2007). However, individuals can develop capabilities to establish BGFs (and digital firms) without having a previous experience in foreign markets; it depends on founders' strategic intelligence which enables them to recognise opportunities and gaps in domestic and international market environments.

2.8.6. BGFs and developing countries

As noted earlier, most BGF studies have paid more attention mostly to developed countries and emerging economies (Rialip et al., 2005; McDougall et al., 1994; Madsen, 2013). Comparatively less attention has been paid to developing countries, especially in Nigeria and Africa (Thai & Chong, 2008), thus, this research explores the emergence of digital economy firms that seek early international through digital internationalisation in Nigeria.

However, several studies have been conducted on export characteristics of African firms (Marandu, 1995; Bigsten at al., 2004; Ibeh, 2003a; 2004), and internationalisation of African firms (Calof & Viviers, 1995; Crick, Kaganda & Matlay, 2011; Ibeh et al., 2012). Most of these studies focus on traditional process of internationalisation whereby firms develop an international market competence by a gradual process (Johanson & Vahlne, 1997). Hence, the present study addresses this gap in knowledge by providing frameworks that will help explain how digital internationalising firms in Nigeria seek early international market from inception.

Furthermore, BGF/INV theories still lack comprehensive explanations (Knight & Cavusgil, 1996; Servais & Rasmussen, 2000; Rialp et al., 2005). Hence, understanding how born-global (digital firms') entrepreneurial capabilities (BGECs) develop and how digital firms are established and internationalise will augment existing BGF/INV theories.

2.9. International entrepreneurship and firm internationalisation

International entrepreneurship has been identified as a crucial determinant in the internationalisation process of businesses, especially SMEs (Wach, 2015). Wach (2015) suggests that there are several ways to explain the internationalisation process of firms in business studies, from both economics and management perspectives. These perspectives include stages models (including innovation-related models), network approach, international entrepreneurship approach, resource-based view, and integrative approach (holistic models). The present study focuses on international entrepreneurship and digital internationalisation as core theories in exploring internationalising of digital economy firms in Nigeria.

Internationalisation has different definitions and dimensions and it encompasses different theories: eclectic paradigm (Dunning, 1988)), foreign direct investment (Blomström & Zejan, 2000), Uppsala stage model (Johanson and Vahlne, 1977; 1990), Ansoff's matrix (Ansoff', 1958; 1965), and product life cycle theory (Feenstra & Hanson, 2004).

Welch & Luostarinen (1988) define internationalisation as, "the process of increasing involvement in international operations". Similarly, Calof & Beamish (1995, p.116) define internationalisation as "the process of adapting firms' operations (strategies, structures, resources, etc.) to international environments".

E-marketing and e-branding are some of the enablers of firm's rapid internationalisation from inception, which help a firm to gain large market share (Ibeh, Luo & Dinnie, 2005; Schbert & Williams, 2011; Kietzmann, Hermkens & McCarthy, 2011; Dutot, 2013).

Social and business networks enhance business opportunities recognition, eliminate physical distance, facilitate business processes, and reduce time and cost (Ibeh & Kasem, 2011; Ciravegna et al., 2014; Ozcan & Eisenhardt, 2009).

Kuivalainen et al. (2012, p.453) suggest that "timing (when internationalisation begins and how quickly and consistently it proceeds) is the key differentiating factor between internationalisation paths". For this, both traditional and e-marketing communications are crucial. They enhance a firms' branding in foreign markets before and after the actual products or services are released. These strategies are very important and should be the preliminary steps firms need to adopt in their internationalisation process, because they engage and educate prospective customers about firms' value propositions.

They allow prospective customers to gain full knowledge about products and services before and after their presences in foreign markets. The researcher notes that for digital firms timing is virtually 24/7 because of the cyber-mediated nature of their operations. Given the huge amount of customer experience data generated through continual online learning of customer preferences and opinions of offerings, techniques in business intelligence, Big Data analytics and artificial intelligence are increasingly adopted by digital firms in processing the data for business insights.

2.9.1. Digital internationalisation approach

Ibeh et al. (2005) state that e-branding is very imperative for firm internationalisation and to gain large market share. It generates site traffic and communication value to customers. Today, e-branding takes six weeks or more to deliver its messages to customers, compared with traditional branding which does so in months and years. Though traditional branding is important as it educates all demographics about the offerings, it might take up to six months or more to engage potential customers (Ibeh et al., 2005; Epstein, 2005). Ibeh et al. (2005) identify some of the key e-branding strategies that facilitate early and rapid internationalisation as:

- strategic partnership and affiliation;
- web portal and distributors:
- promoting and managing the website (registering with major searching engines); and
- placing banner advertisements and e-mail marketing.

Today, social and business networks are one of the efficient and essential e-branding strategies. They provide a certain level of trust and transparency about a company and its products and services, and its messages quickly reach much larger populations of customers. Complementing online and offline branding communication is essential for rapid internationalisation. Therefore, firms should take full advantage of e-branding, social media and business networks to facilitate their internationalisation in diverse business environments simultaneously.

It is widely acknowledged that the internet has been one of the most crucial apparatuses for doing business in 21st century (Loane, McNaughton, & Bell, 2004; Loane, 2006; Mathews & Healy, 2007; Mostafa, Wheeler, & Jones, 2006). The internet has provided international business efficiency and effectiveness of international market transactions (Gabrielsson & Manek, Kirpalania, 2004; Loane et al., 2004; Mathews & Healy, 2008; Prasad, Ramamurthy, & Naidu, 2001). It is enhancing the exchange and collection of information concerning international market and improving international business relationship (Petersen et al., 2002). Internet has played important roles to digital firms as it provides new ways to carry international business activities through rapid access to marketplace and information about competitor (Mathews & Healy, 2007; Glavas & Mathews, 2014; Chaffey & Ellis-Chadwick, 2016).

Research has found the international entrepreneur as a vital and potential catalyst for enabling internet-generated internationalisation (Davis, Harveston & Nicovich, 2000; Loane & Bell, 2006; Loane et al., 2004; Loane, 2006; Mostafa et al., 2006). Sinkovics & Penz (2005) suggested that the internet is increasingly enabling rapidly internationalising entrepreneurial firms. It facilitates internationalisation process of entrepreneurial knowledge intensive firms using internet as a sales channel (Arenius, Sasi & Gabrielsson, 2005). It enhances the excellence and speed of communication and transaction, and reducing firm’s cost, such development has made resource-constrained firms internationalisation more feasible (Gassmann & Keupp,2007; Mathews & Zander, 2007; Oviatt & McDougall, 2005a).

In spite of the increasing number of firms around the globe that are using the internet in pursuit of international market opportunities, the link between international entrepreneurship characteristics, internet capabilities and digital firm internationalisation are yet to be explored in Nigerian context. Thus, this research fills this gap in international entrepreneurship and digital internationalisation in this context.

Berry & Brock (2004) examine the impact of internet on internationalisation of 112 small German technology-based firms; they find that use of internet overcomes resource constraints that are barriers to internationalisation of smaller firms. The finding confirms that top manager's internet experience enables them to use internet for internationalisation more than their international business experience. Hence, international business experiences may not be a barrier to cyber-mediated firms.

Tesng & Johsen (2011) show how the internet influences internationalisation process and international customer relationship in UK manufacturing SMEs. Their findings show that the technological advancement level of an SME's products and services determine how they adopt the internet in their internationalisation process and achieve higher international customer interactions. This point needs examining as to the extent it applies to digital internationalising firms depending on the level of sophistication of the underpinning digital technologies. Thus, the internet can offer several opportunities to firms in Nigeria and similar developing countries; they can use it to learn about international market activities and their customers unmet needs. Hence, international business experiences may not be a barrier to an extent to cyber-mediated firms in Nigeria.

Moini & Tesar (2005) survey 125 small Wisconsin in US manufacturing firms and found that internal factors such as managers' perceptions on the importance of ICT affect the scope of internationalisation, rather than external factors such as customer pressure. Glavas & Mathews (2014, p.231) argue that competitive advantage and successful internationalisation arise from a firm's capability to constantly rejuvenate and redeploy the firm's internet capabilities.

Loane (2006) investigates rapidly internationalising internet-enabled firm behaviour and strategies of firms from Australia, New Zealand, Canada and Ireland. They found that firms use internet in different functions of business and to achieve international growth objectives. The result indicates that firms use internet from inception of new business operation and for knowledge acquisition rather than incremental adoption.

The competitive advantage from internet-enabled internationalisation depends on how effectively the new business integrates digital technologies into its business model (Loane et al., 2004). Internet helps firms to build and signal the company's image and enable standardised products and services to sell easily online, but may minimise competitive advantage of a firm (Moen, Endresen, & Gavlen, 2003). It is important to integrate technologies and other IT capabilities from inception of a firm. In environments like Nigeria and similar developing countries that are characterised with low level of resources and digital skills, even though digital functionalities help to generate richer information about the products and services and to learn about customer needs, attention need to be paid to country differences in internet-related attitudes and behaviour (Lynch & Beck (2001), before developing or adopting particular technologies in given firms and environments.

Multi-country studies show that small firms use internet more for communication than marketing and sales, this limited application has been hindering online transactions supply chain management in cyber-mediated content (Loane et al., 2007; Teseg & Johnsen, 2011). Again, Lynch & Beck (2001) suggest that there are important country differences in internet-related attitudes and behaviour. Firms need to take this into consideration when designing their technologies. This needs to be considered from inception when establishing digital firms. Thus, the links between ICT and internationalisation is an important aspect of this research.

2.9.2. Digital firm internationalisation

Jansson (2008, p.216) mentioned in Wentrup (2017) defines "internet firms" as 'firms whose activity/existence is dependent on the internet and whose production and distribution of goods and services are dependent on the internet". Glavas & Mathews (2014, p.230) define internet capabilities "…as the leveraging of internet technology for the international business processes of the firm; improving the transference of knowledge, the efficiency of international market transactions and the development and maintenance of international network relationships''.
Oberg (2016) argues that digitalisation to firms is about finding new business opportunities or business model innovation, which span from marketing and sales channels to logistics. Because of the advanced technology and related digital tools, traditional business models and value chains are challenged since digital activities allow global availability of products and services, speed time-to-market and low transaction costs. This enables smaller firms to compete with established businesses and recognised brands.

Varadarajan, Yadav & Shankar (2008) define internet-enabled markets as markets "that enable buyers and sellers to exchange information, transaction, and perform other activities related to the transaction before, during, and after the transaction via an information infrastructure network and devices connected to the network based on internet protocol." This definition is in line with e-business model ideas by Amit & Zott (2001) on how firms use internet for value creation or to coordinate value activities with customers. Components of the e-business model informs the conceptual framework adopted in the present research.

Sinkovics & Penz (2005) survey 306 Austrian consumers on web-empowerment for SMEs and found that consumers like to develop online engagements and relationships with companies and find relevant information on their websites. The credibility of a company's website such as clarity, security, simplicity and ease of use gives firms competitive advantage and customer retention.

Internet firms (and SMEs) have better capabilities to take advantage of foreign market growth opportunities such as customer acquisition and sales (Mathews, Healy, & Wickramasekera, 2012). Sinkovics & Bell (2006) suggest that the internet in some cases to eliminates managerial and physical barriers to internationalisation. However, Reuber & Fischer (2011) outline negative outcomes that may be related with internet internationalisation: a) inadequate attention to offline interactions with existing and potential customers; b) rash foreign market expansion; and c) temptation to over-standardise.

2.9.3. Impact of ICT on digital internationalisation

The increasing technological advancement is beneficial for all type of firms and enables efficient and effectiveness production and delivery of products and services to customers. Hagsten & Kotnik (2017) examine the relationship between ICT and the internationalisation of SMEs; the findings show a positive relationship between the ICT capacities and the SMEs' engagement in exporting activities. However, ICT capacity seems to vary country to country. ICT is one of the success factors of international performance of firms; it allows new channels of marketing and sales minimise the entry rated costs, for smaller firms with little resources (Lohrke, Franklin & Frownfelter-Lohrke, 2006; Morgan-Thomas & Jones 2009; Marten, 2013).

Sinkovics & Penz (2006) note that consumers like to develop online engagement and relationship with companies and find relevance information on their websites. The credibility of company's website such as clarity, security, simplicity and ease of use gives firms competitive advantage and improves customer retention. Likewise, SMEs with faster-growing exports rely mostly on integration of ICT with offline strategies to facilitate SMEs export performance (Morgan-Thomas & Jones 2009; Higon & Driffield 2011; Ashurst et al. 2012; Sinkovics et al. 2013). Hagsten & Kotnik (2017) indicate that ICT is more beneficial to high-tech SMEs in internationalisation process compared to low-tech SMEs.

Chen, Jaw & Wu, (2016) examine the effect of digital transformation on organisational performance of SMEs using evidence from the Taiwanese textile industry's web portal. The findings show positive support on services-oriented portal function, while there is lack of training on portal interface and maintenance. Morgan-Thomas & Bridgewater (2004) find that businesses that make a substantial financial and managerial investment in technology succeed more in their use of internet-based export channels.

ICT minimises market entry barriers by providing vital information in foreign markets and enabling firms to use minimal costs in developing and maintaining relationships across border. Thus, the adoption of digital technologies in firms improves customer communication and information processing (Harrigan, Ramsey & Ibbotson, 2011; Kendall, Tung, Chua, Ng, & Tan, 2001; Tse & Soufani, 2003). It enhances operating efficiency and organisational growth (Borges Hoppen & Luce, 2009; Bhaskaran, 2013). Therefore, internet, ICT and e-marketing are vital for digital internationalisation.

2.9.4. E-marketing and internationalisation

As the internet, ICT and e-marketing provide new opportunities for developing international businesses, internationalisation models have to be adapted to accommodate changes in the business environment (Becker, 2012). Strauss & Frost (2001) argue that e-marketing allows the emergence of new business models that create more values for customers and improves on organisation’s financial performance based on e-communication abilities and e-data networks.

Kung & Zhang (2011) find that digital marketing strategies help small firms to achieve profitability. It is important to use various e-marketing channels for both physical and digital businesses, as it will help in customer attraction, customer retention and high-quality services. Stankovska, Josimovski & Edwards (2016) highlight new features of the new communication channels that are facilitated by the web 2.0 technologies that transform firms’ strategic marketing positions. Information technology is considered as a strategic technique for small businesses prior to the web 2.0 (Levy, Powell & Yetton, 2001). In the digital era it brings potential competitive advantages to firms such as cost reduction and efficiency-enhancing tool (Higon, 2012). Digital marketing allows firms to reach wider customers, sales at high speed, increased accuracy and cost reduction, and enabling competition.

Oberg (2016) indicates that firms use different digital channels to reach customers such as e-commerce and e-marketplace, email marketing and newsletters, content management, search engine marketing and optimisation, social media, digital international value chains, mobile devices and digital tools for customer customisation. To stay competitive in both physical and cyberspace business environments, firms need to integrate digital marketing and sales channels in their business models. Firms that have multi-channels are more successful in international markets than those that have a single channel. Recently, firms are using various channels, e-customer experience and e-data to uniquely tailor sales and advertise products and services for each customer (Oberg, 2016), based on techniques in business intelligence and big data analytics, including artificial intelligence and machine learning.

Arenius et al. (2005) find that using the internet as a sales channels is faster than using agents and distributors, it minimises cost and traveling searching for partners in international markets. Also, it reduces entry barriers to different countries and facilitates trial of new products and services in a new market. “The internet structure and internet suitability of products influence the channels selection”; products and services are easily sellable through the internet when they are digital (Moen, 2012), which does not require having sales offices either in domestic or in international markets (Zaheer & Manrakhan, 2001).

Gabrielsson & Gabrielsson (2011) note that business-to-consumer firms use the internet more often when the products could be sold through the internet, and firms that do not use the internet are those that use large channel partners to handle their product sales and marketing, or products in which design characteristics are not suitable for presentation in the internet. Internet is the more effective and quickest way to get products and services to multiple international markets.

Cultural dissimilarities tend to reduce the importance of the internet, especially for business-to-business transactions in different international markets which rely more on business relationships involving partners from different international markets (Jean, Sinkovics & Kim, 2008). In contrast, high-frequency business-to-consumer transactions may be enhanced using internet sales channel, because the products and services are appropriate for internet-based sales (De Kare-Siler, 2000).

2.9.5. E-platform and e-platform internationalisation

According to Merriam-Webster online dictionary, a platform is “a flat surface that is raised higher than the floor or ground and that people stand on when performing or speaking” (Merriam-Webster.Com). “A platform is a good or system providing a technological architecture that allows different types of users and complementary business partners (often called “complementors) to connect and benefit from the platform’s base functionality” (Suarez & Kirtley, 2012, p. 36). Platforms are multisided networks that bring together two or more distinct types of users and facilitate transaction among them.

Some e-commerce and e-marketplace firms are designed from inception to reach global markets, using the internet as key distribution channel for their offerings, unlike traditional firms which may internationalize later as they evolve future strategies. Several authors have used different labels to describe the above-mentioned platform enterprises, which include transaction, innovation, integrated and investment platforms (Evans & Gawer, 2016; Ochinanwata & Ezepue, 2016), buyers and sellers, advertisers, application developers and users, merchants and consumers, and shopping mall platforms (Hagiu, 2014).

Evans & Gawer (2016, p.4) note that “enterprises that leverage the power of platform business models have grown dramatically in size and scale over the past decade. Platform companies contribute importantly to the economy. They have driven up productivity in multiple ways”. Platform ecosystems are gaining ground through the digitalization of products, services and business processes and the processes are reshaping the global landscape”. Hence, the e-platform characteristics of Nigerian digital internationalizing firms will be examined in this research.

Multi-sided platform enterprise is designed to connect distinct groups of customers who need to transact business with each other. For example, dating sites such as Match-making is double-sided and multi-sided platform enterprise that enables men and women to meet each other (Evans, 2011).

In a network business, there is typically no value in the network without users and users do not show up on an empty platform. “Key to the success of platforms are network externalities, or the degree to which the “installed base” or number of consumers using it” grows. (Suarez & Kirtley, 2012, p.36). A market has network effects when consumers value a product more the more other consumers use that product (Evans & Schmalensee, 2012).

The indirect networks of more customers in a group are more valuable to the other group (Gawer & Cusumano, 2014). For example, more users make software platforms more valuable to developers and more developers make software platforms more valuable to users (Evans, 2011). Hence, direct network effects assume that increases in usage lead to direct increase in value. For example, telecommunication users gain directly from widespread adoption, and telecommunications networks with more users are also more attractive to non-users contemplating adoption (Klemperer, 2005). According to Suarez & Kirtley (2012), platform companies can use subsidies to incentivize users to attract different groups of platform users.

A platform enterprise can be designed from inception to create single-sided market or multi-sided markets. Platform enterprise models coordinate the demands of different groups of customers who need each other in some way. Some platforms are designed from inception as double-sided and multi-sided platform. Multi-sided platform enterprises connect distinct groups of customers who need to transact business with each other (Evans, 2011). Thus, operating e-platforms like Konga and Cokodeal in Nigeria are helping small and medium businesses in Nigeria to reach out to large numbers of customers, and those who do not know about the products and services they offer. From a resource-based view, platform creators and platform users need to acquire customers and gain large market share with minimal costs (Teece, 2014). However, not all products, service or technologies can become industry platforms, according to Gawer & Cusumano (2008).

The most common trend of global digital platform companies focuses on retail customers and end-users. Facebook has over 2 billion monthly users; Google Android has an estimated 2 billion users; Amazon Prime subscriber is over 80 million; Apple has 588 million users, and Alipay (Alibaba) has 450 million users. Thus, digital business model needs to pursue exponential growth of customer end-users (KPMG, 2017).

Brouther, Geisser & Rothlauf (2016) extend existing internationalisation theory to comprehend ibusiness firms or platform enterprises that produce value through creation and coordination of network effects of users. They found that ibusiness firms create value by building platforms, and providing values the users of the platforms and managing the cross-relationship of the various users. Thus, adoption of platform is a critical determinant for successful internationalisation.

Brouther, Geisser & Rothlauf (2016) suggest that internationalisation of ibusiness differs because they are fully digital as they uniquely generate value by providing platforms that connect users (buyers and sellers) and transact over the internet network. The costs of conducting business in this type of digital organisation are relatively small and the offerings are accessible from any part of the world. Platforms typically reduce the cost of investment in digital firm internationalisation and potential risks related to liabilities of foreignness, compared to the costs and liabilities physical-based firms encounter during internationalisation (Zaheer, 1995; Denk, Kaufmann, & Roesch, 2012).

Merenda & Vankatachalam (2009) examine the relationship between business process digitalisation and new product development with a sample of 85 small manufacturers in United States. They found that business process digitalisation has a crucial impact on SME new business development.

2.9.6. Digital internationalisation challenges

Liabilities of foreignness impact the ability of firms to offer existing products and services in international markets (Zaheer, 1995; Denk et al., 2012). When going to international markets, firms have to learn how to manage the trade-off between costs created by liabilities of foreignness and the risk of making huge investments in international markets (Johanson & Vahlne, 1977). To handle this task, firms usually start with very little investment and gradually learn how to do business in a given foreign market as they become embedded in the host country market (Eriksson, Johanson, Majkgard, & Sharma, 1997).

Brouther, Geisser, & Rothlauf, (2016) suggest that digital firms such as e-platform have to deal with grater liabilities of outsidership (Johanson & Mattsson, 1988; Johanson & Vahlne, 2009) than traditional non-digital firms. This is because the major concern is the creation of numerous networks of users to generate value on the platform. Liabilities of outsidership integrate concepts from both internationalisation process and network theories to recommend that a firm might face outsidership when they enter a foreign market because they have few potential collaborators and relationships in a given market (Johanson & Mattsson, 1988; Johanson & Vahlne, 2009). To overcome this issue, firms partner with local firms to reduce investment risks and to become embedded in new international markets (Anderson & Gatignon, 1986). This point emphasises the importance of business networks in digital internationalisation of firms; see further notes below on network approach to international entrepreneurship.

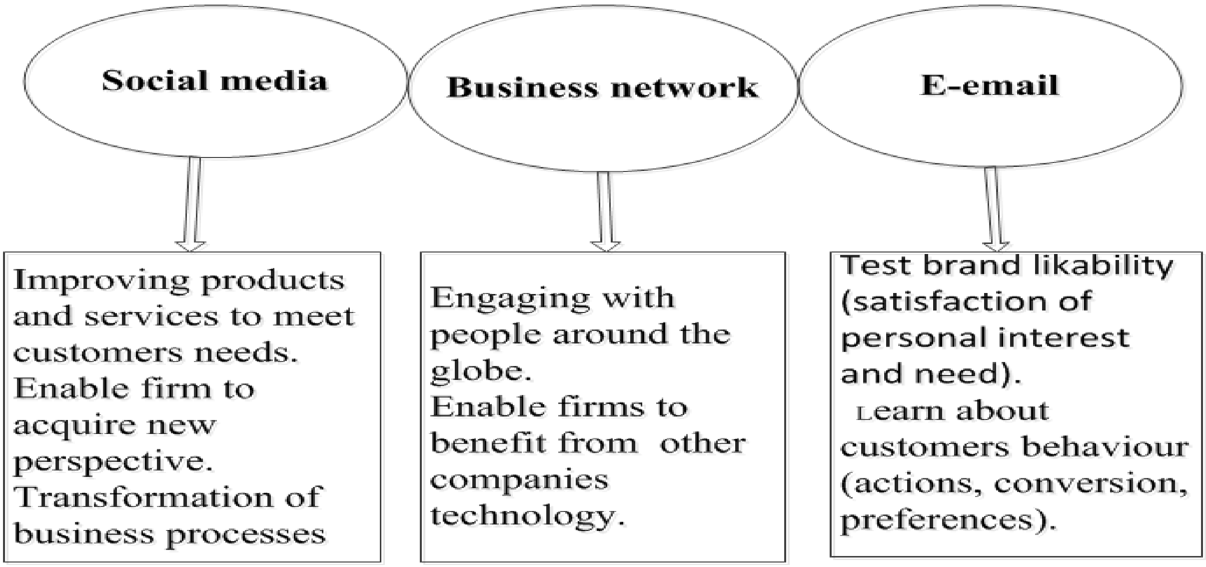
Digital internationalising firms suffer significant liabilities of outsidership because they lack involvement in the international market user community. Digital firms "liabilities of outsidership can be defined as the lack of direct ties to potential platform users in the target foreign market" (Brouther, Geisser, & Rothlauf 2016, p.515). Digital firms that internationalise through e-platforms may be affected by liabilities of foreignness when they internationalise. This is because their value propositions are highly dependent on network externalities of the users of the platform. Therefore, they face liabilities of user network outsidership (Brouther, Geisser, & Rothlauf 2016).

2.10. The role of web innovation in the development e-platforms and e-commerce

Researchers define web innovation as a process through which companies explore and acquire essential information that helps them to innovate their products and services through interaction with other companies and customers in the internet. This interaction provides useful customer needs, feedbacks and suggestions, and positive and negative comments on products and services benefits.

This is because e-commerce and its enablers such as social media, business networks and email are innovative tools that equip organisations with business ideas and opportunities through customers' opinions and remarks. Therefore, start-ups and established firms should consider social media and business networks as e-commerce core instead of incidental strategies. Figure 2.4 below shows how social media, business network and email help firms to innovate their offerings.

Figure 2.4: A web-based innovation schema



Source: the author's own

Despite e-commerce opportunities, many firms are struggling with the best approach to establish and adopt digital strategies; recent retail business experiences in Morrisons UK come to mind regarding its quest to establish an online platform for its business with Ocado. Less attention has been paid to how to link e-commerce and e-platforms in newly established business models. This is even more important in some of the developing countries which lack well-established online businesses, especially digitally internationalising firms. Therefore, this study helps to address this gap in knowledge by adapting existing knowledge on international entrepreneurship and business modelling to Nigerian digital internationalising firms. For businesses to so benefit from web innovations, an integrated business model which contains related innovation strategies needs to be developed, as is the focus of this research.

In relation to this point, businesses need to develop effective strategic directions in e-commerce (Webster, Beach & Fouweather, 2006). However, these directions should be rooted from the inception in strategic planning and business modelling that allow firms to adapt flexibly and quickly to emerging business conditions (Deng & Wang, 2016). This will enable firms to, where necessary, radically alter traditional approaches to doing business (Lee, 2001).

As noted earlier, an enterprise should only adopt e-business if it complements its strategic needs, and firms will fail if they assume that mere innovations in technology will overcome the weaknesses in their business models (Clegg & Tan, 2007). However, it is not every e-business mechanism that is good for an enterprise (Lord, 2000; Clegg & Tan, 2007). E-commerce is imperative for doing business in a globalised and changing world, and mostly in competitive business environments, regardless of its associated risks. It facilitates all critical components of business strategies and enables firms to achieve competitive advantages within a short period of time.

Adoption of e-commerce could be determined by a firm's strengths and weaknesses, and it is important to understand how firms can benefit directly or indirectly from e-commerce regardless of their resources, because it is believed that e-commerce underpins digital firms' profitable growth and overall business strategies (Choshin & Ghaffari, 2017). Prior and more recent studies explore different types of e-commerce value creation such as shareholder value and financial performance (Albers & Clement, 2007), internal efficiency, commerce and coordination (Zhu, Kraemer & Xu, 2003a), sales, competition and procurement (Cosgun & Dogerlioglu, 2002), crucial communication and innovation webs.

Li & Xie (2012) opine that small firms adopt e-commerce as a competitive advantage, while large firms see it as low-cost operation strategy. Competition and globalisation have made e-commerce imperative rather than minimising cost. Start-ups and new ventures in Nigeria and similar developing countries can generate tremendous wealth if they adopt e-commerce and its enablers. It will enable such firms to take advantages of global markets activities.

2.10.1 Innovative e-commerce strategies

Electronic commerce (e-commerce) enables individuals and firms to conduct transactions electronically on internet (Mirchandani & Motwani, 2001; Levenburg 2005; Doherty & Chadwick, 2009). Traditionally, e-commerce models are classified into four major types of market segments: business to business (B2B), business to consumers (B2C), consumer to consumer (C2C), consumer to business (C2B).

The above four types play significantly different roles in the conceptualisation and development of businesses. For example, conceptualising a B2C business requires understanding how an entire firm serves individual end-users, which needs different value propositions, say, compared to when a customer directly serves another customer (C2C). B2C and C2C types scale up much faster than B2B; hence they are more useful for developing digital economy firms such as Jumia and Konga, which mainly serve individual customers.

Subsequently in Chapter 5, the researcher will classify the case study companies used in this study into these business types. This will reveal the nature of their potential development as digital firms and the corresponding choice of strategies for so doing. It will also be seen that combinations of these types provide a more robust basis for growing digital firm profitably. Interestingly, case study firms used in this research have B2B, B2C, and C2C e-commerce types.

The gist of the above notes is that e-commerce has made the world a "global village", where people in different parts of the world communicate and exchange goods and services in virtual world. It therefore creates significant opportunities and advantages for a firm that adopts it from inception. Among other things, it:

- enhances operational efficiency;
- allows companies to benefit from increased demand in products and services;
- differentiates firms and enables them to stay ahead of competitors;
- enables customer support tools that establish effective and efficient communication between firms and their customers;
- enable firms to have their presence in foreign markets from inception;
- enables firm's collaboration;
- facilitates global communication and connection;
- enhances customer relationship and royalty (Srinivasan, Anderson & Ponnavolu, 2002; Boek, Bendavid & Lefbvre, 2009; Colla & Lapoule, 2012; Cosgun & Dogerlioglu, 2012); and
- enhances web innovation, which is a hallmark of digital firms such as Google, Amazon, Alibaba, and Facebook.

2.10.2. Some factors influencing e-commerce adoption

Financial resources enable firms to adopt e-commerce business strategies (Li & Xie, 2012). However, technology and financial resources should not be the ultimate considerations for adopting e-commerce (Chaparro-Peláez et al., 2016). Firms can adopt e-commerce in many ways: direct selling, information enquiry, branding, promoting and advertising, and getting customer attention and acquisition. Most important is the way firms' business models are designed from inception to depend on effective e-commerce strategies (Wong, 2003; Molla & Licker, 2005).

By way of a gap in knowledge, empirical evidence has shown that e-commerce potentials are sparsely realised in developing countries, especially African countries, and are still in their infancy in some Asian countries (Molla & Heeks, 2007). E-commerce benefits may vary from country to country because of the way consumers in these countries perceive the value. For example, on the one hand the benefit of e-commerce has been undermined in Nigeria and Africa due to theft among postal workers, expensive and inefficient courier services, which are exacerbated by poor ICT and internet infrastructure (Okoli & Mbarika, 2002). On the other hand, C2C e-commerce business model will play a crucial role in Nigeria and similar developing countries. It inspires individual entrepreneurs to avoid third party costs. This type of model will enable start-ups and SMEs to take full advantage of their domestic markets. For example, selling goods and services online while physically exchanging goods and services in a shop eliminates risks associated with postal services. This approach will enable customers, suppliers and individuals to engage in virtual business activities and benefit from e-commerce advantages (Oliveira, Alhinho, Rita, & Dhillon 2017).

The adoption of platform enterprises and e-marketplaces in Nigeria and Africa suggests a new industry sector for the African continent. “Current e-platforms seem focused on solving problems that hold the potential to accelerate the development of dynamic next-generation markets” (Boateng, Budu, Mbrokoh, Ansong, Boateng & Anderson 2017, p.8). However, the industry faces several challenges like inadequate infrastructure, limited banking institutions, logistics, literacy, and trust and transparency from both buyers and sellers (Ekekwe, 2015). The platform economy firms establish in different industries such as internet auctions and retail, online financial, social networking, urban transportation, clean energy, human resource functions, and mobile payment (Raja, 2016).

As mentioned in the background to this research (chapter 1 of the thesis), there are more people who have not shopped online that are planning to do so in Nigeria. In 2015, about 93 million mobile users have access to the internet from their mobile devices, and 90 percent of Nigerians who use smart phones have used it to shop online (Nigerian Communications Commission).

2.10.3. Barriers to e-commerce in developing countries

Agwu & Murray (2015) investigate the challenges and barriers to e-commerce adoption by firms in Nigeria; their findings show the absence of a regulatory framework on e-commerce security and basic infrastructure as the major barriers to e-commerce adoption.

Tan, Tyler & Manica (2007) indicate that negative perception towards e-commerce adoption such as fear of fraud and risk of loss has been identified as most barrier to business-to-business e-commerce in developing countries. MacGregor & Kartiwi (2010, p.65) suggest that "on the internet, it is more or less impossible to make sure, beyond doubt, that (tangible) products have the desired features (e.g. design, material, colour fit), giving rise to a quality evaluation barrier to e-commerce''. The consumers' perceptions on feel and touch of admiring products from home-shopping services are barriers to e-commerce adoption (Thulani, Tofara, & Langton, 2010). It can be argued that lack of real features of offerings which occur in physical stores in the case of e-shopping has been discouraging shoppers who want to shop at a physical environment, since e-shopping eliminates this experience. This accounts for why digital firms in addition to displaying pictures of the offerings online sometimes have offline demonstration offices, a term referred to as hybrid marketing or hybrid business models in the case study analysis (chapter 6 of this thesis).

Agwu & Murray (2015) categorise the significant barriers to e-commerce adoption in Nigeria as follows: external environment (infrastructures, external pressures, socio-cultural factors); internal environment (size, resource availability, organisational culture, trained labour); perception (perceived benefits, perceived risks, perceived trust, perceived cost); attitude (age, occupational relevance, languages and education). Telecommunication infrastructure are identified as one of the major barriers hindering e-commerce adoption in Nigeria because there are outdated and unreliable telephone connections and low connection of internet services in several towns and villages.

2.11. Network approach to international entrepreneurship

It has been acknowledged in international entrepreneurship literature that network ties usually enhance the positive effects of international entrepreneurship characteristics such as proactiveness, innovativeness and risk-taking on the degree of internationalisation of SMEs (also digital economy firms) in emerging markets (Zhang, Ma, Wang, Li, & Huo, 2016).

In the rest of this section, the authors refer to SMEs since the studies were focused on these types of firms, as there were far fewer studies on emerging digital firms compared to SMEs. Hence, similar to our use of BGF/INV theory as possible proxy for exploring digital internationalising firms in the foregoing notes, we consider that the findings on the network approach could reasonably apply to other firms including digital internationalising firms, if not more. Hence, we still present the literature as related to SMEs and note that the ideas will help explain any results on network effects in the findings on Nigerian digital firms later in the thesis (Chapters 6 and 7).

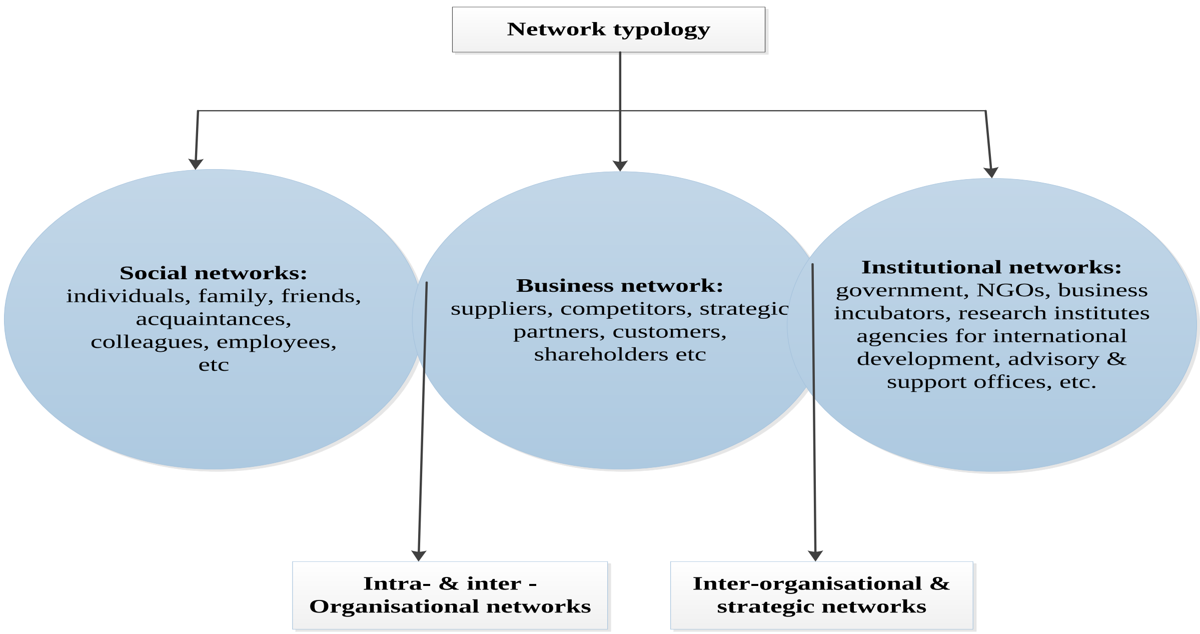
Knight (2000) suggests that SMEs (and firms) that possess international entrepreneurship characteristics are likely to perform better than those that lack distinctive qualities. Zhang et al. (2016) examine how Chinese SMEs networks ties at home moderate the relationship between different characteristics of international entrepreneurship and how it affects level of internationalisation of Chinese firms. Their finding suggests that lack of resources limit international networks in SMEs (and digital firms) in emerging markets. Researchers have emphasised the importance of more studies on the relationship between the local and international networks and internationalisation of firms (Leonidou, Katsikeas, & Coudounaries, 2010).

Firms need to develop more business networks to get access to market-related complementary resources held by external oriented private firms. However, business networks do not strengthen the risk-taking internationalisation relationship. Johanson & Vahlne (2003, 2009) stress that “outsidership” is a barrier to international market operation and suggest that entrepreneurs need to get involved in local value-creation networks, local distribution and marketing networks, to enter foreign markets. Primary and secondary networks facilitate successful operations of smaller SMEs and entrepreneurial firms in foreign markets (Sullivan-Mort & Weerawardena, 2006). This is crucial in managing the difficulties of cross-cultural relations by having a different and diverse local network to remedy “outsidership” in international markets (Etemad, 2017).

Lehtinen & Penttinen (1999, p.13) outline the differences and interconnections between three core network areas that firms utilise in international business: social networks (individual, family friends and employee etc.); business networks (suppliers, competitors, strategic partners, customer shareholders etc.) and institutional networks (government, NGOs, business incubators, research institutes, agencies for international development etc).

Oparaocha (2015) examines the awareness and utilisation of institutional networks in small firm internationalisation and how it impacts their international entrepreneurial activities. The qualitative findings outline the benefits of utilising institutional networks, which include financing information, market information, advisory and knowledge-support services, partner search and foreign business contacts, innovation subsidies, and foreign direct investment (FDI) incentives. The overall finding suggests that firms utilise institutional networks to overcome resource barriers that may hinder their international entrepreneurship efforts. Figure 2.5 below portrays the network typology and how it facilitates international market engagement.

Figure 2.5: A network typology for understanding general network characteristics and intersections



Source: from *Oparaocha (2015).*

Katsanakisa & Kossyv (2012) propose a theoretical framework on how C-Business and Co-opetition strategy can enable value creation in collaborating networks and how participating firms can use the framework to build competitive advantage more than their competitors.

“According to this framework, organizations should cooperate with their stakeholders and their competitors within a virtual network to exchange and create collective knowledge with the use of collaborative technologies. The value is created via knowledge exchange, creation and transfer from the collaboration established within this virtual network” (Katsanakisa & Kossyv, 2012, p.266). C-business system is collaboration and collaborative technologies and it enables firms to communicate and collaborate with one another across boarder within virtual networks (Messey, 2008; Jarle Gressgard, 2010).

Ibeh & Kasem (2011) explore the network perspective on internationalisation of small and medium-sized software firms from Syria. They find social and business networks to be important for firm internationalisation, but social networks seem to be very crucial at early stages, while "business networks become more dominant subsequently". However, engaging in already established social and business networks alone might limit the degree of internationalisation of Nigeria firms. For example, African markets have been known to have lots of potentials and untapped markets.

As mentioned previously, lack of informal and formal networks impedes early and rapid internationalisation of many firms, especially in Nigeria. It is important for entrepreneurs, individuals, and owner-managers of existing firms in Nigeria to participate in informal and formal networks, because it will eliminate psychic distance barriers and enable rapid internationalisation. Importantly, there is a need to equip Nigerian and African firms, and those in similar developing countries, with international entrepreneurial skills (Ibeh et al., 2012).

To maintain cutting-edge advantage in foreign markets, firms need to collaborate with other firms in a country and internationally, to satisfy the existing customers’ needs and acquire new customers. In other words, open innovation is crucial in internationalisation because it "reduces cost and shortens life cycles of new products" (Chesbrough, 2007, p. 24). This is important especially for small firms in Nigeria to take advantage of technological advancement of foreign firms. Also, individuals and entrepreneurs that have novel ideals may engage with such firms for such ideas to come to reality. Actively participating in business and social networks will enable them to take advantage of these opportunities.

Social network theorists identify that firm's networks influence competition by enabling entrepreneurial opportunities for some firms and not for every business (Ellis, 2010). This is because entrepreneurial firms internationalise with the support of current relationships such as distributors, suppliers and other strategic partners. This bridges the barriers to international markets and reduces liability of newness and investment risk (Coviello & Munro, 1997). Social and business networks are fundamental value creation catalysts in business planning and execution. Social and business networking offer numerous advantages and opportunities in every business life cycle stage. Thus, firms engage in both social and business networks for different opportunities and activities since the networks:

- Enhance social capital for individuals and firms (Walter, Lechner & Kellermanns, 2007; Coleman,1988);
- Offer an organisation alternative market (Ciravegna, Lopez & Kundu, 2014);
- Creates locus of innovation both in high- and low-technology industries (Bogers, 2011);
- Facilitate organisational learning (Grant & Baden-Fuller, 2004), multiple marketing platform (Freeman, Edwards & Schroder, 2006), economic performance and cost sharing (Ozcan & Eisenhardt, 2009; Chesbrough, 2007), competitive advantage (Winch, 2014; Freeman, Edwards & Schroder, 2006), diversification into new businesses and rapid internationalisation (Zarei, Nasseri & Tajeddin, 2011; Criavegna, Majano & Zhan, 2014), information and resource sharing (Gulati, 1999; Palloti & Lomi, 2011); and
- Enable businesses to build trust and transparency for doing business both in physical and virtual world.

The fundamental mechanisms of social and business networks are information channels and resources, which are essential in business development. They enable individuals and entrepreneurs to discover and exploit promising business opportunities around the globe, because international market gaps rely on international markets awareness and international entrepreneurial orientation. Individuals and entrepreneurs need to consider information flow and resources as key mechanisms to establish and grow business.

2.12. Resources and learning towards international market

Dynamic capabilities allow firms to acquire tangible and intangible resources (Teece, 2007) the nature of which varies over time. New business development and (NBD) and profitable growth depend on a firm's resource base and dynamic capabilities that determine which business to introduce or eliminate (Bogers, 2011; Chesbrough, 2007). Traditionally, forming strategic alliances with other companies is a way firms may achieve DCs and profitable growth in new business development. This is more important for digital firms in Nigeria that are eager to establish their presence in global markets. Such firms should be structured from inception to draw DCs more flexibly from e-commerce, network, and web-based innovations than non-digital firms.

International learning orientation entails how firms actively engage in learning foreign market activities and customer needs in order to take advantage of foreign market opportunities (Voudouris, Dimitratos, & Salavou, 2011). Mahoney (1995) refers to organisation learning as a "meta-competence" that firms use to engage knowledge acquisition, processing, storage and recovery. Wang (2008) indicates that combining entrepreneurial and learning orientations enable firms to have more balanced approach to innovation. Similarly, Zhao, Li, Lee, & Chen (2011) find a positive relationship between learning and entrepreneurialism for firms in emerging economies. This supports the argument that experiential learning plays a vital part in the international business literature (Eriksson, Johanson, Majkgård, & Sharma, 1997). The role of learning and knowledge has been paid attention in exporting literature. Wheeler, Ibeh, & Dimitratos (2008) suggest that small exporting firms have competitive advantage when they frequently utilise export-related sources to acquire knowledge (Dimitratos, Amorós, Etchebarne, & Felzensztein. 2014).

Kafouros, Buckley, Sharp & Wang (2008) note that firms that are highly internationalised countries have more opportunity to attain higher innovative performance. This is because the business activities, products and institutions are exposed to different types of innovation activities. This also enables individuals and firms to learn from different innovation contexts (Filippetti, Frenz & Letto-Gillies, 2011). Therefore, as noted earlier, there is a need for policy-makers in developing countries to encourage and attract international enterprises as it will enable domestic companies to emulate their innovation activities. This will help existing firms in Nigeria to internationalise into global markets. However, they need to expand their value propositions beyond existing offerings; this can be achieved through open innovations and partnerships that support expanded value propositions (Bogers, 2011; West & Bogers, 2014; Bustinza et al., 2017). However, the collaborating firms need to protect the business models that create these advantages. From the resource-based view (RBV) perspective, this can be done by involving new people with diverse knowledge and new ideas which such knowledge also facilitates.

Teece (2007) states that learning attributed to enterprise success includes experiential, vicarious, individual, and organisational learning. Several studies found the importance of entrepreneurship education and its contributions in creating new businesses and jobs, and improving innovation in organisations, which has a positive impact on socio-economic development (Fayolle, Gailly, and Lassas-Clerc, 2006). Entrepreneurship education is important in all forms of education, where students have to come up with novel ideas and innovative thinking to create new enterprises. Key challenges faced by most entrepreneurs are lack of valuable skills needed to succeed as entrepreneurs. This affects the productivity, output and performance of small businesses in Nigeria.

There is need to offer formal and informal entrepreneurship education in all forms, as it helps individuals to develop quality entrepreneurial skills. In this sense, SMEs and digital firms in Nigeria can enhance the effectiveness and efficiency of their business performance. They can also grow faster than those without the above-mentioned qualities. Hence, government needs to develop different frameworks for teaching business skills and training business owners and operators in Nigeria.

2.13. Gaps in knowledge and conclusion

In this chapter, the researcher reviewed the literature on several constructs and perspectives in international entrepreneurship and their links with this research on digital (or rapidly) internationalising firms. These constructs and perspectives include:

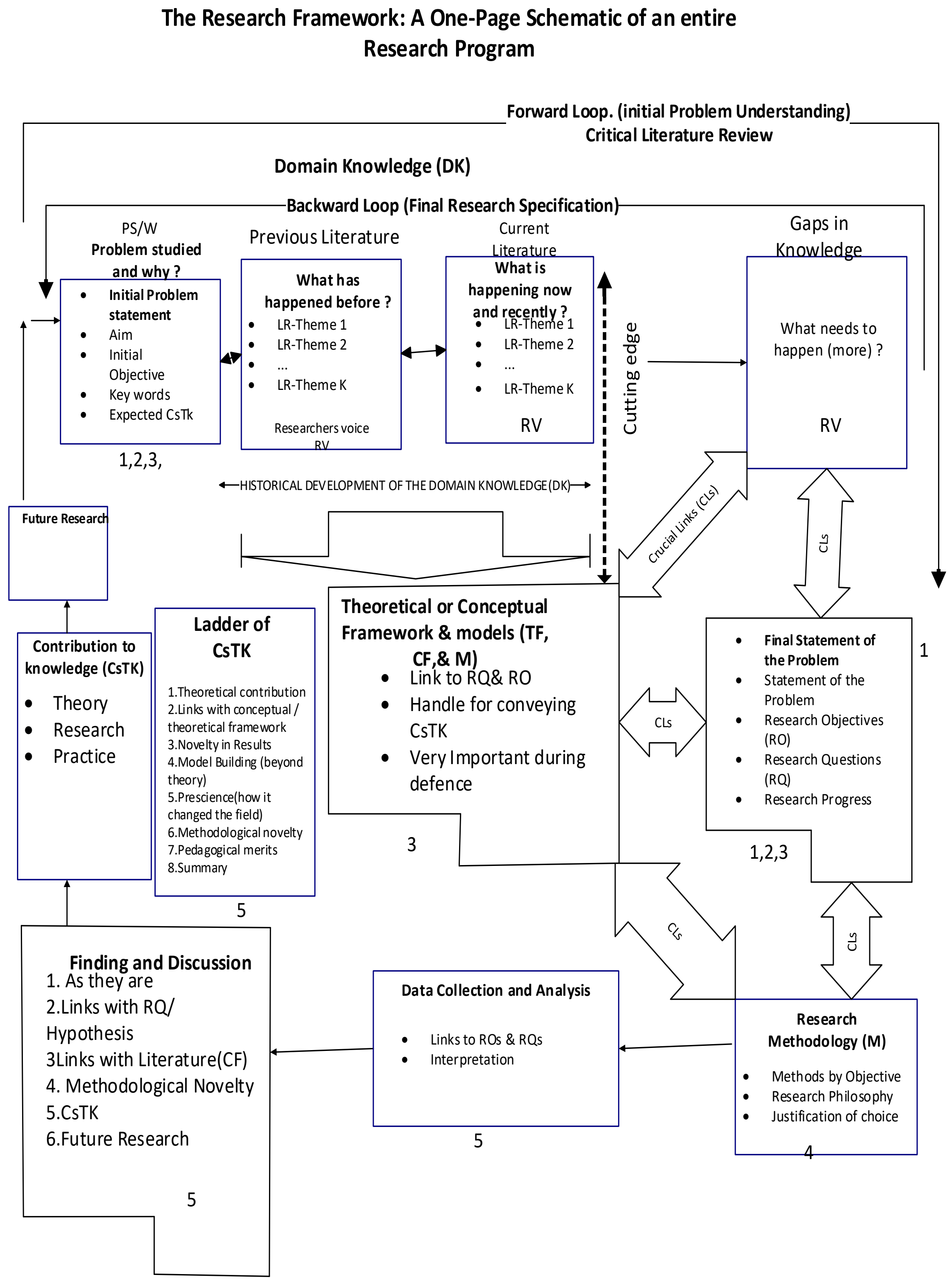
- Foundations and definitions of international entrepreneurship; International entrepreneurship orientation; International motivation; International innovativeness; International proactiveness; International risk-taking propensity; Models of international entrepreneurship (Figures 2.1-2.3); International entrepreneurship and environment; International entrepreneurship in emerging and developing countries;
- Debates around international entrepreneurship research in Nigeria and Africa; International entrepreneurship in digital context; Digital entrepreneurship, ICT and local context; Digital entrepreneurship orientation;
- Entrepreneurial orientation and market orientation; International entrepreneurship approach to internationalisation;
- Born-global firms (BGFs) and international new ventures (INVs); BGF/INV theory and digital internationalising firms; BGFs and developing countries;

- International entrepreneurship and firm internationalisation; Digital internationalisation approach; Digital firm internationalisation; Impact of ICT on digital internationalisation;
- E-platform and e-platform internationalisation; Digital internationalisation challenges;
- The role of web innovation in the development of e-platforms and e-commerce; Innovative e-commerce strategies; Some factors influencing e-commerce adoption; Barriers to e-commerce in developing countries;
- Network approach to international entrepreneurship; Resources and learning towards international market.

The rationale for covering these perspectives distinctly (even though there are some inevitable overlaps across some of them) is to present a detailed exposition of the possible contributing ideas that will underpin development of later chapters of this thesis. The above constructs, the digital economy contexts of the research (chapter 3), and the conceptual framework they complement in chapter 4, will facilitate a critical understanding of the digital economy antecedents, business development approaches, and internationalisation activities of Nigerian digital internationalising firms.

Moreover, since this is a foundational study of this type of newly emerging firms in Nigeria (and Africa), the broad scope of the literature review will also facilitate more detailed work on selected combinations of the constructs in follow-on work on Nigerian digital firms. For example, work on digital marketing aspects of the firms (including strategy, implementation and practice) can be pursued based on insights from this research (Chaffey & Ellis-Chadwick, 2016).

Figure 2.6: A Research Framework that almost says it all



Source: Ezepue (2015a revised) Grasping the Basics and Stylistics of Effective Literature Reviews and Academic Writing

An evaluation of the literature review, which informs the overall strategy for presenting the literature and developing the thesis, uses the framework in Figure 2.6 above. In this chapter 2, the above-mentioned list of constructs are literature review themes that seem to cover the main focus of the topic and present a good historical development of the domain knowledge in international entrepreneurship. Additional literature that completes the domain knowledge is presented on the digital economy context chapter 3 and business modelling and digital internationalisation themes in the conceptual framework chapter 4 of the thesis. Thus, with regards to the strategy for organising the review, we use distributed model of literature review, whereby the main literature review and underpinning Conceptual Frameworks are in chapter 2 and 4 of the thesis.

In line with the figure, we researcher explained and reiterate the gaps in knowledge as follows. Other elements of the framework will be used in subsequent chapters, as appropriate, for example the conceptual framework in chapter 4 of the thesis, methodology in chapter 5, findings and discussion in chapter 7, and contributions to knowledge in chapter 8.

As depicted in Figure 2.6, the problem studied for this research is the need to create an integrated business model that enhances development and internationalisation of cyber-mediated firms in Nigeria. The main gap in knowledge addressed in the research is the lack of well-constructed integrated business models which address the realities of how digital firms are designed from inception to succeed in complexly uncertain environments and engage in international market.

Practically, there is also a lack of integrative research studies like this research which demonstrate how digital firms are established in those environments, apart from the successful global digital firms (for example Alphabet (Google), Facebook, Microsoft, Alibaba and Amazon) that thrive in developed countries. Given the urgent need to advance the socio-economic development of countries like Nigeria, these gaps in knowledge warrant a thorough examination of the socio-cultural influences and business environment challenges facing development of such firms. The chapter therefore showed that there is a need to contextualise international entrepreneurship research within national digital economy and business environments, hence the focus on Nigerian digital internationalising firms. It also showed that there are few research-informed establishment and internationalisation of online marketplaces that will hopefully replicate successes achieved by the likes of Amazon and Alibaba in Nigeria, Africa, and developing countries. The present research implements to some extent in Nigeria Ibeh et al (2012)'s recommendation for e-commerce-based internationalisation by developing enabling business model (IBMT and ITDF).

It was noted that e-commerce models are not prevalent in most developing countries like Nigeria, because of low information and communication technology (ICT) enablement. The chapter suggested the need to link e-commerce, e-platforms, and related web innovations to newly established business models which are suitable for developing digital internationalising firms, possibly similar to those used by BGFs and INVs.

It was argued that emerging firms in developing countries may adopt a blended approach which combines strong e-commerce platforms with traditional channels that are more widely accessible by target customers. Hence, developing digital firms in such environments as Nigeria may require a slightly different e-commerce focus, for example mobile services, since smart phones are widely available. There is need to explore socio-cultural factors and challenges which influence effective deployment of such services in Nigeria.

In conclusion, the above gaps in knowledge about international entrepreneurship, business modelling and internationalisation experiences of Nigerian (and African) digital firms inform the choice of the five research questions in this study namely: how does knowledge of international entrepreneurship influence the development of emerging digital firms (RQ1)?; how do digital internationalising firms emerge in Nigeria (RQ2)?; how do digital economy characteristics affect the development and internationalisation of Nigerian digital firms (RQ3)?; what are the defining business model characteristics of digital firms (RQ4)?; and what challenges do such firms in the Nigerian context (RQ5)? The next chapter discusses current developments in the digital economy which influence the business performance and internationalisation of digital firms.

Chapter 3: Digital Economy

3.1. Introduction

This chapter reviews current developments in the digital economy which determine the context in which emerging e-commerce/e-platform digital firms operate in and internationalise their activities. Some of the constructs discussed in the chapter include: trends in the digital economy; its contribution to global economic development; sharing economy; application of big data, robotics and artificial intelligence; internet of things (IoT); local and international crowdfunding platforms; World Wild Web; digital economy in emerging and developing countries and digital firms in Nigeria; Nigeria digital infrastructure and challenges in doing business in Nigeria.

3.2. Trends in the digital economy

The US Department of Commerce "characterizes a digital economy as based on industries and forms of IT enabled business activity…. These activities include the IT industry itself, electronic commerce among businesses, the digital delivery of goods and services and the IT-supported retail sales of tangible goods and services" (cited in Kling & Lamb, 2000, p. 296 from Hamid & Khalid, 2016).

Focusing on the digital technologies used, digital economy can be defined "as the digital transformation of the economy, achieved through an interaction of digital technologies such as cloud computing, artificial intelligence (AI), and Internet of Things (IoT). with physical ICT infrastructure. This can lead to significant advancements such as the development of smart machines, smart platforms and digital products" (Banga & Willem te Velde 2018, p, iii).

"A digital economy is a system (or ecosystem) within which stakeholders – including public, private, and non-profit organizations – utilize ICT to communicate and transact with each other and end users". (Vital Wave & Caribou Digital, 2014, p.2).

Apart from the 'IT industry itself', the rest of the above definitions related to the use of digital technologies in doing business characterise digital internationalising firms which are of interest in this research.

Digital economy encompasses acquisition of digital skills by workers, government policies and regulations that foster development of ICT, creativity, innovation, and digital business models (Banga & Willem te Velde, 2018). This definition emphasises the human resource and government policy aspects of the digital economy.

According to the European Commission, the digital economy contributes about eight percent of the GDP of G-20 major economies and is the most crucial factor that drives business innovation, growth, and competitiveness. As noted in chapter 1 of this thesis, in 2015 McKinsey estimated that the digital services value of the world trade surpassed that of other goods and services (Manyika et al., 2016). In accordance with this fact, in 2016, Amazon, Apple, Alphabet (Google), Facebook and Microsoft were five of the ten largest technology companies in the world by market capitalisation (PricewaterhouseCoopers, 2016 cited Hamid & Khalid, 2016). The emergency of big data, internet of thing (IoT), World Wild Web, and artificial intelligence has offered this opportunity and advantage. Thus, Alphabet (Google), Amazon, Apple, Microsoft and Facebook are all driven by the digital economy and digital platform business models (Financial Times cited in KPMG, 2017). How such digital business models underpin the development of emerging digital internationalising firms is of interest in this study, hence RQ 4: what are the defining business model characteristics of digital firms (RQ4)?

The digital economy is providing increasing opportunities in emerging and developing countries. It facilitates development and growth of digital businesses which are making huge contributions in different areas of the economy such as media, on-demand services, e-commerce and finance (Hamid & Khalid, 2016). For example, rapid expansion and export of IT-enabled services contribute to India’s higher economic growth since the 1990s, which exceeded $80 billion in 2015. The growth of the digital economy not only contributes to a nation's economic growth, but also gives rise to new generation of entrepreneurs who enhance the national socio-economic development. Digital economy tools thus enable entrepreneurs in emerging and developing nations such as Nigeria to develop businesses more cost efficiently.

As noted in chapter 2, the digital economy has motivated firms and individuals to internationalise their business activities beyond their domestic markets (Kempster & Cope, 2010). Clacher & Hagendorff (2012) indicate that the most crucial driver of internationalisation is the fast growth of digital entrepreneurship in specific ICT and industry sectors. As also mentioned in chapter 2, digital entrepreneurship facilitates firms’ interaction and offers new ways of conducting business in 21st century. Smaller firms take advantage of this to compete in global markets with more established companies.

To achieve this, firms need to understand strategic orientation and operational techniques required to succeed and compete in the digital environment, and the circumstances that support the development of that orientation (Quinton et al., 2017). Small firms may succeed in the digitalised business environment because digital technologies enable intelligence gathering, reduced cost and wider customer engagement (Borges, Hoppen, & Luce, 2009; Harrigan, Ramsey, & Ibbotson, 2011). However, not every firm may achieve this due to lack of technical and digital skills and digital marketing expertise required in this environment (O'Toole, 2003; Nguyen, Newby, & Macaulay, 2015; Chaffey & Ellis-Chadwick, 2016).

As mentioned elsewhere in this research, to create and deliver value through digitalisation firms need to link their market orientation to digital orientation. This is because digitalisation enables them to pursue activities that support the 'generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organisation-wide responsiveness to it' (Kohli & Jaworski, 1990, p. 6). Digital market orientation enables firms to understand domestic and external information that will help them identify new domestic and international opportunities (Hulbert, Gilmore, & Carson, 2015).

Researchers and practitioners have used different terms to described current activities around digital economy, namely e-commerce, e-platform, unicorn, big data, crowdfunding, and sharing economy. Other names that are used to describe digital economy activities include gig, on-demand, collaborative and crowd-sourcing economy (Belk, 2014a). These terms serve different categories of business and align with different industry sectors. The next section discusses sharing economy companies and how they operate in a digital economy.

3.3. The sharing economy

The sharing economy is a floating signifier for a diverse range of activities" (Schor, Walker, Lee, Parigi, Cook, 2015: 13). It is one of the important terms used to describe companies that operate in the digital economy context such as Airbnb, Uber, and Lyft. Mair & Reischauer (2017, p.12) define "sharing economy as a web of markets in which individuals use various forms of compensation to transact the redistribution of and access to resources, mediated by a digital platform operated by an organization". Stephany (2015: 205) suggests that the sharing economy is constituted by "the value in taking under-utilised assets and making them accessible online to a community, leading to a reduced need for ownership".

In a report made by the United Kingdom government, sharing economy is defined as "online platforms that help people share access to assets, resources, time and skills". PricewaterhouseCooper indicates a valuation of the global sharing economy at £9bn predicting that it will get to £230 billion by 2025 (Cadman, 2014).

There is a dearth of sharing economy literature, although, researchers have explored some aspect of sharing economy, mostly in relation to deviations from traditional consumption. For example, Belk (2014a, 2014b) examines consumers as collaborators and Bardhi & Eckardt (2012) consider the change to access-based consumption. Through crowdfunding platforms, for example, consumers and interested stakeholders collaborate to implement projects that deliver needed products and services. Belk (2014) argues that such "collaborative consumption occupies a middle ground between sharing and marketplace exchange, with elements of both". Sharing economy involves economic activities that is person-to-person or peer-to-peer and facilitated by digital platform (Schor et al., 2015). For example, non-governmental organisations, private and corporate firms, sometimes as part of their corporate social responsibility (CSR) engagements, use digital channels to solicit for funds to support urgent poverty alleviation needs of citizens in a community or the payment of expensive treatments on behalf of very needy patients who cannot afford same.

Cockayne (2016) examines sharing economy as a discursive formation in the emerging on-demand economy firms in San Francisco, and highlights the relationship between the sharing discourse and working practice in the on-demand economy. Richardson (2015, p.121) suggests that "the central paradox of sharing in the on-demand economy is that performances of sharing are framed both as part of the capitalist economy and as an alternative." The author argues that we should view sharing as a complex articulation of economic activity that is iteratively performed rather than imposed on subjects from without, pointing to the ambivalences and ambiguities that characterize the use of terms like sharing to narrate economic practice (Cockayne, 2016). For example, CSR specific activities are not directly imposed on firms by governments but signify ways they socially and economically empower their communities, even though governments may require them to demonstrate evidence of such engagements generally.

In the context of social media, sharing discourse directly influences the revenue model for social media firms due to how people engage in online communities, and transforms the social collaboration (Joseph, 2002). The sharing discourse on social media platforms has great effect on SMEs (and digital firms) development and performance as individuals share the effect of new products or services they have used. Sharing the benefits and features of products and services globally on social platforms motivates new customers to try the new products and services.

Sharing content on social media platforms by firms and users informs the revenue approaches of digital firms because it contributes customer data that firms use for tailoring their advertising, marketing and selling activities to potential customer segments (Fuchs, 2014). Again, social media enable sharing activities such as transaction, exchange and economic production; they nurture cyber communities for entrepreneurs and firms in digital environment. It can be argued that social sharing is making consumers indirectly employees for firms by helping to share their products and services content in digital marketspace. Hence, social media strategies should be incorporated into digital business models for digital firms and related businesses.

Banning (2016) describes the link between neoliberal capitalism and digital communication using the term 'info-liberalism'. Positive user participation and contribution on social media platform may likely increase revenues of SMEs and firms generally. Banning (2016, p. 490) argues that ''sharing is yet another avenue through which the ordinary, everyday labour is affectively woven into neoliberal capitalism." Thus, digital entrepreneurs may transform their firms through sharing economic activities. Therefore, individuals who share other companies' products and services to increase their sales and revenues may be called sharing entrepreneurs.

Research has shown that Africa and the Middle East have a 68% readiness to partake in sharing communities as compared to Europe's 54% and North America's 52% (GSMA, 2016; van Welsum, 2016). The sharing economy seems to provide firms with solutions to some infrastructure deficiencies and enhance their access to affordable products and services (Mulligan, 2016b). The sharing economy potential of African markets is enticing the global giants such as Airbnb and Uber. For example, home owners in Kenya offer more than 4000 rented accommodation units across the country and there are significant increases in guests choosing to stay in an Airbnb in Kenya (Constable, 2017).

Thus, the sharing economy has spurred the emergence of African indigenous sharing firms who compete with the global giants like Uber. These include Easytaxi in Nigeria, Taxify in South Africa, Uru, and Yenko taxi in Ghana (Luedi, 2017; Technovagh, 2017a; Technovagh, 2017b). The availability of these sharing transportation firms has brought effective and efficient way of conducting business in Nigeria and Africa. It reduces the cost of transportation and brings in competition in the transport market.

Also, sharing economy economic activities such as crowdfunding are providing financial opportunities to entrepreneurs and SMEs in Nigeria Africa. This is eliminating the barriers to funding that usually constrains small businesses from achieving their potentials. The sharing economy activities such as transportation, accommodation and crowdfunding are powering big data applications in the use of user-generated data. Thus, big data and its applications are crucial mechanisms for developing the digital economy firms.

3.4. Applications of big data in digital firms

Soroka, Liu, Han & Haleem (2017) opine that “big data analytics is a broad term given to the application of advanced data analysis techniques which are applied to big data sets”. The meaning of big data is twofold, namely big data as the gigabytes or terabytes of data a firm can have, and big data analytics which refers to “tools and techniques that are used to analyse the data”. Big data analytics can help firm price optimisation, product placement design, distribution and logistics optimisation, and web-based markets.

Cenicola (2013) identify many technologies that small firms need to have in place for capturing and securing data, which include websites and visitors/lead analytical tools, electronic payment, customer relationship management (CRM) system, email marketing tools and blogs. Voice of Internet Protocol (VoIP) telephone systems can be used to capture data from users (Totka, 2013).

“The provision of products and services in the digital economy suggests the growing importance of data as an economic raw material, and the value addition that is occurring, forming part of a nascent “data economy” (Boateng et al., 2017, p.12). This idea reinforces the relevance of big data analytics in the digital marketing and innovative product development aspects of digital internationalising firms. For example, digital firms like e-platforms, e-marketplaces, social networking and crowdfunding are collecting personal data about individuals, which they use to meet emerging needs of those individuals.

Sen, Ozturk & Vayvay (2016, p.166) explore the growth opportunities stemming from big data and its impact in small firms. Their findings highlight the following:

> "Big data can enable small firms to notice new things about their system by analysing data and pointing out correlations, risks, and opportunities. that they couldn't notice before. Because of that it has the potential to improve decision support systems. It can also help SMEs simulate different scenarios, to improve existing offerings or develop new ones. However, at the very beginning decision makers have to decide which data to be used and collected, how to collect it, how to process it, etc."

Big data has potential impact on small firm growth and firms need to seize its benefits in enhancing their business performance. However, the benefits of big data are yet to be realised as a tool to achieve competitive advantage by many firms and managers (Bughin, Livingston, & Marwaha, 2011), especially in some developing countries like Nigeria and other African countries. Sen, Ozturk & Vayvay (2016) suggest that technology users produce numerous data every day, for example, the daily communications made by individuals through emails, text messages, images, videos, phone calls, posts on social media, and places people visit are parts of big data. These data are being gathered by computers and digital devices (e.g. mobile phones) and can be used through big data analytics (including machine learning and artificial intelligence) to improve decision making in key aspects of a business, which in turn increases performance and profitable growth of firms (McAfee & Brynjolfesson, 2012).

From the above insights, big data analytics can be widely used for cyber-mediated firms and non-technological firms in various industries such as retail and finance to improve business performance. It is imperative for small and medium firms that want to succeed in national and global markets to adopt new information technologies like big data, data mining, machine learning, internet of things (IoT) and cloud computing. These are intertwined with each other in enhancing firm performance. Therefore, managers of digital firms need to identify suitable aspects of big data analysis to incorporate in their business models.

Oxford Economics Survey (2013) indicated that technologies such as big data, and artificial intelligence are strategic priorities and one of the key drivers for firm growth. It is important for firms to know how to use big data to analyse and predict market and customer behaviour, and it is a paradigm shift for SMEs. This is even more important for digital internationalising firms which generate big data sets through e-commerce and e-marketplace transactions and apply them in digital marketing, related business models, and strategic decision-making, Chaffey & Ellis-Chadwick (2016). For example, e-commerce giant Alibaba developed Galaxy which is a real-time data processing platform that can manage five million transactions per second (Jin, Wah, Cheng, Wang, 2015). Also, Amazon’s use of customer ratings, big data, and artificial intelligence techniques to predict customer preferences is a good example of the power of those techniques in continually enhancing the digital firms’ (sales and revenue) growth and profitability.

The big data techniques used in Alibaba and Amazon can be adapted to the, albeit less complex, business needs of digital internationalising firms in Nigeria, because even though Alibaba and Amazon are very huge global (digital) firms compared to the case companies in this research, some of their subsidiaries are comparable to the latter, which can use the big data techniques to aspire to the performance of such subsidiaries. For example, it is noted by Lucas (2018) that Alibaba which went public in 2007 currently has a market capitalisation of $420bn, and 920 subsidiaries, 420 of which are in China and the remaining ones internationally located. This fact reinforces the notion that such global giants are likely to have a range of subunits which reflect the characteristics of different types of firms, namely BGFs, INVs and digital internationalising firms (the focus of this research). An example is Taobao which is Alibaba’s China- and Asia-focused e-marketplace. Lucas (2018) states that more than 630m consumers shop on Taobao every month. A similar Africa-focused e-marketplace like Jumia in Nigeria can therefore use similar big data and digital marketing techniques like Taobao to grow its customer footprint and profitability.

Sen et al. (2016) highlight how big data reduces six major challenges to SME growth (also digital internationalising firms):

- Ways to compete with enterprises & franchisees
- Inability to invest in customer acquisition
- Inability to manage supply chain, distribution & sales force
- Lacking timely insights into market movements
- Inability to deliver large order size with short cycle times
- Lacking Big Data expertise.

Big data enables firms to define narrower customers segments and tailor products and services to specific customer needs within those segments. It is predictable that SMEs (and other firms in general) can attain remarkably quick growth opportunities from big data, by analysing and predicting market and customer behaviours such as their preferences for products or services and purchasing decisions. The big data analytics are also useful in lean manufacturing (Sen et al., 2016). Therefore, entrepreneurs and companies need to understand the implementation and use of big data from inception. Big data can help to shape digital firm business models and their internationalisation strategies. The importance of big data in digital firms' internationalisation is such that firms can use comparative big data analytics to profile local and international customer needs as they internationalise their offerings digitally. In effect, emerging real-time customer understanding from a growing base of international customers will signal to their management the potential in each country they engage in, which determines the scope, speed and success of their internationalisation strategies.

3.5. Challenges to big data adoption in small firms

Mowbrey (2009) highlights that four types of data that a (small) firm can store in cloud include operating data, information about customers, accounts such as payments, and "activity data that tracks when and for which applications the business' account with the service provider is used". Schaeffer & Olson (2014) explore big data options for SMEs and identify that cloud is a better option, and to accomplish this would require the technology and the bandwidth to carry it. However, there are barriers for big data applications especially in small firms. These barriers are likely to undermine the firm's performance in 21st century business environment.

Soroka et al. (2017) indicate that SMEs and other firms generally usually do not have internal capabilities to identify, install, configure and maintain sophisticated IT systems. These are potential barriers for adopting big data analytics in SMEs, but not so much barriers for digital internationalising firms which are more richly resourced than SMEs. Hence, the key challenge in big data applications for digital firms would seem to be the correct choice and optimal combination of big data analytical procedures. Though big data applications are not the focus of this thesis, the researcher intends to explore them in future work with respect to their role in 'digital marketing strategy, implementation and practice', Chaffey & Ellis-Chadwick (2016).

Sultan (2011) suggests that cloud computing will be an alternative solution for several SMEs because of its flexible cost structure and scalability. Therefore, cloud computing can be a way SMEs that lack financial capabilities can access complex computing systems. From the above suggestions; cloud computing and big data complement each other, "cloud computing's killer application is seen as big data, whereas IT infrastructure of big data is provided by cloud computing" (Jin et al., 2015. Indeed, cloud computing capabilities are even more applicable to the relatively huge data sets generated by digital firms (including born-globals and INVs) as they operate in different countries. This point has been noted before.

Soroka et al. (2017) examine how companies are using their offerings and customer data, based on online survey of Walsh manufacturing companies. The results suggest that big data analytics may not be viable for SMEs because they may have constraints in making use of it and taking potential advantages offered by the big data analytics. Jin et al. (2015) argue that all industry requires big data in different areas of business for strategic factors in firm competitiveness. It is important for firms to have capability to hold and analyse data as it provides resources that offer competitive advantage.

McGuire, Ariker, & Roggendorf (2013) highlight three key challenges of using big data: a) choosing which the type of data to use; b) handling analytics such as having people with right skills and capabilities to do that; and c) how to use the outcome from the data to transform operations or other areas of firms. Understanding how to use big data can create values for smaller firms and large companies in many ways: refining business models and innovation (Brown Boon & Pitt, 2011), improvement of firms' overall performance (McAfee & Brynjolfsson, 2012), marketing analytics (Mayer-Schönberger & Cukier, 2013; Xu, Frankwick, & Ramirez, 2015; Chaffey & Ellis-Chadwick, 2016); making decision making more effective (Kaisler et al., 2013); and higher customer satisfaction (Brown, Chui, & Manyika, 2011 from Sorokaa, Liub, Hanc & Haleemc, 2017; Mbama & Ezepue, 2018a,b).

The big data problem can be solved through open innovation and these will benefit smaller firms, especially those in emerging and developing countries like Nigeria. The skills required for implementation and cost of acquiring such complex computing system make it more difficult to benefit to small businesses in these environments. Large companies are already taking advantage of open co-creation of value, based on collaboration with companies who generate hug data that can be used. Therefore, data can come from either inside or outside of firms and making it accessible for SMEs to adopt big data analytics in enhancing their performance.

Vecchio, Minin, Petruzzelli, Panniello & Pirri (2017) examine how small and big corporations use big data for open innovation strategies. The findings suggest that big companies have more capability to access data than SMEs due to economies of scale from their size. Small firms need to train their "data managers" to develop skills related to data access, collection, storage and processing, and most crucially analysing the data and making using of the insights in appropriate functions (Soroka et al., 2017).

We noted that even though the focus of this research is on digital internationalising firms, the big data challenges cut across different types of firms especially digital firms. The techniques are therefore important for developing not only digital firms locally and internationally, but also SMEs which aspire to scale up to sizes comparable to digital firms (BGFs or INVs) through cyber-mediated internationalisation. It will therefore be instructive to explore how the research findings and integrated business model from this thesis can be extended to other types of firms in future work, for example SMEs (Ezepue & Ochinanwata, 2017) and digital banking and fintechs (Mbama & Ezepue, 2018a, b).

A summary of the techniques and technologies associated with big data analytics and related topics such as artificial intelligence and data science is presented in the website of the International Centre for Research and Enterprise Development (ICRED), www.oseluxworldhero3e.com. See particularly the Schools of:

Statistics and Information Modelling (applied statistics, multivariate analysis, statistical modelling and informatics); Integrated Business Analytics (data science, data mining, and sector-focused applications in, say, financial services, retail, telecommunications, energy, health, education, engineering and manufacturing, some of which are the business lines undertaken by case study digital firms in this thesis); and Computing and Information Technologies (machine learning and its applications, including advanced artificial intelligence, neural networks, deep learning, natural language processing (NLP), text mining and sentiment analysis, genetic algorithms, decision trees, logistic regression, advanced time series, econometrics and macroeconomic modelling; hybrid models). The big data analytics are deployed in businesses through and insight development work which elicits business-critical intelligence from the results.

The above diversity of statistical computing techniques explains why it is important for digital firms to choose suitable big data techniques depending on the business objectives under investigation. It can be explained that big data applications are variations of the standard methodology for data mining and related insight development. This methodology has been extended by Ezepue & Ojo (2012) who superimpose the McKinsey Management Consulting model, known as the McKinsey Mind, on the CRISP-DM Data Mining Methodology, developed by IBM SPSS, to create a Hybrid Strategic and Statistical Problem-

Solving Model. This methodology will be deployed in future big data studies on Nigerian digital internationalising firms which will build on this research. The following notes further clarify pertinent aspects of big data analytics and data science in enhancing business performance.

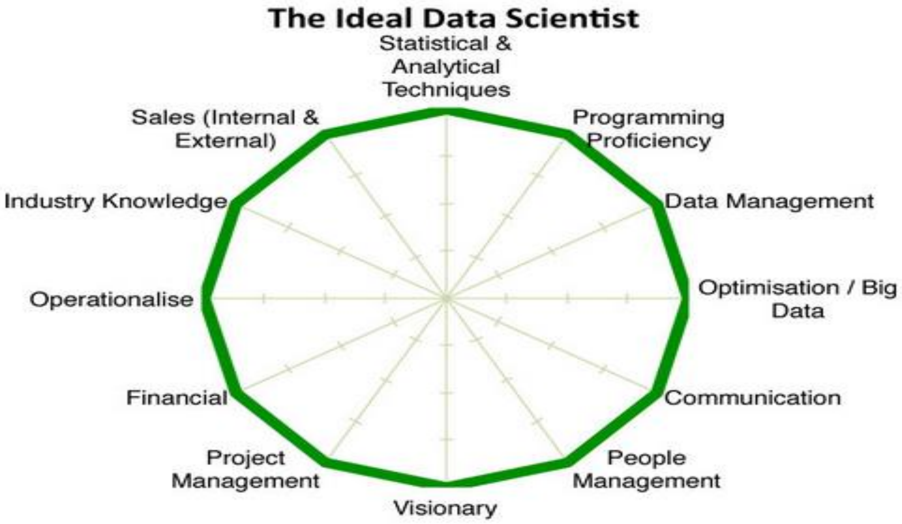
3.6. Data Science, customer data modelling, business development and financial performance

Reiterating earlier notes above, data science as an interdisciplinary field distils insightful patterns from structured and unstructured data which exist in organizational databases and are collated through different data sources. Examples of these sources in banking include customer transactions related to retail banking services, investment banking, insurance, loans and credits, digital banking, and customer service surveys. Some digital internationalising firms offer banking and financial services and are called fintechs. Moreover, similar examples of customer learning from big data using data science techniques underpin the business development and profitable growth of digital firms in other industry sectors.

As noted above, data science has cognate links with information science and business analysis (IIBA, 2006) and, more technically, statistical modelling and informatics (e.g. multivariate, regression and time series analyses, and analysis of categorical/ordinal data), data mining techniques and predictive modelling e.g. neural networks, decision trees, logistic regression, and genetic algorithms (Roiger & Geatz, 2003; Giudici, 2003; Pal & Mitra, 2004; Bishop, 1997) and big data.

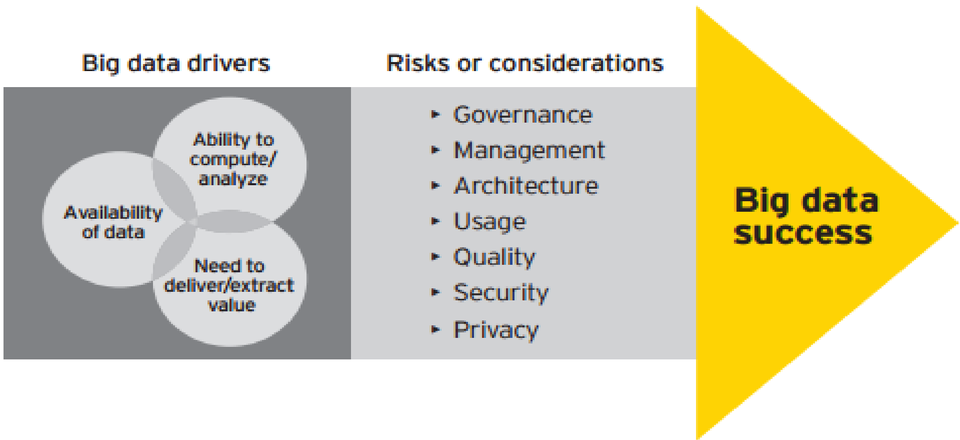
Figure 3.1 below depicts the roles of an ideal data scientist. Hence, these roles should be borne in mind in using big data analytics to support the development of digital internationalising firms in Nigeria and Africa in follow-on work in this line of study (Granville, 2015).

Figure 3.1: Pertinent aspects of data science



Source: from Granville (2015)

Figure 3.2: Success factors in big data



Source: from Granville (2015)

Figure 3.2 depicts the key considerations and success factors that underpin big data applications. These considerations apply to digital internationalising firms but are not the main focus of this research.

3.7. Internet of things (IoT)

Hsu, & Lin (2016, p.157) define internet of things (IoT) as a process which integrates smart object identification, active intelligence, network capabilities and interaction with users. Internet of things (IoT) allows manufacturers to use real-time data from sensors to track, monitor machinery, and guide actual operations (Manyika et al., 2011). Moreover, IoT allows everything to be connected, for example day-to-day things like cars, TVs and washing machines as well as industrial things like pumps, shipping containers, and machinery. All of the connected things are combined with cloud and mobile devices (Council Global, 2015). "With annual economic benefits related to the IoT expected to reach $3.9 trillion to $11.1 trillion by 2025, companies cannot afford to defer their IoT investment until 5G arrives" (McKinsey, 2017).

IoT semantically means a 'worldwide network of interconnected objects uniquely addressable, based on standard communication protocols' (Bandyopadhyay & Sen, 2011: 50). It is the next logical evolution of the web and a disruptive revolution in ICT (Feki, Kawsar, Boussard, & Trappeniers, 2013). IoT enables many devices to collect open big data that support new businesses or improve existing organisations. Digital firms such as e-platforms and other cyber-mediated firms have opportunities to innovate and develop new value propositions because of the use of big data that flow from the IoT (Vecchio, DiMinin, Petruzzelli, Panniello & Pirri, 2017).

Hsu & Lin (2016) examine consumer adoption of IoT services and found that network externalities play a crucial impact in influencing consumers' perception of usage and benefits adoption. Yu, Roy, Quazi, Nguyen, & Han (2017) examine the importance of IoT in sharing information through word-of-mouth (WOW) in the online SME's context in regard to customers mentioning the site to peers in individual communications. The findings suggest that IoT enables several factors such as e-satisfaction and perception toward website concept to play crucial roles.

IoT offers a new set of attributes for competitive behaviour that entrepreneurs building digital business should consider. IoT is significant in predicting customer e-loyalty which includes stickiness, propensity and positive attitude that spread positive WOM. Entrepreneurs developing digital business need to ensure that IoT information network systems is incorporated in their business to enable them manage e-satisfaction that will spread positive WOM (Yu, Roy, Quazi, Nguyen, & Han 2017).

With respect to this research, given the fact that it is mainly a baseline exploratory study of business modelling aspects of digital internationalising firms in Nigeria, IoT is not a focus of the research. It is reviewed briefly in anticipation of its potential to drive possible future offerings by digital firms.

3.8. Robotics and artificial intelligence

The digital age has led companies around the globe to rethink how robotics and artificial intelligence can replace human effort in running the digital enterprises. Digital economy businesses across different industry sectors are being transformed by the IoT, robotics and artificial intelligence, bringing extensive market opportunities and innovation advantage in several industries. Thus, the emergence of these technologies seems to be driving digital business transformation (KPMG, 2017). The digital economy firms are leveraging digital labour from technologies such as robotics, internet of things, and artificial intelligence. Together with human ingenuity, they are capable to transform functional and whole organisational processes. This is reducing cost and operational efficiency in many functions of business. Digital economy attributes such as IoT, big data, and artificial intelligence have led to effective and efficient ways of acquiring funding for establishing new enterprises through local and international crowdfunding platforms which facilitate business development in many nations.

3.9. Local and international crowdfunding platforms

Schwienbacher and Larralde (2012) define crowdfunding as “an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights in order to support initiatives for specific purposes” (Sannajust Roux, & Chaibi, 2014). To narrow the definition of crowdfunding to entrepreneurial contexts, it refers to how entrepreneurial individuals and groups (cultural, social, and for profit) make effort to secure funding through internet from relatively large number of individuals, without going through traditional financing.

In crowdfunding, all funds are collected from contributors through the internet platforms. According to the “Association Funding Participatory France, crowdfunding helped raise 40 million Euros invested in 60,000 projects between 2007 and 2012 in France, including 25 million Euros for the single year of 2012. It represented $2.7 billion in 2012 worldwide, spread over 308 platforms for more than a million successful fundraisings; this represents an

81% increase in one year. The U.S. Massolution firm provides $5 billion in 2013 and the firm Xerfi provided $80 million for France. Forbes makes forecasts on the potential funding from crowdfunding to 1000 billion in 2020" (Sannajust Roux, & Chaibi, 2014, p.1920). Therefore, for entrepreneurs need to develop and maintain professional and personal networks during crowd funding because contributors are the key success factors for crowdfunding campaign.

"Crowdfunding is attractive to start-ups as an alternative funding source and offers nonmonetary resources through organizational learning. It encompasses the outsourcing of an organizational function, through IT, to a strategically defined network of actors (i.e. the crowd) in the form of an open call-specifically requesting monetary contributions toward a commercial or social business goal" (Paschen, 2017, p.179). Crowdfunding has been a source of capital for start-ups and SMEs in various fields like technology and non-technology industries; it draws inspiration from both the idea of microfinance and crowdsourcing (Morduch, 1999). Start-ups that usually have limited access to secure funds due to lack of credit and operating history benefit from local and international crowdfunding.

There are different types of crowdfunding models suitable for different stages of a firm which include donation crowdfunding, lending crowdfunding, traditional lending agreement, and equity crowdfunding. In the donation model, no rewards are offered contributors; lending crowdfunding is referred to as peer-to-peer (P2P), peer-to-business (P2B) and the business founder will repay supporters. The traditional lending agreement expects to repay the loan when the business starts to generate revenue or profit. The equity crowdfunding is where the investors expect some equity from the new business, and it is the fastest growing crowdfunding.

Brown, Boon & Pitt (2017) suggest that crowdfunding websites can be used as marketing channels through the crowdfunding campaigns in which prospective customers pre-order the new offering when raising funds and before it will develop. For example, starting crowdfunding project helps the founder to introduce new products and services to several numbers of prospective customers. It enables founders to form relationships with the individuals who are participating on the platform, and it can be used to obtain feedback and engage customers (Gerber & Hui, 2013).

Moisseyev (2013) suggested that crowdfunding can be considered as a marketing tool and used in three ways for small firms. First, people can search and access the quality of the new project ideas by tracking the number of individual (backers) who are participating on the platform and their feedbacks from social media. Second, crowdfunding platforms promote new products and services, not only reaching the individuals who back the projects, but also the whole crowdfunding community and other people search for new products and services on the crowdfunding platforms. Finally, crowdfunding can be use as direct sales channels with discounts for the backers by offering them first samples and price reduction when the actual products are developed. However, there is a disadvantage for backers when the product description fails to meet their expectation.

The benefit of launching a new product like Opal using the Indiegogo crowdfunding platform allows immediate feedback on market acceptance (Freeman, 2015). The success of Opal on Indiegogo made it to be purchased in several regular stores (Cowley, 2016). Established firms are using crowdfunding as marketing strategies and validating the new products and services. For example, "General Electric used its Indiegogo crowdfunding project as a test market to evaluate the potential demand for its product before committing to wide-scale distribution". Digital firms can benefit from such market testing advantages of crowd funding.

Crowdfunding can be used as idea generation and fundraising for the new projects; backers are important sources of inbound open innovation firms, apart from their financial contributions. The knowledge creation from the interactions of backers on the platform is crucial in digital technology innovation. The backers offer advice and play active role in choice of design ideas (Diallo, 2014; Lewis-Kraus, 2015).

3.10. The impact of World Wide Web in digital firms' activities

DiNucci (1999) coined the term web 2.0 and later linked it to business revolution caused by the move to the internet as a platform (O'Reilly, 2006). Web 2.0 provides platforms for firms to syndicate information on products and services and promotion to customers. This platform enables firms to engage with customers to create contents, for example blogs, posts videos and images, in order to achieve their business goals (Constantinides & Fountain, 2008). Web 2.0 allows customers to be become indirectly part of the marketing activities because they co-create content with the firms. This differs from the early Web 1.0 marketing because the users become important contributors due to contents they create. Thus, web 2.0 enables a shift from marketing activities being only from producers to consumers to one that flows from conventional mass media to personalised marketing (Constantinides &Fountain, 2008).

Web 2.0 marketing enables firms to collaborate through activities such as content and multimedia. It enables users to generate content for firms and empowers individuals and companies, especially SMEs that have low marketing budget. Gwadabe (2017) examines the impact of web 2.0 marketing in Nigerian SMEs using qualitative interviews with Nigerian SMEs' senior managers. The findings show that most prominent web 2.0 marketing tool is Facebook; services provider adopt blogging tool and product-based SMEs prefer platform such as Facebook and Instagram that display product features and benefits. This increases brand awareness and revenue. The finding indicates that inadequate in-house digital skills are some of the major barriers for adopting web 2.0 as marketing tools in Nigeria. Thus, SMEs in Nigeria should employ people with digital skills or retrain the employees in effective ways to manage digital marketing in order benefit from web 2.0 and 3.0.

Kiron et al. (2012) suggest that social media network is not just a tool that is used in organisations; it transforms business processes and involves redesigning business models (Kane, Palmer, Phillips & Kiron, 2014). It can be used in externally customer-facing activities in early mature firms, which include marketing, promotion, and awareness activities, and to balance business processes in mature organisations, both in internal and external activities such as, innovation, operations and leadership (Dutot, 2013; Kane et al., 2014). To put a context to this, for digital internationalising firms, it is clear that social media can be used to advertise the businesses. Participating in social and professional networking is a way to increase companies' market shares because word of mouth (WOM) is a crucial to getting customers' attention.

Revevani (2014) indicates that Instagram is one of the most understandable and shareable platforms for Web 2.0 marketing than any other platform. Carbone (2015) suggests that firms that adopt Web 2.0 strategies gain market share rapidly and are likely to become market leaders and perform better than firms that use traditional marketing techniques. The author highlights the benefits of adopting Web 2.0 as marketing strategies:

- Lead Generation and Conversation Opportunities;
- Better Search Engine Optimization "SEO" Ranking (Acronymcom, 2015);
- Improve Relationship with Customers;

- Increase Brand Awareness;
- High Brand Authority;
- Provide Opportunity to Syndicate Information;
- Allow Tracking and Insights;
- Increase Revenue (Gwadabe, 2017);

Stankovska, Josimovski & Edwards (2016) survey UK SMEs with fewer than 500 employees across different industry sectors to find out the digital channels they use. The findings suggest that there are no connections between firm's size and digital channels usage. There is a significant correlation between online approaches and firms' marketing budget. This is because of online approaches such as online ads which are not free of charge. The significant correlation between the size of marketing and social media tools, which shows that "for free of charge online tools, such as social media applications, the usage of different tools is associated with the number of people involved in creating and maintaining the online presence".

The impact of digital channels on marketing has led to a paradigm shift which can be seen as changing in marketing communication concepts. In digital communications, the products and services information from the marketplaces are based on the individual consumers' experiences (Yank et al., 2012). The web 2.0 technologies are user-friendly and fundamental technical know-how for making online presence simplified. Thus, the importance and uniqueness in usage of web 2.0 tools is more of co-creation of content rather than technical skills of its users (Stankovska, Josimovski & Christopher Edwards 2016). Web 2.0 has allowed electronic marketing to shift from one-to-one traditional marketing channel communication model to one-to-one and many-to-many online models (Allen, Kania, & Yaeckel, 2001). The emergence of this type of new marketing channels enables companies to reach customers and end-users. Hence, Web 2.0 enables firm marketing to shift from a business-centred to a user-centred model.

Wolfram (2010) opines that Web 3.0 is the process of computers generating new information rather than humans. This is reinforced by Morris (2011)'s theory of data integration as the fundamental foundation of Web 3.0, and by using metadata embedded in websites, data can be converted into valuable resource and intelligent agents (IAs) allow the data to be located, evaluated and stored." IA refers to software programs designed to collect information based on the users' interaction with the Web and perform tasks on behalf of the user" (Rudman & Bruwer, 2014, p.136). In order to know if IAs understand the information gathered from web expressive, languages such as Ontology Web Language needed to be developed. Based on this "Web 3.0 has the capability to use unstructured information on the Web more intelligently by formulating meaning from the context in which the information is published" (Verizon, 2015 cited in Rudman & Bruwer, 2014, p.136).

Rudman & Bruwer (2014, p.142) suggest that Web 3.0 brings the following opportunities related with the implementation of business intelligence (BI):

• Reduced cost of IT infrastructure; cost will be reduced by eliminating investment-intense data warehouses and redundant extraction processes performed by hired personnel with domain expertise (Watson & Wixom, 2007).

• Opportunity to increase effectiveness of e-commerce by tracking users' browsing behaviours down to individual mouse clicks and applying targeted and personalised marketing

• Time saving for data suppliers and users and the reduction of information bottlenecks: by enabling users to access reports when they need it without technical support from IT or financial personnel.

• Timely and informed decision making: Extraction of data by machines from multiple sources with far greater efficiency and precision will support organisations in making better decisions (Watson & Wixom, 2007). Furthermore, IAs can be programmed and deployed to harvest information autonomously based on rules set by the user.

The business benefits of web 3.0 to firms include sales growth, improved customer satisfaction; cost reduction, increase productivity, and improved employee's development (Edvardsson & Durst, 2012).

However, there are several negative impacts related to the development stages of web evolution; some of the disadvantage are the loss of confidential and personal information due to malicious attacks, unauthentic electronic intrusion and unwanted application performance due to continuous updates (Rudman, 2010).

Weinberg, Milne, Andonova, & Hajjat (2015) outline how IoT differs from web 2.0 and opportunities and challenges. IoT mechanisms help firms to learn about consumers by observing their habits, tendencies, and choices as well as their environments. IoT can benefit firms by improving their data collection and increasing efficiency and productivity; the data can be collected instantly to allow for real-time decision making and action.

3.11 Digital economies in emerging and developing countries

This section reiterates some ideas discussed in the literature review (chapter 2). Digital economy is growing rapidly in developing countries compared to developed countries. However, there is a global digital divide, among developed, less-developed, developing and least-developed countries (LDCs) (Banga & Willem te Velde, 2018). Sub-Saharan African countries have been shown to have low access to internet; in 2016 it shows that they have 10 percentage points less than those countries in South Asia.

Boateng et al. (2017, p.1) suggest that in digital economy there is formal and informal digital enterprise. Recognised digital enterprises include telecommunications, digital services, software and IT consulting, hardware manufacturing, information services, platform economy, gig economy and sharing economy. Informal digital enterprises include repair of digital devices, online training sessions, WhatsApp, mobile money and cryptocurrency services.

The digital economy in emerging and developing markets has created several benefits to individuals and business ranging from higher employment, better incomes, and larger entrepreneurship opportunities. Internet access, transactional access and entrepreneurship are highlighted as foundational elements of digital economies. Access to internet enables businesses, and people to connect; transactional access allows products and services to be developed and consumed, and entrepreneurship "ensures the value is created and retained within the country and population" (Vital Wave & Caribou Digital, 2014, p.4). The internet is fundamental to digital economy but without the access to individuals, networks and data that the internet access is providing, the main goal of digital services on an economy will not be achieved. "The majority of value creation in terms of pure digital assets is trending this way as personal data in the cloud makes the location where your business value is based a very moveable feast" (Vital Wave & Caribou Digital, 2014, p.2).

The adoption of digital payments improves productivity of businesses in emerging and developing markets, and it is estimated to be $300 billion in Sub-Saharan Africa (Vital Wave & Caribou Digital, 2014). The World Bank's Consultative Group highlights how digital payments are fostering new business models in different industry sectors, from water, energy, health access and agriculture. For example, Wizzit International has used its internet-based payments to provide banking systems in nine countries in Africa and serves 6 over million customers through collaborators banks. This innovation is providing a better access to funding. Mobile money and digital payment platform are providing affordable and better services to low-income people and businesses in emerging and developing markets. Transactional access such as digital payments firms are filling the gaps that the formal financial institutions have not provided.

Digital economy provides greater opportunities for entrepreneurs in emerging and developing markets as it is enables them to create more values such as employment generations through building vibrant and innovative businesses. However, government policies sometime seem not to have maximus support for digital ecosystems.

3.12. Digital economy firms in Nigeria and Africa

The first formal digital enterprises in Nigeria are telecommunications; the main players are MTN, GLO, Airtel and 9mobile. In recent time entrepreneurs have developed digital businesses across industries. The digital investments in Nigeria are across different market sector, including financial technology, media, retail, data management, transportation, health management, IT consulting and related services (KPMG, 2017). It is important to categorise and highlight some digital firms and the industry sectors they operate in Nigeria.

There are twenty popular e-commerce, e-platform and cyber-mediated firms in Nigeria. These include Jamia, Konga, Cokodeal, Fashpa, Dressmeoutlet, Vconnect, Payporte, Dealdey, Wakanow and Kara. These digital firms are trading several products and services from various industries on their platforms. Jumia and Konga are the major digital merchandise firms in Nigeria. Fashion focused ones include Fashpa that sells clothes, fashion accessories and beauty products for women, and Traclist is into fashion just like Fashpa has clothes for women, men, and children. Fashpa makes clothes that sell in its platform. Groceries and food firms include Gloo.ng which is the first e-commerce/e-platform that sells grocery and household items in Nigeria. Online delivery and logistics malls for Africa enable Nigerians to buy product and services from the largest e-commerce companies around the world. Wakanow is a digital online platform that allows people to book travel tickets and hotel bookings around the globe (Adeleke, 2018). Some crowdfunding platforms in Nigeria include StartCrunch and Funda Solva.

Internet-related technologies and activities contributed about 1.5 percent of Nigeria GDP as of 2015. About 60 million have regular access to internet, and 65 percent out of the 6 million people in Nigeria have shopped online (The next web, 2014).

The key drivers of digital investment in Nigeria are growing investor interests in the upcoming potential of digital solutions that have been provided by large number of young, middle-class, and government initiative platforms for supporting the establishment of start-up and small tech firms. There are indications that the most lucrative firms will come from digital business models. In 2016 both local and foreign investors have invested about $425 million in Jumia and making it the fastest growing e-commerce in Nigeria and Africa in general (KPMG, 2017).

Nigeria digital economy holds the key to how Africa will rise in digital economy in the 21st century. Nigeria's digital economy ecosystem is dominated by e-commerce and e-platform marketplaces and is positioned as the capital of e-commerce in Africa with such digital economy firms such as Konga, Jumia, Easy Taxi. iROKOtv is an example of a next-generation company and has been described as the Netflix of Africa (Iwuoha, 2016). Yaba, a suburb of Lagos is considered Nigeria's Silicon Valley and is home to a few tertiary education institutions, and many tech companies (Akwagyiran, 2015).

Dall'Omo (2017) reports on driving African development through digital technology focusing in South Africa, Nigeria, Kenya and Ethiopia. The report shows that the levels of digital maturity in all countries are not the same. For example, how these countries develop digital literacy and skills has ranked South Africa as first, followed by Kenya, Nigeria and Ethiopia. Given Nigeria's leadership in digital firms, this ranking means that Nigeria needs further development in digital skills that support such firms.

As mentioned earlier, digital economy in Africa is fundamentally based on its mobile market, and this market has large potential for growth. Fawcett (2015) shows that countries from the Sub-Saharan Africa have been the fastest-growing countries in the globe for mobile phone users in recent time, Nigeria, South Africa, Kenya and Ethiopia, for example. The growth in internet development has fostered the digital economy in Africa. The growth of African digital economy may seem to be the combination of internet and use of mobile phone (Malakata, 2015).

The reduction in mobile and broadband tariffs has been identified as a cause of an increasing proportion of people engaging in development of digital economy in Africa. For example, Sage (2016) shows that there are more than 15 million Facebook actives users in Nigeria. Sheree (2013) highlights that the top ten websites that Africans regularly visit are social networking and dating sites which include Facebook, Africanzone, LinkedIn, Blueworld, Africanplanet, and Twitter. This trend provides advantage for technology and non-technology companies in Africa, leading to an ecosystem which is beneficial to the African continent's economies. For instance, "Nigeria's digital space for instance contributed US$8.3 billion to the economy in 2016, representing 1.4% of GDP" (Matinde, 2016).

The digital economy has provided enabling cyber-friendly environment for individuals to create formal and informal digital firms. Some formal digital firms in Africa include mobile payment aggregators such eTranzact in Nigeria and Ghana, Cellulant in Botswana, Kenya and Zambia, and Selcom in Tanzania (Fawcett, 2015). The formal digital economy firms include e-marketplace (Konga), e-platform and e-commerce Jumia and Konga in Nigeria.

There are many relevant mobile apps that have been developed for the past few for years in Africa. For example, an on-demand recruitment app (Girafee) in South Africa that was Launched in 2015 enables thousands of people to engage in hundreds of South African businesses (Diptesh, 2017). Some of the downloaded apps by category are social networking, instant messaging, education, gaming, health and fitness. Some of the examples that are developed in Africa include iRokoTv, Vula mobile, WumDrop, Esoko, Safaricom, Hellofood, 2Go and RamLocator (Africa.com, 2017). Some other popular apps include SnapnSave, shopping app that allows customer to have cash back when they buyer grocery wherever they shop in store. Slimtrader enables users to carry out e-commerce transactions such as purchasing or paying for products and services through SMS using text messages to have effective shopping (Linington, 2015).

There are many existing and future initiatives that are encouraging and the development of mobile apps, which would help meet specific Africans needs. Many of these initiatives provide creativity and innovation in young African entrepreneurs through competition. Some examples include MTN business App of the year Awards in South Africa (MTN, 2016) and Kipokezi Apps challenges in Kenya (Heim, 2012).

3.13. Nigerian digital infrastructure and policy

Mobile services in Nigeria had been growing rapidly and extending connectivity to more than 83 million subscribers since their introduction in 2001. The main mobile competitors are MTN, Globacom, Airtel and 9Mobile. Most of them offer both 2G and 3G services. Late entrants and smaller operators like Swift, Spectranet and Smile offer 4G services. It is estimated that only 0.2% of Nigerian population have access to fixed telephone line, while mobile has represented the means for majority of Nigerian to have access to communications services (GSMA, 2015). Nigerian mobile internet usage is relatively low compared to other Sub-Sub-Saharan Africa countries like South Africa and Kenya. This is because mobile internet is basically using 2G connections and the mobile broadband access has continued to remain relatively low.

There are several challenges that are limiting mobile operators and digital businesses in Nigeria such as policy and environmental issues, and inadequate electricity supply that always affects the network service providers. The impact of government policies on the digital ecosystem is important in order to achieve digital economy in Africa. There are many governing bodies in charge for digital space polices implementation. For example, there "is fascinating policy in Nigeria which has also tried to increase its participation in international digital space by requiring foreign information and communication technology (ICT) companies or multinationals to maintain at least 50% local content by value either directly or through outsourcing to local manufacturers engaged in any segment of the product value chain, by the end of 2015" (Boateng et al., 2017, p. 4). "The guidelines are intended to help restructure and develop a strong indigenous ICT industry by addressing three core areas of need as follows: driving indigenous innovation; developing the local ICT industry; and establishing intellectual property regulation and protection standards" (Matinde, 2016 cited by Boateng et al., 2017, p.4)

Despite the challenges on digital infrastructure, digital literacy is a crucial factor that will allow individuals and firms to use the internet and integrate digital technologies into their firms (Shenglin, Simonlli, Ruidong, Bosc & Wenwei, 2017). Thus, strong attention should be paid on how to develop digital skills and competences to accelerate the creation of more digital businesses in Nigeria and Africa. There are several digital initiatives in some commercial capital African countries.

To foster digital skills for digital economy in Nigeria and Africa, there is need for human capital development that will foster digital specialists and professional users. The digital training requires deeper expertise on computer science and computer engineering which is acquired through tertiary education (Dahlman, Mealy & Wermelinger, 2016). Data analysts or scientists are necessary to perform computing and statistical analyses.

The basic digital economy skills can be taught in all levels of schooling as fragments of an ICT-enabled learning curriculum. It is important to ensure that teachers and lecturers have necessary digital skills to impart the digital skills to students in order to promote the development of Nigeria's digital economy in.

3.14. Challenges doing business in Nigeria

The dynamic capabilities framework in strategic management suggests that country and regional factors can have impact in establishing new business and making investment location decision (Teece et al., 1997; Teece, 2014). Location can also have a marked impact on the observed occurrence of important organisational behaviours (Johns, 2006). Johns (2006:386) defines context as 'situational opportunities and constraints that affect the occurrence and meaning of organisational behaviour as well as functional relationship between variables. Mowday and Sutton (1993) describe context as 'consisting of constraints versus opportunities for behaviour, proximal versus distal stimuli, and similarity versus dissimilarity among organisational members' (cited in Johns, 2006:386).

Nigeria firms face many internal challenges ranging from lack of access to financial institutions, inefficient managerial capacity, lack of skills among workers, poor accounting systems, and lack of effective business strategies. SMEDAN OLOP Report (2014) indicates that 73.24 percent of top priority assistance needed by MSMEs operators in Nigeria is financial capability, and only 4.2 percent out of 17.2 million MSMEs have access to loans and other financial support from financial institutions. The lack of access to financial institutions affects many new businesses and start-ups in Nigeria because they do not have collaterals required from banks and other financial institutions (Essien, 2006).

Numerous researchers have shown that external contextual influences are major barriers for developing business enterprises that can seek early international markets from inception in sub-Saharan African countries (Benda et al., 2001; Soontiens, 2003; Esterhuizen & van Rooyen, 2006). World Bank conducts worldwide survey every year which is entitled "doing business index". The index measures how people easily start and operates businesses. Sub-Saharan Africa is ranked as the region in the world where it is most difficult to do business (World Bank, 2016). Sub-Sahara African and South Asian firms identify inadequate power supply and access to finance as key constraints to doing business in these regions (World Bank, 2016).

The specific African environmental influences highlighted in the previous studies include microeconomic instability and policy instability (Amank-wah-Amooah & Debrah, 2011; Greneier et al., 1999; Okpara & Koumbiadis, 2011); political instability (Fosu, 2003); higher interest rates and lack of access to financing institutions (Esterhuizen & van Rooyen, 2006; Ochinanwata & Ezepue, 2015); inadequate infrastructure (Belwal & Chala, 2008); trade restrictions and transportation (Soontiens, 2003); crime, theft and disorder (Okoli & Mbarika, 2002); and corruption (Kimuyu, 2007).

Ayozie et al (2013) & Agwu & Emeti (2014) note that lack of adequate infrastructure constitutes the major challenges to firms in Nigeria. This includes electricity, roads, pipe-born water and transportation system. The power supply in Nigeria is erratic and results in firms spending extensive amounts of their profits running their businesses, which makes it difficult for businesses to operate and perform efficiently. The bad road and expensive transportation systems make it difficult for firms to transport their goods to local and international markets (Adisa, Abdulraheem & Mordi, 2014).

African countries generally face poor physical infrastructure and it is affecting businesses in this region (International Trade Centre, 2015). International transportation and logistics remain expensive, and postal system suitable for Nigeria and African business environment is important. This will enable smaller firms to connect to international markets cost-effectively.

3.15. Summary and Conclusion

From the above review of the digital economy influences on the development and internationalisation of digital firms, a clearer understanding of the drivers of digital businesses emerges. The review highlighted telecommunication as fundamental for digital success; this is because the growth of the digital economy depends on adequate digital infrastructures such as affordable telephone services and access to internet.

In developing countries like Nigeria and African countries, mobile and smart phone has represented the major means for many Nigerians to have access to communications services and one of the factors driving and contributing to digital economic development. The digital economy is enabling creation of digital and non-digital firms that generate employment and enhances economic development. The review studies have shown that Nigeria and Africa are ready to take advantage of digital economy, but there is need for adequate government policies and enabling environments for businesses and individuals to participate in digital economy activities.

This chapter noted that big data, artificial intelligence, internet of things (IOT), web 2.0 to 2.4, and crowdfunding platforms are crucial digital economy tools and drivers, and there is a need for digital businesses to adopt them from the inception. The big question is how small digital firms that lack resources and technology capabilities will go about this. The sharing economy and open innovation that allow businesses to use other firm resources may have to be considered.

The review showed that there is digital divide between developed and developing countries; the technology and physical infrastructure gaps affect development and internationalisation of digital business in Nigeria.

Chapter 4 explores understanding of business model, and international entrepreneurship literature to bring together the components of the conceptual framework for the research. The chapter discusses the elements of business model, their configuration and application in the international entrepreneurship literature.

Chapter 4: Conceptual Framework for the Research

4.1. Introduction

This chapter is presented in four parts. First, it presents the definitions, meanings and elements of a business model. Second, the configuration and application of business models in the international entrepreneurship literature is described, especially from the perspectives of opportunity identification and value creation. The third part explores how business model constructs enable rapid internationalisation of cyber-mediated firms from or near inception. Fourth, the chapter examines the contextualisation of business models in Nigeria and developing countries generally, and how the contextual factors influence the establishment and internationalisation of digital firms in Nigeria.

This kind of comprehensive approach to the study of digital internationalising firms (DIFs) has been lacking so far in developing countries like Nigeria. The concept of an integrated business model, which builds on the conceptual frameworks in this chapter and is presented in chapter 7 of this thesis, will enable entrepreneurs and firms to analyse emerging opportunities in international markets.

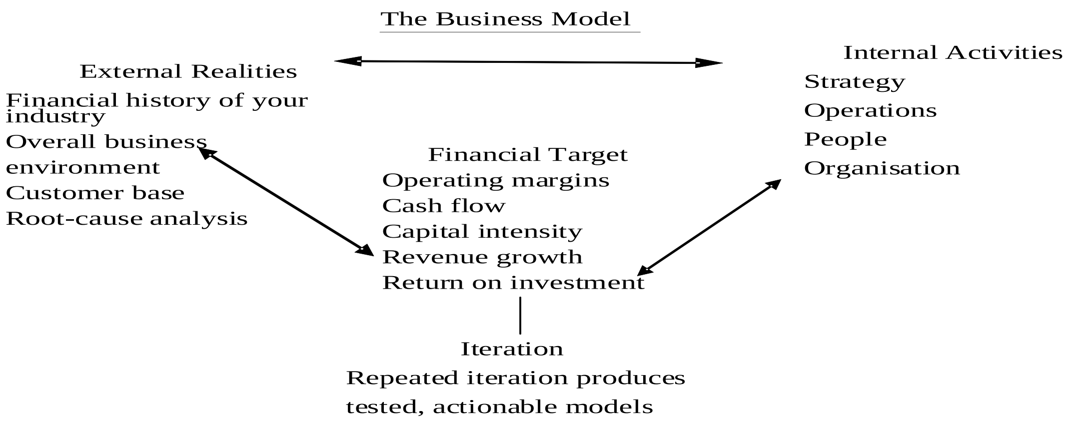
The term ‘integrated business model’ implies that several aspects of business modelling presented in the literature review and this chapter are brought together to better understand the emerging business development and internationalisation experiences of Nigerian cyber-mediated firms.

4.2. Definitions of business model

Management research has demonstrated the importance of business models for: value creation and firm performance (Magretta, 2002 Markides & Charitou 2004; Wikstorm et al., 2010); how these are directly associated with transaction governance (Maddigan, 1981); value chain (Porter, 1985); value constellations (Norman & Ramirez, 1994); value streams (Davies, 2004); revenue model (Bonnemeier, Burianek & Reichwald, 2010); novelty and efficiency (Zott & Amit, 2008); activity system perspective (Zott & Amit, 2010); supply chain management (Mason & Mouzas, 2012); mission and vision statements (King, 2012); lock-in and complementarities (Mason & Mouzas, 2012; Zott & Amit, 2008), trial and error (King, 2012); and business model innovation (Teece, 2010; Amit & Zott, 2012). It is noteworthy that whilst individual companies use such models to succeed in their organisational missions, there is no systematic effort in the literature to integrate the model characteristics with reference to Nigerian digital firms’ business modelling and internationalisation activities.

Zott & Amit (2008, p.1) define a business model as "a structural template that describes the organisation of a focal firm's transactions with all of its external constituents in factor and product markets". According to Teece (2010, p.20), a business model is "management’s hypothesis about what customers want, how they want it and what they will pay, and how an enterprise can organise to best meet customer needs, get paid well for doing so". This definition is similar to the conceptualisation of a business model by Bossidy & Charan (2005, p.79) who note that a business model consists of: a firm’s external realities (financial history of the industry, overall business environment, customer base, root-cause analysis which determine best solutions to the firm’s problems); its internal activities (strategy, operations, people and organisation); financial targets (operating margins, cash flow, capital intensity, revenue growth, and return on investment); and importantly iteration which tests and refines the model in different application contexts. We shall explore in chapter 7 of the thesis the role of the Bossidy & Charan (2005) model as a base model in the integrated business model template for DIFs developed in the research. Before then, it is clear from the model that strategy plays a fundamental role in a business model. The following notes discuss further the notion that strategy and business model are intimately linked, though subtly different in meanings. Figure 4.1 below depicts the above-mentioned elements of the Bossidy-Charan business model.

Figure 4.1: The base business model



Source: Bossidy & Charan (2005)

The above model is referred to as a base business model in this research because it shows the key aspects of a meaningful business model in the way it links the external and internal environments and the usual financial performance metrics. Hence, in this research attention is focused on what additional insights from the research findings should be used to enhance the base model to account for the realised business models used by Nigerian DIFs. This view warrants the inclusion of this model in the conceptual framework of this research in later sections of this chapter.

As noted above, business model and strategy are often used interchangeably by many researchers and business practitioners; they are quite distinct but complement each other. Magretta (2002) outlines differences and similarities between strategy and business model. Business model describes how firms create and deliver value to customers, while strategy determines how a firm uses the business model to gain competitive advantage (Markides & Charitou, 2004).

Souto (2015, p. 145) defines business model innovation as “a new configuration of what is done in the company and how it is done, to provide a new value proposition to customers”. In other words, it is the new or significantly improved system of activities required for the generation of a new value propositions. Christensen, Bartman and van Bever (2016) state that many businesses that have attempted business model innovation have failed. This research will examine the responses from founders and top managers of selected Nigerian DIFs for possible evidence of business model innovation in their activities.

The different definitions of business model and terms used to describe the business model process make it difficult for researchers to reach consensus on what constitutes a business model (Linder & Cantrell, 2000; Osterwalder, Pigneur & Tucci, 2005; Zott et al., 2011). Mapping out an integrated theoretical framework that will easily be adopted by researchers and practitioners would help to quickly move the field forward and develop business models in distinct industry and environmental contexts. Table 4.1 presents some selected business model definitions which clarify the meanings of business models.

Table 4.1 Selected business model definitions

Author, Year	**Definition**	**Papers Citing the Definition**
Timmers, 1998	The business model is "an architecture of the product, service and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors; a description of the sources of revenues" (p. 2).	Hedman & Kalling, 2003
Amit & Zott, 2001; Zott & Amit, 2010	The business model depicts "the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities" (2001, p. 511). Based on the fact that transactions connect activities, the authors further evolved this definition to conceptualize a firm's business model as "a system of interdependent activities that transcends the focal firm and spans its boundaries" (2010: 216).	Hedman & Kalling, 2003; Morris, Schindehutte, & Allen, 2005; Zott & Amit, 2007, 2008; Santos, Spector, & Van Der Heyden, 2009; Bock, Opsahl, & George, 2010
Chesbrough & Rosenbloom, 2002	The business model is "the heuristic logic that connects technical potential with the realization of economic value" (p. 529).	Chesbrough, Ahern, Finn, & Guerraz, 2006; Chesbrough, 2007a, 2007b; Teece, 2007, 2010
Magretta,	Business models are "stories that explain how	Seddon, Lewis,

2002	enterprises work. A good business model answers Peter Drucker's age-old questions: Who is the customer? And what does the customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?" (p. 4).	Freeman & Shanks, 2004; Ojala & Tyrväinene, 2006; Demil & Lecocq, 2010
Morris, Schindehutte & Allen, 2005	A business model is a "concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets" (p. 727). It has six fundamental components: Value proposition, customer, internal processes/competencies, external positioning, economic model, and personal/investor factors.	Calia, Guerrini, & Moura, 2007
Johnson, Christensen & Kagermann, 2008	Business models "consist of four interlocking elements that, taken together, create and deliver value" (p. 52). These are customers value proposition, profit formula, key resources, and key processes.	Johnson & Suskewicz, 2009
Casadesus-Masanell & Ricart, 2010	"A business model is . . . a reflection of the firm's realized strategy" (p. 195).	Hurt, 2008; Baden-Fuller & Morgan, 2010
Teece, 2010	"A business model articulates the logic, the data and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value" (p. 179).	Gambardella & McGahan, 2010

Source: Zott, Amit & Lorenzo (2011)

The business model constructs encompassed by these definitions include: the architecture or plan of a business; content, structure and governance of transactions; value creation via exploitation of business opportunities (which directly links business models to entrepreneurship theories); economic value; 'stories' about how enterprises work; concise representation (typically graphically or in tables) of the interconnections among key aspects of how a business works (as we will see in the business model canvas later in the chapter, for example); and crucial elements like customer value propositions, revenue and profit formula, hey resources and processes. These considerations are of interest in the development of an integrated business model for digital internationalising firms (DIFs) in Nigeria and developing countries.

Massa, Tucci & Afuah (2017) in their ‘critical assessment of business model research’ explain that there are three important interpretations of business models which connect the above perspectives. These are: 1) ‘business models as attributes of real firms’; 2) ‘business models as cognitive/linguistic schemas’; and 3) ‘business models as formal conceptual representations of how a business functions’. They note that whilst these interpretations are related, they serve some subtly different purposes to different business model agents and fulfil three corresponding functions for firms. The first interpretation describes how a business works, which is essentially what the above definitions of business model do. The second relates to how managers of different functions of a firm and the senior management of the firm perceive their roles in successfully enhancing targeted performance. In other words, by this interpretation a business model is a mental picture in the minds of management of what they do to promote the performance of their functions and the overall business better than their competitors. With such a picture, they do not need to recall the minutiae of the above definitions, but simply use the picture as an image of why they are different in the offerings they provide, thus motivating them to excel in their roles. The third interpretation is typically a graphical illustration of the business model with connections among the elements that clarify the process for all stakeholders, especially management and employees of the firm. The paper examines wider debates about the ‘apparent lack of agreement in the interpretation of business models, and the relationship between business models and strategy’. In the following notes we use a football team (as a firm) as an analogy to clarify these interpretations and explain to what extent they are important in this thesis.

4.3. Explaining the interpretations further

We use a simple analogy in football management, say by Guardiola of Man-City, to illustrate how the interpretations differ and are related. For the first interpretation, think about the details of how players typically play football on a pitch. There are eleven of them and they are placed in a specified formation, which the coach thinks is suitable for defeating an opposing team. The composite details of how the footballers play the game, when they are deemed to play well enough, represent the football business model as attributes of a real football team like Man-City. This includes the system of passes, speed and agility, allowed maximum number of dribbles, set pieces, manner of defence and counter-attacks. The players are like the staff of a business who accomplish these specific tasks according to their functions (goal keeper, defenders, players on the flanks, central midfielders and holding players, sometimes freely marauding players, and attackers). In a real business we have such functions as production, customer services, accounting, and marketing. Activities performed by managers and employees in the functions and how they perform the activities are attributes of the business which the business model captures.

To continue the football analogy, the above details of how the footballers play the game are known to the players, but they are probably new to outsiders and spectators. For the players, all they need is a language that summarises the strategy and tactics and differentiates their style from competing teams. Given that they know the details, they only want a motivating and uniquely innovative cognitive/linguistic schema that mobilises and energises their collective effort always to win matches ever so often. It may be something like:

'In Man-City, we are masters of creative and possessive play, averaging at least 70% possession in most games, wearing down opposing teams who don't touch the ball enough, structuring our stellar passes like shifting diamonds and triangles that aggressively walk us and our attackers finally towards the opponent's goal mouths, and unleashing fast counter-attacks that surprise them, scoring scintillating goals time and time again'.

This story of their game is the equivalent of the interpretation of a business model as managers' and employees' cognitive/linguistic schema, but now for the business of football (Szymanski & Kuypers, 2000). Again, the players do not need to have the detailed image of the business model as attributes of a real business. The story depicts the players' winning mindsets. Such cognitive/linguistic schemas are fall-outs of strategic visioning in the management of firms (Martin, 1995, p. 2). That is, a business model is in effect a story, vision or strategy of how the business succeeds. Hence, business model and strategy are deeply connected management concepts as argued by Massa, Tucci & Afuah (2017).

Martin (1995) uses 'seven disciplines of enterprise engineering to align people, technology, and strategy', namely strategic visioning as a capstone, enterprise redesign, value stream reinvention, procedure redesign, TQM/Kaizen (all these as 'the disciplines for changing an enterprise and its processes'), human and culture development, and information technology development (the latter two as supporting pillars). Hence, we can argue that enterprise engineering (literally business development such as undertaken by Nigerian DIFs) is an outcome of an underpinning business model for ensuring the successful internationalisation and financial performance of the firms. Having strategy as the capstone in the schematic of the seven disciplines (Martin, 2005. p.2) shows why business model and strategy are linked and reasonably interchangeable, with the business model sometimes interpreted as the way strategy is played out. A look at the Bossidy & Charan (2005) base business model in Figure 4.1 above shows again the incorporation of strategy in the Internal Activities part of the model, which also includes People (Human and Culture Development enterprise engineering pillar in Martin, 1995). These notes suggest the need to include the base model in the envisaged Integrated Business Model Template (IBMT) for (Nigerian) DIFs, to enable the model to fulfil the functions explored here. The following notes analogically explain the third interpretation and function of business models as formal conceptual representations.

For the formal conceptual representations, think of the formations and the way the players are selected and placed on a drawing of a football pitch, namely 4-4-2, 4-3-1-2, and 4-3-3, for example. That diagram of the system of play is a graphical or conceptual model of the game, which is sometimes enriched by arrows that describe the nature of passes and dynamics of the game as the players are in motion and revert to the formation within the duration of a game.

Hence, these interpretations are related to slightly different ways of understanding and using business models, depending on who is involved. The first interpretation is usually about the whole business, how things really get done and what is gained (the functions, revenues and triple bottom-line profits – the organisational employees, customers/shareholders, and the environment/society). As noted above, the second interpretation which is related to business models as cognitive/linguistic schema has more to do with how unit managers (players in different roles, for example) see the overall philosophy of the business, the winning mantra or overarching vision. For example, Aspara, Lamberg, Laukia, & Tikkanen (2013) note as follows:

'We view the unit-level business model as the business unit managers' perceived logic of how the unit in question functions and creates value, in connection with both its market environment, and within the corporation (i.e., with its other business units)'.

Hence, that interpretation is the heuristic, story and compelling mental framing of how specific managers and staff in different functions see their roles, whether as managers, marketers, finance and accounting staff, or project managers. For football, we talk about the different roles. What is important is that they integrate their roles to achieve overall optimum results (making money and scoring goals, for example), hence, the concept of integrated business modelling. The formal conceptualisation in the third interpretation enables the process that achieves this integration to be visually depicted, so that staff can learn from it and get used to excelling at each stage in the process.

It is interesting that these interpretations and functions of business models are reflected in the definitions of business models presented in Table 4.1 above. For example, Timmers (1998)'s view of business model as an architecture of a firm's offerings and related information flows, the roles of different actors and how the model supports their roles, reflects the second interpretation as cognitive/linguistic schema used by the actors to create, capture, and deliver business values. Chesbrough & Rosenbloom (2000)'s view of business model as 'heuristic logic' of how a business achieves its technical potential and economic value reflects all three interpretations. Also, Magretta (2002)'s 'stories that explain how a business works' reflects mainly the second interpretation.

Concerning the debates in Massa et al. (2017) about the lack of agreement among management scholars on what business models mean and whether they constitute a separate field from strategy, we agree with the authors that business models are worthy of study as a separate field, even if they are related to strategy. As noted in the literature (Teece, 2010; Massa et al., 2017), whilst strategy focuses more attention on the supply side aspects of creating successful offerings from the firms' perspectives, business models deal with both the supply and demand sides, with an emphasis on customer understanding. An additional contribution of Massa et al. (2017) to this chapter is their explanation of various functions of business models under each interpretation (see Tables 1-3 of the paper). The functions in columns 3 of those tables enable us to have a checklist of those functions that a robust business model such as the IBMT in this research should fulfil. We will use such a checklist in evaluating the robustness of the revised conceptual framework for the research and more importantly the IBMT in subsequent chapters.

To summarise the above debates, therefore, Appendix 1 synthesises the functions of a business model under each interpretation of business models from columns 3 of Tables 1-3 of Massa et al. (2017). It was mentioned that the table serves as a checklist for assessing the robustness of business models.

As further notes on current debates in the business model literature, DaSilva, Carlos & Trkman (2014) state that there is a semantic confusion in the use of the term 'business models' by academics and practitioners. This is mainly due to similar connotations it has with other business concepts like strategy, economic model, and revenue model. The paper therefore explores the meanings of these concepts, including business concept and business process modelling. It uses two business theories, namely resource-based view (RBV) and transaction costs economics to ground the concept of 'business models' theoretically and differentiate its meaning from those of these other concepts. Methodologically, the paper, not being empirical, conceptually clarifies the above meanings. By way of contribution to knowledge, the paper explains the fact that a clearer understanding of business models and their links with the above concepts facilitates an effective management of a business in which the strategic direction of the business is well-conceived. This includes the way the business model implements this strategy by nurturing the dynamic capabilities and resources of the business, achieving competitive advantage, and enhancing the revenue streams and profitability. These ideas are applicable to this research which is focused on developing integrated business models for DIFs' value creation, since the concept of value is related to enhanced business performance (revenue base and profitable growth) of a digital internationalising firm.

4.4. Elements of a business model

To enter a new market or create new offerings, firms need to understand the niches and gaps in the market, current dissatisfaction of the offerings in the market, and extents to which this has not been resolved (Sinfield, Calder, Mcconnell, & Colson, 2012). Business model design should focus on the business opportunities that will generate customers' satisfaction sustainably. The most essential part of developing profitable growth business model is engagement of stakeholders, especially customer engagement. This is labelled "customer development" in establishing start-ups processes (Blank & Dorf, 2012) and follows the steps in a business "model canvas" (Osterwalder & Pigneur, 2010).

Understanding the degree of efficiency and effectiveness of the stakeholders in a business model canvas will help to improve the performance of the business. Most important is how the different stakeholders will efficiently and effectively work together. Effective engagement with prospective customers is essential for developing customers' desirable products in early-stage firms (Payne & Frow, 2005; Ngo & O'Cass, 2012).

It is important to communicate with prospective customers when designing and developing firms' initial business models. This will serve as "customer methodology" and allow entrepreneurs or intrapreneurs to engage with various stakeholders during the business model design and testing. These processes enable prospective stakeholders to participate in designing and testing the business model, to develop products and services from customers' expectation (Blank & Dorf, 2012). Developing products and services without engaging necessary stakeholders, results in failure of start-ups and new ventures, because it would restrict them from discovering their customers' needs (Osterwalder & Pigneur, 2010; Blank & Dorf, 2012). It is expected that the customer engagement process will differ by types of firms; hence, exploring how Nigerian digital internationalising firms implement same is of interest in this research.

The above points are crucial in many ways because they enable a firm to considerably reduce costs during new business development. It balances the value creation and value capturing processes for firms and their prospective customers. A more customer-centred approach is needed to develop profitable growth business models or improve existing ones, and it "requires businesses to constantly re-evaluate their value propositions to ensure their offers matches with customers' demands" (Trimi & Berbegal-Mirabent, 2012, p.461).

Digital firms can thrive both in domestic and international markets when entrepreneurs follow customer development methodology which is related to what Zott & Amit (2010) propose as an activity system design, with two dimensions:

- Design elements: content, structure and governance; and
- Design themes: novelty, lock-in, complementarities and efficiency.

The first dimensions enable firms to analyse and evaluate the value proposition before moving toward business model design. The later allows founders to choose an adequate strategy (design themes) for the firm.

Designing digital business models requires integrated theories to create robust values for an organisation and its customers. Zott & Amit (2013) note that business models are associated with different strategic management theories: transaction costs economics (efficiency); Schumpeterian innovation (novelty); resources-based theory (complementarities); and strategic networks (lock-in). Amit & Zott (2001) argue that there is no single economic theory that can completely elucidate the sources of value creation in e-business. The potential value creation from e-business is interrelated with efficiency, complementarity, lock-in, and novelty. Previous research indicates that SMEs "pass through a set of adoption stages from email use, to a web presence, to e-procurement, and e-commerce adoption" (Daniel, Wilson, & Myers, 2002). Insights from the case studies in this research will reveal how they create value.

Business models need to be applied differently in different business environments and stages of a firm. Organisational life cycle theory asserts that a business experiences every stage differently, and to transform from one stage to another requires different business planning and models (Greiner, 1972; Miller & Friesen, 1984). Brettel, Strese & Flatten (2012) state that efficiency-centred business model design has impact in later stage of business life cycle, and not for start-ups and new small firms, while another view indicates that novelty-centred business model has positive relationship with entrepreneurial firms or start-ups, and diseconomies of scale (Zott & Amit, 2007). Trying to combine both novelty-centred and efficiency-centred perspectives in business models may prove counterproductive (Zott & Amit, 2007). It is important for start-ups and new ventures to create powerful switching costs, whether it is on existing or new markets. This rapidly attracts numerous customers, including the ones from competitors (firms with similar products and services). These types of firms control large market shares and position firms for long term competitive edge.

However, these approaches might differ in business environments. In developed economies, digital firm business models may need to focus on novelty because there are various companies and competitors with efficient operations in the same industry. However, Nigerian digital firms may consider combining efficiency, novelty and entrepreneurial performance, because these countries are characterised by low resources (Zott & Amit, 2007). Therefore, businesses in this environment need efficiency to generate profit (financial resources) for subsequent growth.

Trimi & Berbegal-Mirabent (2012) argue that since new start-ups tend to have less routine in processing their transactions, they should design one business model. King (2012) notes that firms trying to use two different business models simultaneously may conflict the entire management processes. Carefully examining the relationships between the two models and their target offerings will give organisations a better idea on how to combine the business models or to have a separate business unit (Wikstorm et al., 2010). Separation is needed when new markets introduce trade-offs and conflicts, and no separation when new markets are very similar to existing ones with lesser conflict to manage (Markides & Charitou, 2004). New businesses take advantage of business model innovation by experimenting and testing new business models because of the flexibility associated with new and small businesses. However, established businesses can take advantage of business model innovation by creating novel products and services, changing entire organisational processes, or establishing a new spin-off within an existing business (Ochinanwata & Ezepue, 2017). For a digital internationalising firm operating in different countries, a core business model can be modified to account for the different contextual influences in the countries.

As noted in chapter 2 above, empirical evidence has shown that many new firms do not grow initially which may be associated with inability to acquire or develop new technology (Diambeidou & Gailly, 2011). Cyber-mediated firms in Nigeria may require entrepreneurs to focus on low-cost strategy and high efficiency business models (Amit & Zott, 2011). Firms in Nigeria may gain capabilities by benchmarking the most effective strategies in developed countries and evaluating their business processes in order to design and develop efficient and novel business models that align with Nigeria contextual factors. This novelty connotes innovation in potentially successful cyber-mediated businesses in Nigeria contexts.

Additionally, start-ups and SMEs can take advantage of open innovation to overcome the limitations of low resource base, especially in Nigeria. This will allow them to pursue business opportunities from inside and outside an industry sector, through user generated ideas in the internet. Open innovation allows a firm's internal technology to flow outside where other firms can make potential use of it (Chesbrough, 2007; Bogers, 2011).

4.5. Business model innovation

The term “business model innovation has been referred to as “disruptive business models” (Markides & Oyon, 2010), re-inventing business models (Johnson, Christensen & Kagermann, 2008), and renewing/revamping business models (Wirtz, Schilke, Ullrich, 2010). As noted above, Souto (2015, p. 145) define business model innovation as “a new configuration of what is done in the company and how it is done, in order to provide a new value proposition to customers”. In other words, it is the new or significantly improved system of activities required for the generation of a new value proposition. According to Massa & Tuchi (2013), business model innovation terminology has been used in two distinct contexts such as subject of innovation and advent of novel technologies. The two contexts are relevant to digital internationalising firms (DIFs) because mastery of the innovation process gained from the ‘subject of innovation’ focus equips founders and management of DIFs with the know-how for innovating the firms, whilst the choice and deployment of suitable novel technologies directly impacts the firms’ business performance, in terms of speed and intensity of internationalisation as well as key financial performance metrics indicated in the base model presented in Figure 4.1 (Bossidy & Charan, 2005).

Some key drivers of business model innovation include technological change, new market entrants, internationalisation, customer unmet needs (Sako, 2012), economic stability, deregulation (Casadesus-Masanell and Ricart, 2010), role of organisational leadership and geopolitical factors (Bock, Opsahl, George & Gann, 2012). “Exploring new business model is a recognised way of mature companies to renew their business competitive advantage. Companies explore new value propositions, deploy value propositions in new segments, change the value propositions or experiment with alternative revenue models, all in a search for a different logic for value creation and capture”. (Sund, Bogers, Villarroel & Foss, 2016).

Start-ups and innovative businesses take advantage of business model innovation by experimenting and testing new business models because of the flexibility associated with new and small businesses. However, established businesses can take advantage of business model innovation by creating novel products and services, changing entire organisational processes, or establishing a new spin-off within an existing business (Ochinanwata & Ezepue, 2017). This is because when establishing business organisations, the ultimate character of the business models will emerge as the business experience accumulates (King, 2012).

Christensen, Bartman and van Bever (2016) state that many businesses that have attempted business model innovation have failed. To execute it well, executives need to understand how models develop through predictable stages overtime, and then apply that experience to key decisions in discovering new business models. For this, business executives need to have the ability to make companies resilient in the face of change and to create growth unconstrained by the limits of existing services. It should be noted that management execution capabilities underpin the ultimate success of business model innovations. This is because even with the best innovations in hand, management deficits in properly aligning the innovation with strategy, people and processes will lead to failure in the end. Though outside the immediate scope of this thesis, we note that a significant source of the requisite principles for achieving superior management execution in different types of firms is explored in Dalio (2017). These business management success tips fall under two main life and work principles discussed in this text – radical transparency and believability-weighted decision-making – which cover crucial elements of effective management of firms, namely getting the culture right, getting the people right, building and evolving the business machine (model in effect).

Several factors affect decisions to adapt business model innovation, including total opportunity costs and the possible cannibalisation of a company's existing offerings and its core capabilities (Chesbrough, 2010; Christensen, 1997). Other barriers to business model innovation are cognitive and organisational inertia and internal resistance (Tecee, 2010; Sosna et al., 2010; Zott et al., 2010).

Matzler, Bailom, den Eichen, & Kohler (2013) provide five components for business model innovation which include: 1) innovative and unique positioning for the firms; 2) a consistent product and service logic by the firm; 3) appropriate value creation architecture; 4) an effective sales and marketing logic (Chaffey & Ellis-Chadwick, 2016; Peters, 1989) and; 5) a profit formula that works. "However, organisational design and the associated organisational tensions that emerge during the process of business model exploration are not well addressed by the existing tools. Companies exploring new business models may not fully recognise that these tensions will almost inevitably emerge and may be ill-prepared to manage them. Understanding these tensions should help in managing the challenges for concurrent business models" (Sund, Bogers, Villarroel & Foss, 2016). It is apposite that the management principles discussed in Dalio (2017) address these difficulties, though not directly in business model terms. Having an integrated business model that surfaces the touch-points of business development which Nigerian DIFs will use in making overall sense of the strategic and operational directions of the firms, complements Dalio (2017)'s principles and more effectively resolve the above-mentioned business model challenges. This is the main aim of this research.

Chaffey & Ellis-Chadwick (2016) provide a detailed exploration of current developments, techniques and tools in digital marketing which augment the ideas in this chapter, to enable digital internationalising firms in Nigeria, Africa, and developing countries to succeed in their local and international engagements. The text covers such themes as digital marketing fundamentals, digital marketing strategy development, digital marketing implementation and practice. Perspectives that are material to this research particularly include: online marketplace analysis (micro- and macro-environments); impact of digital media and the marketing mix; relationship marketing using digital platforms; evaluation and improvement of digital channel performance; business-to-consumer digital marketing practice; and business-to-business digital marketing practice. Understanding these perspectives will complement technical business modelling work in this thesis in future work on digital internationalising firms.

Additional perspectives for managing firms up to excellence which further complement the above themes in Chaffey & Ellis-Chadwick (2016) are explored in Peters (1989). They include such broad themes as total customer responsiveness, pursuing fast-paced innovation, and building systems for a world turned upside down.

4.6. Configuration and application of business models in international entrepreneurship

4.6.1. Business model in early entrepreneurial firms

Some quantitative studies have failed in finding positive relationship and efficiency gains between a firms' use of business models in planning new business and survival or profitability of the firms ((Delmar & Shane 2003; Locke & Latham 2002). However, Zott & Amit (2007, 2008) find significant relationship between business model planning and performance of new ventures. Hence, a business model can be seen as a main organisational design mechanism used to forecast firm success. Shirky (2008) states that new businesses that survive are not necessarily those that use detailed business model templates, but those that adopt flexible and emergent business models which are changed as the businesses grow. Designing a business model for a new venture is about understanding the customers' and users' needs (Teece, 2010). Hence, understanding how business models are designed and developed requires researchers and managements to explore core value creation from customer preferences (Wikstrom et al., 2010; King, 2012).

Kaplan & Norton (2008) argue that firms will benefit from adopting integrated management systems that link strategy formulation, planning and execution. Hence, this research explores the implications of effective business modelling in establishing and internationalisation of digital firms in Nigeria. This point further justifies explicit inclusion of strategy perspectives in the Integrated Business Model Template (IBMT) for developing digital internationalising firms.

As mentioned earlier, developing digital business models is complex and requires well-considered perspectives such as entrepreneurial orientation, digital orientation, emergent and dynamic elements in structuring affective business model, cultural norms and data-driven cause-effect analytics (Lippman & Rumelt, 1982; Brealey & Meyes, 1988; Karra, et al., 2008; Balboni & Bortoluzzi, 2015).

King (2012, p.2) notes that when establishing business organisations, “the ultimate character of the business models will emerge as the business experience accumulates”. Hence, entrepreneurial firms and new businesses should adopt an experimental and adaptive approach in order to discover, calibrate and validate successful business models (Malmström & Johansson, 2017). In other words, start-ups are likely to have short-, medium- and long-term value creation objectives, and this requires an ongoing process of developing profitable business models (King, 2012). Entrepreneurial firm business models can be built as organic systems which use integrated business models to profitably innovate and exploit the firms' objectives, customer needs and preferences (Chung, Chatterjee & Sengupta, 2012; Balboni & Bortoluzzi, 2015). Meeting the customers' needs by understanding their perceptions and making sure that they are satisfied with excellent products and services determine success of enterprises (Koh & Saad, 2007; Eggers, Hansen & Davis, 2012).

As noted by Ries & Euchner (2013), digital business processes use online offerings to reduce costs and new business failures. They achieve in-depth and real-time understanding of customer preferences and consequently use effective medium-short and long-term business goals. This reduces cost and start-up failure. Thus, they need to understand the market environment and customers' preferences in order to develop profitable business models. It is believed that emergent business planning shows how businesses work, and how the business models and strategies develop over time to achieve a firm's short, medium and long terms goals.

Qiaoling & Oleksiy (2017) emphasise that designing provisional digital business models may be an attractive approach to discovering business opportunities, because such provisional models can be enriched with emerging business realities overtime. This will then go to attract investors and create business affiliations with international firms around the globe. This is even more important for small digital firms that lack financial capabilities and technology, especially in Nigeria with limited advanced technologies. This will enable new and existing firms in Nigeria and similar developing countries to collaborate and benefit from international firms that are advanced in technological capabilities**.**

Cavalcante, Kesting & Ulhøi (2011) suggest that firms should explore new business models when products or services no longer fit with customers' expectations, and when competitors are developing more viable business models that threaten to capture large market share. However, it is important for firms to continuously explore new ways of doing business, by reshaping and innovating their business processes. This should be done even when firms are at their peaks or their business models are still viable and making profit.

Because firms would only benefit from competitive advantage and enjoy customer loyalty when they design their products from customer experience (Botha & Rensburg, 2010), understanding customer preferences is one of the vital ways to achieve differentiation. Offering customer-centric products enables firms to maintain competitive advantage. Indeed, new firms could avoid failure if they paid attention to customers' feedback. This could be done in many ways by developing a page on social networks to gain customers' views on experimental products, so a firm would learn and understand more about customer expectations from the new offerings around the globe.

4.6.2. Business model and international entrepreneurship

George & Bock (2011) state that the lack of business "model with an entrepreneurship lens has shown in fragmented research and questions and findings" such that some researchers argue that business model is a tool that characterises entrepreneurial opportunities (Franke et al. 2008; Markides 2008). Trimi & Berbegal-Mirabent (2012) suggest that "entrepreneurs need to set up the boundaries of the business and define the products/services to offer"; also, business models help entrepreneurs to make informal decisions and increase the probabilities of success of new business (Castrogiovanni, 1991).

Entrepreneurial behavioural processes (such as explored in Figures 2.1-2.3 of chapter 2) are associated with the identification and exploitation of opportunities in domestic and foreign markets. In this research, behavioural process and value creation (McGrath & MacMillan, 2000) are based on business model constructs in Zott & Amit (2001, 2007, 2008, & 2010) and business model canvas by Osterwalder & Pigneur (2010). In 'The Entrepreneurial Mindset: Strategies for Continuously Creating Opportunity in an Age of Uncertainty', McGrath & MacMillan (2000) cover salient perspectives of what proactive entrepreneurship entails, namely the core mindset, ‘framing the challenge’, building blockbuster offerings, differentiating the offerings as customers’ preferences change, developing breakthrough competences, exploring and selecting appropriate competitive terrains, collating the opportunity portfolios, executing related strategies, managing and leading the projects with dynamically shifting outcomes, and achieving the entrepreneurial edge through discovery-based strategy. These perspectives would seem to characterise the founders and managers of the case study DIFs in this thesis, so the reference will support further development of related entrepreneurial attributes among them in the future, supported by the IBMT.

It can be argued that the configuration and application of business models in international entrepreneurship expand the notion of value creation and will enable entrepreneurs and firms to build sustainable and profitable international businesses. An attempt to combine business model, international entrepreneurship, and digital internationalisation constructs will provide a framework that explains the development and internationalisation of digital firms, especially in Nigeria where there is a dearth of this nature of research.

Business model has been regarded as a dynamic concept which permits "trial-and-error learning, adaptation and renewal as the external environment changes” (Sonsna et al., 2010; Chesbrough, 2010). “This seems very well suited to analyse international entrepreneurial behaviour, which is often described as a cyclic process consisting of alternating periods of positive and negative development” (Nummela et al., 2009 cited in Sainio et al., 2011, p 559).

Sainio et al. (2011) argue that in international entrepreneurial firms, value creation needs to be explored at the interfaces of a firm. Thus, the examination of business models from international entrepreneurship perspectives will facilitate the creation and development of international entrepreneurial firms in Nigeria. Entrepreneurs’ fundamental driver for international activities is to create value from cross-border resources combination (Autio, 2005). There is evidence that international entrepreneurs co-create value and exchange tangible or intangible resources with different actors such as customers, suppliers, and financiers (Styles & Seymour, 2006) and even competitors (Bengtesson & Kock, 1999).

“International entrepreneurship is the combination of entrepreneurial, opportunity-seeking and strategic advantage-seeking actions towards business concepts that gives superior value creation and at the same time reduces competitive threats” (Hitt et al., 2001 cited in Zucchella & Sciabini, 2007, p.126). In order to understand value creation in international entrepreneurial firms and how it enables Nigeria digital firms to internationalise from or near the inception, the present research follows Zott & Amit's (2010) conceptualisation, by identifying value creation drivers which are aspects of business model design themes (novelty, complementarity, efficiency, or customer lock-in), and business model design elements (content, structure and governance).

International entrepreneurial firms are usually identified as niche-oriented and innovative businesses, but they sometimes lack resources, international business experience and market knowledge (Weerawardena et al., 2007; Terpstra & Sarathy, 2000). International entrepreneurial firms that want to enter new markets and grow need to consider the potential for value creation through efficiency (profit and volume), effectiveness (meeting customer unmet needs) and networks (access to market information, partners and customers) (Moller & Torronen, 2003).

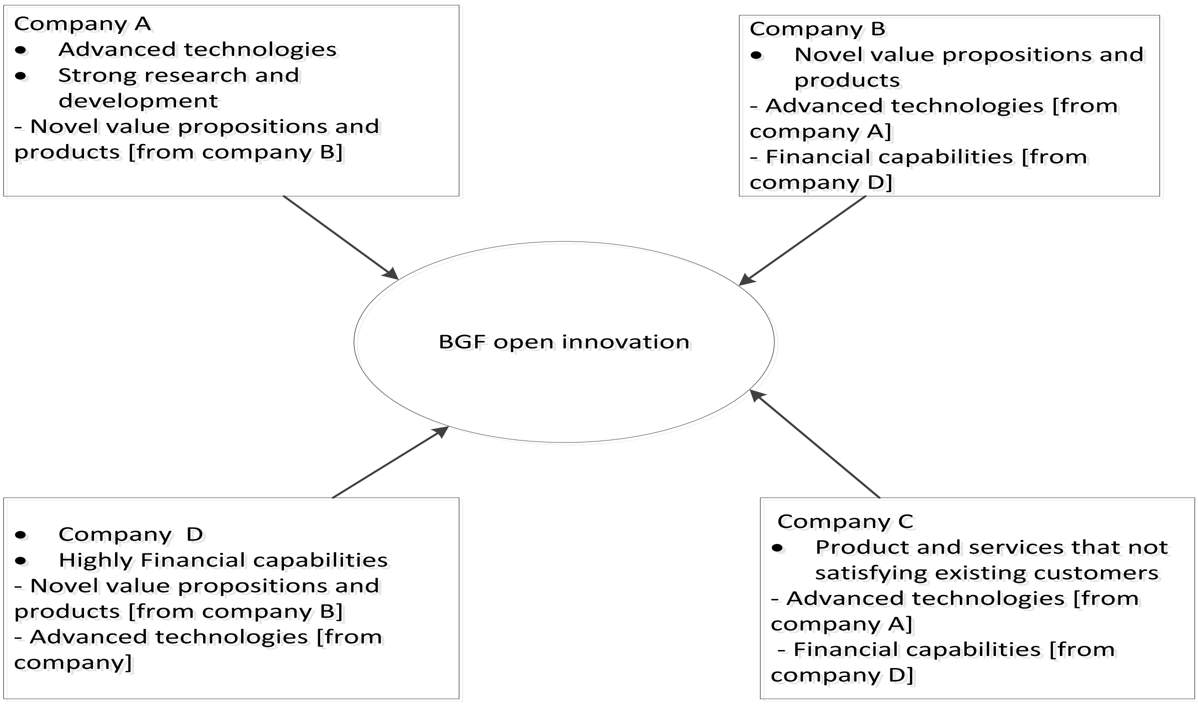
Relevant aspects of international business experience which will inform the successful development of (Nigerian) DIFs are explored in Terpstra & Sarathy (2000) which is focused on international marketing. These aspects broadly include: global marketing; the world economy and institutions (GATT-WTO, UNCTAD, the big emerging markers (BEMs), for example); foreign economies; the cultural environment and people of the world; world political and legal environments; global marketing strategy; international marketing intelligence and research techniques in developed and developing country contexts; international product policy and conceptual approaches for new product development; foreign market entry, channels and global logistics; international promotion of a firm's offerings (advertising and other approaches such as social media); pricing in international markets; international services marketing; and importantly for Nigerian DIFs, the internet and international marketing. Continuing work at the interface of international marketing, digital marketing and underpinning business models which integrate insights from these domains with international entrepreneurship will expand the scope for successful opportunity recognition and exploitation by (Nigerian) DIFs post-PhD. Hence, the centrality of international business and marketing to the success of DIFs is emphasised in these notes.

The design elements in international entrepreneurial firms are associated with value creation with partners. The literature on international entrepreneurship contends that some "international new ventures rely on hybrid organisational structures (Oviatt & McDougall, 1994), the new firms do not plan for the partnership and they may struggle for the value added and complementary partners (Nummela et al., 2004). The exploitation of foreign market opportunities requires collaboration to help them to recognise opportunities apart from their own areas of expertise (Chandra, Styles & Wilkinson, 2009).

Resources have been identified as a major challenge facing entrepreneurs and new businesses in Nigeria. A new business can collaborate with existing firms but needs to have compelling value propositions to entice established firms. This is more important for firms in developing countries that have unique value propositions, but do not have either financial or technological capabilities to develop such products and services. This approach reduces costs of researching and inventing new technologies, products and services.

Panels A, B, C and D in Figure 4.2 represent different companies; for example, company A might have advanced technologies and strong research and development (R&D) team but needs novel value propositions (latent ideas) from company B to provide customers unmet needs. These insights are more important in developing countries like Nigeria and Sub-Sahara Africa where many new businesses lack tangible and intangible resources.

Figure 4.2 Digital firms open innovation



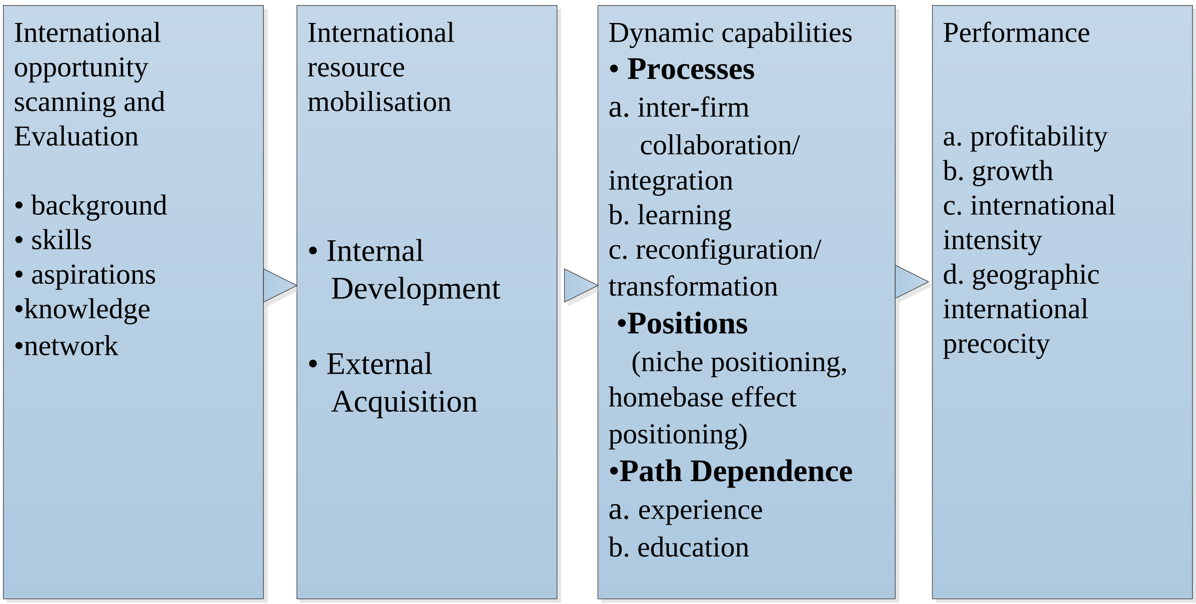
Source: the author’s own

The A, B, C and D companies will struggle to achieve their goals without having all the above capabilities in each company. Firms succeed by using internal resources and external capabilities of other companies.

4.6.3. Business model and entrepreneurial internationalisation

Sainio et al. (2011, p.567) note that "the business model construct offers an alternative perspective for running an internationalising venture that concentrates on the key process of value creation instead of managing disparate international activities and functions". Zucchella & Scabini (2007) suggest that international entrepreneurship underpins internationalisation processes, beginning from opportunity identification and finishing with corporate performance, in which resources mobilisation and dynamic capabilities play crucial parts. Figure 4.3 is an interpretative model for international entrepreneurial organisation which portrays how entrepreneurs scan and evaluate foreign market opportunities, once the business opportunities are identified.

Figure 4.3: An interpretative model for international entrepreneurial organisation



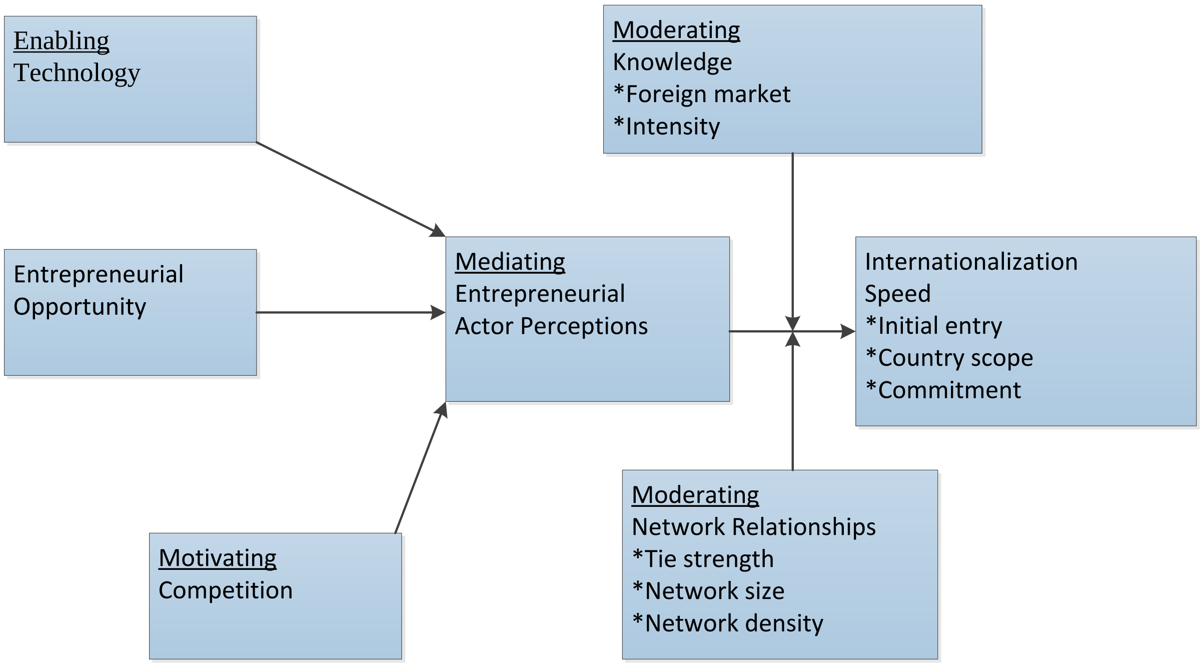
Sources: From Zucchella & Scabini (2007)

The big question is how small digital firms that want to internationalise from inception overcome the resources constraints. According to the above model, resource mobilisation can be achieved either from external or internal development (recall 'external environment' and 'internal activities' in the base business model, Bossidy & Charan, 2005), and the ability to integrate and reconfigure internal and external resources leads to firm dynamic capabilities. Small firms and emerging DIFs are associated with lack of resources and liability of newness, whereby they may struggle with external resource acquisition and inter-firm collaboration or integration, because they may have not proven their performance and the need for their products and services in both domestic and foreign markets. Thus, developing experimental products and services which could be offered in both domestic and international markets is an important way for firms to acquire external resources and collaborate. Business model literature has shown that firms that develop based on customer insights are more likely to succeed than those that build on mere assumptions (Osterwalder & Pigneur, 2010; King, 2012).

Environmental considerations such as industry and market characteristics are important influences on how digital firms in Nigeria develop and internationalise. This is because little attention has been paid to industry's degree of internationalisation in knowledge- and technology-based firms in Nigeria. Also, it is important to understand the market's size, potential and degree of internationalisation both in domestic and foreign markets (Oviatt & McDougall, 1997; Zahra et al. 2000; Bell et al., 2003). Financial measures such as how digital firms achieve growth and profitability, and non-financial measures such as international intensity, geographic international precocity, learning and experiential knowledge creation, are important aspects of the research (Covin & Slevin, 1990; Bloodgood et al.,1996; Autio et al., 2000).

Jones & Covielo (2005) propose a general model that includes many elements affecting internationalisation, with special focus on time and behaviour. The authors suggest that "The evidence of internationalisation occurs as value-creating event - that is, behaviour manifest at points in time (as events), in locations (countries), consisting of cross-border business modes established between the firm and organisations/individuals in foreign countries" (Jones & Covielo, 2005, p.297). Oviatt & McDougall (2005) similarly note that environmental influences, industry situations, and entrepreneurial thinking, are believed to be crucial features that influence the speed of international business involvement. Figure 4.4 thus depicts elements that influence the speed of entrepreneurial internationalisation.

Figure 4.4: A model for forces influencing internationalisation speed



Source: from Oviatt & McDougall (2005)

The model emphasises the four major factors which include enabling technology, motivation, mediating and moderating factors. In the above model, technology makes accelerated international business feasible. For example, the authors suggest that airlines using online marketing strategies have reduced airfares and realised more efficient flights among many countries. Also, computer and wireless technologies have enabled efficiency and rapid cross-border communication. Thus, digital technology is a fundamental factor that facilitates rapid internationalisation.

Moderating factors that influence the speed of internationalisation are important in this research. Oviatt & McDougall (2005) highlight knowledge-intensity and international networks as two types of moderating forces that are very important for rapid internationalisation. The former is crucial for digital firms as they have been categorised as knowledge-based firms unlike bricks-and-mortar firms who also typically adopt advanced technologies but use incremental approach to internationalise to foreign markets. The knowledge intensity in view also accommodates all shades of theories, models, and practices that derive from the cross-cutting disciplines of international entrepreneurship, internationalisation (anchored on international and digital marketing), and integrated business modelling which engender the anticipated findings from this research. Hence, positioning this thesis such that it facilitates follow-on pedagogical innovations in the art-science of integrated business modelling linked to the above-mentioned disciplined is of interest in this research. The pedagogical merits of the findings are implicated in the Ezepue (2017)'s Research Methods Canvas © presented in the closing sections of chapter 2. Hence, we will expand on the encompassing seven themes in the Ladder of Contributions to Knowledge manifested in the canvas – the reason being that curriculum innovations are not as grounded in Nigerian higher educational institutions as in the UK, say (Ezepue & Ochinanwata, 2017).

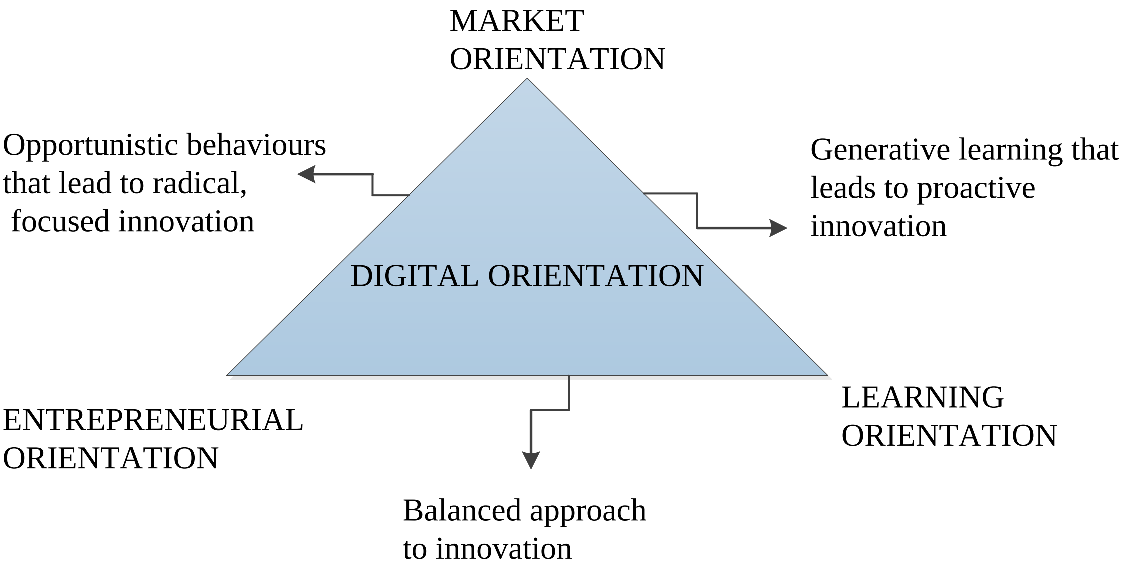
The notion that bricks-and-mortar firms 'also typically adopt advanced technologies but use incremental approach to internationalise to foreign markets' evokes the stage model of firm business development. Thus, the Uppsala model may best explain the internationalisation mode of bricks-and-mortar firms. In contrast, cyber-mediated firms like Nigerian DIFs that are characterised as knowledge-intensive firms which design novel products and services, improve operational efficiency and deliver offerings mainly through digitalisation (Oviatt & McDougall, 2005). As noted earlier, these types of firms have unique advantages such as novel products and services and customer unmet needs that are demanded in many countries. Therefore, entrepreneurs in Nigeria not only need to identify international customer needs, but also must identify gaps in the markets and differentiate existing offerings to facilitate their cyber-mediated internationalisation, McGrath & MacMillan (2000).

4.6.4. Value creation through digital business models

Digitalisation of products and services through platforms, apps, data and devices is becoming imperative for all business that want to tap emerging opportunities, according Zott & Amit (2017). Companies like Facebook, Airbnb, Amazon and Alibaba have thus achieved remarkable success and shown exponential growth. Many new ventures and established companies seeking to benefit from this type of emerging business opportunities find themselves unsuccessful. When one looks at it very closely, it may seem that this type of business follows similar approach and faces the same challenges. These global giants have similarities with Nigerian digital internationalising firms. Thus, there is "need to develop new business models that work in digital world and create new value for connected customers'' (Zott & Amit, 2017, p.19). Such models will enable digital internationalising firms in developing and emerging economies to grow sustainable profits.

Wang (2008) shows that integrating entrepreneurial orientation and learning orientation creates a more balanced approach to innovation. Entrepreneurial orientation, learning orientation and market orientation have complementary characteristics which enable small firms to be successful in the digital economy (Quinton et al., 2017). These characteristics generate intangible resources that permit firms to have unique competitive advantage (Hult & Katchen, 2001). Figure 4.5 portrays the components of the digital orientation which combines three orientations that help entrepreneurs to successfully establish, develop and innovate businesses in digital environments.

Figure 4.5: The components of the digital orientation



Source: from Quinton et al. (2017)

Quinton et al. (2017, p. 4) define digital orientation as “the deliberate strategic positioning of a small firm to take advantage of the opportunities presented by digital technologies. This positioning includes the attitudes and behaviours that support the generation and use of market insight, proactive innovation, and openness to new ideas”. The authors highlight five factors that support the development of digital orientation in firms, namely environmental factors, organisational capabilities, the internal evaluation of digital technology’s value, individuals’ characteristics and skills, and the level of cross-functional integration. Firms use digital technologies to enhance all part of the organisation.

Quinton et al. (2017) argue that the gap in the digital entrepreneurship literature is not the identification and exploitation of business opportunities, but the components of digital business models. Building on this idea, the researcher explores elements of business model, international entrepreneurship constructs and components of digital firms, to develop an integrated business model for developing and internationalising digital firms in Nigerian. This will help to close current gaps in knowledge regarding the conceptualisation and application of digital business models in Nigeria and similar African countries (Standing & Mattsson, 2018). Moreover, firms that establish in technology-intensive sectors may face more challenges such as huge investments needed to develop their offerings and short product life cycles. Thus, they need to have suitable industry-related digital business models from inception, to enable them to mitigate such constraints and have efficient and effective operations. Digital strategies are used to drive the entire organisation and functions of digital business such as the scope of the business, scaling through digital, digital value creation and capturing, and facilitating the speed of internationalisation.

Reuber & Fischer (2011) suggest that online technological capabilities, online reputation, and online brand communities permit firms to pursue international opportunities in internet-enabled markets. They explain three resources for firms that seek opportunities in digital environments as follows. A firm's reputation is “a perceptual representation of a company's past actions and future prospects that describes the firm's overall appeal to all its key constituents when compared to other leading rivals” (Fombrun, 1996, p.72). Online reputation is the perception of the online stakeholders towards the firm. Online technological capabilities are defined as the engagement of “routines, prior and emergent knowledge, analytic processes, and simple rules to turn IT [information technology] into customer value” (Zhu & Kraemer, 2002, p.278). For instance, big data analytics and related customer-centric decision making have been implicated as vital for the success of digitalising internationalising firms.

It is identified that senior managers' internet experience is more crucial than the international market experience in internet-enabled business and digital internationalisation. Thus, online technological capabilities are more crucial resources in this context, rather than technology. This is because the power of technology to enhance business performance depends on the managers' ability to configure and utilise the technology (Zhu & Kraemer, 2002). An online brand community is an online “specialized, non-geographically-bound community, based on a structured set of social relationships among admirers of a brand” (Muniz & O'Guinn, 2001:

412). A firms' online brand communities enable good endorsements and attract prospective customers to switch loyalties from other brands to the firm (Moe & Yang, 2009; Schau et al., 2009).

Several studies have acknowledged that the internet is a main platform for e-marketing that leads to global accessibility, interactive communications, and services that respond to real-time information (Laudon & Laudon, 2002; Harridge-March, 2004; Chaffey, 2009). Skudienea, Auruskevicieneb & Sukeviciute (2015) propose a revised conceptual internationalisation model from e-marketing perspective. The model highlights "information availability and usage, international mindset, international business networks and communication interactivity - and e-marketing perspective leading to internationalization process success" (ibid, p. 922).

4.6.5. E-business model and business model canvas

There are few studies that discuss the key stages involved in building digital business models in the literature. Amit & Zott (2001) argue that there is no single economic theory that can completely elucidate the sources of value creation in e-business. The potential value creation drivers in e-business are interrelated and include efficiency, complementarity, lock-in, and novelty. Previous studies indicate that SMEs "pass through a set of adoption stages from email use, to a web presence, to e-procurement, and e-commerce adoption" (Daniel et al., 2002; Rao et al., 2003).

Components of e-business models by Zott et al. (2001) and business model canvas by Osterwalder & Pigneur (2010) are important elements of the conceptual framework for this research. E-business models describe how businesses create value through the internet, for example customer relationship management, product innovation, and infrastructure (Osterwalder, 2002; Zott at al., 2011). Business model canvas is a strategic management and lean-start-up template for developing a new or documenting existing business models (Osterwalder & Pigneur, 2010). However, it is not only start-ups that benefit from using the business model canvas; it is a strategic tool which facilitates the evolution of existing firms like SMEs and multinational firms. Augmenting the elements of the canvas with e-business components makes it more suitable for supporting the development of (Nigerian) digital internationalising firms. This view is implemented in the proposed conceptual framework for this research, later in this chapter. It also helps existing firms to align their new business strategies in present business environments. The key aim of business model canvas is to assist individuals, start-ups and new firms to identify potential activities before developing the offerings in more detail. Table 4.2 and 4.3 display the elements of the business model canvas and components of e-business model.

Testing the assumptions of a business model through the steps of the business model canvas and doing appropriate risk quantifications to understand what might occur in the future among stakeholders in the canvas, helps to achieve good fit between value propositions and customers' needs. Developing prototype products and services using the canvas and testing them with prospective customers is an effective way to build successful business models (Blank & Dorf, 2012; Trimi & Berbegal-Mirabent, 2012).

The researcher notes in a nutshell that the nine stages of an integrated business model are almost equally powerfully developed in both Osterwalder & Pigneur (2010) business model canvas and Amit & Zott (2001) components of e-business models. The components serve as some important elements of conceptual frameworks for building the IBMT in this research. A theoretical justification for using the canvas is the fact that its elements, in addition to explicating the nine important stages of a business model, consider the design features (context, structure, and governance), as well as the design themes (novelty, lock-in, complementarity, and efficiency) noted by Zott & Amit (2010) as core facets of an e-business model. Tables 4.2 and 4.3 depict business model canvas and component of e-business model.

Table 4.2: Business Model Canvas

<table>
<tr>
<td rowspan="2">Key Partners (KP)
Who are our Key Partners?
Who are our key suppliers?
Which Key Resources are we acquiring from partners?
Which Key Activities do partners perform?</td>
<td>Key Activities (KAs)
What Key Activities do our Value Propositions require?
Our Distribution Channels?
Customer Relationships?
Revenue streams?</td>
<td>Value Propositions (VP)
What value do we deliver to the customer?
Which one of our customer’s problems are we helping to solve?
What bundles of products and services are we offering to each Customer Segment?
Which customer needs are we satisfying?</td>
<td>Customer Relationship (CR)
What type of relationship does each of our Customer Segments expect us to establish and maintain with them?
Which ones have we established?
How are they integrated with the rest of our business model?
How costly are they?</td>
<td rowspan="2">Customer Segments (CS)
For whom are we creating value?
Who are our most important customers?</td>
</tr>
<tr>
<td>Key Resources (KR)
What Key Resources do our Value Propositions require?
Our Distribution Channels?
Customer Relationships?
Revenue Streams?</td>
<td></td>
<td>Channels (C)
Through which Channels do our Customer Segments want to be reached?
How are we reaching them now?
How are our Channels integrated?
Which ones work best?
Which ones are most cost-efficient?
How are we integrating them with customer routines?</td>
</tr>
<tr>
<td>Cost Structure (CS)

What are the most important costs inherent in our business model?
Which Key Resources are most expensive?
Which Key Activities are most expensive?</td>
<td colspan="3"></td>
<td>Revenue Streams (RS)
For what value are our customers really willing to pay?
For what do they currently pay?
How are they currently paying?
How would they prefer to pay?
How much does each Revenue Stream contribute to overall revenues?</td>
</tr>
</table>

Source: Osterwalder and Pigneur (2010

Table 4.3: Components of e-business model

Authors, year	**First-order Themes**	**Second-order Themes**
Mahadevan, 2000	• Value stream for partners and buyers' network (identifies the value proposition for the buyer, • Sellers and market makers and portals in an Internet context) • Revenue stream (a plan for assuring revenue generation for the business) • Logistical stream (addresses various issues related to the design of the supply chain for the business)	
Stewart, & Zhao, 2000	• Profit stream (includes the revenue stream and cost structure)	• Customer selection • Value capture • Differentiation and strategic control • Scope
Afuah & Tucci, 2001	• A system made of components, linkages between components, and dynamics • Customer value (the extent to which the firm's offer is distinct or has a lower cost than its competitors') • Revenue sources (Where do the dollars comes from? Who pays what value and when? What are the margins in each market, and what drives them? What drives value in each source?)	
Alt & Zimmerman, 2001	• Mission • Structure • Processes • Revenues • Legal issues • Technology	Mission: • Goals, vision, value proposition Structure: • Actors and governance, focus Processes: • Customer orientation, coordination

		mechanism Revenues: • Source of revenues, business logic
Applegate, 2001	• Concept (describes an opportunity) • Capabilities (define the resources needed to turn concept into reality) • Value (measures the return to investors and other stakeholders)	Concept: • Market opportunity, product and service offered, competitive dynamic strategy for capturing a dominant position, strategic options for evolving the business Capabilities: • People and partners, organization and culture, operating model, marketing sales model, management model, business development model, infrastructure model Value: • Benefits returned to stakeholders, benefits returned to the firm, market share and performance, brand and reputation, financial performance
Rappa, 2001	• Sustainability • Revenue stream • Cost structure • Value chain positioning	• Network (structural aspects) • Network externalities
Osterwalder, 2004	• Value proposition • Customer segments • Partners' network • Delivery channel • Revenue stream	• Relationship • Value configuration • Capability • Cost structure
Bonaccorsi,	• Products and services delivery	

Giannangeli, & Rossi, 2006	• Customers • Costs structure • Income	
Brousseau & Penard, 2006	• Costs • Revenue stream • Sustainable income generation • Goods and services production and exchanges	• Pricing strategies • Relationships (demand and supply) • Network externalities

Source: Adopted from Zott et al. (2011)

Table 4.3 above provides a framework for making better sense of integrated e-business models, since unlike the business model canvas which identifies the key questions to consider in a simple way, it develops a deeper understanding of the first- and second-order themes. These further elements pull together the evolutionary developments of business model concepts by key authors and explain the origin of the business model canvas as a practical manifestation of the main themes.

We note that the above tables contain sufficient guidance notes to enable the business model canvas and the components of e-business to meet the functional prerequisites that flow from Massa et al. (2017)'s interpretations of business models. Hence, they are included in the conceptual framework for the thesis in a later section of this chapter. This fact is borne out by a look at the contents of the tables and the checklist of business functions from Massa et al. (2017) which is appendix 1.

4.7. The need for integrated business models for digital internationalising firms in Nigeria

While integrated business model literature has been well-researched as shown above, the models have not been adapted to the socio-cultural contexts of developing countries such as Nigeria. Most of the research does not demonstrate how successful cyber-mediated firms are created in developing countries. In other words, there is a dearth of research-informed knowledge of how digital internationalising firms emerged in Nigeria, including an explication of the underpinning business models. To fill this gap in knowledge, this research uses digital case companies in Nigeria. The research implements the ideas espoused in Teece (2010) to the effect that the best way to develop successful digital business models is to try the underpinning conceptual frameworks such as developed in this chapter on existing or experimental businesses. This is because such innovative business models evolve from iterative experiments on real-time strategies, with dynamic adjustments. Exploring the case companies also partially enable us to implement Ibeh et al. (2012)'s recommendation for e-commerce-based internationalisation using real digital firms. The business stories from the founders and managers of the selected cyber-mediated case firms is or closest attempt to implement this suggestion. The follow-on use of the resulting IBMT in supporting such firms after completing the PhD research will more practically do same.

As will be shown in chapter 7 of the thesis, the IBMT for digital internationalising firms considers the social-cultural factors and infrastructural barriers to cyber-mediated internationalisation, and thereby augments the business model canvas and components of e-business with an integrated internationalisation focus. It is therefore expected that the IBMT will be a more versatile integrated model than those applicable to bricks-and-mortar firms. The conceptual framework developed in this chapter also provides guidelines for the empirical work to be conducted in the research (Van De Ven, 2007). The framework discussed below will specify what the researcher considers as important to be examined to appropriately extend the above-mentioned reference models. As noted above, the important considerations include an underpinning business model which takes cognisance of the contexts of digital firms in Nigeria.

4.8. Proposed conceptual framework

Maxwell (2005: 33) defines a conceptual framework as a 'system of concepts, assumptions, expectations, beliefs, and theories that supports and informs your research'. Miles & Huberman (1994:18) define a conceptual framework as 'a visual or written product, one that explains, either graphically or in narrative form, the main things to be studied, the key factors, concepts, or variables and the presumed relationships among them'. Milles & Huberman (1994) suggested that researchers use conceptual framework to provide plan for an empirical work to be undertaken. In this research, therefore, the conceptual framework should clarify the study variables that contribute to three main outcomes, namely: the internationalisation success of (Nigerian) cyber-mediated firms; a base business model which relates firms' external and internal environments to appropriate financial performance metrics (Bossidy & Charan, 2005); and a dashboard of key constructs and elements that support the creation of effective integrated business models for achieving these outcomes.

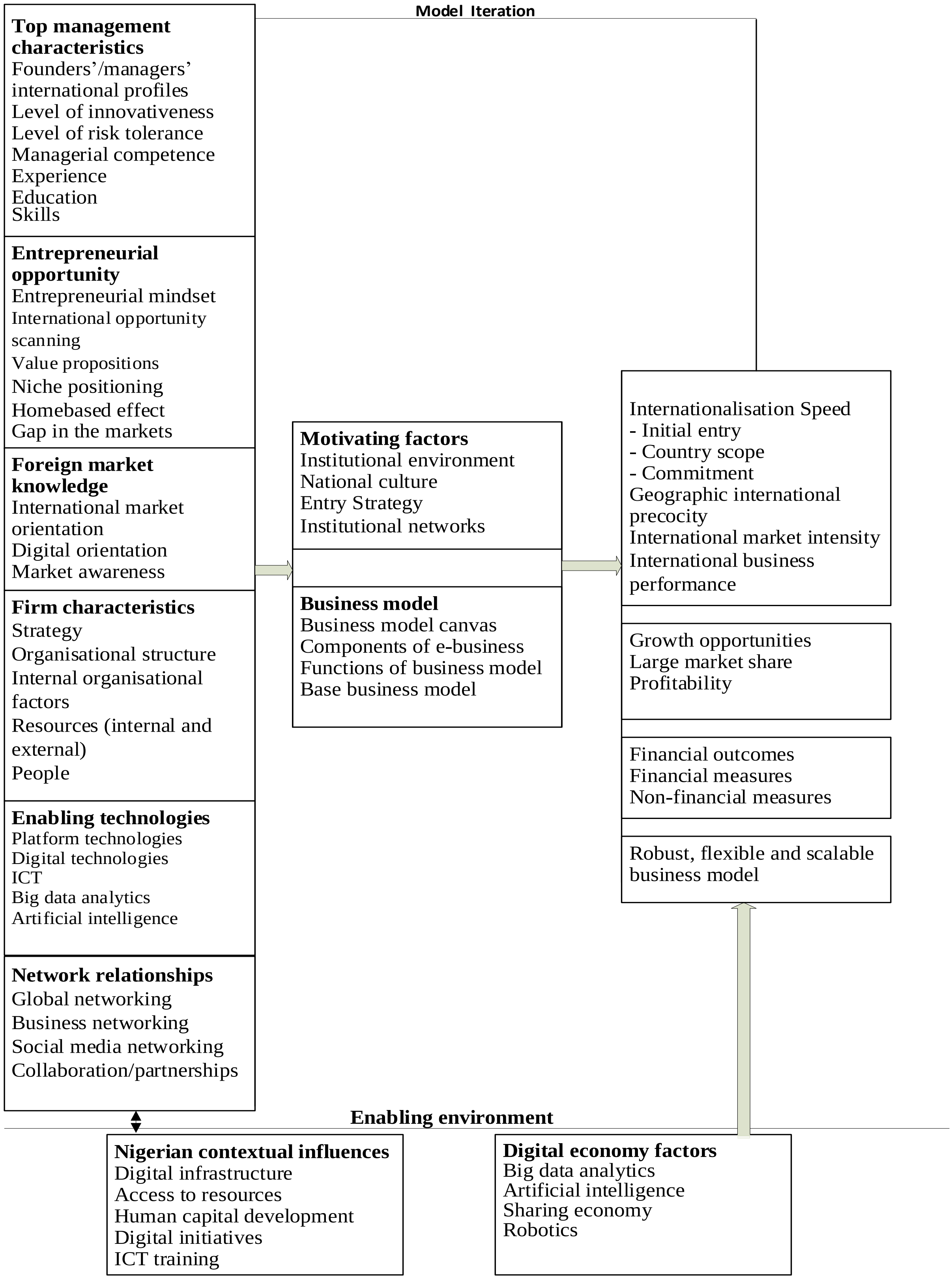
Building conceptual frameworks typically requires researchers (Egwuatu, 2013; Brain, 2014) to a) identify a dominant model that seems to tell the story of the research better than competing models and adapting it to the contexts of the research, b) if there is no such model, but a few that cover the remits of the study based on the research questions of interest, the researcher can combine cogent constructs from them, or c) in the rare case of a completely new line of work where there are no good reference models, researchers develop the conceptual framework for the first time. In this study, we examine a number of models and constructs in the literature review and this chapter across the three main research themes – international entrepreneurship, internationalisation, and integrated modelling. We also examine in chapter 3 constructs from the digital economy which potentially influence the success of digital firms. Hence, we adopt options a) and b) above by combining a key internationalisation model (Oviatt & McGougall, 2005?) and augmenting it with constructs from the other themes, taking cognisance of the three outcomes mentioned above.

Conceptual frameworks enable researcher to see important connections and features that are likely to influence the type of data to be collected and analysed (Lesham & Trafford, 2007). The use of multiple theoretical frameworks recently has been suggested as useful to cover key perspectives in a study e (Berman, 2013). Therefore, as argued above, the present research integrates several theoretical models from international entrepreneurship, business modelling, and components of e-business models reviewed in the literature, to provide a robust conceptual framework for digital internationalising firms in Nigeria.

The primary theoretical models that make up this conceptual framework include an interpretative model for international entrepreneurial organisation (Zucchella & Scabini, 2007), model forces influencing internationalisation speed (Oviatt & McDougall, 2005), components of digital orientation (Quinton et al., 2017), component of e-business models (Zott & Amit, 2001), and business model canvas (Osterwalder & Pigneur, 2010). To enable the models to explicitly incorporate strategy and internal environmental factors, these theoretical models are linked a base business model, Bossidy & Charan, 2005), as indicated in the introductory sections of this chapter. In effect, the conceptual framework uses the Oviatt & McGougall (2005) international forces model as a stem and enriches it with additional elements from the other models, including enabling environment which reflect the Nigerian context.

By employing the above conceptual frameworks and excluding of others, the present research risks reproducing the deficiencies associated with previous studies. That said, Amit & Zott (2001) argued that there is no single economic theory can completely elucidate the sources of value creation of e-business. However, the careful considerations explained above for building the conceptual framework in this study hopefully provides a robust and suitable model that will support the research. For example, the business model canvas is a strategic management and lean start-up template for developing a new or documenting existing business models, which does not capture international opportunity, background and skills in the interpretive model for international entrepreneurial organisation, or components of digital orientation, international market knowledge, and internationalisation speed in the model forces influencing internationalisation speed. This again justifies why some frameworks need to be combined in the research in the present conceptual framework for studying digital internationalising firms in Nigeria. Figure 4.6 presents the conceptual framework as described.

Figure 4.6: Proposed conceptual framework for the research



Sources: the author's own

The first column combines elements from different thematic models discussed in the literature review chapters 2 and 4. For this, the Oviatt & McDougall (2005) international forces model (Figure 4.4), which is the stem of the conceptual framework, provides most of the headings and elements in the column (Entrepreneurial opportunity, Enabling technologies, Network relationships). Within this ‘Entrepreneurial opportunity’ heading, ‘International opportunity scanning’ comes from Figure 4.3. Other headings and elements are adapted from the integral model for international entrepreneurship (Figure 2.1), stimulus model of international entrepreneurship (Figure 2.2), INVs cyclical behaviour (Figure 2.3), an interpretative model of international entrepreneurship (Figure 4.3), and components of digital orientation (Figure 4.5). Figure 2.1 informs the ‘Top management characteristics’ heading and elements ‘Founders’/managers’ international profiles. Figure 2.2 provides the ‘Foreign market knowledge’ component of this first column. Figure 2.3 is the source of the elements ‘Level of innovativeness’, ‘Level of risk tolerance’, and ‘Managerial competence’ under this heading. Figure 2.3 also supplies the entries under the ‘firm characteristics”.

Similarly, for column 2 of the proposed conceptual framework, the ‘Motivating factors’ subheading and component elements are taken from the ‘Mediating’ factor heading in Oviatt & McDougall (2005, Figure 4.5). The ‘Business model’ heading comes from the review of business models in this chapter and includes the four models that combine to support the creation of robust models which will integrate online and online characteristics, namely ‘Business model canvas’ (Osterwalder & Pigneur, 2010, Table 4.2), ‘Components of e-business’ (Zott et al., 2011, Table 4.3), ‘Functions of business model’ (Massa, Tucci & Afuah, 2017, Appendix 1 of the thesis), and the ‘Base business model’ (Bossidy & Charan, 2005, Figure 4.1).

The last column sieves out the key business outcomes and performance measures associated with international entrepreneurship, internationalisation, and business modelling. The listed elements therefore derive from all the above-mentioned models and frameworks in the first two columns. The ‘Robust, flexible and scalable business model’ is an outcome expected to be satisfied by the Integrated Business Model Template for Digital Internationalising Firms (IBMT) which is a key aspect of this research. It is an implicit requirement for a good business model which is usually not expressly stated in the graphical representation of the models in the literature (Massa et al., 2017; Zott et al., 2011; Osterwalder & Pigneur, 2010; Bossidy & Charan, 2005).

To contextualise the conceptual framework to Nigerian and generally developing country situations, as expected of a flexible and environmentally adaptable framework (Bossidy & Charan, 2005), the framework indicates important elements of an enabling environment for developing rapidly internationalising digital firms. The two strands involved are 'Nigerian contextual influences' and 'Digital economy factors' which were discussed in chapters 2 and 3 of the thesis. The concept 'Deep tech' is means the creation of firms and their offerings which address big problems in society, based on advanced scientific and technological research (Chaturvedi, 2014). It requires an ecosystem of scientists, engineers, technologists, social scientists, and stakeholders who contribute multidisciplinary perspectives to the theories, research and practice of Deep Tech. Examples of 'Deep tech' are: the use of robotics in the creation of drones that deliver drugs to patients in difficult-to-reach war zones or serve as machine herd dogs for sheep and animals in humanly inaccessible parts of a farm; virtual reality games and related learning technologies; and the company Deep Mind, which uses advanced artificial intelligence and neuroscience techniques to mimic the human brain, with interesting real-life applications.

In this research, though the Nigerian digital firms may not be at this stage yet, having 'Deep tech' in the conceptual framework helps to make the envisaged IBMT robust and flexible regarding future combinations of ideas from data science, robotics, artificial intelligence, and neuroscience in creating innovative digital offerings; see for instance related ideas in integrated business analytics, computing and information technologies in the International Centre for Research and Enterprise Development (www.oseluxworldhero3e.com).

As noted earlier in this chapter, the logic of the proposed conceptual framework is that the first two columns identify important variables, attributes, and influencing factors that engender successful international entrepreneurship and internationalisation activities of (Nigerian) cyber-mediated firms anchored on 'robust, flexible and scalable' business models which integrate these perspectives

4.9. Summary and Conclusion

This chapter demonstrated understanding of the constructs and debates related to the three main themes of this research – international entrepreneurship, digital internationalisation, and integrated business modelling. The chapter therefore discussed: business model definitions; Massa and et al., (2017)'s interpretations and functions of business models, elaborated using analogies from football; elements of business models; business model innovation; the 'configuration and application of business models in international entrepreneurship, including business model in early entrepreneurial firms, business model and international entrepreneurship, business and entrepreneurial internationalisation, value creation through digital business models, e-business model and business model canvas (Zott et al., 2011; Osterwalder & Pigneur, 2010); business model and the Nigerian context; and the proposed conceptual framework.

In conclusion, the chapter combined perspectives from the above areas to create the conceptual framework such that: it shows the important variables and constructs that inform this research (Figure 4.6, mainly column 1); it exhibits in column 2 of Figure 4.6 the motivating factors and contributing business models (Business model canvas, components of e-business models, functions of business model, and base business model; and the range of outcomes and performance metrics that guide successful development of digital internationalisation firms, from the three themes of the research. The logic of the framework is therefore to show the conceptual elements of the research and how they interact to engender the research outcomes namely successful international entrepreneurship, digital internationalisation, and robust, flexible and scalable business models.

Chapter 5: Research Design and Methodology

5.1. Introduction

This chapter details the methodology used in this research. It begins with the philosophical foundation of the methodology. The epistemological and ontological assumptions are briefly explained. This is followed by explaining the research design and why a qualitative case study research method was chosen.

The interpretivism and critical realism paradigms are discussed as the most appropriate philosophical positions underpinning the study. This chapter also discusses and justifies the research methods adopted, case companies, and data collection process. The researcher summarises the case study criteria selection, the access to participants and interview constructs used for data collection. The trustworthiness of qualitative research and the ethical considerations are also discussed. Finally, the chapter ends with a summary and conclusion.

5.2. The philosophical foundations of the research methodology

When undertaking research of this nature, it is important to consider different research paradigms and matters of ontology and epistemology, which describe perceptions, beliefs, assumptions, and nature of reality and truth in any research. Johnson & Duberley (2000) describe ontology as our view on the nature of reality, the assumptions we have about reality and whether it exists objectively or is created in our minds subjectively. They explain epistemological commitments as the ways one understands the world, explains situations and justifies what one knows, and believes. In addition, epistemological processes direct and influence our everyday life and define the appropriate methods to develop knowledge.

These discussions are affirmed by Watson (2011)'s view that our everyday concepts of things influence our ontological and epistemological positions. It can be argued that the different assumptions we have about an object influence the way we see the object. These assumptions that researchers hold determine the outcome of knowledge that will be obtained from the investigation. The researcher assumes for example that with due consideration given to the specific contexts of developing countries, models for internationalising digital firms in developed countries can successfully be replicated in developing countries.

Johnson & Clark (2006) argue that it is not necessary for the philosophical assumption to inform our research. What is important is how one reflects upon and defends them when undertaking management and business research. Saunders et al. (2012) argue that none of the philosophies are necessarily better than the other, but they serve to develop different kinds of knowledge. Additionally, what determines a researcher's philosophical position is the type of research problem the researcher intends to solve (Van De Ven, 2007).

Most important in this study is how the researcher engages epistemological and ontological perspectives which define their philosophical position and manages interactions across different stakeholders (Jonson & Duberly 2000; Van De Ven, 2007). Therefore, the philosophical perspectives that underpin this study are mainly interpretivism and critical realism. The critical realist view also underpins the research, as Saunders et al. (2006) contend that our knowledge of reality is a result of social conditioning. Realism is about how things are and differs between the social and natural sciences (Blaikie, 1993). Saunders et al (2007) explain that interpretivism underpins international business research, and it is appropriate when studying business management research, because management data are innately selective and require critical sense-making.

5.2.1. Interpretivism

Blaikie (2007) argues that interpretivism is an understanding of meaning of actions through form of interaction with actors. The researcher adopts interpretivism approach in order to interact with the subject of observation, interpret the actions within the research setting, and examine the meanings of the actions. Norman (1983) states that interpretivists dispute the approach of randomly selected samples in investigation of human behaviour and experience. Walle (1997) argues that interpretative epistemological research in social science focuses more in artistic investigation and is a very adaptable tool for investigation, but has less variation.

Interpretivists explore the subjective states of mind of social actors and the meaning that they attribute to particular actions. Interpretivism is a way of viewing the social world and engaging with reality from the social context. The researcher will explore founders' and senior managers' points of view and experiences in developing and internationalising digital firms thereby adapting an interpretivist position (Blaikie, 2007). Interpretivists believe that researchers cannot be detached from the objects being investigated. They adopt many approaches of enquiry like case study, phenomenological, and hermeneutical approaches which are parts of qualitative research (Lee, 1991). Interpretivism holds the ontological view that reality exists in multiple and subjective epistemological positions; it has strength in subjectivist understanding of human behaviour and social reality (Williams, 2000).

Interpretivists reject the assumption of positivists concerning how human beings get to know social phenomena. The interpretivists believe in several notions of choice that are obtained from human beings on the subject of inquiry (Goldkuhl, 2012). Human beings make sense of different aspects of objects within their environment and when they interpret a particular issue, so that interpretation attributes different notions and qualities to the subject being investigated (Hay, 2011). In order to create meaning, the subject of the research mostly develops through interaction between the actors. Interpretivist meanings can always be modified and changed through interaction. In contrast, positivists, hold those meanings as static (Charmaz, 2000).

According to Cibangu (2010), interpretivism approach understands in-depth reality, human beings and their words. This is the reason why this study adopted interpretivism paradigms over positivism paradigm because interpretivism approach grasps meaning(s) of the actions and experience of founders and top managers of digital firms. It is line with the data collection method adopted in this study and this will enable the researcher to get insightful understanding on the development and internationalisation of digital firms.

This approach enables the research to understand how different types of personal experiences of the senior managers of the firms develop and emerge overtime, including, but not limited to their personal experiences, cultural values, social structures and as personal values. Therefore, the interpretation of truth is not only variant on the object or phenomena being observed, but on the context in which it is being observed, a context in which judgements are being made regarding the subject of the research.

The foundations of interpretivism may be seen in the philosophical ideas of Kant, who argues that there exists no direct connection between the independent and physical/objective world (known as 'noumena’) and the way different people will experience that world (known as 'phenomena'), Warmoth (2000). Kant states that people rely on their perceptions of their experiences to interpret the world and that the connection between the mind and the world always remains hypothetical; there are no guarantee that observations or conclusions are true (Warmoth, 2000).

5.3.2. Critical realism

Critical realists reject the prediction forms of investigation in favour of explanation and reliance on interpretive forms of research (Wikgren, 2005). According to Sayer (1992), the world exists independently of our knowledge and our knowledge is fallible, historical and theory-laden, but susceptible to empirical check. Furthermore, Sayer (1992) notes that social phenomena are concept-dependent but are independent of the researchers' concepts. Critical realism is rooted in interdisciplinary studies that occur in many fields, especially in social sciences, like in organisation and economics research, and it has recently been adopted by many commentators within the social sciences (Debson, 2002; Spasser, 2002; Wilmott, 1997).

Critical theory was originated in Frankfurt School Germany in 1930 from the Institute of Social Research by Herbert, Adorno and Theodor; they argued that all forms of knowledge in both scientific and social sciences research are political in nature (Agger, 1991). Hammersley (1992) states that critical theory tends to illustrate situation of self-understanding of the social actors; it details analysis of contemporary environments and it has a multidisciplinary approach to studying society, such as action research and ethnographic interpretation. Critical theorists dispute the idea of positivism as natural observation, but it accepts that knowledge of reality is about value and interest (Johnson & Duberley, 2000). These notes underpin this research because the founders and managers of digital internationalising firms could be argued to be business actors who apply critical thinking to the understanding of firms' operations. For this, they have to be self-aware of how best to implement digital business models. Given that the digital firms and the surrounding digital economy contexts constitute an ecosystem (business ethnographic communities) within which business actions are undertaken, critical theory and critical realism are therefore appropriate paradigms for understanding the development and internationalisation of digital firms.

Myers (2008) claim that critical theorists have similar philosophical viewpoint with interpretivists from their inter-subjective focus on human beings and social action in society.

Norm (2008) argues that critical theorists seem to have three different interests in knowledge, practical, instrumental, and emancipatory knowledge. Practical knowledge consists of interpretation and understanding of everyday life of human activities; emancipatory refers to knowledge in terms of control and power; while instrumental is knowledge about human interest that is associated with natural science and work, example like labour and production.

Consensus theory is the truth that underpins critical theory of knowledge which has subjective epistemology and realist ontology (Nichols & Allen-Brown, 1996). That is, critical realists use their subjective interpretation to make sense of objective reality of business phenomena under investigation. Hence, in this research the phenomena involved include business modelling, international entrepreneurship, and internationalisation of digital firms in Nigeria and similar developing countries.

Interestingly, critical realism combines aspects from both the positivist (realist ontology) and interpretivist (subjective epistemology) positions. It can be argued that reality exists independently of human consciousness, but that knowledge is socially constructed. The realist view in this study is that there is a truth out there about what makes cyber-mediated firms successful and that it is the researcher's responsibility to use suitable methods to obtain or discover that truth. To develop integrated business model template (IBMT) for digital internationalising firms in Nigeria, which is the core goal of this research, the researcher cannot detach himself from involvement with the subject or object being investigated. Therefore, subjective approach to inquiry is crucial in this study, because the anticipated findings will inevitably be influenced by the opinions and beliefs of the research team and top managers of Nigerian digital internationalising firms.

The critical realists argue that our senses accept what we see or sense, but in order for us to understand it we need to engage and interact with the situation and with others in making multiple meanings (Wikgren, 2005; Hodgson, 2004; Van De Ven, 2007; Saunder et al, 2012). Therefore, having subjective view of founders and senior managers through interviews allows the researcher to gain in-depth understanding and to make sense of the subjects' situations and their motives (Saunder et al., 2012). Therefore, the researcher agrees with Bhaskar (1978) that *"The researcher will only be able to understand what is going on in the social world if we understand the social structures that have given rise to the phenomena that we are trying to understand" (Saunders et al 2012: 136).*

This is the reason case study qualitative approach is crucial for understanding how cyber-mediated firms establish and internationalise, meaning that we cannot understand the real situation if we collect the data through the questionnaire method, for example (Dobson, 2002).

Therefore, adopting a qualitatively-leaning methodology facilitates the development of a robust IBMT from triangulated evidence from interview and secondary data (Currell & Towler, 2003). Finally, therefore, the research philosophy that underpins this research is interpretivism and critical realism.

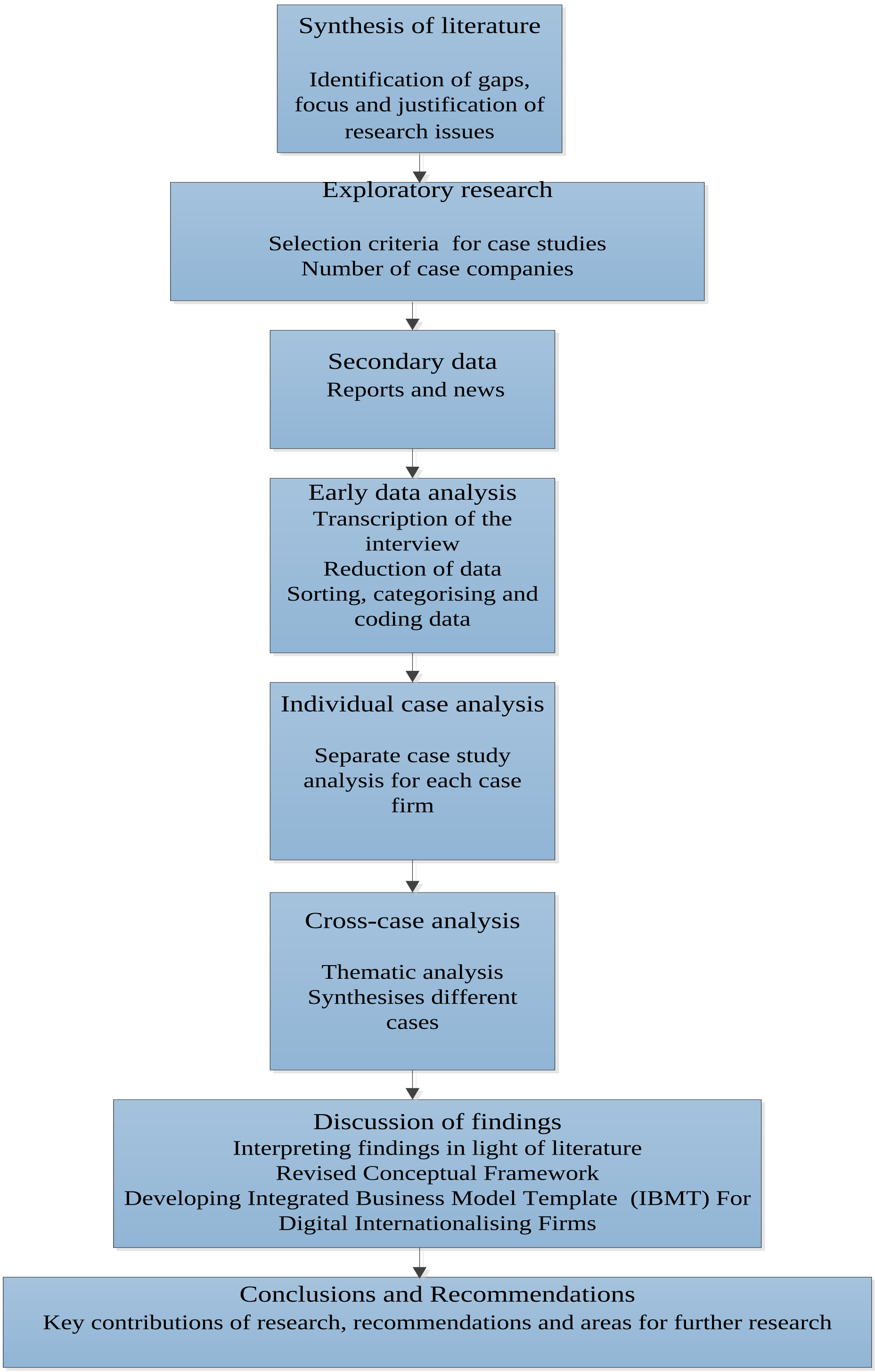
5.3. Research design

Maxwell (2005) defines a research design as "involving tacking back and forth between the different components of the design, assessing the implications of goals, theories, research questions, methods and validity threats for another" (Maxwell, 2005:3). The research design is a significant part of the research process, covering research questions, data relevance, data collection and analysis (Philliber, Schwab & Samsloss, 1980 cited by Yin, 2009).

This study adopts an exploratory research design, given its foundational character as the first in-depth study on development of an integrated business model for digital internationalising firms in Nigeria, and Sub-Saharan Africa. The exploratory research design helps to determine the appropriate range of issues involved theoretically from the critical literature review and conceptual framework, and practically from the case study and questionnaire analysis (Creswell, 2003). The research therefore consists of more general theoretical model building and overall look at how the cyber-mediated firms emerge in this environment. In other words, the exploratory research approach is adopted to gain familiarity with digital firms in environments like Nigeria where they are currently emerging, and it is appropriate research design in this present study considering the fundamental nature of the study in Nigerian context.

Exploratory research usually relies on techniques such as the primary and secondary research data, for example reviewing available literature and existing data. It can combine informal qualitative approach such as discussions with participants or management of organisations and formal qualitative research approach through case study and interviews (Maxwell, 1997). The research design of this study follows research design approach from Saunders et al (2007). Figure 5.1 below portrays the research design flow chart of the present study

Figure 5.1 Research Design



Source: the author's own

The researcher used both primary and secondary data evidence to explore the characteristics of founders and senior management of selected case companies in the research. This approach enables the researcher to understand how cyber-mediated firms develop and grow, by carefully selecting the case companies and their founders and senior management.

Using exploratory research design allows researchers to be flexible in terms of data collection and how the data can address research questions such as the what, why and how questions asked in this research (Blaikie, 1993; Maxwell, 2005). Adopting exploratory research design helps researchers to gather preliminary information that will enable entrepreneurs to define how businesses that seek early international markets are established.

Exploratory research design of the present study uses case study approach to understand how individual case firms develop and engage in international market activities. This includes reviewing critical literature and constructs of the subjects under investigation, secondary analysis of founders and CEOs of selected case companies; and in-depth interviews with senior management of the selected case companies to understand how the firms develop and internationalise.

Interview was found to be the most appropriate way to collect data from senior managers of the firms to develop integrated business model on how such firms develop and engage in international market activities. The research uses different research techniques from previous studies to ensure robustness, reliability and validity of the research results.

The interview check list and questions were developed using insights from the conceptual framework developed in chapter 4 of the thesis. The framework consists of key themes like business modelling, international entrepreneurship, digital internationalisation, digital economy tools, Nigerian contexts and related literature. Hence, the researchers aim to understand how elements of related literature can be implemented to enhance the development and internationalisation of digital firms in Nigeria, and what insights the results provide in order to give individuals and entrepreneurs a holistic perspective on how to establish and grow such enterprises in Nigeria. Since new business problems manifest to different degrees in developed and developing countries, and are generally more severe in developing countries, the focus on the contexts, challenges, limitations, and prospects in Nigerian firms is considered appropriate for the study.

5.3.1. Qualitative research approach

This research adopts qualitative research approach as its methodology. Methodology is defined as "the theory of how research should be undertaken" (Saunders et al., 2007:3). The reason for choosing both methods is because of the nature of the research problem. Mason (2002, p. 1) considers a qualitative research approach as "a highly rewarding activity because it engages us with things that matter, in ways that matter." Qualitative research methodology has been very useful in studying how people make sense of their worlds and how they reflect on their experiences (Bergman et al. 2010). This research adopts qualitative research approach as method of inquiry because it focuses on capturing the in-depth understanding of development and internationalisation of digital firms in Nigeria from the perspectives of founders and senior management, which ensures high authenticity and trustworthiness (Collis & Hussey, 2009).

In contrast, quantitative approaches play a partial role in the analysis and understanding of the processes of social change (Morgan & Smircich, 1980). The quantitative research approach has several limitations concerning its inability to reflect human thinking. Gill & Johnson (2005) argue that the quantitative approach ignores the unique human ability to interpret experience, and it restricts the researcher's choice and freedom to be involved with the object they are observing. The quantitative approach does tend to facilitate replication by adopting highly structured methodology (Gill et al, 2010), but it can be argued that adopting highly-structured methodology might not produce the findings this research hopes to ascertain.

As a result of these limitations of the quantitative approach, this study adopts the qualitative approach to explore subjective views of founders and managers on the emergence and internationalisation of digital firms in Nigeria. The qualitative approach focuses on capturing the in-depth descriptive knowledge of the phenomena in a study, extracting data through the interaction with the subject observer and providing detailed explanations which engender high levels of authenticity and trustworthiness (Collis & Hussey, 2009), unlike the quantitative approach which focuses more on objectivity and prediction as forms of knowledge (Easterby-Smith et al, 2011). The qualitative method is therefore deemed most suitable for looking deeply into people's perceptions on how Nigerian digital firms develop and internationalise. However, qualitative research does have limitations, such as the difficulty of replication and the limit on the scope of data gathering. Another criticism of qualitative research is that an untrained researcher

may not be equipped to effectively present the data that has been collected. In addition, the researcher might simply replicate the story that has been told by the participant, instead of analysing it (Silverman, 1985; Bryman, 1988).

The main aim of adopting a qualitative research approach in this research is to provide an in-depth knowledge of how digital entrepreneurs develop cyber-mediated firms in Nigeria and how the firms engage in international activities. Hence, it adopts the interpretive approach since, as Gill & Johnson (2002) state, interpretivist knowledge is knowledge that is built and rooted in in-depth description and understanding of phenomenon and will enable this researcher to become part of the study and to make sense of the subject under investigation.

There are many approaches to data collection and analysis under the umbrella of the interpretivist paradigm. Dezin & Lincon (1998) include interpretivism within qualitative research. Williams (2000) supports the use of qualitative methods in the interpretivist paradigm.

5.3.2. Case study approach

According to Yin (2013, p.16) "a case study is an empirical inquiry that investigates a contemporary phenomenon (the "case") in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident". "Case study research is required when a *how* or *why* question is being asked about a contemporary set of events over which a researcher has little or no control" (Yin, 2013, p.14).

This study adopts case study methodology to use multiple case companies to gather data from a range of sources which will help the researcher to effectively explore the research questions. Reliance on multiple case studies over a single case study is crucial in studying organisational performance, since it provides significant evidence and findings from diverse sources of information (Zott & Amit, 2007; Yin, 2013; Creswell, 2003; Eisenhardt, 1989). Therefore, using different case companies in this research makes the evidence base for the research as well the research findings more robust compared to single case study.

Moreover, Yin (2013) argues that multiple case studies have distinct advantages and disadvantages compared to single case study. Using multiple cases in this study offers significant advantages such as multiple evidence from distinct cyber-mediated firms and cross-case analysis provides (industry-based synthesis and comparison of selected case companies, wholly for different business functions).

A case study can be classified as holistic or embedded; an embedded case study has subunits of interest in a study. Each individual case can have holistic and embedded unit analysis (Yin, 2013). However, a holistic case study explores an entire company. The researcher notes that it is not feasible to implement holistic case studies for such cyber-mediated firms like one of the case firms which has more than eight business lines as sub-units. Hence, the case study cyber-meditated firms studied are parts of these companies which provide good learning points for understanding the core themes of the research. The insights from these parts can be extended to other parts of the business using the IBMT.

Case study research design can be judged according to the four concepts: trustworthiness, credulity, conformability and dependability. Yin (2013, p.46) provides four other criteria for effective case study analysis:

- *Construct validity:* identifying correct operational measures for the concepts being studied
- *Internal validity:* seeking to maintain the natural order of meaningful relationships among events and constructs studied, for example natural order of causal relationship between two entities, whereby certain conditions are believed to lead to other conditions
- *External validity:* defining the domain to which a study's findings can be generalised
- *Reliability:* demonstrating that the operations of a study such as the data collection procedures can be repeated, with same results.

The researcher developed construct validity through critical review of different theoretical constructs revealed in the literature, and framed the data collection around the constructs and related gaps in knowledge. This was achieved through corresponding notes on the gaps and contributions to knowledge under key research themes in the review.

Additionally, the research team conducted a brainstorming exercise at the inception of the interview questions design. This exercise critically examined what types of interview questions should be framed to meaningfully explore the five research questions, identify how case companies established, explore the challenges facing them in Nigeria, and have the potential to extend the current state of knowledge captured in the conceptual framework for the research.

The researcher enhanced the external validity of the research findings by developing an IBMT that is applicable to digital firms in different industry settings within Nigerian context through use of differently purposed case studies of cyber-mediated firms. That is, through an exploratory research design. The research is indicatively reliable because of the care in framing interview questions and the detailed description of the methodology which enable the research to be repeatable in other settings, namely sub-units of the case firms, digital firms in other Africa countries, and related firms such as BGFs and INVs, where possible.

5.3.3. Case study methods adopted from previous research

The use of case studies in international business and international entrepreneurial firms such as BGFs, INV and cyber-mediated firms and particularly firms that seek early international markets from inception, is an accepted method. The empirical research on international entrepreneurial firms shows how the use of case study method is important for capturing the holistic development and international market activities of such firms (Crick, 2009). From the review of the literature, previous studies have used different methods within the case study research approach. Yin (2009) recommends that it is crucial to obtain the case study data from a variety of data sources, which include interview, enterprise documents and archival data.

Several prior and recent literature on INVs referred to in this present research have used case studies and interviews to study the emergence of such firms and their internationalisation at or near inception (for example, Kinght & Cavusgil, 2004; Loustarinen & Gerbrielson, 2002). They have used qualitative methods such as semi-structured and unstructured interviews with founders and CEOs, who were deeply involved when establishing and growing such firms (Rialp., 2005; Ibeh & Kasem, 2011; Madsen, 2013). By way of methodological notes, these references adopt the case study approach in a similar way to this research.

5.3.4. Case companies' selection and criteria

The selection of case study companies and participants is purposive, to be able to gather evidence from typical cyber-mediated firms in different industry sectors as well as understandings from experienced founders and senior managers (Guarte & Barrios 2006). Maxwell (1997, p.87) defines purposive sampling as a type of sampling in which, ''particular settings, persons, or events are deliberately selected for the important information they can provide that cannot be gotten as well from other choices''. Marshall (1996) states that qualitative participants are chosen on the basis of the possibility that the selected participants will provide adequate information that will be relevant for the study. Additionally, it increases variety of experiences that will be obtained during data collection.

These firms are selected on the basis of the broad innovations that they are known for, and how this supports the research questions. The companies comprise cyber-mediated firms that have been in existence for more than 5 years and above. The case firms help the researcher to understand the process of establishing and growing cyber-mediated firms in different industry sectors, and how their strategies and approaches could enable entrepreneurs in Nigeria and Sub-Sahara Africa to develop digital businesses that engage in international markets from or near the inception.

Case firms are selected with the following key criteria in mind: a**)** they need to provide multi-stakeholder perspectives on how cyber-mediated firms develop b) they need to support the research with outside-in views on innovation from other sectors and business lines; c) they need to help the researcher to generalise the IBMT to different industry sectors; this requirement is already partially met by the foundational research on the business canvas and related constructs on conceptual framework referred to in Chapter 4; therefore, emphasis in this research is on deepening these ideas for digital internationalising firms in Nigeria; and d) they are selected from environments where this is the first time research exploring the emergence and development of these types of firms and how they engage in international market activities, is studied in this way

The participants (founders and senior managers of selected case firms) are selected based on their entrepreneurial characteristics, digital orientations and global market mind-sets. They provide insightful information on how the digital firms were establish and grow. They also provide insights on how decision making (strategic thinking) influences innovation and adaptation activities of such firms in the Nigerian context.

The case firms were selected according to some well-defined criteria discussed in (Reichheld, 2006; Baghai, Coley & White, 2000). Choosing specific cyber-mediated firms from different industry sectors will enable the study to generalise the proposed IBMT to different business contexts. It allows the researcher to explore the various strengths and weakness of firms' strategies across key industry sectors, business lines and characteristics such as technology, internet, e-commerce, and digital economy tools. These choices also facilitate meaningful cross-case analysis mentioned earlier in this chapter. Multiple case studies can be selected either to predict similar results (a literal replication) or predict contrasting result but for anticipatable reasons (a theoretical replication) (Yin, 2009). The theories in view are based on the conceptual frameworks for the study which are presented in Chapters 4 7 of this research.

Yin (2009) recommends that using multiple cases is different from sampling logic, because cases are chosen for theoretical, not statistical, reasons (Glaser & Strauss, 1967). Multiple cases also create more robust theory because the propositions are more deeply grounded in varied empirical evidence (Eisenhardt & Graebner, 2007, p.27). Table 5.3 shows the case firm profiles, the industry they belong to, core products/services and headquarters.

Table 5.2: Case study profiles

No	Firm	Core products/services	Industry	Headquarters
1	Firm 1	Food, African products and commodities	Retail, marketplace,	Lagos, Nigeria
2	Firm 2	Electronics, mobile phones, computers, fashion, beauty products, home and kitchen, Building and construction materials	Retail, online marketplace	Lagos, Nigeria
3	Firm 3	Clothes, shoes, and bags	Internet, e-commerce	Lagos, Nigeria
4	Firm 4	Online booking, reservation for flight and accommodation	Travel service, online marketplace	Lagos, Nigeria
5	Firm 5	Electronics, general merchandise, travel service	Retail, travel service	Lagos, Nigeria

Source: the author’s own

The firms' profiles and their business lines are discussed in the next chapter.

5.3.5. Primary data collection: in-depth interview

The data for this research is made up of primary and secondary data. The primary data consists of semi-structured in-depth interviews that were obtained from founders and senior managers. According to Kvale (2009, p.51), “interviews seek to obtain descriptions of the life-world of the interviewees with respect to interpreting the meaning of the described phenomenon”. It also helps to narrow the focus of the interview in terms of capturing all the information that is vital for the study. Interview is most essential in looking at founders' entrepreneurial characteristics and their innovation thinking. Semi-structured interviews allow the researcher to interact with the participants on the subject of observation through participant communication. In addition, open-ended interview questions enable the researcher to explore insightful information on the subject being investigated through probing questions during the interview process (Kavle, 2009).

Subjectivists argue that the feelings of the researcher are part of the data collection process by understanding the situation from the interviewees’ perspectives (Sunders et al., 2012). Interviews are like conversations but there is a distinction between the two. According to Silverman (2006), interviews involve a set of assumptions and understandings about the situation which may not identify with an ordinary conversation.

According to Saunders et al (2012: p.132), “subjectivism asserts that social phenomena are created as the perceptions and consequent actions of social actors”. Interestingly, this is where the subjective part of research makes it very important by engaging and interacting with participants in order to understand the reality and what is happening behind the reality (Saunders et al 2012).

However, there are limitations associated with the interview process and it is important to state those disadvantages. Interviewing is time-consuming and usually expensive, and the participant will always show what is socially desirable. Biases may occur due to the incompetence of the researcher and an untrained researcher might distort the data during the analysis (Denzin & Lincoln, 2008; Silverman, 2006).

The interviewer may also not be able to recall certain information given by a participant, and a researcher with poor skills may not be able to give an accurate interpretation of the data that has been collected (Kavle 2009). According to Rubin and Rubin, the qualitative interview is one of the most crucial and vital processes in data collection that a researcher can use to understand ‘how’ and ‘what’ in an organizational setting (Rubin and Rubin, 1995).

Interview is adopted as one of the appropriate techniques for data collection in this study. Interviews are very useful in studying how people make sense of their world and how they reflect on their experiences in everyday life (Bergman et al., 2010; Saunders, Lewis & Thornhill, 2012). In contrast, survey (questionnaire) techniques that ignore the individual differences in human experiences, restrict the researcher’s choice and freedom to involve him/herself with the subject they are observing (Gill & Johnson, 2005).

From the existing literature that underpins this study, various researchers have used interviews to study the innovative characteristics of international entrepreneurial firms. They emphasise the importance of semi-structured interviews in understanding organisational trends (Chung et al, 2012; Zortea-Johnston et al., 2012). Dimitratos et al, (2010) have used interviews to study the entrepreneurial firms and find it more fascinating in capturing an in-depth descriptive knowledge of organisations’ strategies, by extracting data through interaction with the subject observer and providing detailed explanations which enable high levels of authenticity and trustworthiness (Collis & Hussey, 2009). In contrast, questionnaire techniques may only capture descriptive forms of data through some well-structured instruments (May 1997; Maxwell, 1996).

5.3.6. Secondary data collection

The secondary data comprises journal papers, conference papers and other research reports, obtained mainly from databases using the internet. Glaser (1963, p.11) suggests that secondary analysis carried out by an independent researcher could, among other things, ‘lend new strength to the body of fundamental social knowledge’. Several researchers have used secondary data to: explore different research interests compared to those of other researchers they reviewed (Hinds et al., 1997); apply a new conceptual direction or a new perspective to the original research problem (Heaton, 1998); explore the contemporary and historical attributes and behaviours of organizations (Corti & Thompson, 1995); and provide new methodological developments (Corti &Thompson, 1998). An example of secondary data in this research is the use of previous interviews of founders and CEO of selected companies, which exhibit broad characteristics of digital internationalising firms, BGFs and INVs.

5.3.7. Pilot of the interviews

The researcher piloted the interview questions with a female entrepreneur who runs a small internet business in Nigeria as the interviewee, which allowed the researcher to modify the questions. The pilot interview was conducted over the telephone, with the researcher asking each question and the participant answering. The researcher asked the participant for feedback and the interviewee highlighted certain areas of the questions that were not clear and relevant for study. They also suggested some important questions they felt should be included in the questions. The pilot of the interview question helped to improve the interview question and was useful to build the researcher's confidence on the questions asked.

5.3.8. Skype interview procedure

Internet based methods of communication such as voice over internet protocol (VoIP) and technologies like Skype are becoming increasingly important for conducting qualitative interviews (Lo Iacono, Symonds & Brown, 2016). "At the same time, the use of Skype affects the areas of rapport, non-verbal cues and ethics by creating limitations but also new opportunities (Lo Iacono, Symonds & Brown, 2016, p1). The skype interview was used for the data collection and it is very useful; it allowed the researcher to reach participants in different locations and is cost efficient.

The interview questions are listed in the interview guide which enabled the researcher to revisit vital questions before each interview. The interview questions were sent to the participants prior to the interview in order to facilitate the discussion during the interview. An interview recorder and smart phone were used to record the interview. The researcher took care to ensure that the locations used for interviews was conducive for the interviewer to avoid interruptions and so that the interviewees felt able to participate in the interview without holding back any important information. The interviews lasted between 40 to 50 minutes.

5.3.9. Access to the case firms and participants

All the case firms' headquarters are located in Lagos and the case firms were identified through the internet. The researcher listed about 20 digital firms in Nigeria, after due diligence was carried out to determine which company will meet the criteria of the subject being investigated. It was found that the most digital, e-commerce, e-platform and cyber-mediated firms operate only in Nigeria. Some of the 20 companies that were initially identified were reduced to eight. These companies have started engaging in international market through digital and hybrid internationalisation approaches. These firms started from Nigeria and have their headquarters in Lagos. After due diligence, the researcher started studying each firm in detail to understand when they established and when they started engaging in international markets. Through this process the secondary data was collected from credible sources like the companies' websites, business magazines, newspapers, previous interviews and presentations of founders and CEOs of the selected firms.

The researcher contacted five out of eight selected firms that meet the selection criteria through email by sending them consent letter requesting them to participant in the study. The consent letter explained the background and relevance of the study. Surprisingly, none of the firms replied the email. After one week a follow up email was sent to all the five firms, yet no response. After one month the researcher recruited a research assistant to deliver hard copy letters to the selected firms. At this point some of the companies provided a direct contact to appropriate persons to be interviewed. Some of the case firms promised to contact the researcher directly which they did not, and the research assistant had to go back to the companies several times.

One out of the five initial selected case companies declined to participate and was replaced. The interview processes took almost two months. It started from May 22nd till 15th July 2018. Two founders and CEOs, one digital marketing and business development manager and two executive directors were interviewed.

5.3.10. Data analysis procedures

As noted earlier, the qualitative analysis uses analytical techniques such as open and axial coding. Open coding is used for sorting and placing the data collected from the interviews on YouTube into conceptual categories and labelling them (Strauss & Corbin, 1998). Axial coding examines the relationships between the categories, and the conceptual framework was used to give structure to the codes, and to ensure accurate explanations of the subjects being investigated through the data that is reassembled (Strauss & Corbin, 1998).

The researcher used thematic analysis approach to analyse the qualitative data and it was adopted in this research as the most appropriate analytical method. "Analysis includes summarizing data, whereas the interpretation of data involves making sense of what it means and answering the "so what?" question in terms of the implications of the findings" (Gay et al., 2006: p. 436). Miles & Huberman (1994, p. 90) use the term 'analytical progression' to label the process of moving through the various stages of answering questions of "what and how, to why … [that is] what is going on and how things are proceeding … as well as to understand and explain …why things occur as they do."

According to Braun & Clark (2006), thematic analysis is one of the most popular analyses used in qualitative research, offering many approaches, and it is one of the most basic techniques for analysing qualitative research interviews. Boyatzis (1998) describes thematic analysis as a general analytical process that serves different analytical methods, the themes are considered as the appropriate tools for analysing qualitative research.

Within-case and cross-case syntheses are adopted as appropriate analytical procedures in the research because these types of analyses make research finding more compelling and robust. They enable the researcher to understand the similarities and differences from selected case firms' internationalisation strategies. Yin (2013) states that cross-case synthesis is specifically relevant if the study consists of two or more cases and it would strengthen the findings.

The cross-case syntheses are based mainly on case aspects that relate to the research questions. The meta-inferences use the combined evidence from the two strands of analysis to develop insights regarding their implications for a) extending the conceptual framework (CF) to a revised conceptual framework (RCF), and b) inferring what the new knowledge means for developing the integrated business model template (IBMT) and the internationalisation template for digital firms (ITDF).

5.3.11. Data Triangulations

Following Maruyama & Ryan (2014), the researcher used the different triangulations designed into the study explained in the research methodology. The triangulations mentioned above include: a) data triangulation across different case companies; b) theory triangulation based on the use of contributing theories from the literature (international entrepreneurship approach, digital internationalisation, integrated business modelling, innovation and e-commerce and e-platforms, for example); d) methodological triangulation, whereby primary and secondary methods are used to collect and analyse the data and develop suitable IBMT and ITDF frameworks for internationalisation of digital firms in Nigeria (Guion, Diehl & McDonald, 2011).

5.4. Trustworthiness of the qualitative research

As explained above, the concepts, research design, interview techniques and methodology used in this study ensure the trustworthiness of this study. Selection of the participants was based on their knowledge and experience on business strategies that support development of the subject being investigated. The other criteria of trustworthiness promote confidence and provide an accurate picture of the phenomena under investigation. Guba (1981) states four criteria by which the trustworthiness of qualitative research can be measured as follows: credibility, transferability, dependability and conformability. According to Merriam (1997), credibility in qualitative research concerns how the findings of a study will match with the reality. Ensuring credibility is one of the most important factors in establishing trustworthiness in qualitative research (Shenton, 2004). The detailed notes on legitimization of the research approach, validity and reliability of the research stated above ensure these criteria.

This research achieves reliability by following traditional approach of the previous studies that underpin the present study, and the result of this research can be reproduced under a similar methodology. The construct validity was reinforced by the brainstorming exercise alluded to earlier.

Before summarising the triangulations, the researcher notes that by adopting suitable conceptual frameworks critiqued in the literature review chapters, the underpinning arguments for replicability and appropriateness in those frameworks apply to those aspects of this research which the frameworks relate to. This means that the researcher will concentrate attention on issues of replicability and appropriateness which occur within the qualitative methodology described in these notes.

5.5 Ethical considerations

The ethical considerations were made to ensure the integrity of the project. The research and data collection approaches were approved by the Sheffield Hallam University Research Ethics Committee. All the ethical considerations are in line with the SHU research ethics framework (please see Appendix 4) and this research is not ethically controversial (Denscombe, 2007).

The study was not carried out in any hazardous environment. The interviewees were well informed through the consent form about the aim and objectives of the study. They were assured of the confidentialities of their responses, with their names and names of case firms not indicated in the thesis (Mehendale, 2007). Please see appendix 4 for the interviewees' consent letter. The consent form was written, and checks were made to ensure that the interviewees fully understood the nature of the research (Denscombe 2007). The interviewees were also given an option to withdraw from participating in the research at any time.

The researcher will inform the interviewees if the information given should be used for anything other than the stated purpose of this particular study. The relationship between the researcher and the interviewees were based on trust and integrity and the researcher ensured that the interviewees information was fully protected. Other ethical considerations include ensuring adequate data protection and that the research material is not shared with other researchers.

5.6. Summary and Conclusion

To investigate the research questions, the researcher extracted relevant constructs and themes from critical review of related literature on international entrepreneurship, digital internationalisation and business modelling-specific cyber-mediated characteristics. Insights were obtained from individual case studies on how the founders and CEOs of the firms design their business from inception and engage in international market, which informs the creation of the IBMT.

For a summary of the research methodology, the chapter examined: philosophical foundations of the methodology (mainly interpretivisms and critical realism); the research design; qualitative research approach and its suitability for the research; case study approach and its appropriateness for the research, including the case selection criteria; in-depth interviews and use of secondary data; piloting the interview questions; the Skype interviews for the research; data triangulations; and data analysis procedures.

Using selected case firms to develop the IBMT model for Nigerian digital internationalising firms will enable IBMT to reflect the realities of key cyber-mediated firms. The choice of the case studies was carefully documented using established techniques in case study research reviewed in the literature (Eisenhardt, 1989; Kathleen & Eisenhardt, 2007; Yin, 2009, 2013). The researcher used the case study firms to explore the emergence development and emergency internationalisation characteristics of the case firms, and how founders' and COEs' entrepreneurial orientations informed decision making related to innovation and development of such firms (Azadegan & Teich, 2010; Ferreira et al., 2010; Lapan, Quartarolli & Riemer, 2012; Saunders et al., 2006).

Following the case study, the researcher will evaluate how different socio-cultural and macroeconomic contexts could influence the choice of appropriate strategies, for example how developing economies and their different contexts compared to developed economies could require aligning and incorporating Nigeria's social cultural influences, to make IBMT model contextually realistic, if needed. Grounding the work in the Nigerian context, which is a key economy in Africa, with similar characteristics like some of the BRIC countries (Brazil, Russia, India and China), for example, will enhance the global applicability of the IBMT in developing countries generally.

This chapter built on the methodological notes provided in the literature review chapters 2, 3 and 4 to develop in more detail the approach to this research. The chapter covered such important elements as the nature of data required the need to triangulate the evidence by a multi-methodology that not only addresses the particular research themes in the research questions, but also enables the researcher to effectively legitimise the research.

The IBMT so developed can then be used to extend the results to other key industry sectors in Nigeria and developing countries. In effect, adopting this engaged scholarship approach (Van De Ven, 2007) would make the research continue to contribute new knowledge to the field of integrated business modelling and internationalisation of digital firms in Nigeria, theoretically, methodologically, practically and contextually.

The next chapter presents case study analyses of the selected case companies mentioned above. The synthesis of the data helps to identify the different strategies of internationalisation of digital firms; hence, the case insights are important for creating the revised conceptual framework and IBMT that will enhance development and internationalisation of digital firms in Nigeria.

Chapter 6: Case Study Analysis

6.1. Introduction

This chapter presents the analysis of the empirical data gathered by the methodological process presented in Chapter 5. The chapter is structured into two main sections: the first section covers an overview of the five case studies and each of the case studies is examined in turn to look at the elements of business model and their internationalisation process in an overall within-case analysis. In section two, a cross-case analysis is conducted to explain the digital internationalisation patterns and elements of business model that support digital internationalising firms in Nigeria.

The chapter aims to answer the research questions, which are recalled as follows: How does knowledge of international entrepreneurship mediate the development of emerging digital economy firms in Nigeria (RQ1)? How do Nigerian digital economy firms successfully internationalise their offerings (RQ2)? How do digital economy characteristics influence the development and internationalisation of digital firms in Nigeria (RQ3)? What are the defining business modelling characteristics of digital firms (RQ4)? What challenges are faced by Nigerian e-commerce and e-marketplace firms (RQ5)? The emerging themes and insights on e-commerce and e-platform firms lead to the discussion of the findings presented in Chapter 7 contributions to knowledge in Chapter 8.

6.2. In-depth Case Profiles

6.2.1. Firm 1: E-marketplace

(i) ***Firm profile***

Firm 1 was founded in 2012 and officially launched in 2014 in Lagos, Nigeria. The firm's founder and COE was interviewed through Skype. The firm is an online marketplace that was created to help connect Nigeria and African traders to international markets. The platform allows Nigerians and African small businesses to sell their products and commodities to international buyers and enables people from different parts of the world to source for products and other commodities in Nigeria and Africa. The firms headquarter is in Lagos, Nigeria.

The platform promotes solely African content, like African manufactured goods such as textile, and agricultural products. The platform is solving social challenges and it is offering several advantages and benefits to SMEs and businesses who use it as they are leverage it to save costs and reach wider customers.

(ii) ***The founder and interviewee's background***

The founder has past experience in oil and gas industry before obtaining a master's in business administration (MBA) in the UK. After that he worked in the UK before moving to China to set up his own business. The founder's previous company was based in China and Nigeria. He acquired international and professional business experience while he was in the UK and China.

> *"Also, I have been engaging in international business for a couple of years. Way back we set up a business that produced local products in China and shipped it back to Nigeria. This is one of the companies I used to run before, from which, I gained some international experience"*

The founder's background and diverse experience has helped him to set up the current firm. He has been into many businesses with nine failed and successful businesses before launching out the current e-marketplace platform.

(iii) ***Firm's strategies and elements of business model***

The firm started with an idea like "Shopify" that helps small businesses and enterprises in Nigeria to create online stores to engage in international market activities, but the team realised that th value proposition was more advanced for the Nigerian market because most small manufacturers and businesses are not computer literate and do not have much of technology services as opposed to developed countries.

> *"We started from an idea like "Shopify". You know Shopify that help individual and business create store online to enable them to sell their goods. We now later found out that this was a bit advance for this market. People don't have that much tech service here. We pivot to an e-commerce, we found out that e-commerce was still elementary and there is a lot to be done for it to run in this place. Then we pivot to a marketplace, after we pivot to a marketplace, we are trying to do general goods. Later we finally pivotal to only locally product commodities"*

The firm found unique value proposition by focusing on only local commodities that are produced in Nigeria and Africa. It offers much more than online retailing and focuses on African commodity products and goods. The firm has created a niche by promoting African SMEs and African goods. The interviewee emphasises that the reason behind the unique value proposition is because the African market is somehow an uncoordinated market and the market is not interconnected. For, example there are many products or goods that are sourced from developed countries like US and European countries not because the products and goods are not available in Nigerian and African markets. This is because African manufacturers and businesses have not had enough publicity that can enhance their awareness to African consumers. The firm enhances their exposure to African products and goods offered from different African countries. The firm indirectly serves as marketing and advertising company for individual businesses and enterprises in Nigeria and Africa. For example, many small businesses that could not have afforded to reach customers in international markets and a wider domestic market do so through the firm.

The platform allows businesses and individuals to create and personally manage online stores. The sellers can easily upload their texts, images and videos of their products and goods, which interested and potential buyers can find and buy from them directly.

Because of the nature of the commodities trading on the platform, the firms use both digital and conventional customer engagement despite being a digital firm.

> *"We use a lot of search engine optimisation tools. If you search for something like food export in Nigeria, …. the firm will come up... We use solution through free blog content, we engage customers in event like trade expo/seminars.*

The firm partners with other businesses in the private sector and government agencies to do events like trader exhibitions and seminars where they educate small businesses and enterprises that trade on the platform. They engage customers offline by visiting customer's physical business premises where they provide questions and answers about how to trade on the platform. Engaging customers in physical activities facilitates the way businesses trade on the platform. This also helps the firms to build relationship and trust, especially to ensure traders' safety in international transactions. The firm developed a programme called trade association free training where they educate existing and potential customers.

In terms of digital engagement, they use Twitter to generate highest promotion for "Made-in-Nigeria" and Africa goods, share their knowledge bases on how businesses can drive sales and reach international market buyers. The firms also help their customers to create digital market structures because of the experience they have gathered since they started their digital platform firm, apart from helping manufacturers to engage in international marketing activities. For example, some manufacturers in the South East of Nigeria are not known in the

North. The firms eliminate barriers within domestic markets and international markets through search engine optimisation and digital advertisement.

(iv) ***Firm's internationalisation process***

The firm's mode of internationalisation is digital, and it has been involved in international market activities from inception. Its customers are individuals and businesses across the globe who purchase African goods and products from African manufacturers. It has customers from UK, China, Australia, Middle East, South America, US and European countries. The firm has digital presence in Tanzania, Zambia, Ghana, Rwanda, South Africa, Kenya and so many other African countries. Apart from Nigeria being the headquarters of the firm, highest orders come from South Africa, Ghana and Cameroon from the first few years when the firm started.

Majority international buyers come from the UK, US and European countries. International market currency is one of the good internationalising factors for the firm.

> *"Basically, most international market currency is stronger than that of African countries, it makes it easier to command good price for local goods. For example, now, averagely across the world a cup of coffee costs $3, in Lagos Nigeria it cost $0.6. If we said that we are sending a cup abroad at a cost of £0.6 it will command price in the global market, and people will be attracted to buy from somewhere like Lagos or other part of African countries"*

The firm targets African immigrants in the other parts of the world that are in need of African products and goods like local dishes, local attire and other commodities they use where they live. The interviewee explains that African products and goods are needed in many parts of the world. For example, "Nigeria is among largest producers of Cassava, Sorghum and Shea butter", said by the interviewee.

The firms do research and obtain information on international market needs through sources like Chatham House in the UK, world facts and international market trade. It also understands customer needs and demands from partners; this is all about getting deep insights into the markets.

> *"As we begin, overtime different people from different parts of the world began to reach us, and said there is a big market in this area and I want you guys to explore it"*

Partners enhance and facilitate the internationalisation of the firms. The firm does not handle logistics and delivery as it is sorted out between the sellers and buyers. The firm focuses on making sure that manufacturers meet all required demands from sellers and supports both parties to have successful and seamless transactions.

The firm leverages its multifaceted platforms to localise its services in different regions and enable firms to scale up their businesses. The platform is built in way that it picks the location of the visitor, whether is a merchant selling on the platform or a buyer buying from any location in the world. The firm's multifaceted platform allows the products and goods to be listed in the denominated currency of that particular location. For example, when Kenyans are searching for Nigerian products it will list in Kenya shillings as well when searching a product from Nigeria it lists in Naira.

(v) *Future direction*

The firm continues to adapt new features that enhance their business model to meet their customer needs. Because of the nature of the customers the firm has on one side of the platform some of whom are not computer literate in terms of using technologies like computers and smart phones, the firm is introducing what they called "text to live" to enable customers, like farmers in ruler areas that may not have or don't know how to use digital phones but have hundreds or thousands of products to trade. The firm aims to connect this type of customer with 2G to live platform so that they would be able to receive information direct such as market inquiries on their mobile phone.

The firm is planning to integrate social cultural setup into technological use because they realised that an average Nigerian or African wants to do business or sell products in their own preferred ways, and try to connect them the way they want be connected

6.2.2. Firm 2: Online marketplace

(i) *Firm profile*

Firm 2 was founded and launched in 2012. The firm's head of digital marketing was interviewed through Skype. The firm is an e-marketplace and has headquarters in Lagos, Nigeria. The firm started as e-commerce focusing on baby, beauty and personal care products and serving only customers in Lagos. In 2013 the firm expanded its offerings to general merchandise products and services, serving customers across Nigeria; the expansion may have been a response to acquiring large market share from other existing e-commerce businesses in Nigeria.

(ii) ***Founder and interviewee's background***

The founder has past experience in banking industry and IT sector and worked with a profitable American digital company. Before establishing the firm, he has setup previous internet related ventures in Nigeria ranging from job placement site, classified site and media streaming services. Although the previous ventures failed, he noted as that "*these start-ups were just way ahead of their time*". The previous experience helped to him successfully set up the present firm. He has an MBA from a University in the United States.

The interviewee has deep experience in digital business and has headed most of the top e-commerce and digital businesses in Nigeria. He previously co-founded a digital marketing company based in Lagos, Nigeria. These experiences have made him understand all it takes to run a successful e-commerce and online marketplace in Nigeria. He is aware of how to align social cultural factors in e-commerce and digital business in Nigeria

(iii) ***Firm's strategies and elements of business model***

The firm started as an e-commerce and expanded by launching online marketplace in 2014, which later in the same year rebranded as "mall". The mall is a revolutionary option that allows businesses and enterprises in Nigeria to display their products on the firm's platform. The firm went from e-commerce to marketplace as they perceive more opportunities.

> *"We started from e-commerce point of view, initially, e-commerce business thought that when you raised $5 million in funding, you commit $2 or $3 million of the money sourcing your product and you use the remaining $2 million to execute your business. As time goes we realised that was not sustainable business strategy because you cannot continue to own your inventory, which is why we now went into marketplace devours that allows to grow a lot of capital to deliver the business promises"*

The business model that underpins an online marketplace seems to be more profitable because most of the inventories are supplied by merchants. Repositioning and rebranding the business make the firm's business model more "cleaner and lighter", and it attracted and featured 8,000 merchants beating internal merchants eight-fold. With the new business model, the revenue of the firm grew 450% from 2013.

Being one of the first e-commerce businesses in Nigeria, the firm has made several adaptations by aligning social cultural influences with its business model, which has drastically improved the business model and overall business performance. For example, the firm realised that cultural limitation was hindering the online purchase because internet penetration in Nigeria is not as good as in developed countries, because of this only a small percentage of customers were buying online with debit or credit cards. The firm introduced a strategy called "pay on delivery" whereby consumers will make a purchase online and the items will be delivered to customer's door step so that the customer can have a look at it and pay cash to the dispatcher who takes the money back to the company.

The firm did this for few years and realised that this business model component was flawed because customers who have no interest in buying products in the first place were making orders, and the firm was incurring cost of delivering the product when the consumers did not need the product.

> *"We had to look at how to optimise pay on delivery to ensure that we are getting our product to real customers that need the services"*

They optimised this by collaborating with other local enterprises and organisations by providing pick up centres whereby customers will purchase online, and the products will ship to pick up centre that is closer to the customer's location. This approach works for domestic markets across Nigeria.

The interviewee emphasises that they have to go through all these adaptations because Nigerian e-commerce is very different from e-commerce in the world. He gives some examples, "in *North America you have Amazon which is the big guy there, if Amazon came to Nigeria and set up, the same exact way they are playing in America they will fail"*. Cultural differences and social economic factors make it difficult for e-commerce firms in Nigeria to operate with proven business models from developed countries. Replicating existing strategies and business may therefore result in failure for new entrants without understanding the cultural context of Nigeria and target customers or population.

They developed hybrid e-commerce to suite Nigerian e-commerce model and achieve users' satisfaction. The "hybrid is where a percentage of users' journey is still offline", according to the interviewee. The integration of digital and physical business models and strategies gives the firm an edge in the market and meets customer needs.

The firm has partnerships with other companies like Facebook to overcome lack of internet penetration in Nigeria. The partnership is called "free basic" initiative where people would be able to have a strong internet connection. For example, in some parts of the country where people would not be able to have internet, the firm deployed free basic technology to enable customers have access to internet as far as customers have mobiles smart phones that would be connected to the internet. The free basic initiative allows customers to shop and list their items on the firm's platform.

> *"E-commerce is nascent in Nigeria, even now you are not sure what is the permeant strategy for success, the company has to continually iterate the model and deploy strategy to make sure that they ahead of the game"*

The above insights show that the firm continues to adopt business model innovation in order to discover better value propositions, customer preferences, and strategies to meet the customer needs. Most importantly, the firm changes its strategies and iterates the business model based on environmental factors to understand customer needs.

The firm has adopted some of the digital economy mechanisms whereby they analyse data to make decisions on customer needs and to engage in international markets.

(iv) *Firm's internationalisation process*

The firm's digital internationalisation started after introducing a mall which allows merchants and individual businesses to list items on the platform. The firm's online marketplace facilitates its internationalisation. The firm has witnessed customers purchasing and making orders from outside Nigeria through third parties.

> *"This happened after we officially launched our third parts retail platform around 2014, this is when we opened our platform to merchants. By The end of that year our company has over 8, 000 merchants selling on our platform. At the moment our third-party sellers are selling things to customer from other countries, I mean countries apart from Nigeria"*

The firm's business model was to focus only in Nigerian markets as they believe that e-commerce is still a very nascent stage in Nigeria, and launching the online marketplace enhances the firm's digital internationalisation through third-party internationalisation. The firm has seen orders coming from outside Nigeria, especially West African countries like Ghana, Benin Republic and other African countries. The third-party users of the platform manage logistics and shipment of orders that come outside the countries.

The firm has not developed substantial internationalisation strategies. The third parties are making the way for the firm's digital internationalisation. The firm is paying more attention to big data and artificial intelligence which are currently used to make decisions for international market engagement. These remarks suggest a need for the internationalisation template for digital firms (ITDF) envisaged in this research. Even though the ITDF is a dashboard of constructs that will support a firm's internationalisation activities, it will be contextualised in application to firms' offerings.

(v) *Future direction*

The firm adopted several innovations in the past and continues to innovate in order to have effective digital business models that will meet customer needs, both in domestic and international markets. The firm's innovations mostly focus on digital economy mechanisms ranging from use of big data, artificial intelligence, and cryptocurrency as payment solutions. The cryptocurrency is to enhance payment solution they have developed in early years of the firm, in partnership with a digital payment company. The firm focuses on futuristic and data-driven decision making to meet customer needs. The firm has started planning to have physical presence in international markets and is leveraging partnerships to engage in international market activities.

6.2.3. Firm 3: E-commerce

(i) *Firm profile*

The firm was founded in 2013 as an e-commerce platform in Lagos, Nigeria. The firm's founder and CEO was interviewed through Skype. The firm's business objective is focused on carrying different brands designer like Topshop, Zara, H&M, and New look. The firm started after the founder has lived several years abroad and was unable to access quality clothes without going from one market to another searching for quality fashion products. The founder realised that Nigeria and Africa as a whole have taste for quality fashion, but the market is so uncoordinated that you have to put enough energy and a lot of time to find your desired taste of designers and other clothing accessories.

The firm started by targeting style consumers who want to be served with quality products without ordering from abroad or sending people traveling to the UK, US and other countries to buy good quality designers. The firm's value propositions and uniqueness were based on quality, variety, and convenience, at affordable prices.

(ii) ***Founder and interviewee's background***

The founder has degree in business management from a university in the UK, and she has diverse experience in management consulting with technology and consulting firms and banking sector. After graduating from a University in the UK, she worked with a management consulting firm before moving to Belgium to work with technology firms. She founded the fashion tech firm when she was working with multinational technology firm in Nigeria that she called her dream job. She founded the firm as a side hustle as she described while working with an American technology firm in Nigeria.

> "*I started a side hustle when I was working in technology firm here in Lagos, I was an industry manager there for a couple of years and started commercialisation business there, but an interesting thing happened, and I started this side hustle while then become an empire, and it is one of the pioneers in the industry. I hired people to start the business"*

This is her first venture and she described herself as an accidental entrepreneur because she never wanted to start business since she wanted a career progression in a professional environment.

(iii) ***Firm's strategies and elements of business model***

As mentioned above, the firm started as an e-commerce retailer having brands such as H&M, Topshop and Zara and its own makes focusing on African fashion styles in solving Nigerians' problem in terms of accessible and affordable quality fashion.

> *"Nigerians and Africans have a good modern unique fashion tastes and love for fashion like other part of the world but what is different is the way we Africans access fashion compared to consumers in UK access to that fashion. What we are doing is to bridge the gap using technology so that everyone in Nigeria and Africa can have access to good fashion no matter where the person is located" (Secondary)*

After operating for a few years, the firm rebranded and refocused exclusively on its own brand. Changing the business model and rebranding have enabled the firm to see double digit growth and increase international customer acquisition and orders. The firm's rebranding focuses on female clothes, shoes, and other clothing accessories. The rebranding allows the firm to design, manufacture and deliver to Nigeria, African and the world. Focusing exclusively on its own designs has enabled them to satisfy customers' obsession and cater for women fashion.

The new business model has improved the business performance ranging from customer needs, preferences, and increased customer acquisition. The firm has taken advantage of digital economy tools such as big data analytics as enormous customer data started emerging. Because of data generated from customers, the firm started as an internal project called "Fit Project" using big data to analyses customer measurements and to manufacture accurate fitting garments. This enables the firm to offer tailored designs and personalised service to customers. The personalised service has increased sales both in domestic, African, and other international markets.

The firm has adopted several unique strategies which have boosted its business model on how to engage customers and meet their needs. For example, delivering different sizes of customer order to enable the customer try different sizes and chose their best fitting clothes ordered in domestic market.

> *"Online customers in Nigeria still like the feeling of seeing and touching what they are buying, so what we do is to allow customer items to be delivered in different sizes, so they can try them while the delivery person waits for the customer to try it"*

This integrated approach helps the firm to bring physical offline experience to the online shopping experience. This is because Nigerian e-commerce is nascent, and people will always prefer when the customer online journey is still offline. The interview cited that developing online platforms based on what is happening in America and Europe cannot apply in Nigeria; rather it needs to adapt them and make them relevant to align with Nigerian and African consumers' preferences

(iv) ***Firm's internationalisation process***

The firm's digital internationalisation began from the inception of the firm because of its own fashion brands that focus on African styles and designers and target African diasporas and non-Africans that would like to be dressed in African attires. The firm's fashion brands are ordered and delivered throughout Africa and the world through international currier services. The founders experience has helped the international market engagement. The interviewee explains that when she was working with a company in Europe she tried to search for African attires that what was always coming up from Google are the physical addresses of the merchants selling clothes in Balogun market in Lagos and other places in Nigeria.

The firm's international orders have been coming from so many parts of the world, especially, the UK, US, European countries and Australia. The firm has witnessed returning customers increasing the sales due to their strategies in engaging and acquiring customers through social media, which allows the customers to know when new designers are being released. The firm is using customer's data and a whole spectrum of of value chains in manufacturing, designing and distributing, to cut down returning orders from international markets.

The firm's primary focus was Nigeria with Africa as secondary focuses. The firm started with a global market mindset because the founder believes it is important to build a global business in the digital era, especially digital business that would solve both domestic and international market needs. However, focusing on its brand exclusively has increased site visitor numbers and people following the brand on social media are growing, and overall the firm's international orders are increasing.

> "*Our main focus as a business is Nigeria, and secondary Africa. Well, we believe it is very important to develop your business as a global one from day one, so we have been international from the day we started. Our company is filling the gap existing in Nigeria and African market for a one-stop shop for fashion"*

The firm has a multifaceted platform that displays the inventories on the platform from the customer location and this enables the customer to see the price of the products from the currency of the countries the customer is logging in from. The taxes and any other fees such import duties are the responsibility of the customer, even when the customer returns the order or refuses shipments upon delivery. The interviewee explains that these are some of the challenges the firm faces in the digital internationalisation and international business arms of the company.

For example, customers are responsible for the cost of returned orders to the firm and expensive currier services for international shipment which costs from N25,000 equivariant of £50 seem to be have some effect in the firm's internationalisation process.

The firm developed a couple of online relationship strategies by acting as customers' fashion adviser in providing style advice online, especially returning customers whose data help to predict or understand customers' physiology and keeping the firm updated on the latest fashion trends and the firm's new brands. The interviewee explains that they help customers differentiate themselves from everyday fashion trends. They also integrate western modern design with African traditions to offer customers a unique experience and something different.

(V) *Future direction*

The firm's vision is to build a number one fashion technology company in Africa, as the interviewee stated that with over $30 billion fashion market size in African that the fashion industry growth is going to be driven by online and digital mechanisms, and specifically mobile commerce. The firm is leveraging fast mover advantage in African fashion industry and with unique business strategies and an innovative business model. The interviewee explains that the firm has a majority market share in African fashion retail, and this is making the firm a market leader in African online fashion.

6.2.4. Firm 4: E-platform

(i) *Firm profile*

Firm 4 was founded in 2008 in Lagos, Nigeria and is the oldest case firm and one of the first online platform and cyber-mediated firms in Nigeria. The firm is an online platform for flight and hotel reservation. Prior to 2008 the industry of online booking was made up of brick-and-mortar booking agents. The firm enables customers who travel outside the country to have opportunity to independently compare airline or hotel pricing. The firm changes the process of traveling in Nigeria by providing convenience, transparency, and good-price deals.

> *"A few years later I returned to Nigeria to visit and I had difficulty booking my flight. Next time I got stuck at the airport going from Lagos to Moscow because I needed a transit visa through Frankfurt which I did not have, and I could not buy a ticket at the airport".*

At this point the founder realised that there was a big gap in the market as the Nigerian market does not have online reservation companies like United States and other developed countries. The firm leveraged technology and the digital ecosystem to change the way customers book travel tickets in Nigeria and Africa. The firm has other lines of products and services it offers like visa packages and tours. The firm assists customers to facilitate their trips with ground transportation activities, telephony, and travel wallets.

(ii) ***The founder and interviewee's background***

The founder has background in engineering and has experience in online travel. The founder has set up similar online travelling venture firms in United States which was not successful. The previous ventures enabled him to acquire digital experience that he uses to take the online reservation to a new environment.

The interviewee is an executive director of the firm and has background in IT and business and has been with the firm several years. She has worked with different multinational companies' in IT industry in the UK before moving to Nigeria and joining the firm. She is in charge of ICT and entire digital ecosystem of the firm.

(iii) ***Firm's strategies and elements of business model***

The firm started as an online platform from inception knowing that it will not serve only Nigerian customers. The firm understands that online business was new in Nigeria as at that time. The firm integrates brick-and-mortar and online channels which allows the business model to create travel solutions that serve local customer needs, and still meets the globally accepted standards of online platform for flight and hotel reservations. The firm has more than 30 outlets in Nigeria. This is because the firm realised that Nigerians still wanted the direct personal interaction when booking their tickets. This has enabled the firm to operate with a hybrid (online and offline) business model, even though the firm is primarily on online firm. The hybrid business model provides customers great experience and reduces difficulty that associated with digital payment.

> *"We were very clear that technology would shape the future of travel, despite the cynicism of many Nigerians to anything online at the time, we could see that a rising number of people were voraciously consuming content online and would latch on as early adopters to our innovative offerings"*

The firm has Travel Now Pay Later Scheme that is designed to entice customers who cannot afford to pay at the go for their travel costs. The scheme is in partnership with a consumer finance organization with expertise in the provision of simple money solutions. The flexible payment enables customers to pay minimum down payment of 25% while the remaining balance is spread conveniently across over nine months from travel date of the customer. This approach offers the firm's customers soft loans at a very marginal interest rate within 24 hours.

The firm is planning to set up offices in many African countries. The firm's main business objective is to become number one travel booking portal in Africa and make Africa one of the most exciting destinations to travel to. The firm has a number of innovative offerings that enable people to travel more easily and enjoyably. The firm is planning to develop new lines of related business. The interviewee explains that if a firm has a robust technology that it helps to shorten turnaround time. This enables Nigerian customers to afford air travel and holiday packages.

Despite being a cyber-mediated firm, it adopts more traditional marketing strategies using such as TV and Radio to target its audience and for customer acquisition. These marketing channels target customers who need the firm's travel package. Thus, the firm combines both traditional and digital marketing which is described as hybrid marketing by the interviewee.

The firm does not have many challenges like other case firms due to the types of products and services it offers. The interviewee explains that building a business that requires digital payment is a huge challenge in Nigeria and Africa; hence the firm has partnered with payment platforms like Interswitch and banks to mitigate this problem. This is one of the challenges the firm has faced in the past. Further, it was explained that Nigeria does not have a customer service-oriented culture compared to other developing countries and emerging markets, using India as an example.

(iv) ***Firm's internationalisation process***

The firm started with a global mindset to serve domestic and international market needs. The firm's digital internationalisation started near the inception; serving international market customer is the firm main of the value propositions. The firm built its system from day one knowing that customers would come from different places around the world purchasing their products and services. The multifaceted platform enables customers in America to be able to have a best deal when booking from the US, likewise in the UK. If a customer is booking in the UK, it will be charging in British pounds or US dollar in America, respectively. Customers can switch online booking portals in more than six African countries.

The firm operates commercial offices in Ghana, Kenya and service outlets in Dubai and the UK. The first physical internationalisation office was in Ghana followed by the UK, Dubai and Kenya. The interviewee explains that they understand that there are other travel companies in those countries but going there is to offer travellers more than just booking tickets because they understand that an average African need more than what is obtainable in the market.

> *"It is all about having a model that can engage customers in so many parts of the world, from the beginning we built the business as a global business knowing that customer would be buying our products from different parts of the world. Basically, internet has made many businesses go global. And what we are finding out is that people are reaching us even when we do not have presence in those countries, we realised that there are a lot of interest, and we do more analysis, it is about doing due diligence and understanding the need to make into the market. These are some of things we looked at before going to any market"*

The interviewee explains that they use some strategic management tools like Porter's Five Forces to understand those market trends before moving into a particular market. Interestingly, the firm is using big data to understand whether there is a lot of customer interest in those countries. Having market and environment analysis to understand the actual business environment such a competitor analysis, how customers would like to be served, and whether the new market is similar to existing market are crucial for the firm's success. The firm considers a lot of adaptation processes before embarking into a new market.

> *"What we do is that we take the Nigeria model and we look at the model to see if what works here will work in other countries, especially if it is in Africa countries, we try to replicate what we have here. If is non-African countries, we would try to understand how we need to operate in that market, how we do the marketing, how we engage customers. So, in that respect you need to have partnerships to enable you do most of the things"*

The interviewee explains that they collaborate and partner with other firms when going to into an international market to enable them to do most of the things in order to meet customer needs in a particular country. The firm has partnerships with different vendors that supply travel products in those markets, these types of relationship helps the firm to reach customers and meet their preferences.

The interviewee explains that why the firm has offices in physical locations despite being digital firm is because those customers feel more comfortable when a firm has a physical presence in a country or city where they are booking from. Though those customers may not necessarily come to the office, they are more comfortable to spend their money because of trust and proximity. The interviewee further explains that search engine and algorithms are more favourable when a company has physical office, and it is very influential.

(v) ***Future direction***

The firm is planning to set up offices in many African countries. The firm's main business objective is to become number one travel booking portal in Africa and make Africa one of the most exciting destinations to travel. The firm has a number of innovative offerings that enable people to travel more easily and enjoyably. The firm is planning to develop new lines of related business. The interviewee explains that if a firm has a robust technology that it helps the firm to branch out to other industry sectors, but the firm does seem to be moving outside its core business.

6.2.5. Firm 5: E-commerce and e-platform

(i) ***Firm Profile***

Firm 5 was founded and launched in 2012 in Lagos, Nigeria, as an online shopping website for electronics and fashion. The company extended its business by acquiring an e-commerce firm in September of the same year. The company has launched online platforms for different market needs ranging from online hotel booking and flight reservation, car deal, grocery, and employment platforms. The firm's main business is general merchandise e-commerce business model, which contributes to biggest fraction of the firm's business and travel services. The firm is the largest online marketplace among the case firms and probably in Nigeria and Africa. In 2017 more than eight million packages were sold on the firm's platform.

In 2016 the company shifted from e-commerce retail to e-marketplace on its general merchandise business. This enabled third party companies that have devices and other commodities to sell on the firm's "mall" as it was described by the interviewee. There are serval reasons why the firm shifted from e-commerce retailing to e-marketplace because of contextual influences like risk and trust.

In 2017 the firm launched another program that allows third party merchants who are not located in Nigeria to sell at the firm online store. The firm has local and global mall which help domestic and global merchants to sell their products. The global program will be discussed in more detailed in internationalisation sub-section in this section.

(ii) ***Founders and interviewee's background***

The two founders have MBA from the same university in the United States; they also have degrees in finance and computer science. One of the founders has worked with financial institutions in the US and had previously set up a digital business. The co-founder has previous experience in investment banking and chemical industry in the US, Switzerland, and Czech Republic, and also, he had previously set up a digital business just like his co-founder. The ample experience enables them to successfully build e-commerce businesses in Nigeria at a time e-commerce market was not as mature in terms of internet penetration and was an unfamiliar business model in the Nigerian context.

The interviewee has been with the firm since near the inception and she was head of customer experience and currently head corporate sales (central Africa). She has master's in data modelling in the UK and has previous experience in management consulting before joining the firm.

(iii) ***Firm's strategies and elements of business model***

The firm started as an e-commerce company and pivoted to online marketplace because the management realised there is some risk and trust issue which was undermining the firm's credibility. This is because vendors were taking advantage of the firm's brand credibility by selling nonstandard and low-quality products, and this was affecting the firm's brand and credibility. Hence, the firm decided to pivot to e-marketplace.

> *"…why from e-commerce to marketplace is because we don't want to take ownership of the fault from the vendors because if we take ownership and say these are our products because when the product is delivered to the customers and it is not exactly the way it was described on the site, the customer may take us to court or we lose money or pay the person refunds and all that. It is just good we make it to marketplace just like Amazon that is it exactly for us"*

The firm's initial strategic objective was that since independence Nigeria had not has organised retail. This is because if you want to shop you can either go to local market or your friend travels to get what you need. Even though the company's online shopping website was not the first e-commerce in Nigeria, it has shaped the way consumers in Nigeria and Africa shop digitally.

The firm integrates online and physical business model mechanisms to meet customer needs and satisfy customers who are into traditional offline retailing. The firm deploys hundreds of staff that physically go to local malls, school and other corporate organisations to market and educate consumers on how to shop on the firm's platform and the benefits from online shopping. The interviewee said that the people that are acquired through this channel spread the news through word of mouth (WoM) which is one of the firm's crucial approaches in engaging acquiring customers. This approach helps the firm to convert and activate offline shoppers to online customers.

> *"Well, you see there are very few e-commerce platforms when…. started and maybe the investors we have have also helped us to leverage that we would be able to do a lot of push and publicity to be able to push the name. Apart from that we provide an exceptional customer service when people make their order whether it is on mall or travel. Will provide personalised customer service just to ensure that the customer walks away happy. Because when you have a happy customer it is easier to spread the news through the word of mouth. We take customer experience seriously"*

The interviewee emphasises on the importance of leveraging investors found on e-commerce and e-platform businesses in Nigeria. It seems that investors funding and their international experience has contributed immensely to the firm's growth and internationalisation compared to other case firms. The interviewee believes that it will be difficult for an e-business to survive in Nigeria without huge funds from the investors as she went on to explain that Nigerians are not loyal and returning customers. Because of this the firm has been offering a very high number of vouchers and discount to acquire prospective customers and retain existing customers. The interviewee believes that it will be difficult to attract customer on the platform without incentives and promotions. Because of this, the firm uses what the interviewee described as mystery shopping to entice customers and it drives a lot of traffic to the platform.

The firm adapted the same payment methods as firm 2 to meet customer preferences and satisfy African consumers. The platform allows a consumer to order and pay cash to a delivery man known as "pay on delivery" which was adopted by firms 2 and 3. This is because many consumers are still not confident of making online payment.

The firm is collaborating and working with a variety of local and international partners to offer a wider product range. It is a gateway to international brands that want to expand into Nigerian and African markets. Logistics was initially a challenge to the firm; the firm decided to create its own fleet of delivery vans rather than using different logistics partners. This was to reduce the geographical fragmentation of the African continent and cover wider geographical locations. Today, the company's logistics is described as large as DHL, and makes it possible to distribute across many African countries.

(iv) *Firm's internationalisation process*

The firm's first international activities began in the first year; it expanded to Morocco, Kenya, Egypt and Ivory Coast in less than one and a half years since it was first launched in Nigeria. In 2016 the firm became the continent's first unicorn being valued over 1 billion USD. The firm has 126 active websites in across 23 African countries. The firm has different internationalisation patterns unlike other case firms because they have different lines of business which they use different approaches to engage in international market activities.

For example, the firm has online "mall" for different countries which makes it easier for customers to order goods through the country's mall and this will be delivered just in a few days. For travel services, the firm has a central system (multifaceted platform) as described by the interviewee which allows customers to book flight ticket or hotel from their geographical locations. Having physical presence is a crucial approach for internationalisation pattern of the firm. Apart from the Mall that allows merchants and businesses in those particular locations to trade on the platform, the firms still have offices for travel service and others business lines.

> *"There are clients or customers who wants to book with people not just wants to book online, right, maybe when there are some issues, maybe the payment, some people would like to see the face of the person they are dealing with or maybe they don't trust you to do transaction online. And also, if you check the banking system currently there is a limited amount you have on your card. So that gives you limited access to the expensive you can make online"*

Both online and offline approaches help the firm to meet customer needs and preferences. Language is another important factor for internationalisation strategies for the firm. The interviewee describes how it is important to employ people who speak core language of a country because it is crucial when engaging customers for whom French is core language, for example. This helps provide effective and efficient customer services that meets their needs. The interviewee uses Ghana to illustrate the importance of having physical office when a firm is wholly digitally oriented. Having employees from those countries where a firm operates offers advantages because those employees know the location very well and would be able to direct customer when making enquiries.

When asked how the firm obtains information on potential markets before engaging in those markets, the firm uses digital economy mechanisms such as big data and artificial intelligence to analyse and identify potential markets in a given location or countries, and this helps the firm to make decisions where to open an office.

> *"Our business intelligence team (BIT) are able to give us those kinds of information, regardless of location you are in when you log in our central system we will see your location, when we have a lot of traffic coming from a particular location, we will know there are lot of customers, we open office there to reach out to customers rather than seeking to the transaction online. We really rely on the reports that are generated from BIT"*

The firm leverages international relationships and partners to access international market activities and achieve its internationalisation goals and it provides smooth landing in international markets as described by the interviewee. The firm's personal relationship team usually reach out to collaborators and partners or respond to invitations for organisations seeking for collaboration to work with the firm.

The firm has a "global mall" that allows third party sellers from oversees to sell different global brand on the platform. The global mall allows customers from Nigeria and other African countries to shop from international firms and pay in Naira and the items will be delivered to their door step. This is because the firm realised that there are many brands that you cannot get in Nigeria, for example. The global mall allows customers to purchase different top brands from the UK, US and other countries.

The firm allows every country or region to manage their internationalisation activities; this has reduced barriers and challenges that may have faced the firm when they engage in different international market, for example, in the case of language by employing people that speak core language of those countries or regions. Physical presence is enabling them to meet customer needs and preferences. Although, the firm still manages international customers, this is mainly in travel services where customers from different countries may be going to Nigeria or Kenya and "they have to go through our central system to book" as described by the interviewee.

(v) ***Future direction***

The firm continues to establish partnerships with different organisations to meet customer needs. This partnership includes big players in air transportation. The firm is looking forward to introducing ground transportation in coming years such as booking train tickets and bus tickets for cross-country travel in Nigeria and Africa.

6.3. Cross Case Analysis

This section examines common themes across the case firms which will inform the development of the IBMT and IDTF frameworks. The cross-case themes are market knowledge, resources and skills, customer engagement and acquisition, digital technology and Nigerian social cultural influences.

6.3.1. Theme 1: Market knowledge

One of the major themes which emerged from the interview on development and internationalisation of Nigerian digital firms is market and customer needs. The five case firms emphasise the importance of market knowledge when establishing the firms and before embarking on international market engagements. Almost all the founders and CEOs of the case companies have had some ample experiences with multinational companies and it has enabled them to develop corporate entrepreneurial characteristics. Some of the founders had engaged in previous businesses with a mixture of success and failure. The most frequently cited market knowledge sub-themes are finding gaps in the markets, understanding customer needs and solutions, having entrepreneurial orientation, and international market mindset. The sub-themes are presented as follows.

(i) Gaps in the market

The interviewees' comments regarding gaps in the market are related to diverse gaps in both domestic and international markets. Identifying gaps in the market is fundamental for establishing the businesses and engaging in international activities. The gaps in the market vary across the case firms' value propositions and customer needs. Firm 1's gap in the market are related to both domestic and international market needs.

> *"The gaps the motivated us to start…. was inaccessibility of quality market information in Africa, wrongly perceived production level, locating particular goods majorly available in Africa. A bridge to trust markets in Africa" (Firm 1)*

The firm was established to help African SMEs and African commodities take advantage of international markets while enabling international buyers to have access to African products and commodities. In this sense, the gaps in the market are to and from international markets. Firm 1 emphasised that gaps in the market does not stop from the initial gaps that motivated the establishment of the firm. Gaps in the market is a continuous discovering process by learning changing customer needs and business environments.

Firm 2's initial gap in the market focused on domestic market needs before international market gaps that emerge through third party; this is discussed in more detail in the sections on internationalisation process of the firms. Firm 2's gap in the market was the difficulty of Nigerians finding business around them that will meet their needs.

> "*People begin to have difficult access or knowing business in their cities and what the businesses could do for them. This is one of the reason e-commerce business began to gain ground in Nigeria" (Firm 2)*

The firm enables Nigerians to have access to different individual businesses and compare prices when purchasing goods and services from different businesses that a customer may not have known in the first place. Firms 2, 3 and 5 have similar gaps in the market. For firm 3, the business idea came about when the founder returned to Nigeria after living abroad for several years and was not able to access quality fashion in the market without going from one physical location to another.

> *"You either go to a local market or your friend travels, or there are one or two malls here and there. But there is nothing that can provide the services you want wherever you were across the entire country. So, we said to ourselves, 'the market is huge, people will always need items" (Firm 5, Secondary)*

> *"I wanted to bridge that gap using technology, by creating an online fashion platform targeted at style conscious consumers who wanted quality, variety and convenience, at affordable prices" (Firm 3)*

The gap in international market is that Nigerian and African diasporas living abroad were not able to have direct access to African fashion. This is because the interviewee believes that Africans have modern sophisticated fashion tastes and loves African attire. The initial gaps in the market are in two ways for firm 3 provides local and international fashion to Nigerian and African consumers.

Firm 4's gaps lie in both Nigerian and international markets; the firm changed the industry trend in terms of how consumer booked online reservation and purchased airline travel tickets beyond the brick-and-mortar model. The main initial gap in the market was a focus on Nigerian customers but the firm was created as a global e-platform with the understanding that customers will come from different parts of the world. For example, Nigerians who are in the UK or US can have a good deal when booking from their geographical locations. Thus, firms 1, 3 and 4 started with a global mindset in order to serve customers in domestic and international markets.

(ii) Product-market fit and provisional business models

Firms 1, 2, 3 and 5 all had pivoted from initial product-market fit apart from firm 4 which still maintains its initial value proposition as the main business objective. The firms pivoting from their initial value propositions enabled them to meet emerging customer needs with the current value propositions and services they offer. The firms did a lot of research in order to understand product-market fit and align technologies that provide customers solutions to their needs. Firms 1 and 3 customer needs include African commodities which are demanded needed globally, and Nigerians and Africans living abroad needing local dishes and African attires

> *"Commodities peculiar to Africa are widely needed globally. And also, Africa is the largest producer, like Nigeria and many other African countries are largest producers for many things. For example, Nigeria is among largest producer of Cassava, Sorghum, cocoa, shea butter. We connect the producer to international markets and they have access to the markets" (Firm 1)*

Firm 1 and 2 value propositions and customer needs encourage more Nigerians and Africans to produce more goods and services because they are no longer worried where to sell their goods as they now have direct access to international customers as opposed to selling at wholesale prices and making less profit. The firms' value propositions provide awareness and direct access to local consumers and domestic market needs.

> *"Also, people wanted to be able to compare if I'm buying this thing from this person, how do I know if I go to a particular market in "Ketu" or "Mile 12" I would be able to get this product cheaper. E-commerce allows you to be able to view price comparisons from different many sellers that you won't have known in the first place" (Firm 2)*

All the firms were created to solve problems related to customers' domestic and international market needs. The business problem in the Nigerian industry was that people were unable to access the kind of services they wanted. The data shows that the initial elements of business models of firms 1, 2 and 3 did not effectively execute the business ideas. This is because some elements of the business model were not properly adapted and aligned with Nigerian social cultural influences and business environments.

Firms 3 and 5 understand the importance of product-market fit because running a business is about building a great customer base and effective execution. These two areas determine firm success because if a firm's value proposition achieves product-customer fit, it will attract customers who are willing to spend their money and the firm will earn profit.

> *"One greatest lesson I have learnt when I was working with multinational companies is that it is important to find a great product-market fit and it will earn you customers love. When you focus on customer everything else will follow" (Firm 3, secondary)*

Firm 4 did not pivot from the initial value proposition because it understands the necessity of product-market fit. The firm contextualises its value proposition with elements of business model that align with the Nigerian business environment.

> "*It is all about understanding what your customers need, is my customer ok getting on with computers to do her/his transactions or does my customer need to see people when doing transaction, so these are some of the things we have learnt that enable us to understand our customers" (Firm 4).*

The first thing for a new business is to understand customer needs, and secondary elements of business model that underpin effective execution of the business. Firm 4 succeeded in successfully executing the business from the onset with the initial value proposition because of the founder's previous experience in the travel industry, which was adapted to the Nigerian context.

(iii) International market engagement

It is important to define and understand how Nigerian digital firms engage in international markets and which channels effectively enable them to engage in those markets. The case firms have different digital internationalisation approaches and partners. Firm 1 and 4 started internationalisation from inception, having been established with a global market mindset due to their value propositions and customer needs. Firm 1 started advertising site that helps SMEs to reach customers in international markets but realised that the initial business model was not working. The firm created an e-marketplace that enables the sellers to engage directly with buyers in international markets, unlike firm 4 that started engaging international customer through its online platform near the inception. Niche customer needs facilitate firm 1 and 4 international market activities.

All the firms have different digital internationalisation approaches and international market engagements. Firms 1 and 2 have similar digital internationalisation approaches; the firms facilitate seamless transactions, handle payments for both sellers and buyers on the platforms, and make sure that both parties are happy for the exchange of goods and services. Firm 2 follows this approach whereby third parties engage customers in international markets. Both firms 1 and 2 do not get involved in handling items and shipment. Firm 3 ships direct to its customers because the firm has an in-house logistics and supply chain services which include sourcing raw materials, designing, production and distribution channels.

Firm 4 combines both digital internationalisation and physical presence approach to international markets. The firm has commercial offices in Ghana, Kenya, and outlets in the UK and Dubai. Firms 4 and 5 believe that having physical presence in international markets is very important for their success as it enhances customers' trust and enables them to serve customers better. Firm 5 emphasises the importance of local content such as employing local staff who speak the core language of those particular countries or regions the firms trades in. This helps the firm to achieve successful internalisation and meet customer preferences.

> *"Ok, so for instance it depends on what country as well. I think when you want to start business in most parts of the world, customers feel more comfortable when they know that you have physical presence somewhere. They may not necessarily come to the office, but they are more comfortable to stake their money when you have physical presence. Even when they search through search engine, and algorithm are more favourable when they know you have physical office. It is influential to have physical presence" (Firm 4)*

> *"In terms of location, they know location more than we do, if someone needs to be in Ghana or wants something in Ghana and the person is asking me questions about Ghana, lets imagine that I have never been to Ghana before I would not be able to answer the person's question. However, people who live in Ghana would be able to answer the questions and give the customer a better direction" (Firm 5)*

Having physical presence in international markets may vary across countries because in African and some other countries customers still want to experience the offline customer interaction with firms

. Algorithms and search engine optimisation are identified as one of the factors that drive digital internationalisation. These techniques also complement big data analytics in the firm's business development.

Firms 1, 4 and 5 have clear internationalisation strategies and business models from inception. Firms, 2, 3, 4 and 5 use digital economy mechanisms like big data and artificial intelligence to understand customer interests, which help them to decide if there is a potential market interest in a particular country. The founder of firm 3 travels across African countries and Nigeria to obtain to search and obtain market information. The interviewee visits rural areas of these countries learning and discovering unique natural resources that can be processed and turned into luxury fashion accessories such as shoes and other fashion accessories. Some of the African countries she has visited include Tanzania, Ethiopia, South African and Morocco. She also visits China, UK and other countries to form partnerships and understand specific African products needed in different countries.

> *"…is about getting insights into the deep market. Also, we get world facts, for example if they said there is a largest producer in this area, we get a research knowledge from credible source like world facts. Also, we get demand from partners from global enquires" (Firm 1)*

Firms 1 and 3 are all about travelling and forming partners around African to discover goods and commodities that are required in international markets. The firms do not have physical presence but engage customers when they visit different countries as part of their customer development.

Firm 2 does not have clear internationalisation strategies as its international market activities emerged through third part. The third-party international activity is similar to firm 1. Firm 2 has ongoing plans for expanding its physical presence in international markets like Africa, but the interviewee declined to comment on the African markets which they are trying to engage in order to protect its business model. The firm admitted that they have already started building strategic partnerships in order to facilitate and have effective internationalisation.

> *"I can't speak on that at moment; I know we have met with some strategic partners in other African markets. I believe that this will fast-forward the movement. Our mission is to be a leading marketplace in African" (Firm 2)*

In a nutshell, all the case firms have different approaches for engaging customers in international markets. Firms 1,4 and 5 have clear approaches and models for digital internationalisation. Firms 4 and 5 combine digital and physical internationalisation approach (hybrid internationalisation) in order to meet customer needs, but vary their approaches from one country to another. They have workable and adaptable internationalisation models. Firm 2 and 3 are still developing their digital internationalisation strategies this because their primary focus was on Nigerian market.

(iv) International entrepreneurial orientation and experience

All the founders of the case firms had past international business and professional experience. The international market experience of the founders served as the driver of the establishment and internationalisation of the firms. The founders' international experiences vary; firms 2 and 3 founders' past international market experiences come from working in multination companies and big consultancy firms. Firms 1, 4 and 5 gained international experience from previous business and personal experience as they had set up business in the US and China. International orientation also implies an understanding of customer needs and how best to serve the customers in different markets with different contextual influences.

> *"Also, I have been in engaged in international business for a couple of years. Way back we set up a business that produced locally products in China and shipped it back to Nigeria. This one of the companies I used to run before, from which I gain some international experience" (Firm 1).*

For firms 1 and 4, having established business in international markets have contributed a lot to the development and internationalisation of the firms. From this sense, the two firms were established with international market mindsets because of their founders. This has enabled them to develop workable internationalisation models and strategies which enable the them to engage in international market activities near their founding. It is therefore clear that international orientation combined with business experience facilitate internationalisation processes of the firms.

Firms 2 and 3 that have ample work experience with multinational companies and large consulting firms. Both working and business experience offer a considerable level of international orientations. This is because all the case firms are involved in international market activities, but the extent of the engagement differs.

“When I was working as a management consultant with experience across different industries, ranging from brand management, banking, internet company, along the way and realised that what I enjoyed most professionally were the ones that where entrepreneurial. I grow up in a family of entrepreneurs” (Firm 3).

International entrepreneurial orientation and personal experience of founders of firms 2 and 3 enable them to translate their experience and ideas into the Nigerian market. The firms’ primary focus was Nigeria when they started, their internationalisation strategies are emerging as the businesses acquire experience and understand business environments and customer needs.

Most importantly, all the case firms perform international entrepreneurial acts and have international market mindsets that enable them to do business both in domestic and international markets.

6.3.2. Theme 2: Resources and Skills

This section presents the skills and resources required for development and internationalisation of digital firms. The most frequent cited comments from the case firms are founders; and funders’ resources, technological skills and ICT knowledge, and partnerships and collaborations that support the development and internationalisation of digital firms.

(i) Founders’ and funders’ resources

All the case firms show that the basic and fundamental requirement for developing digital firms is initial capital investment. The initial funding for creating digital businesses usually come from the founders because this type of business may find it difficult to attract investors if the founders of the firms have not proven a viable business model that will boost investors’ confidence on the new business. Firm 3’s initial funding came from the founder and was started from her bedroom while working with multinational companies, which was described as a “side hustle”. The firm suggests that the easiest way to start a business in Africa is to start small with personal, family and friends support to develop experimental products and services in order to prove the potential of the business value proposition. In this sense, it will attract investors because of the potential growth in such a new business.

The founder of firm 4 started with his personal funds and his father’s as the first initial investor and partner. The interviewee went on to emphasise how initial funding varies depending on the nature of the digital firm that is to be established. Adopting an existing business model or building a new business model from scratch will determine resources that will be needed for starting a new business. For example, building a novel business is associated with a lot of uncertainties, compared to adopting existing and proven business models which may be easier to replicate.

Firm 1 secured initial seed funding from individual partners to form the foundation of the firm, and this enabled the firm to the have the first partnership in the business. At a later stage the firm opened its doors for investments from larger corporations to enable it to achieve growth. Hence, securing funding from the onset of business or using personal funds can determine the viability of value proposition. The comments below describe how the firm's value proposition and business environment can determine the required funding

> *"If you look at a company like Facebook, which started in a garage. So your location, your key people, your technology, what kind of system do you need, do you need access to the crowd, if you are looking for a global business you need a platform that will scale up quick, even local business" (Firm 4)*

> *"We started from e-commerce point of view, initially, e-commerce business thought that when you raised $5 million in funding, you commit $2 or $3 million of the money sourcing your product and you use the remining $2 million to execute your business. As time goes we realised that was not sustainable business strategy because you cannot continue to own your inventory, which is why we now went into marketplace devours that allow to grow a lot of capital" (Firm 2)*

> *"Of course, you cannot run a business like an e-business without an investor, then if you have all the funding it is fine, I don't think there is one person who will like to invest all his funds in an e-business, where there are many investors who would like to support you" (Firm 5)*

For firm 5, investors' funding is very important because the interviewee believes that the firm has leveraged investment funds from international investors to establish the firm as a famous e-commerce in Nigeria. Funding is very important but does not always have to be a challenge for entrepreneurs. New businesses need to consider how to maximise the resources and opportunities they have around and understand the market environments to succeed locally and internationally.

Finding how a digital business aligns with customers' needs is very crucial; the data show that product-customer fit is discovered as businesses grow and understand the market environment. For example, firm 2 started as an e-commerce firm having their own inventories, but the company realised that the initial business strategies and model were not aligned properly with the business environment. This is because at some point in the past the firm could not afford to maintain its inventories to meet customer needs. Hence, the firm pivoted to e-marketplace that allows merchants to supply most of the stocks to meet customer requirements and generate profit for the firm.

(iii) Skills and ICT knowledge

Technological skills and ICT knowledge are crucial skills for developing and internationalising digital firms. Almost all the case firms cited digital skills and ICT knowledge as important intangible resources, but these kills vary depending on the types of firm and industry sectors they belong to. The findings indicate that it is not necessary for a founder to possess the requisite technology and digital skills for a firm, but they need to have the capacity to engage people that would be able to develop the technologies.

> "*When I mentioned the skills, I did mention experienced developers and talent. So it doesn't mean you must have all these skills. It means that you will work people that have that capacity. You may not have digital skills, but you need people with tech skills" (Firm 1)*

> *"…if you want to go digital you need someone as head that understand technology to an extent, maybe at some point having worked in digital firms or with developers, this type of skills ensure you are going to get exactly what you need" (Firm 2)*

The interviewee of firm 4 believes that the founder or the MD of the firm should have technological skills and ICT knowledge. From the firm's perspective, the MD's or founder's technology background will save cost, and MD who is digitally and strategically oriented will understand changing dynamics in the technology and digital world. This will make the firm to continue to be relevant in the digital world.

Firm 4 knows from the inception that understanding that technology is the future of the industry even when the technology services were not prevalent in Nigeria and some of the African countries. From the data firm 4 seems to be more technology oriented and it integrates technology and offline service to meet customer preferences.

> *"One of the major factors that fuelled our optimism for the model we adopted was the rise of digital technology. We looked at the statistics and were convinced that technology would shape the future of travel. We were very clear about this fact that the technology would shape the future of travel." (Firm 4 secondary)*

The interviewee firm 5 believes that the most crucial skills required to set up an e-commerce business consist of business management and analytics skills, since employers do not need to have technology skills because they can hire people with the right skills to make a good team. This is because the founder of a business does not run the entire business.

> *"If you talk about skills that person needed to understand business management basically, if he will be able to manage people of course he will be able to drive the business" (Firm 5)*

> *"You need a considerable level of digital marketing, em you need to have digital marketing skills to the for selling any online merchandise" (Firm 2)*

For firm 2, digital marketing is more important because digital marketing drives digital firms, and firms need to have digital marketing budgets from the foundation of a business. Digital marketing capacity is very crucial especially for firms that engage digitally in international market activities. Although the data show that both digital and conventional marketing are crucial for digital firms, internationalising firms may need more digital marketing skills in order to engage and acquire customers in diverse locations. Digital marketing tools and how they convert prospective customers to realised customers are discussed in more detail in the next section. A good source of digital marketing skills in the researcher's view is Chaffey & Ellis-Chadwick (2016).

(iii) Partnership and collaboration

As highlighted above, all the case firms have partnerships and collaborations with individual businesses. Some of the firms started partnerships from the beginning while some started at later stages, in order to achieve objectives of the businesses and engage in international market. Firms 1 and 2 started partnerships in relation to funding capital unlike firm 3 and that started at later stage when pushing growth paths of the business. Firm 1 has domestic and international collaborators that enhance its business operations and facilitate internationalisation processes, thereby enabling the firm to engage customers that it would not be able to access directly through digital channels. These domestic and international partnerships have enabled effective and efficient digital models for internationalisation of this firm.

> *"Yes, we do have partnership in both local and diaspora markets, like UK, US, Australia and so many other countries. They have to stock the products and they have*

to distribute them locally. We have collaboration with local banks for international funds receiving or transfer and general transaction" (Firm 1)

Firm 1 has partnerships with trade associations in Nigeria, government agencies, and some international chambers of commerce help it to gain customer information and understanding customer needs in both domestic and international markets. Firm 2 has gone into partnership with Facebook called "free basic initiative" as mentioned in individual case analysis, in order to engage their customers more successfully via mobile phones. This is because the firm realised that for the 180 million people in Nigeria only around 20 to 25 million have access to the "internet or manageable data.

"So we have also gone into partnership with Tecos and companies like Facebook, Facebook come to Nigeria and started an initiative called free basics, where people would be able to have a good or strong internet connection" (Firm 2)

"We 've structured partnerships with the best logistics partners that have helped us expand globally (Firm 3)

Firms 1, 2, 3 and 5 have on-going partnerships with different bodies because in an e-commerce ecosystem one firm may not be able to provide some of the auxiliary services. Firm 2 realised that focusing on many auxiliary services like logistics bulked down the company business model. The partnership with logistic company and service providers ensures smooth logistic and customer satisfaction and makes the business model more effective. Firms 1 and 3 have partnership as well with international courier services that help them to expand globally. Firm 3 leverages partnership for its entire supply chain in fashion industry from cotton farming and retailing.

Firm 4 has a slightly different partnership compared to other firms because of related travel services and products it offers. The firm's partnership focusses more on internationalisation path. The firm acknowledges that it is important to have different levels of partnership with different firms in online markets in order to reach more customers. It leverages third-parties' technology service providers because data show that in a digital ecosystem one firm cannot develop all technologies in-house.

All the case firms leverage on relationships and networks to reach customers widely and engage in international markets. Partnerships and collaborations enhance a firm's operations and facilitate internationalisation activities. Most importantly, it makes the firms to stay lean and focus on their core business priorities. The next theme and sub-themes discuss customer engagement and acquisition.

6.3.3. Theme 3: Customer engagement and acquisition

How digital firms engage with and acquire customers both in domestic and international markets is an important aspect of this research. Sections under this theme include digital and offline (hybrid) customer acquisition and engagement, and customer learning to understand customer needs and help firms to build tailored relationships and customer support.

(i) Digital engagement and acquisition

The case firms use different and related digital channels to engage and acquire customers. Firm 1 serves two types of customers and uses different digital channels to engage them, and it tailors customer engagement and acquisition tools to specific customer needs. The firm uses information messenger (IM), SMS and WhatsApp to engage suppliers and sellers. This is because they find it easier to use mobile web platforms. The firms use search engine optimisation, Twitter, and free blog content to engage international buyers on the platforms.

> *"We use a lot of content online, which work with search engine optimisations. We use solution through free content we distribute on the internet. People search constantly on Google on information. These contents are really good and rank very high and people find it on the internet and they engage us through internet" (Firm 1)*

Firm 2 uses digital customer engagement strategies like email, newsletters, SMS marketing, and targeted online advertising,

> *"Finally, digital marketing channels or digital marketing strategies include a lot of things; this is where we have our biggest play. We have a whole suite of digital marketing techniques we use to engage with customers, starting from online advertising, e-mail, newsletter, social media, SMS marketing" (Firm 2)*

The interviewee of firm 2 emphasised that socio-economic developments like internet infrastructure, including quality, quantity and affordability of the internet access enable digital firms to run successful and implement their digital strategies. The increase in smart phone use is very important for running effective digital business and marketing and acquiring domestic and international customers. Hence, more people having smart phones and affordable access to the internet will enable more customers to reach the firm's platform, and the firm's digital marketing communications to reach more customers and consumers locally and internationally.

Firm 5 uses high percentage discounts and what the interviewee described as "mystery shopping" to engage and acquire customers online. This kind of digital acquisition drives a lot of traffic on the firm's platform.

> *"We also do mystery kind of shopping, maybe we can do a push, maybe there is an item going for #500, may be few items may be there is none, and we say is going to be a lucky buyer. There is one we did recently, just a bag of rice for 1000 and there were a lot of people coming on our platform to buyer that" (Firm 5)*

(ii) Social media

All the case firms cited social media as one of the crucial tools for customer engagement and acquisition. How firms use social media and the type of social media varies depending on the firm's targeted customers. Firms 4 and 5 acknowledged that social media have different strengths and they use more of Facebook because it is more effective in Nigeria and Africa. Facebook, Instagram and Twitter are more crucial in reaching customers than other social media platforms. This is because the firms' customer groups lie across different age demographics-young, middle age and adult individuals. This is why the firms work across the three dominant social media identified in the present research.

> *"So, they all have different strengths, we use all of them, probably to be honest, this region Facebook is really effective, Instagram is good, and it is also a big one. Twitter is good as well. It is really hard to pinpoint if this one is over that one, certainly Facebook, Instagram and Twitter are above everyone else" (Firm 4)*

All case firms cited Facebook, Instagram and Twitter as crucial components that they combine with other digital marketing and advertising mechanisms to engage and acquire customers. Firm 3 described using social media as DNA of the firm, not just as a component of customer engagement or digital marketing tools.

> *"Social Media is at the heart of our business. We are one of the first e-commerce businesses in Nigeria to put social media at the core of the business, for us it is not an extension of marketing but a key part of our brand DNA" (Firm 3 secondary)*

Firm 3 has different levels of using social media marketing compared to other firms. The firm's customers play an active role on social media platforms and have helped the firm to build an online community. The online community allows the firm to have a regular interaction with customers and it provides the firm with a better understanding of customers' wants. This is a great way to gather real time customer feedback. Firm 3's online community groups help the firm to update the latest designs of products, which bring in new customers, convert likes to sales, and encourage returning customers.

(iii) Offline engagement

Firm 1 does a lot of offline engagements such as visiting suppliers' business premises to ensure that the product specifications meet buyers' needs in both domestic and international markets. The firm uses face-to-face marketing and customer support to educate traders (sellers) more than online campaigns. Firm 5 has a team that engages prospective customers offline in order to educate them on the features of the products and benefits of their offerings. This offline engagement converts conventional offline customers to online customers.

> *"We also have they guys called J4 people, all they do basically is to engage students, engage people on the street, maybe who really want to place their order, but they don't have devices to place their order. So we give the products to those people at discounted prices, basically they are the one speaking about us in their schools or their workplaces and all just to make sure when you think about e-commerce you think about us, or instead of going to market you will just go on our platform and get those things" (Firm 5)*

> *"It comes with offline visitation, trade seminars, discussions, free support services and enquiries. Professional grooming to ensure traders' safety in international transactions" (Firm 1)*

Firm 1 monitors and ensures safety for customers in both domestic and international markets; because of this both parties have successful deals, and similar to firm 5 customers' items were delivered successfully after purchasing them online. These customers share their experiences socially which is useful for engaging prospective customers through word of mouth (WoM). Firm 1 also organises series of seminars, trade fairs, trade exposes, exhibitions and trade networks, to educate and enlighten their customers in different states and cities about what the firm offers and how to conduct business on its platform.

Firm 2 and 4 use above-the-line (ATL) regular conventional marketing channels like billboards, TV and radio adverts. Firm 1 and 2 use brand-building below-the-line advertising (BTL) to engage consumers, by creating events and partners in order to directly engage with consumers to tell them the benefits of what the company offers and how to shop on the platform. Firm 2 sees Word of Mouth as an important form of advertising. Firm 3 organises fashion parades and exhibitions, but does more of online support and experience.

"So it is digital business, so we do a lot of digital marketing and again this is where you adapt to your market because we know that a lot of customers we want to acquire spent a lot of time on TV, Radio, so we use traditional marketing a lot, the combination and hybrid" (Firm 4)

Both traditional and digital marketing are crucial for all the case firms, excluding firm 3. Most important is that all the firms understand their customer segments and tailor the marketing channels to enable them to engage and acquire customers in different segments.

(iv) Customer relationship, learning and support

Firm 1's customer relationship provides customer solutions beyond sellers and buyers on the platform. By providing training as support services to improve their businesses, the firm also provides potential information for buyers on its products before they are harvested.

"It comes with great service experience which we called the "user experience". It comes with quality content, contents that deliver solutions for customers. And they will believe that these people are the right people I should speak to"(Firm 1)

Firm 2 customer relationship is about keeping its brand promises to ensure that customers continue to benefit from what attracted them on the platform for the first time. Communication is one of the important factors identified regarding how firm 2 maintains customer relationships and keeps their customers. Reputation and trust enhance customer relationship for the firm because keeping brand promises enhances the firm's reputation, and trust enables customer to feel comfortable to do business on the platform. Thus, to build a good customer relationship a firm needs to integrate customer solutions, reputation, brand promises, support and trust.

"We have quite a number of digital suite of communications that we use to continually execute our reputation management, our consumer retention project, all of those things to ensure that your brand promises are kept, we use all these to continue to build your reputation that way" (Firm 2)

Firms 4 and 5 provide personalised customer services which are tailored to specific customers. This is to ensure that customers walk away happy which has a huge impact on retuning customers. They have engaged extensively in learning customer feedback through positive and negative reviews. Compensation by offering vouchers or incentives to customers who have negative experience is a crucial retention strategy for firm 5.

> *"So, we have the customer experience team whose responsibility is to watch for complain and listen to customers' feedbacks, whether we have reviews, or they have called in to complain, we usually give them compensation* voucher *or any incentive just to ensure that the customer walks away very happy" (Firm 5)*

Learning about customer needs and user experience is an important aspect of customer relationship. Firms 1, 4 and 5 have dedicated teams who engage customers to learn their needs. For, example, buyers share their experiences with sellers. Learning about customers allows firms to understand customer needs and offer services and products that meet their preferences.

6.3.4. Theme 4: Digital technology

Digital technology and digital economy mechanisms are main components and drivers of digital internationalisation. The findings show that digital technologies such as big data, artificial intelligence and cryptocurrency are crucial for digital business. Technologies such as multifaceted platforms allow the firms to exploit on international market opportunities. Because of contextual influences in domestic and international business environments, the case firms operate in, they integrate online and offline strategies to meet customer needs and preferences, better than focusing on online strategies. The sub-themes in this section include data-driven decision making, multifaceted platforms, and hybrid e-commerce and e-platform.

(i) Data decision making

All the case firms excluding firm 1 have adopted big data and artificial intelligence techniques for decision making such as on customer learning, acquisition and retention, and international market engagement.

> *"We are a very data driven company and we ensure that we use data to make strategic decision for us. So, we have a big technology team with a lot of people in there focusing in "IA" emerging technologies. From the marketing and commercial perspective, we also do a lot of data crunching, big data analytics, there is analytic back up for almost every function in the company" (Firm 2)*

The firms that will succeed are those that will harness futuristic technologies like the power of artificial intelligence, big data, cryptocurrency, payment solutions, and website capabilities, to ensure that they stay ahead in delivering value to the consumers. There is data analytic support for almost every function in firm 2.

Firm 3 has a program called the Fit Project; the project uses big data to analyse customer measurement data and use the data insights to manufacture and produce highly-fitting quality garments to provide personalised and tailored services. This has enabled the firm's vertical integration as the whole supply chain is done by the firm. The firm is using digital data and vertical integration in building a modern fashion retail that serves both African and international market needs.

> *"From data we can understand there is a lot of interest in those countries. And then the next thing you will do is to scope what is happening in that country, what is the competition like, does the country actually have potential required to go there. What are the alternatives people in the country have, is it easy for me to supply service or goods in the market, what are the customers like, are they similar to the markets we are serving already"(Firm 4)*

Data allow firms to understand consumer purchasing trends; for example if a firm realised that a lot of people are buying a particular products or services from a particular location, they will tailor their communication towards that location or probably open an office in the same area. For firm 4, use of big data analytics relies on having enough customer data and is important for firms that engage in global markets. It stresses the importance of big data and artificial intelligence in enhancing competition in the quote, "*I think anybody that is playing in digital economy business would be foolish to discard the power of big data or artificial intelligence"*

> *"Every decision we take totally relies on data and this is done by our business intelligence team, when you talk about big data it is also driven by business intelligence team; they are people who explore data from the website" (Firm 5)*

Almost all the case firms know from the beginning that from data they would make good decisions. Data-driven decision making helps firms 4 and 5 to move a new market. Using an illustrative example from firm 5, *"let's say for instance, give me the number of people who have travel from South Africa in the last six months that booked on our platform, do you understand, based on the data we would be able to say we need to do this or that or to have office in South Africa"*. Most of the decisions the firm takes totally rely on data and this is done by the business intelligence team, and it is very relevant for digital firms that engage in international market activities.

(ii) Multifaceted platform

Multifaceted e-platforms facilitate digital internationalisation across all case firms, excluding firm 2. “Multifaceted” is defined in the English dictionary as "having many different aspects or features". In an e-commerce or e-platform it is a central technology system that enables e-commerce and e-platform firms to recognise locations in which a customer logs in from. It allows customers to see the price of the item on a platform site in a country's currency in which the customer is purchasing from. This helps the firm to localise their offerings in countries and regions in which they operate, and to scale up faster.

> *"The platform is built such that it picks the geolocation of the visitor, be it merchant or buyer, and lists the prices of the product in the denominating currency of that particular location. For instance, imagine Ghanaians searching and finding a Nigerian product listed in their own currency" (Firm 1)*

This type of digital portal is specific to the countries and it helps customers to have a good deal when booking and making a reservation. It helps firms to identify locations where customer traffics are coming from and to identify international market opportunities. As mentioned previously, it helps firms to decide where to open offices to reach customers physically rather than digitally.

(iii) Adaptation of hybrid e-commerce and e-platform

All the case firms integrate online and offline operations and services to meet customer needs in both domestic and international markets. In the Nigerian and African environments where most of the firms operate and internationalise, these countries are still a bit traditional in understanding e-commerce and e-platform retail. This is because a significant percentage of firms’ user journey is still offline. Most of the case firms combine digital and offline strategies to meet customer needs in those environments.

> *"I would say that technology was the backbone of our strategy. That is the use of technology offer superior services in the areas of ease, convenience and transparency. We are very clear in our minds that online ticketing was the future for the industry in Nigeria. We also recognized that there were Nigerians who wanted the direct personal interaction for the bookings" (Firm 4)*

> *"People still like the feeling of seeing and touching goods before purchase. So, what we do is we try to understand, and we allow our customers to get the items in different sizes and try them on and will wait for you to try it on then take it. So, what we are*

trying to do is to bring things that people like form Shopping offline to the online experience" (Firm 3, secondary)

This informed why most of the case firms have a hybrid model. As mentioned previously, firm 4 is primarily a digital firm but has over 30 offices and centres in Nigeria and 5 has offices internationally. Firm 5 has physical presence in more than 23 African countries. This is because Nigerian and African e-commerce are very different from other parts of the word, like that of US, UK and Asia, due to cultural limitations, insufficient and inadequate internet penetration, and a very low percentage of the population are able to make purchases digitally with debit and credit cards. Because of this, firms 2, 3, 4 and 5 have adopted a payment strategy called "pay on delivery", which firm 2 claims to have initiated.

"We did that number of years in Nigeria before we realised that this was also a flaw in the business model as Nigeria customers are not very well suited for such a process. Because we have no interest in buying those items in the first place. So, business was incurring cost of delivering the product when the consumers did not need the product" (Firm 2)

Firms 2 and 5 found a way to optimise pay on delivery to ensure they are getting their offerings to real customers that needed the services. For example, firm 2 optimisation was to develop a solution that allows the consumer to make a commitment, and customer will go to a particular location or pick up centre near the customer. This is to ensure that the firm does not incur huge costs on delivering, whether they will pay for the pickup centre, if the consumer fails to pick it up there, the firm does not have to pay for the reverse logistics cost.

6.3.5. Theme 5: Nigerian social cultural influences

This section analyses the impact of Nigerian social cultural influences on e-commerce and e-platform firms and their internationalisation activities. Digital infrastructure, human capital development, and other socio-cultural factors are identified as major challenges for the development and internationalisation of digital firms.

(i) Digital infrastructure and internationalisation challenges

Digital payment and customer willingness to pay online are the major challenges that face the case study firms, and they mitigate this challenge through pay on delivery. Digital business is fundamentally driven by a strong internet connection and customers having affordable access to the internet. Below comment from firm 2 shows that digital business will thrive with adequate internet and affordable access to the internet.

"First of all, you need economy to be growing so that business can grow. We need better internet, affordable access to internet, we need a more number of people using internet because many of our business execute through the internet that is underline infrastructure that we need" (Firm 2)

The lack of internet penetration has limited potential customers from purchasing products online. Firm 2 has partnered with other digital organisations to enable potential customers to have access to the internet; this was discussed in the individual case analysis. There are no incentives to encourage investments in technology in Nigeria, though, there is growing interest in Nigeria's technology scene.

Firm 1, 2 and 3 faced more challenges in their internationalisation activities due to the nature of the businesses they do and their operating business models.

"The barriers from international market is that sometime the specification and the demand are different, and when the local supply tried to make that they may not meet it appropriate and it goes into a wrong deal, that is one (Firm 1)

The above comment brings in the issue of trust and transparency that the firms have to deal with. The firms frequently communicate with both buyers and sellers to make sure the product specifications and descriptions meet buyers' needs. Finding partners in international markets has been a challenge to the firms. Collaboration and partnership will enable the firm to grow and reach many international markets. Firm 3 faces expensive courier services for delivering and retuning international orders. Customers have to pay for the returned orders which is very expensive and has negative effects for the firm internationalisation.

"One thing with those orders, it take many days to get to customer destination and it is expensive logistics. We have been working to see effective and speedy way to deliver orders to other countries" (Firm 3)

"Like I said we don't have a lot of those because we have every region managing their own transaction. So, we basically do locals, we don't manage a lot of internationals. However, it doesn't mean that we don't manage international customers, mainly in travel" (Firm 5)

Firm 5's online "mall" has a different internationalisation model unlike firm 1, 2 and 3. Firm 5 still faces challenges in travel services where customers from different parts of the world book a reservation from the central online portal system. The firm faces fraud in terms of customers using stolen cards to make payments. Language barrier is another challenge the firm faces through customer service and when engaged in international markets.

(ii) Human capital development and other challenges

Firms 2, 3 and 4 cited lack of human capital development as one of the challenges. For a business to succeed requires staff development; firm 2 has invested in staff development.

> *"You know we have human capital development problem in Nigeria. You know our education is not sound as it supposed to be, this is the problem entrepreneurs face in Nigeria" (Firm 2)*

It was difficult for firm 3 to find people with the right skills for the business. The interviewee went on to mention that the new industry needs government's support to work with private sector, in order to invest in education system that will integrate technology skills in innovative curricula. Almost all the case firms believe that technological and other skills are very important for developing digital firms.

> *"The main challenges are mainly around resources, recruitment, retention of skills people to be able to operate effectively" (Firm 3)*

Firm 4 noted the lack of skills in the Nigerian market and the fact that Nigerian businesses are not customer service oriented. The interviewee made some comparison on how many multinational companies go to India to set up offices because of their understanding of customer service. Although Nigerian customer service may not be like that of India, but one important thing is that the case firms are continuously adapting and aligning every business function to meet customer needs both in domestic and international markets.

There are other challenges such as electricity, logistics and delivery cost, and access to capital, and good motorable roads. These challenges vary across firms. For example, electricity does not affect firm 1 but affects firm 2 because it has a lot of warehouses in the country that require electricity. Lack of logistics network makes it more expensive for firms 2 and 3 to operate and compete with global counterparts.

6.4. Summary and Conclusion

This chapter presented case study analysis for each of the five cases and a cross-case analysis to shed light on how digital firms commonly develop and internationalise. Market knowledge, finding niche gaps in the market, product-customer fit, and international and business experience of founders and managers are fundamental for developing internationalising digital firms. The findings show that all types of resources and combinations of digital and technological skills of founders and managers are crucial for initial and subsequent stage of the firms. The firms combine vital digital and offline engagements to acquire customers both in domestic and international markets. Social media platforms were identified as for customer digital engagement and acquisition. Digital technologies and big data analytics help to discover and identify international market opportunities. Use of multifaceted platforms has enabled the firms to localise and contextualise their offerings in different international markets. Lack of digital infrastructure, electricity and expensive courier service were identified as most challenging for digital internationalising firms in Nigeria.

Chapter 7: Discussion of Findings

7.1. Introduction

The focus of this research is the development of an Integrated Business Model Template (IBMT) for digital internationalising firms in Nigeria. Consequently, this chapter brings together the insights from the case study analysis in Chapter 6 and the research questions, to revise the conceptual framework in Chapter 4 and develop the IBMT. Table 7.1 below depicts the said linkages. The indicated linkages are major themes associated with the corresponding research questions since some other themes may also apply. We recall the research questions below for easy follow-through in this chapter:

1. How does knowledge of international entrepreneurship influence the development of emerging digital economy firms in Nigeria?

2. How do Nigerian digital economy firms successfully internationalise their offerings?

3. How do digital economy characteristics influence the development and internationalisation of digital firms in Nigeria?

4. What are the defining business modelling characteristics of digital firms?

5. What challenges are faced by Nigerian e-commerce and e-marketplace firms?

Table 7.1 linking the research results to research questions and objectives

Research questions	**1**	**2**	**3**	**4**	**5**
Research Results					
Theme 1: Market knowledge	*				
Gaps in the market	*				
Product-market fit and customer needs	*			*	
International market engagement	*				
International entrepreneurial orientation and market experience	*				
Theme 2: Resources and Skills	*				
Founders and funder resources	*				
Skills and ICT knowledge		*	*		
Partnership and collaboration	*	*			
Theme 3: Customer engagement and acquisition				*	
Digital marketing, social media and physical channels		*	*	*	
Customer relationship, learning and support		*		*	
Theme 4: Digital technology		*	*	*	
Data-driven decision making		*	*	*	
Adoption of hybrid e-commerce, e-platform, and suitable payment system		*	*	*	
Theme 5: Nigeria social cultural influences					*
Digital infrastructure and internationalisation challenges		*	*		*
Human capital development and other challenges					*

Source: the author's own

The numbers 1 to 5 in the top right-hand rows of the Table 7.1 represent the research questions 1 to 5. The texts in left hand columns represent the analysis themes and sub-themes from the case study analysis. The asterisks show how the results answered the research questions. The following notes explain the links among the research questions and the research themes in Table 7.1. The asterisked sub-themes under each theme and research question are of interest here.

For research question 1 *(How does knowledge of international entrepreneurship influence the development of emerging digital economy firms in Nigeria?),* the related sub-themes are: gaps in the market (opportunity recognition), product market fit and customer needs, international market engagement, international entrepreneurial orientation and market experience, founders' and funders'; ICT knowledge and skills; partnerships and collaborations. This means that a deeper exploration of the question requires the sub-themes. Hence, international entrepreneurs must understand gaps in market, fit between offerings and markets, how to engage international markets successfully, have the international market experience, and be able to develop enabling partnerships and collaborations.

For question 2 *(How do digital economy firms successfully internationalise their offerings?),* the contributing sub-themes are: ICT knowledge and skills; partnerships and collaboration; customer engagement, digital marketing and social media acquisition; customer relationships, learning and support; data-driven decision making (big data analytics and artificial intelligence); adoption of hybrid business models for e-commerce and e-platform DIFs; suitable payment systems; effects of digital infrastructure on internationalisation activities. Hence, digital firms internationalise their offerings by: having adequate skills and ICT knowledge; making effective use of digital marketing, social media and physical channels; building customer understanding from data-driven insights (big data analytics, for instance); adopting hybrid e-commerce and e-platform strategies with suitable payment systems; and being up-to-date with emerging digital infrastructure which enable them to overcome digital internationalisation challenges.

Question 3 *(How do digital economy characteristics affect the development and internationalisation of digital firms in Nigeria?)* rests on five key themes: ICT knowledge and skills; social media and digital marketing; data-driven decision making; adoption of hybrid business models and internationalisation approaches; and use of suitable payment systems. Therefore, digital economy characteristics influence the development and internationalisation of digital firms in Nigeria through: digital skills and ICT knowledge, whereby firms with such skills are more likely to succeed than those lacking the skills; effective and proactive digital marketing, social media, and physical channel strategies; sound data-driven decision making; again 'adopting hybrid e-commerce and e-platform strategies with suitable payment systems; and being up-to-date with emerging digital infrastructure which enable them to overcome digital internationalisation challenges'.

For question 4 (*What are the defining business modelling characteristics of digital firms?*) encompasses six themes: profit-market fit and customer needs; customer engagement, digital marketing and social media acquisition; customer relationship, learning and support; data-driven decision making (big data analytics); all culminating in the integrated business model template (IBMT) for DIFs. Consequently, the business model characteristics of digital firms are such that the model enables the firms' offerings to: meet customer needs; facilitate effective digital marketing, social media and physical channels strategies; effectuate proactive customer relationship, learning and support; again implement "data-driven decision making; and adopt 'hybrid e-commerce and e-platform strategies with suitable payment systems".

Question 5 (*What challenges are faced by Nigerian e-commerce and e-marketplace firms?*) relates to two key themes: digital infrastructure challenges; and inadequate human capital development. As a result, the key challenges facing Nigerian digital internationalising firms consist of inadequate digital infrastructure and technologies (low internet bandwidth and resulting high cost of acquiring digital data), low level of human capital development mainly due to gaps between theory and practice of disciplines studied in high education (Ezepue & Ochinanwata, 2017).

This chapter is organised in 7 main themes. The first theme discusses market knowledge. The second themes focus on resources and skills required for developing and internationalising digital firms. Theme 3 discusses customer engagement and acquisition through digital marketing, social media and physical engagements. Theme 4 focuses on digital technologies that enable the firms to develop and internationalise. Theme 5 discusses the problems and challenges facing digital firms in Nigeria and their internationalisation activities. Theme 6 revisits the initially proposed conceptual framework, and incorporate the findings incorporated into a revised conceptual framework

Theme 7 presents and discusses the integrated business model template (IBMT), complementary internationalisation template for digital firms (ITDF). These frameworks will enhance development and internationalisation of cyber-mediated firms in Nigeria. Finally, section 7.8 summarises and concludes the chapter.

7.2. Theme 1 Results: Market knowledge

7.2.1 Gaps in the markets

One of the key factors in the development and internationalisation of digital firms in Nigeria that is common among all the case firms is identifying gaps in domestic and international markets. The findings showed that how the case firms identify gaps and niches in the market varies. Firms 1, 3, and 4 started with international and domestic market needs while firms 2 and 5 started with domestic market needs and later discovered international market opportunities. All the case firms' initial gaps in the market are linked to domestic market opportunities. This finding is in line with Dimitatos, Liokas & Cater (2004), who note that entrepreneurs who understand different business environments are likely to have superior performance in both domestics and international markets.

International experience of the founders enabled them to foresee market opportunities in both domestic and international markets (Zucchela & Scabini, 2007). This is because the findings reveal that the founders of the case firms have lived abroad and have business, professional, and consultancy experiences. Thus, the findings confirmed that having opportunity to travel to new environments and foreign countries helps to develop new niche business ideas, and global business opportunities (Child et al., 2017). This is not only for global business opportunities, but more importantly for domestic markets in which the entrepreneurs hail from. For example, development of digital firms in Nigeria contributes to national economic development due to the experience and market knowledge of the founders. Thus, the finding contributes new knowledge on the importance of international experience and exposure in national socio-economic development through the creation digital internationalising firms.

Some of the case firms' founders identify business opportunities from previous business experience, for example firms 1, 2 and 4 have set up related businesses while firm 3 discovers the opportunities through customer needs. These findings confirms the view by Karra et al. (2008) that suggests that businesses identify opportunities in three ways 1) through active search which involves superior search skills and ability to scan the environment to identify gaps in the market; 2) passive search or fortuitous search which is through experience and existing knowledge; and 3) creativity and imagination that allow entrepreneurs to foresee new opportunities and harness combinations of resources that could lead to development of new products and services. The first of the above three ways to identify business opportunities are supported by firms 3 and 5, while firms 1, 2 and 4 are supported by the second. All the case firms exhibit the third approach.

The findings show that the firms typically explore offerings that fill the identified gaps in the market. Oviatt & McDougall (2005) suggest that environmental influences, industry situations, and entrepreneurial thinking are crucial factors that influence the speed of international business involvement. The findings shade light on the importance of niche and unique offerings in the international entrepreneurship and internationalisation literature. The findings reinforce findings by Taylor & Jack (2016) to the effect that uniqueness and differentiation of offerings enable firms to seize international market opportunities.

7.2.2. Product-market fit and provisional business model

The findings reveal that four out of five case firms have shifted from the initial value propositions and adopted new business models to meet customer needs and preferences. This continuous business model innovation has allowed the firms to achieve product-market fit within the Nigerian socio-cultural contexts business and environments.

In other words, the findings show that initial value propositions of some of the firms meet customer needs, but the business models that support and deliver such values to customers were not properly aligned with Nigerian business environment. For example, firm 1 has appropriate business model that delivers value to customers, but the initial proposition did not meet customer needs, because of which the firm redeveloped a new value proposition that meets customer needs. To enter a new market or create new offerings, firms need to understand the niches and gaps in the market, current dissatisfaction with the offerings in the markets, and extents to which this has not been resolved (Sinfield et al., 2012). Firms 2 and 5 have continued to adapt new business models and create new products and services to satisfy customers. These findings are in line with business model literature that emphasise the importance of designing digital businesses as provisional measures because they can be modified to suit emerging customer needs overtime (Souto. 2015).

Findings reveal that firm 4 has maintained its initial value proposition and continues to add new features and strategies to enhance its business operations and to meet customer needs, while firm 3 has created new products and services but maintains its business model with new features added to meet customer needs. This finding is supported by King (2012)'s view that when establishing business organisations, the ultimate character of the business models will emerge as the business experience accumulates. This is because a more customer-centric approach is needed when developing a profitable growth business model and this is why all the case firms constantly re-evaluate their value propositions to ensure their offerings match with customers' demands (Trimi & Berbegal-Mirabent, 2012, p.461).

Apart from creating new products and services and adopting new business models, the general consensus amongst firms 2, 3, 4 and 5 was that the firms realised that the online payment system was not suitable for Nigerians and African business environments. The four firms mentioned above have adopted strategies called pay on delivery and pay on arrival to meet customer needs. The payment difficulties were due to lack of digital infrastructure and trust issue; the trust issue was because of customers' perceived risks in using their credit or debit cards in cyberspace. This has strengthened the business model of the four firms that adopted this approach. It allows customers to have a sense of feeling and touch that is in physical shopping. The pay on delivery approach provided a robust component of the business models among all the four firms as of that time. However, findings reveal that this strategy was becoming obsolete because of the inappropriate behaviour of customers using it.

Shirky (2008) states that new businesses that survive are not just those that have detailed business model template, but those with flexible business models which are adjusted as the business develop. This is supported by the suggestion made by Karra et al (2008) that entrepreneurial products and services cannot be developed under conditions of certainty due to largely unknown customer needs. Hence, the firms continue to adopt an experimental and adaptive approach in order to discover, calibrate and validate successful business models. This is important because the new business model and offerings will match the customer needs more effectively.

The findings reveal that the e-commerce and e-platform approaches are nascent in Nigeria and there is no definable and permeant business model for running digital businesses such platforms. Almost all the case firms continually iterate their models and deploy strategies to make sure they meet customer needs. The firms have continued to adapt and align existing e-commerce models to Nigerian and African environments. Adapting and learning customer needs to build robust business models have helped the case firms who engage in those international markets similar to Nigeria to have successful internationalisation.

Firm 1 started with a Shopify model and later found that its site was not suitable for Nigerian and African markets. Therefore, pivoted to e-commerce because SMEs and manufacturers do not have adequate technology and knowledge of how best to use it. Firm 2 also found that e-commerce was still elementary because there was a lot needed to do before it will run smoothly as at then. Hence, they pivoted to marketplace formats which seems more profitable to run. Firms 1, 2 and part of firm 5's business lines that started as an e-commerce have pivoted to e-platform. Hence, an integrated digital businesses model for establishing digital business in Nigeria is yet to emerge. This finding is line with Quinton et al. (2017) who argue that the main gap in the digital entrepreneurship literature is not the identification and exploitation of business opportunities, but the lack of what constitutes a digital business model.

The consensus amongst three firms that have pivoted from e-commerce to e-platform in Nigerian and African social cultural environments is that adapting strategies and business models has disadvantages, but copying or adopting competitors' innovative strategies could be harmful if it is applied wrongly (Hansen & Birkinshaw, 2007).

It is important to consider socio-cultural influences in an environment in order to align them with new business model to meet customer needs in the business environment. In this sense, the new business can replicate successful business strategies, products and services of existing business models developed countries. Entrepreneurs and businesses in Nigeria need to learn how successful products and services and their underpinning strategies work in developed and emerging economies, to help them have efficient and effective adaptation of business model that meet customer needs in Nigerian and international markets. This finding is supported by business model literature which argue that business model is a tool that characterises entrepreneurial opportunities (Geoorge & Bock, 2011; Franke et al. 2008; Markides, 2008; Trimi & Berbegal-Mirabent 2012).

7.2.3. International market engagement strategy

The findings reveal that all the case firms have different digital internationalisation patterns. Firms 1 and 4 started digital internationalisation from inception but have different digital internationalisation modes because of the differences in the products and services they offer. The early internationalisation activities of the firms were motivated by customers unmet needs in international markets.

Firm 1's platform facilitates business opportunities and allows seamless transactions between buyers and sellers on the platform. This finding confirms Brouther, Geisser & Rothlauf (2016)'s view that ibusiness firms create value by building platforms, providing values for the users of the platform and managing the cross-relationship of the various users. Thus, adoption of online platforms is a critical determinant of successful approach to internationalisation.

The founders and CEOs play a crucial role in ensuring early successful digital internationalisation of these firms. For example, the sellers' products and goods meeting the buyers' specification was found as one of the major factors to facilitate the early digital internationalisation of firm 1. Environmental influences, industry situations, and entrepreneurial thinking are important factors that influence the speed of international business involvement (Oviatt & McDougall, 2005). These findings confirm what previous studies suggested to the effect that international entrepreneurship motivation can be divided into two dimensions. The first dimension addresses the "why" question about what motivates internationalisation (Segaro, Larimo, & Jones, 2014; Dimitratos, Buck, Fletcher & Li, 2016). The second dimension comes from the implementation of an internationalisation strategy, and how actively employees at senior and junior levels participate in internationalisation decision making. It has been found to be an importance influence that shapes firm's internationalisation path and performance (Dimitratos et al., 2012; Segaro et al., 2014). The findings revealed that the richness and abundance of goods and commodities that can be found in Africa facilitate international business. For example, affordability and relative low price of coffee compared to other markets have contributed to early internationalisation of firm 1.

Studies suggest that the motivation for internationalisation has internal and external dimensions; the former includes possession of unique products, slack resources, and opportunities for economies of scale, while the external includes the presence of business opportunities, government incentives and unsolicited orders from clients (Brooks and Rosson 1982; Kaynak and Stevenson 1982; Bolzani & Foo, 2017). However, there is no indication that the Nigerian government has contributed to international engagement by the case firms.

There are three types of digital internalisation captured in this research, a) internationalisation of digital services which was found in firm 4 and part of firm 5; b) internationalisation of physical products which was found in firms 1, 2 and 3; and c) hybrid digital internationalisation which combines digital and bricks-and-mortar to facilitate internationalisation that was found in firms 4 and 5. Firms who combine physical and digital internationalisation activities such as having physical presence in international markets acquire more customers than firms that focuses solely on digital internationalisation. Findings show that customers feel more comfortable when personal interaction with customer services are provided, and search engine and algorithm are more favourable when an internationalising firm has physical office.

The digital economy mechanisms such as big data and artificial intelligence facilitates customer engagements in international markets. The findings show that customer data help the firms to decide where to open offices in international markets, for example when firm realised that there are numerous customers reaching them from a particular location from their business intelligence gathering. Firms needs to do due diligence work to understand the business environment and develop appropriate strategies and business models that will suite those environments. Hence, they still use conventional strategic and competitor analysis frameworks like Porters 5 Forces and PESTEL.

Location, language and understanding business environment are crucial determinants of how firms engage in international markets. It was found that having a physical presence helps digital firms to overcome some challenges and barriers such as digital payment and trust issue mentioned previously. Language is another important factor because customers are satisfied when they are served in their primary language. Firms that have physical presence have advantage over those that have only digital mode of internationalisation. Thus, digital platform firms face liabilities of outsidership in international markets (Johanson & Mattsson, 1988; Johanson & Vahlne, 2009). Firms need to develop more business networks to get access to market-related complementary resources held by external oriented private firms. “Outsidership” is a barrier to international market operation and suggests that the entrepreneurs need to get involved in local value-creation, distribution and marketing networks, in order to more easily access and enter foreign markets (Etemad, 2017).

7.2.4. International orientation of founders and managers

International entrepreneurial orientation has been found to play a vital role in the development of international new ventures that seek international markets from or near the inception. Overall empirical finding from firms 1, 3, 4 and 5 confirm the importance of the founders' previous experience in internationalisation process. The findings also confirm those previous studies on international entrepreneurship that market knowledge is crucial for the success of international new ventures (Knight & Cavisgil, 2004; Detienne & Chandler, 2004; Weerawardena, Mort, Liesch & Knight, 2007; Hagen & Zucchella, 2014; Hagen, Denicolai & Zucchella, 2014). The founders' international experience was found to facilitate the internationalisation process of the case firms (Oviatt & McDougall, 2005). Some of the founders have past international experience in digital business while some have in non-digital business.

Firms 1 3, 4 and 5 in this study took proactive approaches to internationalisation; this is because they started engaging in international activities and did not wait for customers to pull them into international markets. They identified international market needs as part of the value propositions from the creation of the firms. This reinforces what Glavas & Mathews (2014) suggested that proactiveness in an internet space business environment, referred to as international opportunity-seeking, helps digital firms to achieve international market goals. The decision to engage in international markets was largely influenced by the founders through scanning and analysing international market opportunities. Innovation in firms is often developed before the establishment of such firms (Laanti, Gabrielsson & Gabrielsson, 2007), and businesses that engage proactively in foreign business activities in an online environment are more likely to achieve profitable growth (Loane, 2006).

Firm 2 was the exception, taking a reactive approach as the company got involved in international activities through its third-party individual sellers. Firm 3 did not start from inception but was still proactive in their internationalisation processes. It started international activities after rebranding and focusing purely on African dresses and its own brands. This enables the firm to meet customer unmet needs in international markets. This finding is in line with Bell, McNaughton & Young (2001) who note that "these are firms that have been established in their domestic markets, with apparently no great motivation to internationalise, but which have suddenly embraced rapid and dedicated internationalisation".

It is expected that standardised use of the internet will no longer be sufficient for competitive advantage because a growing number of firms use the internet to pursue international market opportunities (Glavas & Mathews 2014). Firms need to develop innovative offerings to meet customer unmet needs and remain competitive in digital business environments. Firm 4 started after few years when it realised that the services it offered were needed in other African markets, though the firm was established with a global mind-set. Digital economy mechanisms have helped firms 4 and 5 to continue to engage in diverse international market as mentioned previously.

7.3. Theme 2: Resources and Skills

7.3.1. Skills and ICT knowledge

The findings suggest that digital skills and ICT knowledge are pivotal factors for the development and internationalisation of digital firms. Hair et al. (2012) highlight three elements of market orientation in digital entrepreneurship which include: technological skills to maintain the digital enterprise; digital techniques for information-rich business environments; and knowledge to understand a wider marketplace and opportunities for digital business, compared to non-digital enterprise. The first element supports what was found in firms 1, 3, and 4; it shows that the digital skills of the founders are crucial for development of digital firms.

The third element is supported by what was found in firms 1 and 5 which believe that business management skills may seem more important than digital skills because the founders of the firms may not necessarily have digital skills to establish successful digital firms. What is important is for a founder to have digital orientation in order to take advantages presented by digital technologies. These findings reinforce five factors that support development of digital orientation in SMEs by Quintona et al. (2017), namely individual characteristics, environmental factors, organisational capabilities, internal value assessment and cross functional integration.

Berry and Brock (2004) found that top manager's internet experience enables them to use internet for internationalisation more than their international business experience. Digital experience was captured as an important enabler of a firm's internationalisation. However, there are mixed findings because one firm’s founder digital experience facilitates firm’s early internationalisation, while one of the firms that the founder had previously set up a digital business did not have early internationalisation experience, because the firm initially focused on domestic market until its internationalisation activity emerges from third-party partnership. These findings suggest that a combination of international business experience and digital skills/experience will more effectively affect the development of digital internationalising firms in Nigeria and Africa.

For example, a firm whose founder did not have previous internet experience, but diverse international business experience has rapid internationalisation. This finding is supported by Moini & Tesar (2005) who found that internal factors such as managers’ perceptions on the importance of ICT affects the scope of internationalisation, rather than external factors such as customer pressure. Online technologies and capabilities are more crucial resources in this context, rather than just technology; this is because the power of technology depends on the manager's ability to configure and utilise the technology (Zhu and Kraemer, 2002) Hence, as noted above, having internet experience and international business experience has great impact in digital internationalisation firms.

7.3.2. Collaboration and resources

The findings show that initial funding for establishing digital businesses usually comes from the founders, family and friends; this is because this type of business may be difficult to attract investors if the founders of the firm have not proven a viable business model that will boost investors’ confidence in the new business. Firm 5 indicates that investors' funding is important while firm 1, 2, 3, and 4 did not see investors as crucial factors at the beginning stage, though firm 4 indicates that funding from investor is good resource for the growth and expanding of a firm. To attract investment funding, founders use their personal capabilities and resources from family and friends to develop products and services in order to prove the potential of new business value propositions.

It was found that firms use family and friends to provide initial capital for new business developments which attracts local and international investors later. This finding confirms Ibeh & Kasem (2011)’s results to the effect that social and business networks are important for firm internationalisation; social networks seem to be very crucial at early stages, while business networks become more dominant subsequently. Therefore, new businesses need to prove their viability in order to attract investors because building a novel business is associated with a lot of uncertainties compared to adopting existing and proven business models which may be easier to replicate. According to the interpretative model for international entrepreneurship (Figure 4.4 in chapter 4), resource mobilisation can be achieved either from external or internal development, and the ability to integrate and reconfigure internal and external resources leads to firm dynamic capabilities (Zucchella & Scabini, 2007; Massa Tucci & Afuah, 2017).

Firms 1, 2, and 5 emphasise the importance of involving people that possess different skills and capabilities in a firm from inception. The founders' capabilities are fundamentally crucial for developing and internationalising digital firms. However, firms may not succeed if founders do not surround themselves with people that have different skills and capabilities to complement their own strengths and weaknesses. Involving people with multidisciplinary skills in establishing a business in today's changing and competitive significantly important (Ezepue, 2017). Knowledge-intensity and international networks were highlighted as two types of moderating forces that are very important for rapid internationalisation (Oviatt & McDougall, 2005).

Findings show that the case firms have partnerships and collaboration with other individual businesses both in domestic and international markets. Some of the firms started partnerships from inception while some started at later stages of the business in order to achieve their business and internationalisation objectives. These findings support Chandra et al. (2009) who found that the exploitation of foreign market opportunities require collaboration to help them recognise opportunities, apart from their core competences. The firms have on-going partnerships with different bodies because in an e-commerce ecosystem firms may not be able to provide every service that is required in meeting customer needs. Firm 2 realised that focusing on many auxiliary services like logistics bulked down the company's business model. The partnership with logistics and service providers ensures smooth logistic and customer satisfaction and makes the business model effective. Firms 1 and 3 have partnerships with international courier service that help them to expand globally. Firm 3 is leveraging entire partnership supply chain in the fashion industry from cotton farming and retailing to successfully grow the business.

Collaboration and partnership in international markets enable successful hybrid internationalisation and helps firms to engage in wider customer acquisition. This is because international partners and collaborators understand their local markets more than internationalising firms. Entrepreneurial internationalising firms that have relationships such as distributors, suppliers and other strategic partners bridge the barriers to international markets, and achieve to some extents the disappearance of both liability of newness and investment risk (Coviello & Munro, 1997; Brouther, Geisser & Rothlauf 2016)

Collaboration and partnership not only provide additional resources, but also allow firms to focus on more ambitious business objectives and facilitate superior execution of the business model because partners take over distinct aspects of the model which simplify the model.

Firms 1, 4, and 5 have developed relationships with Nigerian and foreign government agencies and institutions that enable them to obtain vital information on customer needs. Collaborating and partnering in domestic markets were identified as crucial factors that facilitate internationalisation. To support this finding, Oparaocha (2015) notes that firms utilise institutional networks to overcome resources barriers that may hinder their international entrepreneurship efforts. These institutional networks include governments, NGOs, business incubators, research institutes and agencies for international development (Ezepue & Ochinanwata, 2017).

7.4. Theme 3: Customer engagement and acquisition

7.4.1 Customer engagement, digital marketing and Social media acquisition

A common trait among all the case firms is that they use both digital and traditional customer engagement channels (Chaffey & Ellis-Chadwick, 2016). Despite being digital firms, firms 1, 2 and 5 use regular conventional marketing channels like billboards, TV and radio adverts. They use direct consumer outreach where they create events and directly engage with consumers to educate them on features and benefits of what they offer. This type of customer engagement and acquisition is common among firms that provide physical product and services. Firms 4 and part of firm 5 business lines that offers purely digital products and services still use conventional ATL marketing. Also, firm 5 promotes their offer and acquire customers through word of mouth advertising. This finding confirms Oberg (2016)'s view that firms which have multi-channels are more successful in international markets than those that have a single channel.

It was found that platforms such as IM, SMS and WhatsApp that are not mobile web platform are more crucial for engaging and acquiring customers for firm 1 because local farmers find it easy to use. Amit & Zott (2001) note that firms use internet to coordinate value activities with customers and have the capabilities to take advantage of foreign market growth opportunities (Mathews, Healy, & Wickramasekera, 2012). However, there are downsides to internet internationalisation, namely: a) inadequate attention to offline interactions with existing and potential customers; b) rushed foreign market expansion; and c) temptation to over-standardise offerings (Reuber & Fischer, 2011). Therefore, integration of ICT with offline strategies facilitates successful internationalisation of digital firms.

Gwadabe (2017) note that the most prevalent web 2.0 marketing tool is Facebook and SMEs prefer to use Facebook and Instagram to display product features and benefits. The present research reinforces the above previous findings; all the firms use social media to engage with and acquire customers but vary the ways they use them. Facebook, Instagram and Twitter were found as the most crucial among all the firms. The use of relevant social media depends on the nature of products and services a firm offers. For example, firms 1 and 4 use more of Twitter and Facebook while firms 3, 4 and 5 use of more of Instagram. In support of this, Carbone (2015) suggests that firms that adopt Web 2.0 tools gain market share rapidly and are likely to become market leaders and perform better than firms that use traditional marketing.

It was found that Twitter and Facebook are more effective in engaging and acquiring older customers compared to Instagram and Snapchat for younger customers. Facebook was found most relevant across the firms and crucial for engaging both older and younger customers. This finding is contrary to Revevani (2014)'s view that Instagram is one of the more understandable and shareable platforms for Web 2.0 marketing than any other platform.

The findings revealed that the three major marketing channels the firms use include ATL, BTL and digital markets, and these vary across firms. The combination of hybrid marketing channels is determined by customer types and business environments, especially in Nigerian and international markets such as African countries, where the firms have large international market share. Understanding different customer segments enables the firms to tailor the marketing channels and to specific segments to acquire more customers.

7.4.2. Customer relationship, learning and support

The empirical findings underscored the importance of customer relationship and learning about customers in order to meet their needs. All the case firms have different ways of maintaining customer relationship (Murphy, 2006). Online communication was found important for acquiring and retaining customers and it is an effective customer relationship management tool for digital firms. This finding is similar to Sinkovics & Penz (2006) who found that consumers like to develop online relationships with companies and find relevant information on their websites.

Customer retention and reputation were found crucial for building good customer relationships. For example, firm 2 noted "*if you have some brand promises that say will give you the best prices. At every point in time it is the responsibility of the team to remind the consumer that will might be doing this, we might be doing that. But the reason we are doing that is because we are trying to tie to our brand promise to you".* This helps firms to develop an effective customer retention capability can be delivered through different digital channels. Keeping brand promises enhances firm reputation and trust, which make customers to feel comfortable to do business and shop on the platforms. The credibility of a company's website such as clarity, security, simplicity and ease of use give firms competitive advantage in customer retention and acquisition (Sinkovics & Penz, 2006)

Good customer user experience was found important in firms 2, 3, 4 and 5; this has helped them to have returning customers. Customer feedback is a crucial factor in building customer relationships whereby firms have to learn about negative and positive customer experiences, and devise responses to improve such experiences. Also, firms benefit from competitive advantage and enjoy customer loyalty when they design their products from customer experience (Botha & Rensburg, 2010). Firm 5 uses incentives to build good customer relationships because it believes that it is difficult to find loyal customers in environments like Nigeria and Africa as customers are always looking for best deals.

Wang (2008)'s findings show that integrating entrepreneurial orientation and learning orientation creates a more balanced approach to innovation. Entrepreneurial orientations, learning orientation and market orientation have complementary characteristics which enable SMEs to be successful in the digital economy (Quinton, et al., 2017). These findings are supported by the current findings; firm 1 uses both online and offline channels to maintain customer relationship (Ezepue & Mbama, 2018). The firm visits small individual businesses to learn about what they do. It provides physical training and online support programme where the manufacturers and traders learn international buyers' needs. Firm 3 acts as fashion adviser by providing personalised advice for its customer through various social media platforms. Thus, a firm needs to integrate customer solutions, brand promises, support and trust, to build an effective customer relationship.

7.5. Theme 4: Digital technology

7.5.1. Data decision making

The digital economy is providing increasing opportunities in emerging and developing countries. It facilitates development and growth of digital businesses in different areas of the economy such as media, on-demand services, e-commerce and finance (Hamid & Khalid, 2016). It has enabled the development of both digital and non-digital businesses and created a new dimension of digital entrepreneurship, whereby firms develop products and services that needed in international markets, which they engage through conventional and digital internationalisation modes.

Findings reveal that digital economy mechanisms, especially big data analytics are important in many areas of businesses such as business development, customer acquisition, product and service needs, and help firms to engage in international markets. This is confirmed by Jin et al. (2015) who argue that all industry sectors require big data in different areas of business as a strategic driver of firm competitiveness. Digital economy has motivated firms and individuals to develop their business activities beyond their domestic markets (Kempster & Cope, 2010). It is important for firms to have the capability to collect and analyse data for competitive advantage.

Firms 2, 3, 4 and 5 have adopted big data analytics excluding firm 1 who is about adopting it. Big data analytics helps the firms that have adopted it to engage successfully in international markets. Big data offers competitive advantage in pursuance of a global customer share. A firm needs to acquire enough customer data in order to make an effective use of big data. It was found that big data is crucial for customer learning and meeting their needs. Firm 3's "Fit Project" uses big data to analyse customer measurement data and to manufacture and produce high-fitting quality garments for personalised and tailored services. This has enabled the firm's vertical integration as the whole supply chain is done by the firm.

The finding reveals that firms use customer data to make better decisions. Big data technology alone will be unable to enhance strategic decisions if does implement with well-trained data analysts and technology teams that analyse the data to meet customer preferences. "At the very beginning, decision makers have to decide which data to be used and collected, how to collect it, how to process it etc" (Sen et al., 2016, p,166). These data are being gathered by machines and firms use them to improve decision making in all aspects of their businesses, which in turn increases performance and profitable growth of the firms (McAfee & Brynjolfesson, 2012)

Big data analytics results are used to personalise offerings and matching communication to individual customers. This allows firms to acquire and retain more customers. Hence, companies that will succeed are those that will meet the futuristic ICT capabilities, like harnessing the power of big data, artificial intelligence, cryptocurrency, innovative payment solution and user-friendly website capabilities, to ensure that they stay ahead in delivering value to the consumers.

7.5.2. Hybridisation of e-commerce and e-platform

Findings show that the case firms benefit from integrating e-commerce/e-platform and brick-and-mortar. This is because Nigerians and many other Africans countries are very traditional in understanding e-commerce retail and e-platform. This finding confirms Molla & Heeks (2007)'s view that e-commerce potentials are sparsely realised in developing countries, especially in African countries, and are still in their infancy in some Asian countries. The case firms introduced a hybrid e-commerce model whereby a certain percentage of user journeys are still offline. The pay on delivery and pay on arrival approaches mitigate some of the hindrances of e-commerce and e-platforms in Nigeria and Africa. This consumers' perception on feeling, touch and admiring products from home-shopping services is one of the barriers of e-commerce adoption (Thulani et al, 2010). Firm 2 runs a click and collect model whereby customers benefit by ordering online and collecting their goods from a pick-up point or distribution point in nearby locations. This type of business model offers mutual benefits to firms, sellers, buyers, and consumers in Nigeria and Africa where most of the firms have their internalisation activities.

The business models used the firms are emerging from customer insights and business environments to develop into affective e-commerce/e-platform models. They continue to adapt new strategies to deliver values to customers. This finding suggests that there are emerging elements of the business model that support the development and internationalisation of e-commerce and e-platform firms in Nigeria. Hence, this research adds to knowledge about the business modelling and internationalisation modes of such firms.

E-commerce and e-platform digital business models may vary from country to country because of the way businesses and consumers in these countries perceive the values and socio-cultural factors. Therefore, to create a business model that will support the development of internationalising e-commerce and e-platform firms in Nigeria requires a careful consideration of contextual influences. This is because Nigeria and some of the African countries require peculiar models as shown by the findings. This model needs to be aligned with socio-cultural influences because replicating existing models in developed and emerging economies may hinder the growth and survival of those firms.

The hybrid model has enabled the firms to have wider customer engagements. For example, pay on delivery and click and collect eliminate risks associated with poor quality postal services and other infrastructure challenges in Africa (Okoli & Mbarika, 2002). This enables sellers, buyers and consumers to engage in e-marketplace business activities and benefit from the digital economy. Literature has shown that French grocery retailers combine traditional and e-commerce business models to deliver their goods to customers by means of click and collect. Customers order products online and collect it in a pick-up point, click and drive or drive-in (Fernie et al., 2010). This is also part of Amazon's delivery strategies which digital firms in Nigeria and Africa can learn from.

7.6. Theme 5: Nigerian soci0-cultural influences

7.6.1. Digital infrastructure and internationalisation challenges

The findings reveal that digital payment infrastructure and lack of internet penetration are barriers to e-commerce and e-platform adoption in Nigeria. The high cost of internet access and poor quality of the internet affect both businesses and customers, because it limits customers who might want to shop online but do not have adequate internet connections.

E-commerce and e-platform firms require customers to pay online and it is a huge challenge in Nigeria and Africa where most of the firms have their international activities. Though, most of the case firms have adopted pay on delivery and pay on arrival, the customer willingness to pay digitally and slower pace of transactions remain big challenges. Customers' unwillingness to pay digitally are associated with lack of trust and security in cyberspace that sometime discourages customers to shop online. This finding confirms Tan et al. (2007)'s view that negative perception towards e-commerce adoption such as fear of fraud and risk of loss have been identified as key barrier to business-to-business e-commerce in developing countries.

The trust issue has been found to apply third parties for firms 2 and 5 online malls. It was found that a lot of third-party companies and individual businesses lack credibility as they are selling items different from what they listed on the platform or items that they do not have in the stock. Another challenge is customers that make reservations and failing cancel when they cannot use the rooms. There is also trust issues perceived by international buyers on products specification for some firms. Firms 1 and 3 have challenges in finding international partners because they do not engage in hybrid internationalisation.

The lack of enabling digital infrastructure poses challenges to development and internationalisation of e-platform firms. It was found that firm 3 faces many challenges such as expensive courier services which might have negative impact on its internationalisation activities. Firms 2, and 3 and customers of firm 1 face high costs of logistics due to poor physical infrastructure such as good roads, which undermine effective delivery of products and services to customers in both domestic and international markets. Firms 1 and 4 do not directly face physical infrastructure challenges. A robust infrastructure is necessary for the growth of e-commerce in Nigeria and across Africa.

7.6.2. Human capital development and other challenges

Finding people with skills and attitudes fit for the development and internationalisation of digital firms is a big challenge. This is because digital business is a relatively new industry in Nigeria and many of the roles that are created did not exist few years ago. Therefore, there is need for vigorous human capital development because people need to understand digital strategies to develop an effective business model for digital firms.

Digital literacy is a crucial factor that will allow individuals and firms to use internet tools and facilitate integration of digital technologies into their firms (Shenglin et al., 2017). It was found that Nigerians generally are not digitally customer service oriented. This type of skills is not common in Nigerian markets. Governments need to work with private sector and invest in education to integrate technology and digital skills that are required in digital firms.

Power infrastructure was found as a big challenge facing the firms, especially e-commerce and e-platforms that operate warehouses (Ochinanwata & Ezepue, 2017). They need power because firms 2 and 5 warehouses all over the country require steady power, since technology cannot function without power in the first place. Power infrastructure is crucial for success of digital firms and for doing business in Nigeria.

7.7. Theme 6: Implications for conceptual framework and model development

The research findings indicate the importance of international orientation of owner/founders as positively influencing firm internationalisation modes and activities. The findings revealed that the founders' prior international business and professional experience gives them the knowledge and understanding that enable the creation of the firms and determines their internationalisation activities. Digital and managerial experience plays a crucial role in the development of the firms. Understanding of gap in the market and product-customer fit are important aspect of these findings.

Internet and digital constructs facilitate internationalisation, multifaceted e-platform allows the firms to contextualise their offerings such as products, content and price display in local content in different international markets. The search engine optimisation and digital marketing such as social media were characterised as factors that facilitate digital internationalisation. The role of digital economy mechanisms such as big data was found to be most frequently cited for firm development, internationalisation strategy, and customer engagement and acquisition. Big data was found to be crucial in many functions of the firms.

It helps the firm in finding business opportunities in international markets. Thus, it is a crucial element of digital business model found in the present research.

Infrastructure was found as one of the challenges that affect development and internationalisation of digital firms. The digital infrastructure includes digital payment system and lack of internet penetration. Lack of adequate roads and expensive courier services affect firm 1, 2, and 3 internationalisations. The finding reveals that there is lack of human capital development in Nigeria and people lack skills that require for development of digital business. The internationalisation strategy most commonly found was a proactive internationalisation strategy among firms 1, 3, 4 and 5. Four firms started near or from inception engaging in international market, they had an international perspective from the beginning due to international orientations of the founders and customer needs in international market.

7.7.1. Revisions to the conceptual framework

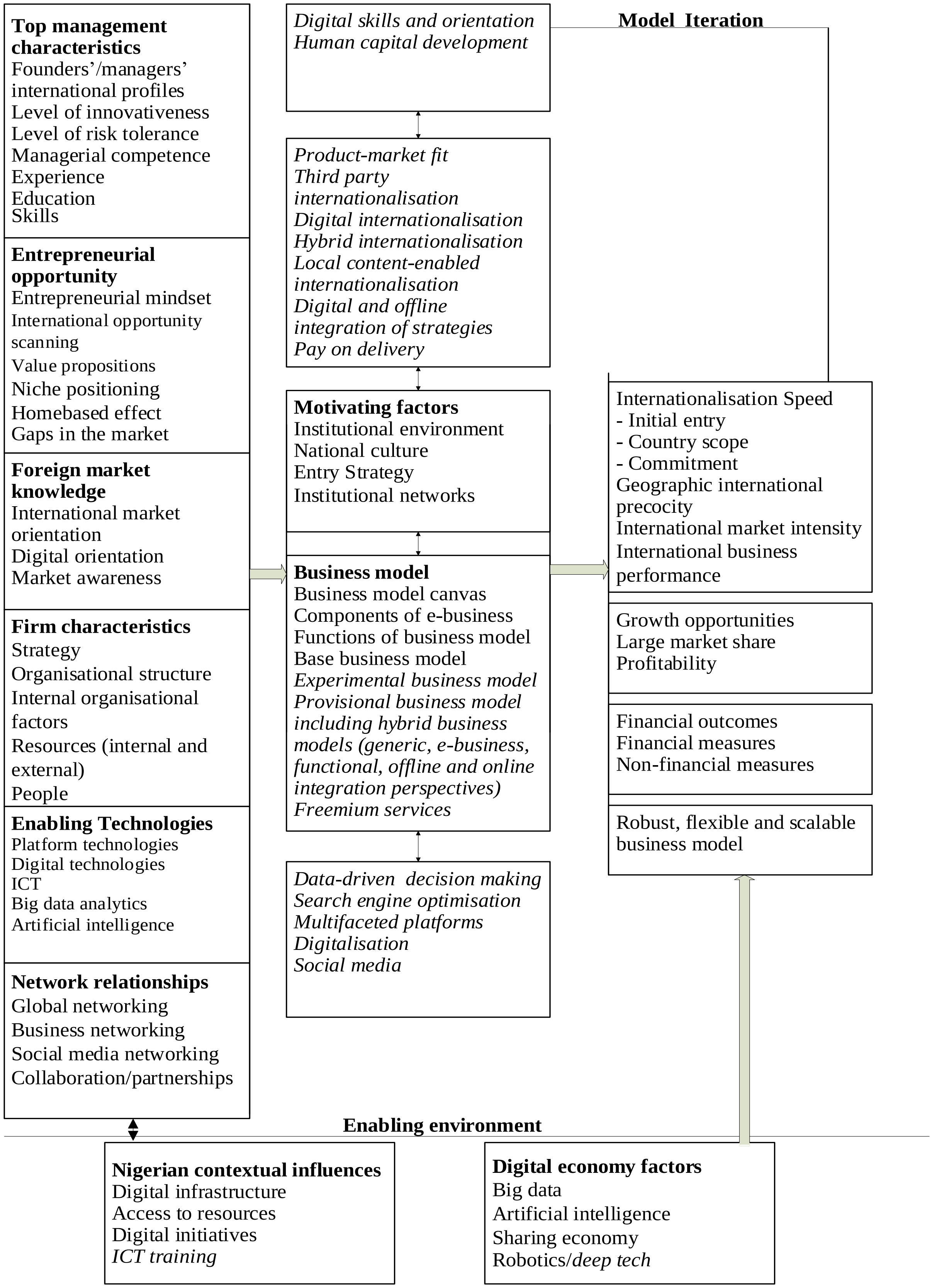
Recall that the conceptual framework highlighted in Figure 4.6 of chapter 4 includes an interpretive model for international entrepreneurship, model forces influencing internationalisation speed, components of digital orientation, business model canvas, and components of e-business model. These concepts used together clarify the establishment and internationalisation of digital firms. Figure 7.1 presents the revised conceptual framework based on the research findings and these discussions. The figure is a visual synthesis of the key constructs that will be elaborated further in the IBMT. The texts inside the boxes in the figure are identified gaps and new sources of knowledge from the research findings. Following the figure are general explanatory notes on key sections of the framework.

The research has been structured with emphasis placed on the dynamic nature of what was taking place within the firms prior to and during the course of internationalisation. Therefore, there is focus on the business model constructs, digital internationalisation process, digital economy and international entrepreneurship, and how they affected the internationalisation process overtime, including challenges that the firm faced in their activities.

The findings are discussed in 6 main themes: market knowledge which includes gaps in both domestic and international markets; product-market fit; market engagement and international entrepreneurial orientation; resources and skills, including ICT knowledge and managerial skills; partnerships and collaborations; founders' and funders' resources; customer engagement and acquisition, including digital engagement and acquisition; social media;

offline engagement; customer relationship, learning and support; digital technology including data-driven decision making; multifaceted platform; adaptation of hybrid e-commerce and e-platforms; and Nigerian social cultural influences including digital infrastructure and internationalisation challenges and human capital development. New elements from the research findings incorporated in the revised conceptual framework in Figure 7.1 below.

Figure 7.1: Revised conceptual framework



Source: the author's own

In Figure 7.1, the new elements from the research findings in chapter 6 are included in italics. These are mainly in the second column and 'Enabling environment' parts of the conceptual framework. The findings emphasise some of the elements of the framework earlier drawn from the literature. Examples are 'Digital skills and orientation' and 'Human capital development' (training) in the top box of column 2, which reiterate same constructs in the 'Enabling technologies' part of column 1. These additional elements show that the research findings, especially the IBMT, will be useful in future for training the employees of (Nigerian) digital internationalising firms on key aspects of the framework and resulting IBMT.

The second box in column 2 of the figure includes such findings as: 'Product-market fit' (which is fundamental to marketing and internationalisation success of the firms); Third-party internationalisation whereby digital firms use resources and capabilities of third parties, usually locally-based, to extend their offerings across national boundaries; 'Digital internationalisation' which is a core trait of the firms as cyber-mediated firms and requires capabilities in digital marketing and technologies; 'Hybrid internationalisation' which integrates online and offline strategies, and for which reason it was important to augment the research conceptualisation with the base business model (Bossidy & Charan, 2005); 'Local content-enabled internationalisation' which takes advantage of locally available materials, labour and techniques in specific countries in making digital firms more successful; and 'Pay on delivery' which was considered helpful in getting customers to commit to buying the offerings by seeing them physically first, though this has some challenges of trust.

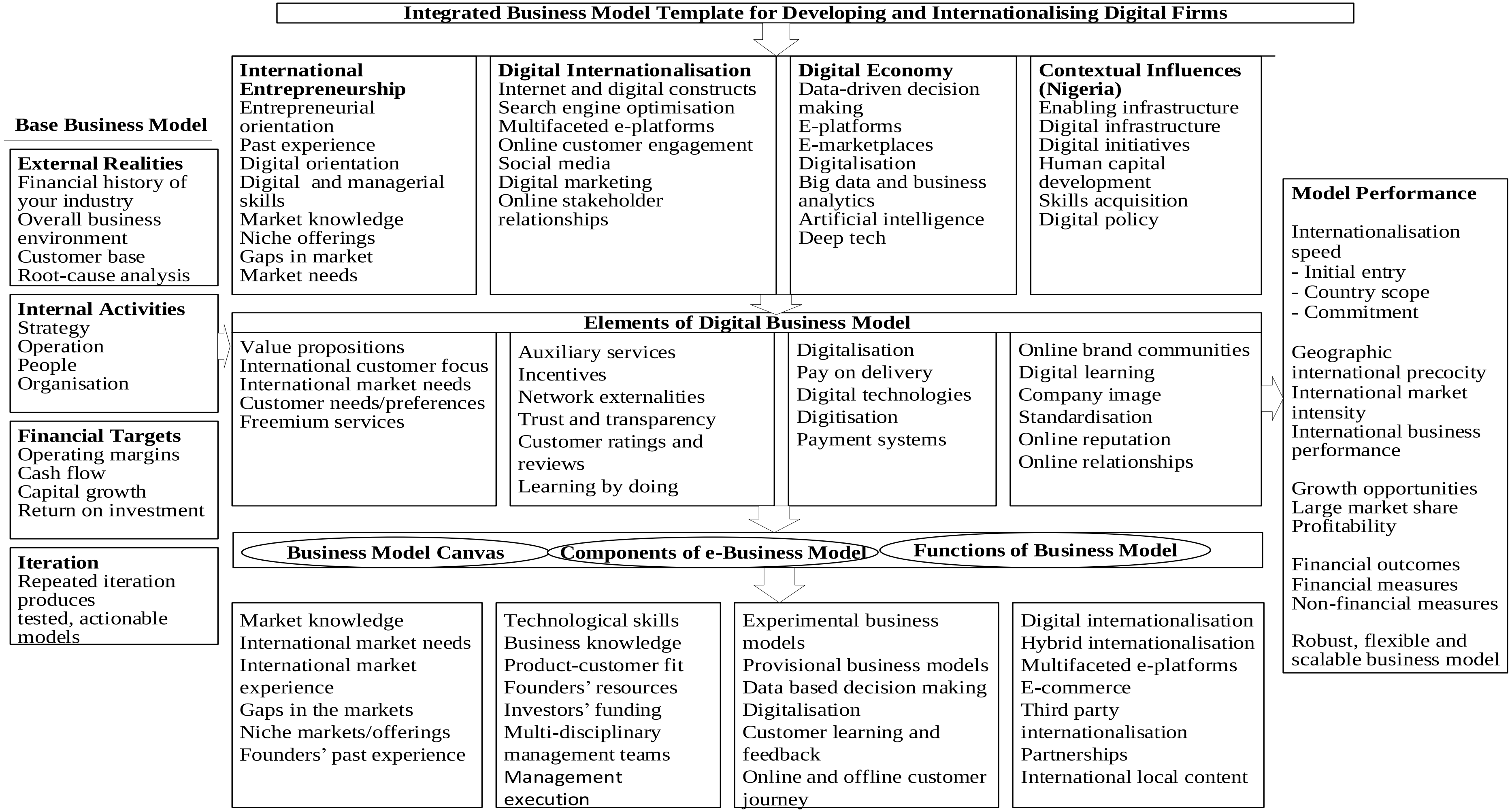
Additional elements from the findings related to 'Business model' box in column 2 include: the need for 'experimental business models' that can be refined as the forms' business experiences accumulate, also related to the objective of achieving 'robust, flexible and scalable business model' indicated in the last box of column 3; a sense of business model integration, including hybrid business models – generic, e-business, offline and online perspectives – which justify the emphasis on integrated business modelling element of this research; and the use of 'freemium services' to attract customers' interests in the firms' offerings.

The last box in that column reiterates the importance of data-driven decision making, search engine optimisation, multifaceted platforms, digitalisation and social media in the activities of Nigerian rapidly internationalising cyber-mediated firms. These elements were identified as crucial parts of the digital economy influences on the prospects and success of digital firms in chapter 3 of the thesis.

In the ‘Enabling environment’ box at the base of the revised conceptual framework, ‘ICT training’ and ‘Deep tech’ surfaced in the findings, even though the ideas are connected to the use of advanced digital technologies mentioned. These findings reiterate similar elements in the ‘Enabling technologies’ part of column 1 of the revised conceptual framework. The next discussion theme develops the IBMT.

7.7.2. Theme 7: Model development

Figure 7.2: Integrated business model template for developing and internationalising digital firms



Source: the author's own

The IBMT in Figure 7.2 above is the overall theoretical dashboard which contains the base model in the first left-hand box (Bossidy & Charan, 2005) integrated with other salient perspectives taken from the critical literature in chapters 2 and 4 and the digital economy contexts in chapter 3. These perspectives are indicated starting from the blocks in the first row as: International Entrepreneurship; Digital Internationalisation; Digital Economy; (Nigerian) Contextual Influences; Elements of Digital Business Models in row 2; the contributing core business models (Business Model Canvas, Components of e-Business Model, and Function of Business Model) in row 3; and additional findings from the research in row 4.

The logic of the IBMT dashboard is that it contains fundamental theoretical, research, and practical constructs that need to be explored in the development and growth of digital internationalising firms. The sub-elements of each main heading in the figure enable entrepreneurs, managers and researchers of digital firms to build business model by thoroughly thinking through those elements. For example, all the elements of the base business model help researchers, entrepreneurs and managers of digital firms to explore the four main aspects of business modelling, including sub-elements under External Realities, Internal Activities, Financial Targets, and Iteration, earlier discussed in chapter 4 of the thesis. This way, strategy formulation is not ignored as well as industry analysis, business environment, root-cause analysis, operations, people, organisational structure, financial targets, and model iteration to adapt the model to emerging business realities. Similarly, all the elements that underpin International Entrepreneurship in the first box of the first row will enable the entrepreneurs and managers of digital firms to consider those important themes in the business model design. These arguments to the other boxes in the model. The fact that using the IBMT dashboard helps model builders not to ignore important themes enhances the robustness and flexibility of the model.

Also, there are necessary overlaps in the placement of different constructs in the IBMT also enables triangulated insights on the relevance of the constructs in the business model to be achieved. For example, a look at the 'Digital orientation' construct under 'International Entrepreneurship' shows that it is implied in similar constructs in the IBMT, namely: 'Internet and digital constructs(in Digital Internationalisation; 'Digitalisation' in the 'Digital Economy' box; 'Digital initiatives' in the 'Contextual Influences panel; 'Digitalisation' and 'Digital Learning' again in 'Elements of Digital Business Model. This triangulation is important building and research methodology generally because it enables a construct to be explored from multiple lenses. This fact means that each lens is an opportunity for the model builder to fully consider the best ways to exploit the construct. Hence, 'Digital orientation' can now be explored considering all the main themes represented by the boxes in which it appears. This answers the following questions. How does 'Digital orientation' contribute to the IBMT's capabilities in supporting the international entrepreneurial mindsets (McGrath & MacMillan, 2001) of the founders and management of digital firms? How does it enhance the digital internationalisation prospects of the firms? To what extent does the Nigerian digital economy enable the development of firms' digital entrepreneurship? How do these insights inform the model features, its robustness and flexibility? These points apply to other triangulated constructs in the IBMT. Clearly, the triangulation also enhances the flexibility of the IBMT because the multiple viewpoints engender a more adaptable model.

The IBMT dashboard culminates in the Business Model Performance panel at the right hand side of Figure 7.2. The business performance elements are directly taken from similar metrics in the Revised Conceptual Framework in Figure 7.1. The performance metrics complement the traditional Financial Targets in the Bae Business Model (Bossidy & Charan, 2005). The metrics cover international business performance angles, hooked on: internationalisation speed and its mediating variables (initial entry, country scope, and commitment); geographic measures (geographic international precocity, international market intensity); growth perspectives (market share and profitability); and traditional financial/non-financial outcomes. The latter triangulates considerations related to the Financial Targets panel in the Base Business Model. Finally, the model is evaluated and continually tested for its integrity (robustness, flexibility and scalability), especially when it is deployed in real-life applications focused on creating digital internationalising firms (Ezepue & Ojo, 2012; Martin, 1995). Such digital firms are indicated in www.oseluxworldhero3e.com.

In addition to the overall IBMT dashboard in Figure 7.2 above, Table 7.2 further develops the research findings in row 4 of the IBMT dashboard into a more detailed Internationalisation Template for Digital Firms (ITDF). Again, when a model builder explores the headings and sub-elements of the ITDF, they are prompted to consider the IBMT dashboard themes in the fourth row of Figure 7.2 more extensively. For example, considering the 'Experience and skills' heading in top left panel of Table 7.2, a model builder explores all the sub-elements, namely: international entrepreneurial orientation; international market awareness; digital and managerial skills; learning international markets business activities. In the IBMT this construct is connoted by 'International market experience' which is only a dashboard element.

Moreover, an element like ‘Channels’ in the IDTF is not explicitly stated in the IBMT, but connoted by such elements as ‘’online and offline customer journey’ and ‘Multifaceted e-platforms’. In effect, the IDTF is more focused and practical for guiding digital firms’ internationalisation activities than the IBMT dashboard. Together, they repeatedly triangulate model constructs and constitute a far more robust, flexible and scalable business model than is possible with only the IBMT. The following notes further explain the ITDF themes and constructs.

The ITDF is divided into five components: market knowledge and value proposition; elements of business model; internationalisation strategy and channels to reach customers; Nigerian socio-cultural influences; and technical aspects of integrated model building in the third section of the revised conceptual framework, which consists of business the model canvas, elements of e-business models, and functions of business model.

The market and value proposition comprise the skills and experiences and market gaps which entrepreneurs need to have in mind when thinking of establishing digital firms which develop products and services that serve domestic and international customers from near or after inception. They need to consider international customer needs and niche products and services that will meet customers’ unmet needs. The firms need ensure product-customer fit to enable them to meet customers’ preferences. Resources are important when developing all types of businesses and it is crucial to involve people that possess different skills and capabilities. This helps entrepreneurs to acquire tangible and intangible resources.

The elements of business model focus on digital mechanisms that underpin the development and internationalisation of digital firms. Customer data help firm to identify potential opportunities in international markets and decide on how to engage in international markets. Multifaceted technology allows firms to digitally localise their offerings in different international markets. Digitalisation and digitisation allow firms to reach wider customers with their contents through ICT and to leverages digital channels delivering products and services. Experimental, provisional and emerging business models are crucial for developing and internationalising digital firms in Nigeria. This is because e-commerce and e-platform businesses are at a nascent stage as they continue adapting to customer needs.

Customer engagement and acquisition are the approaches they use to engage customers; digital firms use both digital channels and traditional approaches to engage and acquire customers. Social media such as Facebook, Twitter and Instagram were found most relevant while ATL and BTL such as Radio, TV, and billboards are used as traditional approaches to customer engagement and acquisition.

Table 7.2: Internationalisation Template for Digital Firms

Market knowledge and Value Proposition		
Experience and skills International entrepreneurial orientation International market awareness Digital and managerial skills Learning international market business activities	**Market Knowledge** Gaps and market opportunity Market and industry trends Customer unmet need Niche market Product-customer fit Novel product	**Resources** Founder's resources Technological competence Multi-disciplinary theme member Investors funds Technological skills Business knowledge
Elements of Business Model and Customer Engagement		
Customer engagement and acquisition Social media ATL & BTL Customer Learning and feedback Customer support Digital customer experience Online community	**Align technology and business model** Data decision making Multifaceted Technology Digitalisation Digitisation	**Adapting business model** Provisional business model Experimental model Emerging business model Digital business model Business model innovation
Internationalisation Strategies and Channels		
Channels Platform E-commerce E-platform Bricks and mortar Traditional channels Online and offline customer journey	**Collaboration and partnership** Logistic Suppliers Financial institutions Merchants Government	**Internationalisation** Hybrid internationalisation Local content internationalisation Third part internationalisation Digital internationalisation E-commerce internationalisation E-platform internationalisation
Nigerian Social cultural influences		
Technology and financial resources Product and services align with business environment	Human capital development Social cultural understanding	Infrastructures Government incentives

Internationalisation strategies focus on internationalisation modes the firms use to engage in international markets. They use hybrid internationalisation which combines both physical and digital internationalisation modes, because having physical presence in international markets allows firms to acquire many customers through contextualising and localising the offerings in foreign markets. The use of local content enhances internationalisation in many ways. Language and proximity were identified as important aspects of hybrid internationalisation. Digital internationalisation allows firms to engage in different international markets from near the inception. It was found that third-party partnership are crucial factor for e-platform internationalisation.

Channels focus on suitable channels through which firms reach and communicate with customers, for example e-platform, e-commerce, bricks and mortar, social media and traditional channels. All these channels are crucial for reaching and engaging domestic and international customers. The blended approach which combines strong e-commerce and e-platforms with traditional channels is needed in Nigeria and Sub-Sahara Africa.

Collaboration and partnership entail different collaborations and partnerships firms engage in domestic and international markets to facilitate their internationalisation activities. They use own and independent logistic services to deliver products and services to customer both in domestic and international markets. Partnering with individuals and companies in foreign countries allows a firm to meet customer preferences in a particular market.

Nigerian socio-cultural influences need to be incorporated into firms' business model in order to meet customer needs in this environment. Infrastructure such as electricity, technology, adequate internet and financial resources are fundamental considerations when establishing businesses in Nigeria. This is because they limit and/or facilitate development and internationalisation of digital firms.

There is a need for entrepreneurs in Nigeria to successfully access international markets. Learning different business activities in international markets is a crucial way to acquire skills and competences needed for the establishment of digital firms in Nigeria. This could be acquired through informal and formal education. Individuals and entrepreneurs in this environment need to participate in domestic and international networks such as social and business networks, to identify partners such as foreign distributors and suppliers. Digital entrepreneurs in Nigeria will benefit from collaborations with founders, funders, international partners, distributors, and suppliers, to facilitate effective internationalisation process.

7.8. Summary and Conclusion

This chapter discussed the analysis from the case study research on how digital firms develop and internationalise. The emerging findings and insights focused on the business model and strategies that underpin development and internationalisation of digital firms. Their significance in regard to digital firm's internationalisation, international entrepreneurship and digital internationalisation literature was outlined, indicating confirmation of past findings, inconsistencies and emerging findings. The revised conceptual framework, IBMT and ITDF models explicate development and internationalisation of digital firms, particularly in light of underpinning theories, and broad considerations in theoretical and practical business modelling.

Overall, the empirical data seem to show support for international entrepreneurship, digital internationalisation and digital economy, ICT, and customers' data-driven decision making as core influences in effective business modelling for successfully developing digital internationalising firms in Nigeria. The founder's international market knowledge and previous business experience enable firms to internationalise and with competitive advantages. The international orientation of the owners and founders and their past experiences helped them to identify niche offerings and gaps in international markets.

The research has achieved its am in expanding understanding of digital firm internationalisation and business model in Nigeria, which had not been examined this way in the digital internationalisation literature.

This study highlighted the importance of the founders' market knowledge, international market awareness, previous business and professional experience, digital skills and managerial experience, and gaps in the market for the success of Nigeria digital firms. It has shown that ICT, internet, search engine optimisation, multifaceted e-platform and digital marketing, and social media as enabling factors for internationalisation of cyber-mediated firms in Nigeria, Africa, and developing countries. It also revealed how customers' data enable firms to create new offerings and engage in international markets. It also noted that socio-cultural influences and digital infrastructure and human capital development challenges that affect the development of digital firms.

The findings highlighted the need to integrate e-commerce, e-platforms, bricks and mortar approaches to engage and reach customers in domestic international markets. This hybrid internationalisation provides competitive advantage for internationalising firms. The findings revealed that digital internationalising firm business models continue to emerge as the firms grow and learn customer needs and business. The importance of big data analytics and sometime artificial intelligence techniques in driving the development of digitally internationalising firms in Nigeria and Africa were emphasises.

This research provided a key contribution to knowledge in the form of its revised conceptual integrated business model template for (IBMT) for developing and internationalising digital firms in Nigeria, and the internationalisation template for digital firms (ITDF). These frameworks show how to establish and internationalise digital firms in Nigeria, and similar developing countries, some of which the case study firms already operate in.

In conclusion, findings from this research highlighted the importance of international entrepreneurial orientation, international market awareness, customer focus and customer data, ICT, internet, multifaceted technology, integrated of digitalisation and physical approach in the success of digital internationalising firms. Overall, digital firms must learn and understand customers and business environments to continue to innovate their business models and meet customer needs as they grow.

Chapter summarises the main research results, their contribution to knowledge, recommends future work and concludes the thesis.

Chapter 8: Conclusions and Recommendations

8.1. Introduction

In chapter 7 the analysis of the case study evidence on how (Nigerian) digital e-commerce and e-platform firms internationalise was discussed in the light of international entrepreneurship, digital internationalisation, related integrated business modelling constructs. The findings and discussions were organised according to seven themes covering the research questions and objectives, and including the support they provide for developing the integrated business modelling templates (IBMT and ITDF) for digital internationalising firms (DIFs).

In effect, the IBMT and ITDF templates simply extended the revised conceptual framework as shown in chapter 7, but in such a way that it integrates the generic business model canvas that applies to all firms, elements of e-business models, and links to the three interpretations and functions of business models explored in Massa, Tucci & Afuah (2017). These functions are business models as: 1) attributes of real firms, that is, a checklist of what firms do to succeed in dynamic business environments; 2) cognitive/linguistic schemas used by managers and employees as mental frames for performing their roles in order to enhance the success of the firms; and 3) physical representations of the way a business functions, which is the business model architecture that allows ongoing thinking of how to improve the component elements and their links in the future.

This chapter summarises these findings and discussions, reiterates their contributions to knowledge (CsTK), identifies areas for further research, and concludes the thesis. The chapter is structured in the following sections. Section 2 summarises the contributions to knowledge (CsTK) of the findings. Section 3 further relates the findings to the five research questions, thereby explicating how successfully the research explores the questions. This informs the nature of future work emerging from the research. Section 4 discusses the implications of the findings for theory, research and practice. Sections 5 and 6 present the policy and methodological implications. Sections 7 and 8 respectively discuss the limitations of the research and related future work. Section 9 concludes the chapter and thesis.

8.2. Summary of the findings

This research identified successful business and internationalisation strategies that will enhance development and internationalisation of digital firms. The role of the founder's international orientation and market knowledge were keys to understanding, developing and internationalising digital firms. Understanding market knowledge, international market awareness, niche markets and offerings, product-customer fit, gaps in the markets, and international customer needs were considered fundamental factors for developing digital internationalising firms.

The findings highlighted the importance of digital and physical modes of internationalisation processes. Combining digital and physical internationalising modes was identified as hybrid internationalisation in this research, which is determined by the types of products and services a firm offers. The findings showed that local content facilitates the internationalisation of firms that engage physically with customers, as it helps them to meet customer needs and preferences in a given environment.

Third-party partners and platforms such as collaborators and individual businesses providing products and services enable digital firms to meet customer needs and facilitate digital internationalisation.

Multifaceted platforms help the firms to contextualise and localise their offerings, strategies and operations in foreign markets. Additionally, integrating physical and digital channels allows digital firms to reach wider customer bases with their products and services. Also, such platforms help to minimise the effects of digital infrastructure challenges which digital firms encounter in domestic and international markets such as Nigeria and other African countries.

The internationalisation challenges alluded to above vary by industry sector and offerings which different digital firms focus on and by external or internal categories. Challenges from the external environment include lack of internet penetration, inadequate digital payment infrastructure, and expensive courier services, while the internal (within-firm) challenges include lack of partnerships in international markets, and low state of human capital development and skills required for running digital firms.

The overarching conclusion from these findings is that key influences on digital internationalisation include: the international orientation of the founders; the importance of market knowledge; niche markets, related gaps and international customer needs; hybrid internationalisation which integrate digital and offline customer engagements. The findings show that e-commerce and e-platform firms are nascent in Nigeria and the firms continue to iterate their business models and deploy strategies that align with Nigeria's socio-cultural and foreign market environments, to ensure they meet domestic and international customer needs.

8.3. Contributions of the findings to knowledge (CsTK)

The key findings from the research and their contributions to knowledge are as follows. Each of the five research questions of this study are carefully examined and linked to the findings and their contributions to knowledge relevant for growing digital firms in Nigeria. Table 8.1 highlights the contributions to knowledge linked to the research findings and questions. The table expatiates on the elements of table 7.1 by summarising how these elements which come under each research question (1-5) expand existing knowledge related to these questions.

Table 8.1 Contributions of the research to knowledge linked to the research questions

Research questions	**Findings**	**Contribution to Knowledge**
For question 1 below, as in Table 7.1, related findings include eight key themes: gaps in the market (opportunity recognition), product market fit and customer needs, international market engagement, international entrepreneurial orientation and market experience, founders' and funders'; ICT knowledge and skills; partnerships and collaborations. The overall new knowledge advanced around these themes is how digital internationalising firms (DIFs) apply/implement these characteristics compared to non-digital firms, where appropriate combining conventional business management frameworks with new digital approaches. The findings show how key international entrepreneurship theories support these DIF experiences and approaches, for example theories explored in Figures 2.1 to 2.3 of chapter 2. The contributions are again summarised for some of the above themes below.		
Q1: How does knowledge of international entrepreneurship influence the development of	International orientation of the founders	Advances understanding of the importance of founders' and managers' past experiences, and international market awareness of the owner/founders as highlighted in international entrepreneurship

emerging digital economy firms in Nigeria?		literature.
	International customer focus product-market fit,	The findings advance knowledge on international entrepreneurship and digital internationalisation and the underpinning business modelling ideas. The research highlights the importance of developing products and services that meet customer unmet needs through learning customer needs when developing novel products and services.
	Gaps in the market (international opportunity recognition)	Advances knowledge on entrepreneurship literature; entrepreneurs who want to establish and grow businesses that seek early international market from inception need to identify niche gaps and offerings in different international markets and understand global business trends (scenario analysis). These findings expand existing knowledge which notes that founders' previous experiences combine with emerging developments in the digital economy to enable founders and managers of DIFs to spot gaps in domestic and international markets.
	Skills and ICT knowledge	Advances knowledge on digital orientation and skills required for establishing and internationalising e-

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<tr><td></td><td></td><td>commerce and e-platform firms. ICT knowledge and digital skills combined with business management skills were found to be crucial for establishing internationalising digital firms.</td></tr>
<tr><td colspan="3">For question 2 below, as in table 7.1, related findings include eight key themes: ICT knowledge and skills; partnerships and collaboration; customer engagement, digital marketing and social media acquisition; customer relationships, learning and support; data-driven decision making (big data analytics and artificial intelligence); adoption of hybrid business models for e-commerce and e-platform DIFs; suitable payment systems; effects of digital infrastructure on internationalisation activities. The findings again show how DIFs combine online and offline approaches as they deploy all these themes in their internationalisation activities. The contributions are again summarised for some of the above themes below.</td></tr>
<tr><td>Q2: How do digital economy firms successfully internationalise their offerings?</td><td>Third party internationalisation, Digital internationalisation,</td><td>Contributes new knowledge on digital internationalisation process and on how third-party businesses facilitate digital internationalisation of e-platform firms. This also confirms what is known from digital internationalisation literature based on internet enabled internationalisation.</td></tr>
<tr><td></td><td>Hybrid internationalisation, local content enable internationalisation</td><td>Advances knowledge on digital and traditional internationalisation literature. The results show that DIFs benefit from integration of digital and physical processes of internationalisation. They also contribute new knowledge on local content/context such as language; people and proximity enhance</td></tr>
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		internationalisation activities.
	Digital and offline integration of strategies, marketing and business management perspectives	Advances knowledge on e-commerce and e-platform adoption for digital businesses in Nigeria and developing countries; evidences the need for Nigerian digital firms to integrate digital and offline given the infrastructure challenges in Nigeria and Africa. This highlight new knowledge on how to run successful e-commerce and e-platform in Nigeria.
	Partnership and collaboration	Advances understanding on the importance of collaboration on internationalisation literature and how DIFs engage customers in international markets. This finding also highlights new knowledge as it helps the firms to focus on main business objectives and allow collaborating firms to provide auxiliary services. The finding addresses the challenges of tangible and intangible resources that face many new and small businesses, for example newness and outsidership in international market.
	Multifaceted platforms	Contributes to new knowledge on how multifaceted e-platforms enable DIFs to contextualise and localise digital internationalisation activities. It helps them to digitally engage customers in different foreign

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<tr><td></td><td></td><td>markets with local contents.</td></tr>
<tr><td colspan="3">For question 3 below, as in Table 7.1, related findings include five key themes: ICT knowledge and skills; social media and digital marketing; data-driven decision making; adoption of hybrid business models and internationalisation approaches; and use of suitable payment systems. The findings again show how DIFs combine these themes in their internationalisation activities. The contributions are again summarised for some of the above themes below.</td></tr>
<tr><td>Q3: How do digital economy characteristics affect the development and internationalisation of digital firms in Nigeria?</td><td>Data-driven decision making</td><td>Contributes new knowledge on how the analysis of customers' data (big data analytics) helps firms to decide where to internationalise; it confirms digital economy literature on using customer data to tailor offerings to customer needs and develop new products and services. More research is needed to better understand how big data analytics can better support effective decision making related to key functions of DIFs in Nigeria.</td></tr>
<tr><td></td><td>Social media</td><td>Confirms the importance of social media and digital marketing for developing DIFs. This finding shed lights on how DIFs use social media to engage and acquire customers. For example, they use social media to create online communities that allow participants to advertise the products and services through word of mouth in digital context.</td></tr>
<tr><td colspan="3">For question 4 below, as in Table 7.1, related findings include six key themes: profit-market fit and customer needs; customer engagement, digital marketing and social media acquisition; customer relationship, learning and support; data-driven decision making (big data analytics); all culminating in the integrated business model template (IBMT) for DIFs. The findings how</td></tr>
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<table>
<tr><td colspan="3">the IBMT combines all these perspectives and maintains required flexibility in modelling by combining the generic business model canvas which applies to all firms, components of e-business models and attention to the three functions of business models. The IBMT also integrates offline and online perspective on business modelling and internationalisation of DIFs. The contributions are again summarised for some of the above themes below.</td></tr>
<tr><td>Q4: What are the defining business modelling characteristics of digital firms?</td><td>Provisional business model, including hybrid business models (generic, e-business, functional, offline and online integration perspectives)</td><td>Reinforces business model literature and suggests that elements of business model develop as businesses grow and understand customer needs and business environments.</td></tr>
<tr><td></td><td>Business model innovation</td><td>Consequently, advances knowledge on business model innovation literature and reveals that Nigerian digital internationalising firms continue adapting and innovating to develop an effective business model for digital internationalising firms that will meet customer needs in both domestic and international markets. Further work on using the IBMT to enhance such business model innovations in DIFs is needed.</td></tr>
<tr><td colspan="3">For question 5 below, as in Table 7.1, related findings include two key themes: digital infrastructure challenges; and inadequate human capital development. The review of current developments in the digital economy (chapter 3 of the thesis) clarify how DIFs can take advantage of such development in order to overcome the challenges. An example is use of big data analytics to improve decision making for specific business functions. The contributions are again summarised for some of the above themes below.</td></tr>
<tr><td>Q5: What challenges are faced by Nigerian e-commerce and e-marketplace firms?</td><td>Digital infrastructure</td><td>Explicitly addresses digital infrastructure challenges and digital firms’ adaptation to it, such as pay on delivery or pay on arrival, and</td></tr>
</table>

		integration of digital and offline customer journey.
	Human capital development	Advances knowledge on internationalisation literature confirming the importance of skilled staff and overcoming the constraints due to lack of human capital development in Nigeria.

Source: the author's own

In sum, the above contributions to knowledge help to close the gaps in international entrepreneurship and digital internationalisation literature on how digital firms successfully develop and internationalise their activities (in Nigeria) through digital and physical modes of internationalisation.

Another contribution of this research is to better understand the challenges faced by digital internationalising firms in Nigeria and provide a revised conceptual framework, an Integrated Business Model Template (IBMT), and a complementary Internationalisation Template for Digital Firms (IDTF) that will enhance the development and internationalisation of digital firms in Nigeria.

The findings indicate that international entrepreneurship theories and digital internationalisation such as e-platform and e-commerce approaches, and digital economy mechanisms, especially big analytics (and potentially artificial intelligence), strongly underpin integrated business modelling and development of DIFs in Nigeria and Africa.

The following sub-sections further link the contributions to knowledge to the research questions, to help the researcher evaluate the success of the study in exploring the questions. This also generates additional insights on related future work.

8.4. Evaluating the success of the research in exploring the research questions

The researcher considers the study to have successfully explored the questions. This is because of the notes in table 8.1 above which: a) explicate key themes of the research that underpin each research question; b) provide additional notes on some of the themes, whilst the rest are in the discussions in chapter 7; and c) where appropriate, articulate areas for further work related to the themes.

That said, since the themes emanated from selected theoretical paradigms in the conceptual framework and the research findings, considering e-commerce and e-platform perspectives, further notes on future work on these themes and other perspectives in the topic are provided later in the chapter.

8.5. Implications for theory, research and practice

This section highlights the theoretical, research, and practical implications of the findings for entrepreneurs, private sectors and public-sector analysts, and makes suggestions for enhancing the development and internationalisation of digital firms in Nigeria (see Table 8.2 for summary of the practical implications).

Theoretically, as embodied in the IBMT, the research highlights the importance of international entrepreneurial orientation and competences. The market knowledge and previous business and professional experience of founders are found to be essential part of developing and internationalising digital firms. From a firm’s perspective, for digital firms wishing to internationalise, this research has highlighted certain competencies that are necessary for the process. The essential success and personal characteristics for the founders are a) being proactive in internationalising digital firms, b) international risk-taking behaviour, and c) international market awareness. It is important to consider the previous experience of the founders as it helps digital firms to reinforce their international market awareness. The international market awareness was shown as important factors that enable entrepreneurs develop digital firms in Nigeria. Learning how e-commerce and e-platform operate in developed countries and aligning the business model with Nigeria social cultural environments is crucial for development of digital firm in Nigeria. This can be learning through digital economy firms such sharing firms; platform and unicorn firms operate in domestic market where the entrepreneurs live.

The researcher notes that the theoretical contributions to knowledge have been developed around the revised conceptual framework, IBMT and the Internationalisation Template for Digital Firms (ITDF). The implications of these frameworks for research are such that the frameworks can now be used by future researchers to extend knowledge and capabilities in integrated business modelling for developing digital internationalising firms (DIFs) to other contexts, namely: industry sectors beyond e-commerce and e-platform firms, which is the focus of the present research; other business lines in the case study firms; wider choice of DIFs in Nigeria, where possible; and other African countries.

Further to the theoretical contributions, stand-alone PhD research topics can be focused on distinct themes in the study, using insights from the above frameworks which embody the key findings from the research. For example, the international entrepreneurship focus can be researched in more detail. For this, many more frameworks in Zucchella & Scabini (2007) not used in this study can be explored in the Nigerian and other developing country contexts. Also, the internationalisation focus could be further explored, combined with complementary perspectives from international business, international marketing, and digital marketing (Chaffey & Ellis-Chadwick, 2016). For the integrated business modelling perspective, specialist PhD research can deepen the IBMT and ITDF, by developing canvases which future entrepreneurs can use in building DIFs, like the business model canvas (Osterwalder & Pigneur, 2010).

Undertaking these specialist research foci with emphasis on different business subunits in the selected case firms and other emerging digital firms in Nigeria and Africa, say, will meaningfully test the integrity of the above frameworks (revised conceptual framework, IBMT and ITDF) in yielding actionable insights that further develop the firms. The result will also inform a taxonomy of different types of digital internationalising firms, and adaptations of the IBMT and ITDF frameworks which are more effective for growing them profitably.

Another line of theoretical explorations resting on the current frameworks and findings will be more probing research on the predictors of the business performance metrics in the IBMT dashboard. For example, studies on the predictors of profitable growth of the firms, linked also to their internationalisation success (speed, entry mode, international geographic precocity, international intensity), will be useful theoretically and practically. The following notes develop the practical and policy implications.

Table 8.2 summary of practical implication to knowledge

Successful strategies for digital internationalised firms	**Advice for stakeholders wishing to establish digital internationalising firms**
International orientation of the founders	Market awareness improve human capital resources, training programmes, managerial and digital skills
Gap niche and customer needs	Identify gaps in the market, niche markets and customer needs and use the IBMT to develop matching offerings.

Provisional and business model innovation	Continually adjust the IBMT to emerging insights from customers (learning-by-doing business modelling), understanding product-customer fit, flexible business models, aligning products, services and operations with socio-cultural influences in the Nigerian (and other) contexts of the businesses.
Multifaceted e-platform model	Leverage the power of e-platform business models, technology alignment with customer needs, multi-platform channels, and local contexts by thinking through important aspects of the IBMT in relation to the features and workings of the platforms.
Customer data	Use customer data and suitable big data analytics to make decisions about where to internationalise and how best to engage with customers, also considering the implications of the results for the marketing mix.
Hybrid internationalisation	Use both digital and physical internationalisation modes, third party collaborations to enable internationalisation.
Partnership and collaboration	Founder and funder collaboration, and providing auxiliary services through collaboration and partnership

Source: the author's own

Digital firms seeking to internationalise their offerings need to identify gaps and customer unmet needs in different international markets. The gaps in the market include market expansion, underserved markets, latent needs, and switching costs. Nigerian (digital) entrepreneurs that want to develop innovative digital firms and offerings should focus attention more on learning what customers want and adapting to changing business environments warranted by these needs and preferences. For example, entrepreneurs in Nigeria need to learn how to adopt existing products and services and contextualise and incorporate them within Nigerian socio-cultural and digital economy contexts.

Developing novel businesses and offerings do not require a detailed model from inception but needs strategic dashboards such as the IBMT and ITDF that guide entrepreneurs and founders. Continuous business model innovation is crucial when establishing e-commerce and e-platform DIFs because such firms are still nascent in Nigeria. This is because detailed business models cannot be developed under conditions of certainty, since products and services and customers are unknown to prospective customers.

Osterwalder & Pigneur (2010) provide nine elements of business model canvas for establishing new businesses. It is crucial to fully mind these elements in developing new businesses in Nigeria. The main elements of a digital business model will emerge through understanding product-customer fit. In this sense, entrepreneurs and founders will discover a profitable business model through "learning by doing". This helps entrepreneurs to learn about prospective customer preferences and get feedback from those customers, which enables the new products and services to meet customers' specifications. Business models need to be flexible and provisional to allows firms to continue to modify and improve their products and services and overall operational excellence.

Digital firms and entrepreneurs need to adopt multifaceted platforms to allows them to localise their digital internationalisation activities. Multifaceted e-commerce and e-platform firms serve different international markets with local contents and allows firms to acquire large market shares. There is need for new and existing digital businesses in Nigeria to leverage the power of e-platform business models; this is because firms that use e-platforms grow tremendously in size and scale up quick.

Third-party partnerships, collaborations, and e-platforms facilitate digital internationalisation as they help firms' customers with varieties of sellers and enable the customers to have bargaining power. E-platform businesses contribute to significant national economic and human development, for example, job creation, convenience, at lower costs than traditional physical businesses. Therefore, e-platform enterprises should be borne in mind when designing digital firms in Nigeria from inception. It is important for individuals, entrepreneurs and firms in Nigeria and to take advantage of e-commerce despite barriers such as inadequate digital infrastructures and lack of internet penetration. A blended approach that integrates mortar-and-bricks and online services is a good way to benefit from e-commerce potentials in this environment because of inadequate infrastructure.

When establishing digital businesses, entrepreneurs need to have skills for implementation and execution of big data analytics and technologies that will enable the DIFs to deliver superior values to customers. Digital firms use customer data insights to develop new products and services, create new customer segments, engage in international markets, and offer personalised customer engagement and acquisition.

As noted earlier, entrepreneurs and digital firms should consider integrating digital and physical internationalisation when necessary. This is because having physical presence offers advantages for internationalising firms. It enhances search engine optimisation and algorithm is more favourable when firm physical presence has in international market. Beyond the above insights, it helps to build and enhance customer trust perception due to proximity. It also offers alternative channels to serve different customer groups.

Collaboration plays a crucial role when establishing new business. It enables firms and entrepreneurs to acquire all types of resources to achieve their goals within a short period. This is very important for entrepreneurs and digital firms in Nigeria, because they can benefit from other companies' resources. Partnering with international businesses and individuals facilitate internationalisation process and allows digital firms to engage with local suppliers that provide other auxiliary services. This allows firms to focus on the main business objectives and make their business models leaner and more effective.

8.6. Policy implications

From government's perspective, policy makers need to create awareness and entrepreneurship programmes to encourage entrepreneurial thinking and international business mind-set, especially about skills that underpin the development of digital firms. In doing this the IBMT and ITDF templates will be focal points since they bring together key elements of digital firm business development. Understanding the global business environment and learning how digital firms develop can be achieved in other sectors of the economy because there are lots of digital business opportunities, apart from the e-commerce and e-platform angles.

Government needs to provide economic incentives to attract foreign direct investment and international business so that entrepreneurs and businesses in Nigeria can learn from their innovative business approaches and thinking. Human capital development needs to be improved because people need to understand how global and emerging innovative business is conduct in Nigeria. The poor state of human capital development poses challenge to (digital) entrepreneurs in Nigeria.

There is need to involve academics in this line of research, industry and government stakeholders, in designing curricula and programmes that will integrate technology and other skills into every level of the education system. This way, the programmes facilitate much-needed university-industry-government collaborations in Nigeria and Africa. These community service perspectives of the core university business should be implemented face-to-face in different departments, the Centres for Entrepreneurial Studies in Nigerian universities and polytechnics, and globally through online certificate, diploma, CPD and degree courses.

The Federal Government of Nigeria needs to create enabling macroeconomic policies to help entrepreneurs and businesses to have access to finance and other available resources that are needed for successful digital business development in Nigeria. Government needs to invest in technological ecosystems. There is need for affordable access to the internet because an increasing number of people are using the internet which will enhance online purchases of digital firms' offerings. Government needs more investment in power because digital firms have warehouse all over the country and cannot function without power.

8.7. Methodological implications

The methodological contributions of the research to knowledge started with the research team who reviewed the research themes in the research questions, and how they should be explored in the research instruments, especially the case studies and interview questions. This was part of initial conceptualisation of the research which aimed to align the research constructs and themes with the key research terms in the research questions, and thereby inform the interview questions.

Following Maruyama and Ryan (2014), the researcher used different triangulations designed into the study, as explained in the research methodology chapter 5. The triangulations include: a) case study triangulation across digital firms with different e-commerce and e-platform businesses; b) theory triangulation based on the use of contributing theories and conceptual framework from literature (international entrepreneurship, digital internationalisation, and business modelling for e-commerce and e-platform firms, for example) and ; c) data triangulation, whereby different data are used including primary data from Skype interviews and secondary evidence from websites of the case study firms.

8.8. Limitations of the research

The researcher acknowledges some limitations of the present study despite the success of the research in exploring the research questions. First, the data collection focuses on five e-commerce and e-platform firms because there are few digital firms in Nigeria that meet the criteria for selecting the case studies. There are many emerging digital e-commerce and e-platform firms (more than 20) in Nigeria but only few have made their way to international markets making it difficult to select the case firms.

The main challenges encountered in the research were related to the process of collecting data. The were no face-to-face interviews due to time and cost constraints; most of the founders and senior managers were busy and the researcher had to send research assistants many times to visit the companies. Because of this researcher was able to interview only one participant from each of the five case firms. It would have been good to gather perspectives from managers in different departments of the case firms. The case firms were selected via the convincing (purposive) sampling method rather than random method, which is generally perceived to be a better method, though not for this type of qualitative study. An effort was made to ensure that case firms are some of the first digital firms established in Nigeria with significant experience of internationalisation dating back from 2008 and 2012.

8.9. Recommendations for future research

This section adds further notes on future work in addition to those stated above. This research took an in-depth look at elements of business model for developing and internationalising digital firms, with a focus on Nigerian e-commerce and e-platform firms. Theoretically, the in-depth critical review of literature on the research themes (about 29 such themes in chapter 2, for example) culminated in a conceptual framework which contextualises the international entrepreneurship models and business model constructs to Nigerian internationalising digital firms. This framework highlights elements of digital business model for developing digital firms. Theoretically, the IBMT/ITDF frameworks could be replicated in future research in Nigeria and similar developing countries.

Further research could also focus on specific approaches for developing, testing and validating the IBMT/ITDF templates in the different contexts mentioned above – other subunits of the case firms, many more emerging digital firms in Nigeria and Africa, particularly for other industry sectors than those studied here. Also, deeper studies on distinct selections of themes within the topic should be attempted in future work. Examples are digital marketing and internationalisation strategies, international entrepreneurship perspectives, and big data analytics.

As noted above, future research on digital firm’s internationalisation process could test these finding on a large scale across a larger pool of digital firms in Nigeria and Africa. By using a large sample size some forms of complementary quantitative analysis in a mixed methods research approach can be used, to additionally use scaled questionnaire items to quantify the extent if the various influences and challenges in digital internationalisation. This way, the future research findings could be tested statistically, and their generalisability can be improved.

Qualitative research was used in this study to explore how digital internationalising firms emerge and develop in Nigeria. A mixed method research approach indicated above may be needed to gain further understanding of the relationship between study variables in the research. This will be more useful when the study variables are related to key firm performance metrics (speed, scope, internationalisation intensity, and geographic proactiveness, and profitability) of the studied firms over time.

The research uncovers some insights on the element of digital business model. Firms have shown that enabling technologies, niche and customer needs are important. Future research could use conceptual framework in this research to study other digital internationalising firms as the present research focus on e-commerce and e-platform. This will help to develop business model for digital internationalisation for specific digital firms in Nigeria and similar developing countries.

Since e-commerce model is not prevalent in Nigeria, Sub-Saharan Africa and similar developing countries because of low ICT enablement, there is a need for future research to explore how to combine the integrated business models with strong e-platforms with traditional channels.

8.10. Conclusion

This research brought together international entrepreneurship and digital internationalisation, digital economy, and business modelling literature to understand digital firms' internationalisation process. The research succeeded in advancing knowledge on digital internationalisation literature specifically in the Nigerian context, by structuring holistic conceptual framework and integrated business model templates (IBMT and ITDF) for developing and internationalising digital firms in this environment. The resulting revised conceptual framework, IBMT and ITDF can be applied to similar developing countries like Nigeria, especially Sub-Saharan Africa. In addition to the above-mentioned frameworks, the recommended future works are in the researcher’s opinion strategic for developing a digital entrepreneurial culture in Nigeria and Africa.

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Appendixes

Appendix 1 Functions and Interpretation of Business Model

	Function of a Business Model as Attribute of Real Firms	**Function of a Business Model as Cognitive/Linguistic Schemas**	**Function of a Business Model as Formal Conceptual Representations**
	Making money (Birkinshaw & Goddard 2009)	It specifies the logic of how the unit in question functions and creates value Connects both its market environment and the corporation Specifies how the machine works Produces revenue and/or costs to the corporation or to other business units (Aspara et al., 2010)	Represents the firm's money-earning logic in a transition to sustainability (Abdelkafi & Tauscher, 2016)
	Shows the value proposition Allows for value creation and delivery Allows value capture (Bocken et al., 2014)	Provides means to describe and classify businesses Operate as sites for scientific investigation Act as recipes for creative managers (Baden-Fuller & Morgan, 2010)	Represents a tool for management It solves the problem of identifying who is (or are the customer(s), engaging with their needs, delivering satisfaction, and monetising the value Provides the basis for classification; Mediates the link between technology and firm performance (Baden-Fuller & Haefliger, 2013)
	Articulates the value proposition Identifies a market segment Specifies the revenue generation mechanism Defines the structure of the value chain Estimates the cost structure and profit	Articulate the value proposition Identify a market segment Define the structure of the value chain Estimate the cost structure and profit potential	Specifies how a new venture can become profitable Shows what value is embedded in the product/service offered by the firm

	potential Describes the position of the firm within the value network linking suppliers and customers (Chesbrough, 2010)	Describe the position of the firm within the value network Formulate the competitive strategy (Chesbrough & Rosenbloom, 2002)	Explains how upstream relationships with suppliers structured and managed Describes how are downstream relationships with customers structured and managed Provides costs and benefits from their distribution across business model stakeholders (Boons & Ludeke-Freund (2013)
	Formulates the competitive strategy Generates and delivers economic value, (as well as) social value Illustrates the mechanisms whereby the firm intends to deliver value to the target public Illustrates how the necessary costs and revenues will be structured (Dahan et al., 2010)	The business model work as both a calculative and a narrative device. It allows entrepreneurs to explore a marker and to bring their innovation-a new product, a new venture, and the network that supports it-into existence (Doganova & Eyquem-Renault, 2009)	Articulates the value proposition Identifies a market segment Defines the structure of the value chain Estimates the cost structure and profit potential Describes the position of the firm within the value network Formulates the competitive strategy (Casadesus-Masanell & Ricart, 2010)
	Generates profit (if) the firm has developed activities and accumulated resources that drive a wedge between operating costs and revenues (Gamberdella & McGahan, 2010)	“Business models stand as cognitive structures providing a theory of how to set boundaries to the firm of how to create value, and how to organise its internal structure and governance” (Doz & Kosonen, 2010, p.371)	Enables description and classification Synthesizes a way of creating value in a business: it helps to describe how an organisation functions and generates revenues Is a tool to address change and focus on innovation, either in the organisation or in the business model itself (Demil & Lecocq, 2010)
	Describes the logic Describes how firms make money (Hinerth, Keinz, & Lettle, 2001)	Narratives to help understand who the customer is, what the customer values, how money is made, and the underlying economic logic for value delivery (Magretta, 2002)	Illustrates the production/delivery system (how to deliver products or services to the target customers) Reflects the firm’s intention about how it will make a profit in its given business (Itami &

			Nishino, 2010)
	Describes the position of the firm within the value network linking suppliers and customers, including identification of potential complementors and competitors (Nielsen & Lunda, 2014).	A reflection of managerial mental models or schemas concerning interdependent organisational activities (Martins et al., 2015)	Offers strategists a fresh way to consider their options in uncertain, fast-moving and unpredictable environments (McGrath, 2010)
		Aid for top management decision-making Enables change in both the cognitive and economic aspects of a business (Velu & Stiles, 2013)	Helps identify -customer value - financial consequences - revenue stream - customer segment (s) - value creation - partners network (Osterwalder et al., 2005)
			Provides a framework for management to allocate resources in order to gain competitive advantage and appropriate rents Ensure a logical and internally consistent approach to the growth of an entrepreneurial venture Defines the architecture through which key variables-or resources and capabilities-will be combined Demonstrates the economic appeal of an entrepreneurial venture Guides ongoing operations (Provance., Donnelly & Carayannis, 2011)
	The business model links the working inside the firm to outside elements including the customer side and how value		Explains the design or architecture of the company’s mechanisms to create, deliver, and capture value (Rein, Parida, & Ortqvist, 2015)

	is then captured and monetized (Roome & Louche, 2016)		
			Describes how the firm works as system The business model describes the design or architecture of the value creation, delivery, and capture mechanisms used. (Sainio, & Marjakoski, 2009), Schaltegger., Hansen, & Ludeke-Freund, 2016)
			Outlines the business logic required to earn a profit Defines the way the enterprise "goes to market" Reflects management's hypothesis about what customer want, how they want it and what they will pay, and how an enterprise can organise to best meet customer needs and get paid well for doing so (Teece, 2010)
			It provides a description of the logic for an organisation's existence: who does it for, to and with; what does it now and in the future; how, where, and with what does it do it; and how it defines and measures it success (Upward & Jones, 2015)
			Description of how a firm interacts with its ecosystem (Wells, 2016)
			Offers a consistent and integrated picture of a company and the way in generates revenues and profits (Yunus et al., 2010)

Source: adopted from Massa et al. (2017)

Appendix 2 SHU Ethics Consent Form

RESEARCH ETHICS CHECKLIST (SHUREC1)

This form is designed to help staff and postgraduate research students to complete an ethical scrutiny of proposed research. The SHU Research Ethics Policy should be consulted before completing the form.

Answering the questions below will help you decide whether your proposed research requires ethical review by a Faculty Research Ethics Committee (FREC). In cases of uncertainty, members of the FREC can be approached for advice.

Please note: staff based in University central departments should submit to the University Ethics

Committee (SHUREC) for review and advice.

The final responsibility for ensuring that ethical research practices are followed rests with the supervisor for student research and with the principal investigator for staff research projects.

Note that students and staff are responsible for making suitable arrangements for keeping data secure and, if relevant, for keeping the identity of participants anonymous. They are also responsible for following SHU guidelines about data encryption and research data management.

The form also enables the University and Faculty to keep a record confirming that research conducted has been subjected to ethical scrutiny.

- For postgraduate research student projects, the form should be completed by the student and counter-signed by the supervisor, and kept as a record showing that ethical scrutiny has occurred. Students should retain a copy for inclusion in their thesis, and staff should keep a copy in the student file.

- For staff research, the form should be completed and kept by the principal investigator.

Please note if it may be necessary to conduct a health and safety risk assessment for the proposed research. Further information can be obtained from the Faculty Safety Co-ordinator.

Personal statement	
I can confirm that: – I have read the Sheffield Hallam University Research Ethics Policy and Procedures – I agree to abide by its principles.	
Student / Researcher/ Principal Investigator (as applicable)	
Name: Nonso Hyginus Ochinanwata	Date: 21/07/2015
Signature:	
Supervisor or other person giving ethical sign-off	
I can confirm that completion of this form has not identified the need for ethical approval by the FREC or an NHS, Social Care or other external REC. The research will not commence until any approvals required under Sections 3 & 4 have been received.	
Name: Patrick Oseloka Ezepue	Date: 21/07/2015
Signature:	

Appendix 3 Participants' Consent Letter

Sheffield Hallam University | Materials and Engineering Research Institute

Sheffiled Hallam City Campus, Howard Street, Sheffiled, S1 1WB
T +44 (0)1142225 3500, F+44(0)114 225 3501, meri@shu.ac.uk
Dear Sir/Madam

My name is Nonso Ochinanwata and I would be glad if you could enable me to interview you as part of my PhD research at Sheffield Hallam University, UK. The research is entitled "*Integrated Business Model for Developing Digital Internationalising Firms in Nigeria"*.

I wish to conduct an open, transparent, confidential, and non-obligatory interview with any senior manager in your organisation. Please note that you are free to decide if you want to participate or not and you are free to withdraw anytime without affecting your relationship with the researcher.

The research aims to understand the process of establishing and internationalisation of digital firms in Nigeria. The purpose of the research is to develop a scalable business model which will facilitate the establishment and internationalisation of such firms in Nigeria and similar developing countries. I am using knowledge-based firms as illustrative case studies in the research.

The interview will be conducted via Skype or telephone, whichever is more convenient for you. The information you would provide will be used only for the research. If I quote any material you give me in my dissertation or in any papers or publications resulting from it, I will do so in such a way that you and your organisation cannot be identified. I have no connection with any government department or welfare agency.

I would be happy to share with you the initial findings after the field work and the findings after the study is completed.

I look forward to hearing from you soon.

Kind Regards
Nonso Ochinanwata
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Skype: nonsoochi or Nonso Ochinanwata

Appendix 4 Interview Guide

Interview questions

Section A: Skills and experience

What are the skills and resources require most in developing digital firms?

Section B: Business strategies

What gaps in the market motivated you to start the company?

What adaptations have your company made after the company have started to meet customer need?

What do you think that your company does different that gives it an edge in the market?

What type of marketing strategies does the company use to engage customers?

Section C: Internationalisation process

What motivates your company to engage in international market activities?

How does your company obtain information on international market opportunities before venturing in those markets?

Which digital channels particularly help your company to engage in domestic and foreign market activities?

Does your company have any collaboration that facilitates its international activities?

Section D: ICT and digital economy mechanisms

What are the ICT factors proving the most relevant in your company?

As a digital firm, how does your company build an online relationship and reputation?

Section E: Contextual influences

What challenges do you face in doing business in the Nigeria environment?

Section F: Future direction

How do you see your company developing in the future, especially the nature of innovations in your offerings that will make more successful?

Appendix 5 Example Case Company Transcripts (Firm 1)

Good afternoon sir

Good afternoon, Nonso

Thank you, for willing to participate in this study, I appreciate your time. You guys are doing an amazing job. My greetings to your co-founder

Thank you very much for your consideration in choosing us as part of your PhD study, and thank you for choosing us for your findings

1) **What are the skills and resources require most developing digital**

Some of the skills are talent, experienced developers, market knowledge, project manager, communicator, good communication skills are very important because you communicate with your team on a daily and hourly basis. You have to understand the market needs, not just trying to build something to make money; you need to understand and solve customer problem as we are solving the societal problem. You see, there is a lot of small and medium business that need a market abroad but doesn't have access to those market. We are bridging that gap say to say.

A good communicator means someone who can experience the developer what he needs to do.

For the resources, you need capital to develop technology because of it usually costly, a lot of research work needs to be done to learn about the market, and technology that will align with that market need to provide the customer what they need or solve their problem.

2) **What gaps in the market motivated you to start the company?**

The gaps the motivated us to start was inaccessibility of quality market information in Africa, wrongly perceived production level, locating particular goods majorly available in Africa. A bridge to trust markets in Africa

3) **What adaptations have your company does different that gives it edge in the market?**

Initially, we started with an advanced technology platform that is a globally standard method, coming to Nigeria and Africa we understand that people are not that conversant with it. We actually had to break the services down to a very low level of communication to connect with the majority, easy to use. This is because many of customer are not technological literates.

4) **You mentioned about technological knowledge and skills, is possible for someone that doesn't have technological knowledge to set up cyber-mediated firms?**

When I mentioned the skills, I do mention experienced developers and talent. So it doesn't mean you must have all these skills. It means people that have that capacity. You must not have digital skills, but you need people with tech skills.

5) **What do you think that your company does different that gives it edge in the market?**

It comes with love from your customer and customer relationship. First of all providing solution that solves individual business challenges, given the room for business to take control of part of their trade, showing a lot of concern and love to individuals business by listening more and solving inner problems beyond just surface of buying and selling.

Then what keep them stick with us as a company is that will provide access to international buyers. Will give training as a support service to improve their business, we also support them and give them information on the product before it harvested.

6) **What type of marketing strategies does the company use to engage customers both in the domestic and international market?**

We use a lot of search engine optimisation tools. If you search for something like food export in Nigeria, our company comes up. We use solution through free blog content we engage customers in an event like trade expo/seminars. We provider trade association free training, e-resources with questions and answers.

7) **What motivates your company to engage in international market activities?**

Basically, most international market currency is stronger than that of Africa countries; it makes it easier to command a good price for local goods. For example now, averagely across the world, a cup of coffee cost \$3, in Lagos Nigeria, it cost \$0.6. If we said that we are sending a cup abroad at the cost of £0.6, it would command a price in the global market, and people will be attracted to buy from somewhere like Lagos or another part of Africa countries.

The second thing is untapped resources in Africa that international markets are in need of. So there are a lot of commodities and goods in Africa that international markets need.

More also the migration of Africans in the other part of the world and they need to service with locals, local dishes, local attire and commodities they use where they are. Commodities peculiar to Africa widely needed globally. And also Africa is the largest producer, like Nigeria and many other African countries are the largest producers for many things. For example, Nigeria is among largest producer of Cassava, Sorghum, cocoa, shea butter. We connect the producer to the international market, and they have access to the market.

8) **Do you have international market previous experience, I learnt from your profile that you had lived some places like UK and China**

First of all, we did a lot of research through sources like Chatham House in the UK, World Facts, international trade markets. Demand from partners and global enquires, is about getting insights into the deep market. Also, we get world facts, for example, if they said there is the largest producer in this area, we get a research knowledge from a credible source like world facts. Also, we get demand from partners from global enquires.

As we begin, over time different people from different part of the world began to reach us and said there is a big market in this area, and I want you guys to explore it.

Also, I have been in engaging in international business for a couple of years. Way back we set up a business that produces locally product in China and ships it back to Nigeria. This one of the companies I used to run before, which, I gain some international experience.

9) **Was the company you mentioned in China started in Nigeria or China?**

The former company was based in China; there I learnt a couple of things based on how Chinese do business and other experience. I have also work in the UK before moving to China, which gives me another ample experience

10) **Which digital channels particularly help your company to engage in the domestic market and facilitate international market activities?**

We use a lot of content online, which work with search engine optimisations. We use solution through the free content we distribute on the internet. People constantly search on Google on information. These contents are really good and rank very high, and people find it on the internet, and they engage us through the internet.

We use a digital platform like trade event on the internet, is a global trade where trade is happing like on the internet. We connect people and engage them in this live event.

11) Does your company have any collaboration that facilitates international activities?

Yes, we do have a partnership in both local and diaspora markets, like UK, US, Australia and so many other countries. They have to stock the product, and they have to distribute it locally. We have collaboration with local banks for international funds receiving or transfer and general transaction

12) What are the ICT factors proving the most relevant in your company?

Basically, it is a digital marketing, and computer programmes engineers. Digital marketing tools like using social media channels in engaging and advertising our services.

13) Does your company use digital economy tools like big data, artificial intelligence to model customer needs?

At this moment we have not been able to explore "AI" properly. But we are looking forward to doing that because we need a lot of big data that we can work with. This is because digital business is driving by big data and "AI".

14) As a digital firm, how does your company build an online relationship and reputation?

It comes with great service experience which we called the "user experience". It comes with quality content, contents that deliver and solving for customers. And they will believe that these people are the right people I should speak to. It comes with offline visitation, trade seminars discussions, free support services and enquiries. Professional grooming to ensure traders safety in international transactions.

15) What challenges do you face in doing business in Nigeria environment and internationally?

One is a slower pace of transaction, a willingness for the customer to pay digitally, non-quality good delivery. Sometimes slow delivery due to logistics, maybe if there is a lot of traffic on the road.

And sometimes unorganised market information, volatility in products prices. If there is **insecurity** in the part of the North, it affects tomatoes prices and overnights it will skyrocket.

16) **As a digital firm, does infrastructure such a road and electricity affect your company?**

As a digital firm, we personally, it doesn't affect us heavily. It affects our traders. Electricity wise we have little to do with electricity, we consumer lower energy compare to companies that use heavy machines.

Infrastructure wise, we don't buy and sell, so we don't rely on those infrastructures for delivery; our traders do which affect the trade or business of traders.

17) **Before we go to the last question as a digital entrepreneur, what entrepreneurial characteristics require for developing and internationalisation of digital firms?**

Thank you, the most important thing entrepreneurs need to learn is that technology and internet is a driver or a medium that speedups new time experience, so if there is an activity that is helping in a social economic, what digital or technology does is to speed it up. The first correction is not to dream of an idea but shot. They need to connect with people.

The second thing is that you don't go into business to invest massively into a product you think people need because people are so different and people way of living is so different. So when you enter the market, you test the value, what people need, what the value is for the people, what do they make sense, are they ready to pay money for. These are the essential thing you have to learn after you launch into the market.

So why most companies fail is that they think of value and they what to impress people with the value without knowing that people may not like the product even if it comes out almost free because that is not what is valuable to them.

18) **As a CEO and co-founder driving the company, how do you see your company developing in the future, especially the nature of innovations in your offerings that will make your more successful**

Interesting this is a secret now. The first is 3G and 2G mobile use. There are a lot of people like farmers in the far South East or the Far North somewhere, they may not have a digital phone like Samsung the way me, and you do. And we need him to trade because he has over hundreds or thousand tons of products, we connect him with 2G to live platform, what we called text to life. Through text to live they would be able to receive information to be able to receive direct market inquiries the same on his mobile.

We are going to increase the usage of "IM", "SMS", and "WhatsApp". Those platforms where people live on, unfortunately, there are not web platform. They find it easy using most of them, and they don't find it using in the mobile web platform.

Lastly, we are going to connect them with the social-cultural setup. An average Nigerian is looking at the selling of doing business in it owns pattern, he wants to do business in his peculiar way. We are going to connect them with the social-cultural setup of the way of life. We want to bridge that into technological use. A new organisation may have a problem introducing products that are non-familiar with lifestyle.

19) **You mentioned something about WhatsApp like web 2.0 do use social media to drive your business**

Yes, we do a lot of work from Twitter, Twitter generates us a lot of activities quietly. A lot of information comes from our Twitter platform, a lot of information comes from WhatsApp enquiry locally and globally.

20) **How does your company manage online payment regarding security and trust?**

When we studied and understood the e-commerce sector from previous players. Research shows that about 1 to 2 per cent make card payment online, pay on delivery. What we did was to ensure a secured transaction of transfer. Most of the customer we got in the early years was more through direct transfers.

Now, we incorporated a flower way (a system) into our platform that accepts the direct transfer, that accepts international and African payment, that accept another mobile wallet because we are stronger brand now that people can trust. Now payment gets easier all the time.

21) **Does your company start as e-commerce or e-marketplace?**

Ok good, didn't start from both either, we started differently, we started from an idea like "Shopify". You know Shopify that help individual and business create a store online to enable them to sell their goods. We now later found out that this was a bit advanced for this market. People don't have that much tech service here. We pivot to e-commerce, we found out that e-commerce was still elementary and there is a lot to be done for it to run in this place. Then we pivot to a marketplace after we pivot to a marketplace, we are trying to do general goods. Later we finally pivotal to only locally commodities.

22) Based on international activities, how many international markets does your company operate in?

Yes, we are growing we are in the UK, China, India, Australia and other European countries for goods to be purchased there locally.

23) What are the barriers do you perceive digital internalisation at the moment regarding how you engage customer digitally in the international market?

The barriers from international market are that sometimes the specification and the demand are different, and when the local supply tried to make that they may not meet it appropriate and it goes into a wrong deal, that is one

And then secondly, there is a trust issue from the international market that we have to into circle of back and forth communication for us to ensure an entrusted deal. We also need access like some of the partners that help us liaise with international buyers.

24) Very interesting, how do you find partners in international markets?

Sometimes when we go for trade expos in London when we go for trade exposed in Houston, US. Or some of the trader seminars, we connect with people, sometimes partners reach us through the internet maybe from Qatar and tell us what can offer us and find some level of "MOU" relate with.

25) What is your background, sir?

My background is in Geophysics, MBA in UK wales and other professional experience. I have been into many businesses with failed and successful prior businesses in a total of 9. Before launching out the current venture.

Example Case Company Transcripts (Firm 5)

Section A: Skills and experience

What are the basic skills and experience require most in developing e-commerce and online platform?

The employer doesn't need to have major skills to be able to start e-commerce or online platform because all he needs to do is to hire the right people with the skills to work for him. The owner of the business is not the person who runs the business is the people who he has hired that is actually run the business

If you talk about skills that person needs to understand business management basically, if he will be able to manage people, of course, he will be able to drive the business

What are the basic resources require most in developing e-commerce and online platform?

Of course, you cannot run a business an e-business without an investor, then if you have all the funding is fine, I don't think there is one person who likes to invest all his fund in an e-business, where there are many investors who would like to support you. Secondary, you need to ensure that the platform will optimise so that you will have enough traffic coming to your platform because if your platform has a fundamental issue of development is going to have a problem because driving audience on your platform will be a challenge. These are the basic things oy need, and of course, you need to employ the right people to work for you.

Section B: Business strategies

What adaptations have your company made after the company have started to meet customer need?

Well, one of the things I will say is regarding the payment system. Initially, it was a major challenge because many Nigerian were not happy to put their card on the website because of fraud and risk. And we have to make it open to pay on delivery or pay on arrival for the hotel. This was a major adaptation for us because ordinary people would have preferred to make a payment during booking to ensure that their hotel is confirmed, ok. This was a major drawback as at the time we started, but now it normalises.

What do you think that your company does differently that gives it an edge in the market?

Well, you see there were very few e-commerce platforms when we started and maybe the investors we have, have also helped us to leverage that we would be able to do a lot of push and publicity to be able to push the name. Apart from that, we provide exceptional customer service when people make their order whether it is on mall or travel. We provide personalised customer service just to ensure that the customer walks away happy. Because when you have a happy customer, it is easier to spread the news through the world of mouth. We take customer experience seriously.

Then when we started, we were doing a very high number of voucher and discount and all. It is for us to win a lot of promotional people, and it made relevant in the industry. We have also tried to balance this regarding our front; you know there is some organisation who have tried e-business and have folded up. So, we were able to manage it to know when to stop and when to do the pushes really, this has also helped us a lot.

So we have like the business team who all they do, particularly the people in the marketing team they will evaluate the business to know when we do promotion and pushes based on the turnover and all. This team all they do is to understand the market and push the findings to management to make a decision

What type of marketing strategies does the company use to engage customers?

Ok, so one particularly thing we did when we started was discount vouchers, we use to do 50 percent discount, 20 percent discount. Then we do black Friday like you have Americans do as well. During those periods is like when we do amazing sales, we will speak to an organisation who have devices or hotels to give us a deal, and this really push our customers on toes, and they look for the deals, ok. Then also, like I had early mentioned, we have people who analyse the business to know when sales are down, and we like to put some incentives to be able to boost the sales.

We also do mystery kind of shopping, maybe we can do a push, maybe there is an item going for #500, maybe few items may be there is none, and we say is going to be a lucky buyer. There is one we did recently, just a bag of rice for 1000 and there were a lot of people coming on our platform to buy that. This kind of things drives a lot of traffic to the platform, with the advertise a lot of people went to the page trying to be the lucky one. For us, it attracted a lot of people to the platform.

We have SCO guys who also able to do their own digital marketing things and all, we also have they guys called J4 people all they do basically is to engage the student, engage people on the street, maybe who really want to place their order, but they don't have devices to place their order. Se we give the products to those people at discounted prices, basically, they are the one speaking about us in their school or their workplace and all just to make sure when you think about e-commerce you think about us, or instead of going to market you will just go on our platform and get those things.

Section C: Internationalisation process

What motivates your company to engage in international market activities?

We are an international brand, so we also have an international relationship, and our investors are not Nigeria based so of course which gives us landing. Also, we have offices in other regions leveraging with international partners give us access to the market in those regions.

As a digital firm, why does your company still go and have an international office market?

There are clients or customers who want to book with people not just want to book online, right, maybe when there are some issues, maybe the payment, some people would like to see the face of the person they are dealing with, or maybe they don't trust you to do the transaction online. And also, if you check the banking system, currently there is a limited you have on your card. So that gives you limited access to the expensive you can make online. We try to make it easy for the customer so that any categories you fall in you would be able to your transaction. Also, language is also an issue, I mean for instance we have East Africa and West Africa, French-speaking countries, of course, if you have some who speaks French, you can hire them because it matters when dealing with a customer whose French are core language.

In terms of location, they know location more than we do, if someone needs to be in Ghana or wants something in Ghana and the person is asking me questions about Ghana, let's imagine that I never been to Ghana before I would not be able to answer the person's question. However, people who live in Ghana would be able to answer the questions and give the customer a better direction.

How does your company obtain information on international market opportunities before venturing in those markets?

Our intelligent business team can give us that kind of information, regardless of the location you are in when you log in our central system (multiplatform) we will see your location. When we have a lot of traffic coming from a particular location, we will know there are a lot of customers; we open an office there to reach out to customers rather than seeking to the transaction online. We really rely on the report that being generated from BIT.

Which digital channels particularly help your company to engage in domestic and foreign market activities?

Ok, so we have both online and offline marketing, online of course we have social media accounts like YouTube, Facebook, Instagram, Tweeter and all. Then offline we have TV, billboard, we have our J4 people like I have already spoken to you about. Sometimes we have events where we have to speak to people Face to Face; these are the major channel we use. So we also sponsor some event so that we can gain more visibility.

Which of the social media is more influential regarding engaging customers?

All of them are useful, depend on the age you want to reach out to, maybe the younger are more on Instagram, Twitter, the elderly once are more on Facebook, a lot of people have a Facebook account, but they don't have an Instagram account. So it depends on the ages

Does your company have any collaboration that facilitates its international activities?

Usually we have PR Team who responsibility is to either to reach out or respond to the invitation as well, PRT reaching out or we have corporate organisation reaching us as well, of course, we collaborate in every country, and those collaborations help us to reach customers

Section D: ICT and digital economy mechanisms

What are the ICT factors proving the most relevant in your company?

Does your company use any digital economy mechanism like big data or artificial intelligence to model customer needs?

Like already mentioned, every decision we take totally rely on data, and this is done by our business intelligence team, when you talk about big data it also drives by business intelligence team, they are one explore data from the website. Let’s say for instance, give me the number of people who have travel from South Africa in the last six months that booked on our platform, do you understand, based on the data we would be able to say we need to do this or that or to have office in South Africa, all is about reaching customers. These are very relevant.

As a digital firm, how does your company build an online relationship and reputation?

So we have the customer experience team whose responsibility is to watch for complaints and listening to customers’ feedbacks, whether have reviews or they have called in to complain, we usually give them compensation vouchers or any incentives just to ensure that the customer walks away very happy. After you bought an item or stayed in a hotel that booked through us an automated mail will send to you asking how your stay was telling you to rate us and also to rate the service the person has also enjoy. So, from this, you will be able to reach the customer if is positive or negative feedback. So we have what we called NPF Net Performance For, that is very important to us, we always ask the customer to rate us that determine how well we are doing or badly doing.

What are the barriers your company face in engaging in the international market as a digital firm?

Like I said we don’t have a lot of those because we have every region managing their own transaction. So, we basically do locals; we don’t manage a lot of internationals. However, it doesn’t mean that we don’t manage international customers, mainly in travel, we have people from different countries maybe they are coming into Nigeria, and they have to go through our system to book. So one of the things we check, one the challenges are frauds, maybe in terms of card payment, because a lot of people use peoples’ card, so we have a fraud team and all they do is to ensure that cards being used are not stolen, so that is a major challenge we face, maybe language barrier as well, if the person doesn't speak English we need to find somebody who can understand what the person is saying. We don't really have so many issues.

Section E: Contextual influences

What challenges do you face in doing business in the Nigeria environment?

Nigerians lack credibility, and a lot of them are very fraudulent, in terms of mall, you find out a lot of people selling items that don't have them in the stock, say you are advertising Gucci bag but you know this is not really a Gucci and when the customer get the bag, the person will start lamenting that we are scams bra bra, but the problem is people who have listed them on the site. Also in the hotel we find out a lot of people are not managing their hotel very well and they are creating a bad name for us. They give us a nice picture, but when the clients get to the hotel, they see different entirely. Another perspective is guest who makes a reservation and knowing they are going to stay in the hotel and they will not call to cancel, and the hotel is not going to sell out the room, and the guest never showed up. Everything is a problem for us.

I understand that your company started as e-commerce and pivot to the online marketplace, what are the reasons?

Well, it still e-commerce, why from e-commerce to marketplace is because we don't want to take ownership of the fault from the vendors because if we take ownership and say these are our products because when the product is delivered to the customers, and it is not exactly the way it describes on the site, the customer may take us to court or we losing money or paying the person refund and all that. It just good we make it to the marketplace just like Amazon, that is it exactly for us.

Does your company still have your own inventories?

Well, not so many, but we are about starting it in Ghana

What are the entrepreneurial characteristics require for developing digital firms

You need to understand the market, Nigeria particularly is not royal people, people are looking for the best deal. If you don't have what it takes to compete to the market don't boarder, say for instance in travel we always roles out discount unlike Hotel.ng, do you understand, it takes a lot fir to win Nigeria customers. We also have a social media team who engage the audience on social media platforms. There are a whole lot involves. You also need to read books; you look at what people have built and how they did it. Just like know when to employ people or when to stop employing many people because of salary. You also need to do your cost analysis.

Section F: Future direction

How do you see your company developing in the future, especially the nature of innovations in your offerings that will make more successful?

So a lot of products are coming, fingers corn for the mall. Additional things we added is Fresh where people can now order fresh food like apple, food stuff, grocery particularly. For travel, we have some partnership with big players airline, another thing we are looking to add is ground transportations in coming years, you would be able to book train tickets and buy bus tickets for cross-countries.