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Leveraging country competitiveness through the ICT sector: The case of Kenya

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration

14 January 2015

ABSTRACT

The recent development in the Information, Communications and Technology (ICT) has resulted in major changes in the social, cultural and economic changes globally. The impact of ICT investments has been noticed in developed countries such as Singapore and United States of America. This has stirred up an interest in developing economies, whereby governments are also perceived to be increasing a portion of their annual budgets towards ICT investment in an effort to improve national competitiveness. Several countries are implementing various government policy interventions to promote foreign direct investments (FDI) so as to build ICT clusters similar to the Silicon Valley model. One of the recent and successful clusters amongst the developing countries is the ICT cluster in Costa Rica, which is an ideal example for other developing countries to imitate. Amongst such developing countries is Kenya.

The objective of this research was to gain an understanding on how the ICT policy has helped create an enabling environment for FDI, which further boosts national competitiveness within the context of an African country. A qualitative case study research design was adopted for the Kenyan case. A sample size of eight respondents consisting of representatives from multinational companies in ICT and government policy experts was used.

The findings on the Kenya case study were later compared to lessons learnt from the Costa Rica case. The study identified the importance of adopting supporting and supplementing policies in relation to the National ICT policy. The mere supply of technology infrastructure is not enough, but as in the case of Kenya, the demand side of ICT adoption was equally important in order to shift the economy to the next stage of growth. Furthermore, as demonstrated by the findings in Costa Rica, an independent, non-political organisation plays a vital role in the effective implementation of ICT policies. Poor execution of ICT policy, re-introduction of VAT on ICT products and old school mentality were identified as factors, which are detrimental to the adoption of ICT policy. The findings indicated that political instability affects different industries at varying degrees. The results also outline the importance of multinational companies in managing relationships with governments especially during the times of government transition. A model was constructed in order to provide a guide for policy makers in adopting national ICT policies for national competitiveness.

KEYWORDS

Information, Communications and Technology

Competitive advantage

Knowledge transfer

Konza Techno City

Silicon Valley

LIST OF ABBREVIATIONS

BBBEE	Broad-Based Black Economic Empowerment
CIA	Central Intelligence Agency
CINDE	Costa Rican Investment Promotion Agency
DFID	Department for International Development
FDI	Foreign Direct Investment
FDZ	Free Trade Zone
GCI	Global Competitiveness Index
GDP	Gross Domestic Product
GoK	Government of Kenya
HDI	Human Development Index
ICC	International Criminal Court
ICT	Information, Communications and Technology
ITU	International Telecommunication Union
IDB	Inter-American Development Bank
MNC	Multi National Company
MoICT	Ministry of Information, Communications and Technology
NGO	Non-governmental Organisation
NPEI	National Program of Educational Informatics
R & D	Research and Development
SA	South Africa
SSA	Sub-Saharan Africa

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Signed: _____ Date: _____

NTOMBIYENKOSI T. MKHIZE

ACKNOWLEDGEMENTS

I would like to thank the following people for their support and contribution:

My husband, Dorwin, who encouraged and gave me the support I needed in pursuing this dream and for being the 'resident chef'. Your patience in discussing case studies and tutoring me on Financial Accounting will forever be appreciated. You truly walked this journey with me through its highs and the lows. I love you.

My mother to whom I am forever grateful for endless support and encouragement. It really kept me going. You are the reason I am challenged every day to become better than yesterday.

My supervisor, Dr Lyal White. Thank you very much for your patience, continuous support and guidance through this research project.

Dr Bitange Ndemo. A special thanks to you. I am thankful for your assistance and insights through this journey. Your passion on the subject is very inspiring.

All the people who agreed to be interviewed for this project. I thank you for your openness, time and contribution.

Lastly, my brother in law, Lawrence, who made every effort in assisting to arrange interviews with government officials. You are a blessing and thank you.

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1 CHAPTER 1: INTRODUCTION TO THE RESEARCH PROBLEM

1.1 INTRODUCTION

Recent global developments in Information and Communication Technologies (ICT) have given rise to a wide range of social, cultural and economic changes (Yunis, Koong, Liu, Kwan, & Tsang, 2012). In developed countries, significant ICT investments have shown a tremendous impact on their Gross Domestic Product (GDP). This could be seen from the example of South Korea which, following the 1981 shift towards developing the overall ICT sector, the country's ICT sector's contribution to GDP increased from 9.5% in 2000 to 16.9% in 2007 (Larson & Park, 2014).

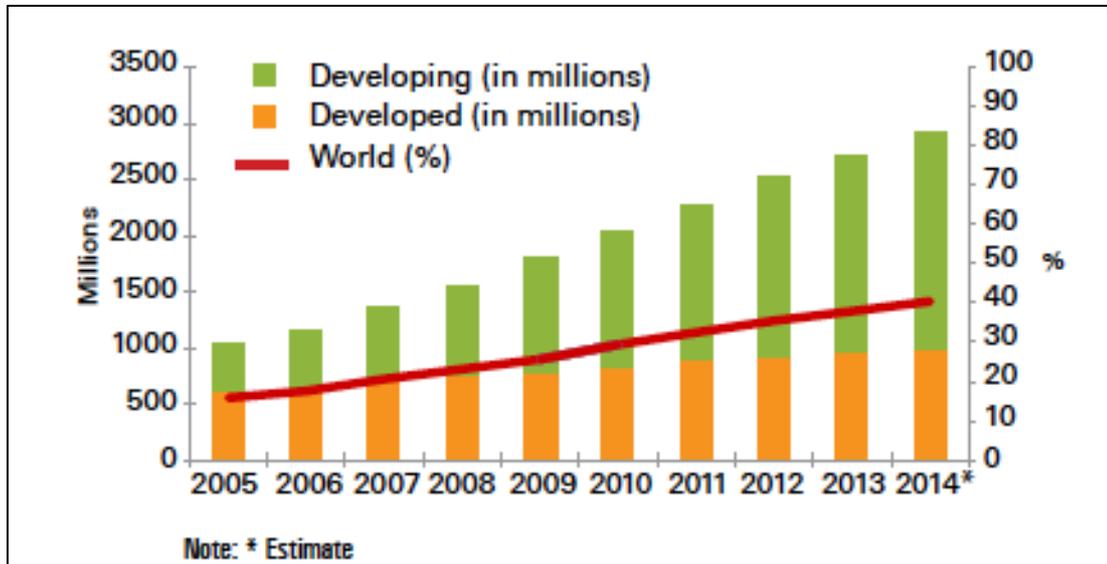
The impact of ICT driven growth is linked to increases in productivity, competitiveness and citizen engagement (Kodakanchi, Abuelyaman, Kuofie, & Qaddour, 2006; Yunis et al., 2012) as well as growth and proliferation of private and organisational use of ICT, particularly the internet. The potential impact of ICT has also attracted attention from different governments, especially in developing countries (Kamel, Rateb, & El-Tawil, 2009; Yunis et al., 2012) leading to a global increase in the development of ICT infrastructure. This global increase in the ICT investments, and use of ICT, is becoming a major driver of competitiveness at firm, industry, national as well as international levels and as a result attracts foreign direct investments (FDI). There is also evidence that even in African countries, ICT contributes significantly towards investment in many sectors of the economy (Rohman, 2012). The objective of this research is to gain an understanding of how ICT has attracted FDI to increase competitiveness at national level. Kenya's ICT industry will be used as a case study for this research. The study will also identify comparative elements on how Costa Rica was able to successfully develop its ICT industry.

1.2 RESEARCH PROBLEM

Many African governments have liberalised their ICT industries and have invested huge fractions of their annual budgets towards ICT development in spite of the pressing human needs (Bollou & Ngwenyama, 2008). For firms, developments in ICT have resulted in reduced production and communication costs as well as better access to suppliers which have in turn led to productivity gains (Vu, 2011). Figure 1 illustrates the rise in the global use of the internet in developed and developing countries following developments in ICT. Although there is a higher increase on internet use in

developing countries, it is still relatively lower than in developed countries. This is attributed to inadequate infrastructure capacity and knowledge base to optimise use of ICT (Kamel et al., 2009).

Figure 1: Global internet use, 2005 - 2014



(Source: ITU, 2014)

The International Telecommunication Union (ITU) is a specialised agency, which focuses on ICT within the United Nations. ITU estimates that globally, the number of internet users is likely to reach approximately 3 billion by the end of 2014 (ITU, 2014), with two thirds of this coming from developing countries. Based on this estimation, the number of internet users in developing countries would have doubled in five years to 1.9 billion in 2014. The ITU estimated that about 20% of the African population would have access to internet. This is a 10% increase from figures recorded in 2010 (ITU, 2014). The increase in global internet use has been supported by increased access to broadband coupled with liberalisation and ICT industry regulatory reforms.

By realising broadband as an enabling ICT platform, different governments have formulated and implemented national ICT plans in order to help build more productive and competitive industries (Kamel et al., 2009). Furthermore, such national ICT plans are intended to encourage the participation of the private sector, increase ICT investments, create jobs and improve export capabilities (Brooker 2013). These plans have also resulted in the emergence of many ICT clusters which seek to develop hubs for ICT industries by imitating the Silicon Valley model (Brooker, 2013; Lucas, Sands, & Wolfe, 2009). Costa Rica is a recent example of a country that developed public

policies aimed to promote the growth of the ICT sector by attracting foreign direct investments. This has resulted in improved competitiveness of the country (Villalobos & Monge-González, 2011).

Foreign Direct Investment (FDI) is crucial to developing countries as it boosts local innovation through technology transfer, transfer of managerial skills and knowledge, and productivity through increased competition in the home market (Cleeve, 2008). Foreign investment, particularly emanating from multinational companies, has also played a crucial role in the development of ICT clusters (Ciravegna, 2011; Ketels, 2006). As a result, many African countries are actively designing policies that seek to attract foreign multinationals in an effort to achieve economic development (Cleeve, 2008). ICT policies form part of this strategy.

1.3 RESEARCH MOTIVATION

According to the McKinsey Global Institute (2013), in 2013, internet penetration was 16% in Africa with 167 million internet users. This follows attempts by African governments to spread internet access to their citizens by placing internet-driven growth at the forefront of economic growth agendas. The McKinsey Global Institute (2013) study, which was conducted in 14 African countries, revealed that internet contributed was about 1.1% of Africa's GDP, compared to 3.7% from developed economies (McKinsey Global Institute, 2013). Senegal and Kenya accounted for the biggest internet contribution to Africa's GDP. Within the overall internet contribution from African countries, Senegal contributed 3.3% while Kenya's contribution was 2.9%. These contribution levels are comparable to France (3.1%) and Germany (3.2%) (McKinsey Global Institute, 2013,p.5). Surprisingly, the contribution from Senegal and Kenya surpassed that from the two biggest African economies, South Africa (1.4%) and Nigeria (0.8%).

Kenya is undergoing an economic transformation and has focused on adopting policies aimed at investing in ICT to build its economic growth. As a consequence, it has produced a very competitive ICT cluster and is becoming a destination of choice to various foreign multinational companies, especially those in ICT (Matinde, 2012; Okuttah, 2013; Omwenga, 2012). Although countries such as Kenya and Costa Rica are making strides in ICT driven economic development, there is still very limited literature focused on assessing the impact of ICT investments on economic development in developing economies (Heeks, 2010; Kamel et al., 2009). Bollou &

Ngwenyama's study (2008) on assessing if ICT investments were paying off in six West African countries also indicated a scarcity of ICT studies in Africa.

Many Latin American countries have adopted a similar approach to that of Costa Rica in an attempt to grow the ICT sector (Ciravegna, 2012). While Costa Rica's ICT cluster is relatively new, its success is viewed as a benchmark for other governments in Latin America (Ciravegna, 2011; 2012). Ciravegna (2012) suggests that other Latin American and developing countries contemplating the promotion of ICT clusters should closely study Costa Rica's success and the difficulties it faced in the formation of its ICT cluster. In 2007, Costa Rica's ICT sector accounted for 10.6% of the overall GDP of the country (Monge-González & Hewitt, 2010).

It is not clear whether Kenya is attempting to replicate the success of Costa Rica. This research is also motivated by a need to gain more insights into whether, and to what extent, government policies contributed towards creating the environment which has positioned Kenya as a destination of choice for foreign multinationals within the ICT sector (Matinde, 2012; Okuttah, 2013; Omwenga, 2012). In spite of the fact that a study of this nature has been conducted in areas such as China (Tan, 2006); Canada (Lucas et al., 2009); Costa Rica (Ciravegna, 2011, 2012); and Malaysia (Brooker, 2013), it does not appear as if similar studies have been conducted within an African country. Therefore, this research aims to gain insights on how the knowledge and technology transfer occurs within a developing African country such as Kenya. It will also seek to explore how the government is fostering inter-linkages and collaborations between various organisations in the ICT cluster of Kenya.

Therefore, the research will also compare Kenya to Costa Rica, both developing countries, and to determine any lessons that can be learned from the success of Costa Rica and their applicability to an African country.

1.4 RESEARCH SCOPE

The research will focus on how government ICT policy creates an enabling environment that attracts foreign multinational companies to a host nation and which further contribute towards creating national competitiveness. The study will be limited to government policy makers and multinational companies within Kenya's ICT industry.

1.5 RESEARCH OBJECTIVE

The purpose of this research is to contribute to the strategy body of knowledge by expanding the understanding of the relationship between ICT and competitiveness in an African nation. From a practical perspective, the insights obtained from this research will assist policy makers gain an understanding of how ICT policies create an enabling environment for multinational companies to contribute towards ICT cluster formation, which ultimately contributes towards national competitiveness and attracting FDI.

The research objectives are therefore:

- To understand the role of government ICT policy in attracting foreign investors who could assist in creating a competitive ICT cluster, which in turn increases the competitiveness of the nation;
- To gain an understanding of how foreign multinational companies contribute towards national competitive; and
- To explore where the next phase of economic growth could be in a technology-driven economy within an African context.

2 CHAPTER 2: THEORY AND LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter introduced the use of ICT towards increasing economic growth, attracting foreign direct investment resulting in competitiveness at country level. It outlined the relevance of the subject in the African context, noting the rise in government policy interventions to create ICT clusters similar to Silicon Valley in developing countries.

The purpose of this chapter is to review literature on the three themes, which form the basis of this research. These themes are national competitiveness, foreign direct investment and cluster theory. Firstly, as national competitiveness is considered a foundation of this study, a clear definition of national competitiveness will be provided in order to guide the interpretation of literature. Past literature is used to explore the key determinants of competitiveness of nations and how governments influence these determinants to encourage competitiveness (Porter, 1990). Secondly, taking into consideration the role that multinational activity plays in creating competitiveness in a host country, the chapter will explore existing literature around foreign direct investment with the aim of establishing how foreign investors are attracted into a country. It will also explore how foreign multinational companies contribute to competitiveness of a host country. Thirdly, as foreign investors enter a country, they become part of an industry cluster (Porter, 1998), the last section of this chapter, will explore how clusters are formed, what occurs when rivalries are concentrated within a geographic proximity and how technology transfer occurs between the different players in a cluster.

These themes form part of the research framework that is used to further guide the research in later chapters.

2.2 NATIONAL COMPETITIVENESS

In understanding national competitiveness, it is important to gain insights on its origins. Economists have traditionally used the concept of comparative advantage rather than competitive advantage (Kitson, Martin, & Tyler, 2004). The theory of comparative advantage is traced back to David Ricardo in 1817 (Kitson et al., 2004). This theory implies that by means of specialisation, a country can gain from trade even if it does not possess an absolute advantage, making trade a positive sum game (Kitson et al.,

2004). Under this theory, trade implies nation-wide differences in factor endowments such as human and financial capital, land, and natural resources (Kitson, et al., 2004). Nations acquire factor-based comparative advantage in industries that make intensive use of factors they possess in abundance (Porter, 1990).

Porter (1990) argued that comparative advantage founded on factors of production has an intuitive charm and national differences in factor costs have played a significant position in establishing trade patterns in several industries. Porter's opinion has enlightened government policy towards competitiveness since governments recognised that they could change factor advantage through various interventions including in the reduction of interest rates (Porter, 1990). This has demonstrated that through government policies, nations can shape their national advantages and improve their competitive positions (Kitson, et al., 2004; Porter, 1990). As nations put this theory into practice over the past decades, it was realised that the theory of comparative advantage, which is founded on factors of production, was inadequate to justify patterns of trade (Kitson et al., 2004; Porter, 1990).

Kitson et al. (2004) have further argued that the theory of comparative advantage exhibits some drawbacks since the theory is considered static as it centred on inherited factor endowments. A new concept of competitive advantage has emerged and is based on the perspective that countries are able to develop and advance their competitive positioning (Kitson et al., Porter, 1990). The new concept also recognised that comparative advantage failed to recognise the effect of globalisation, which has resulted in intensified competition at firm and industry level (Porter, 1990).

Porter (1990) also asserts that the only meaningful concept to competitiveness is productivity. Productivity, which Porter (1990) defined as the value of the output produced by a unit of labour or capital and incorporates everything in the economic activity of organisations (Carral & Capote, 2010). Its growth defines the standard of living of the citizens, competitive advantage of companies and wealth creation (Carral & Capote, 2010; Porter, 1990). The World Economic Forum (2013) also mentioned the level of prosperity that is achievable within an economy is established by the nation's level of productivity.

In order to ensure a good interpretation of the research, it is necessary to give a clear definition of competitiveness at national level. Many scholars have attempted to define competitiveness at national level resulting in many vague definitions with no convergence on the meaning (Cellini & Soci, 2002; Kao, Wu, Hsieh, Wang, Lin, &

Chen, 2008). Table 1 outlines a variety of national competitiveness definitions with the relevant themes.

Table 1: Various definitions of national competitiveness

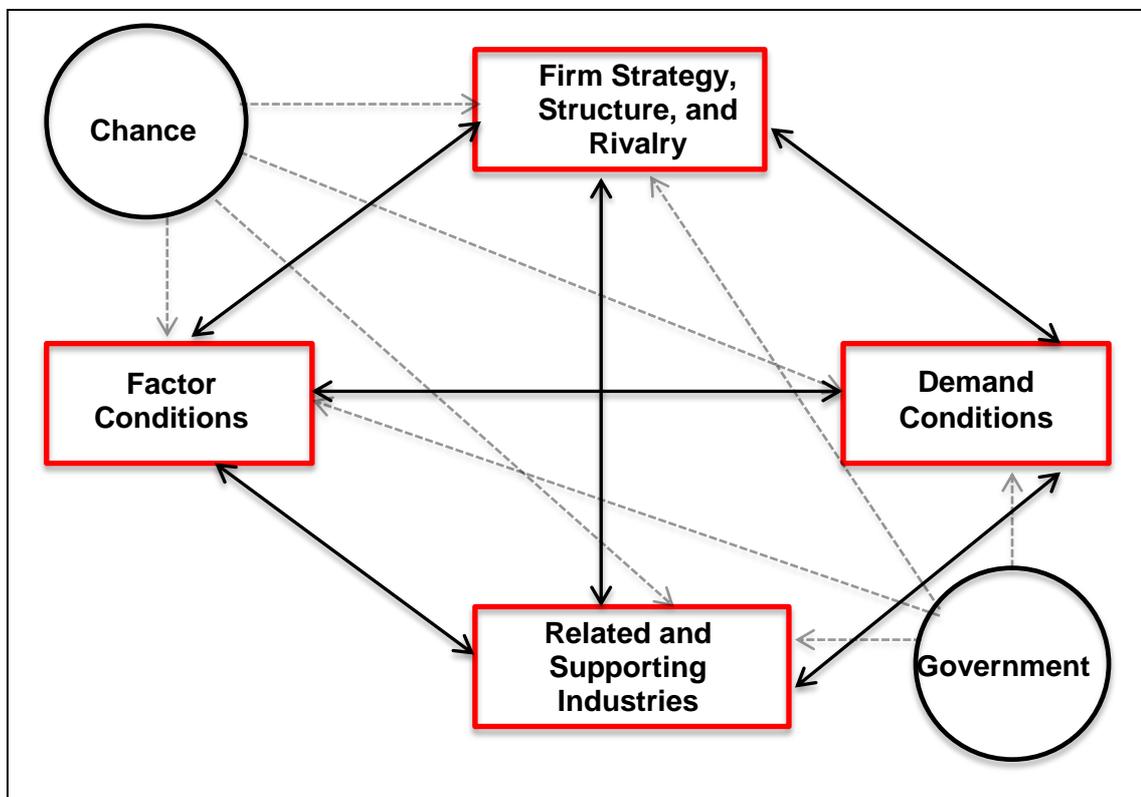
SOURCE	THEME	DEFINITION
Porter (1990, p.6)	Productivity	The “only meaningful concept of competitiveness at the national level is national productivity.”
Wang, Chien & Kao (2007,p.1358)	Productivity	Defined as “the competitive capabilities of a nation related to its economic environment.”
Kao et al. (2008, p.613)	Productivity	Defined as “a measure of the relative ability of a nation to create and maintain an environment in which enterprises can compete so that the level of prosperity can be improved.”
Önsel Ülengin, Ulusoy, Aktaş, Kabak, & Topcu, (2008,p.222)	Positioning	Defined as “the nation’s position in the international marketplace compared to other nations of similar economic development.”
The World Economic Forum (2013,p.4)	Productivity	Defined as “the set of institutions, policies, and factors that determine the level of productivity of a country.”

This research uses Kao et al.’s definition (2008), which states that national competitiveness “is a measure of the relative ability of a nation to create and maintain an environment in which enterprises can compete so that the level of prosperity can be improved” (Kao et al., 2008, p.613).

Porter (1990) went further to argue that the citizen’s standard of living relies on the capacity of the nation’s companies to attain high levels of productivity by continually upgrading their capabilities. By so doing, they can be able to compete in more sophisticated industry segments. An excellent macroeconomic environment is not sufficient to ensure a high level of a national competitive positioning except if the nation’s firms produce valuable goods and services with an equally high level of

productivity at the micro level. Therefore, the nation's level of productivity and competitiveness is determined by both micro-and macroeconomic qualities of an economy (Önsel et al., 2008). According to Porter, nations ultimately succeed in certain industries since their environment is the very dynamic and challenging, and encourage companies to innovate and widen their advantages over a period of time (Porter,1990). Porter went further to explain the four determinants that together build a national environment, which enables firms to be established and compete with one another in a market. The determinants are covered in Figure 2. They are factor conditions; demand conditions; related and supporting industries; and firm strategy, structure and rivalry. Chance and government are the two external variables within the model.

Figure 2: Diamond model for the national competitive advantage of nations



Modified from Porter (1990, p.127)

Together, they form a diamond shape, which is often referred to as a diamond model. Furthermore, countries are probably most likely to prosper in industries where the above-mentioned determinants are the most favourable (Porter, 1990). These determinants are regarded as the building blocks towards achieving international competitiveness and are further defined as factor conditions, demand conditions, related and supporting industries, and firm strategy, structure and rivalry.

2.2.1 Factor conditions

Factor conditions describe the nation's position in terms of its factors of production required to compete in any given industry. These include human, physical, knowledge and capital resources as well as supporting infrastructure. Porter (1990) argued that the presence of factor conditions in an economy is not enough to create competitive advantage if these are not deployed productively. Factors that are vital for the creation of a competitive advantage in most industries are not inherited but rather created from within a nation (Porter, 1990). Furthermore, few are inherited and most must be created over time through investment.

2.2.2 Demand conditions

Demand conditions describe the nature of home market demand of the industry's products and services. Home market demand shapes the rate and quality of improvement as well as innovation within local firms (Porter,1990). Porter (1990) concluded that there exist three significant characteristics that affect home market demand. They are home demand composition; size and growth pattern of home demand; and internationalisation of domestic demand.

2.2.3 Related and supporting industries

This focuses on the availability or unavailability of internationally competitive supplier and other related industries within a nation. According to Porter (1990), the existence of internationally competitive related and supportive industries creates advantages in downstream industries in ways such as:

- Provision of “efficient, early, rapid and sometimes preferential access to the most cost-effective inputs” (Porter, 1990, p.101);
- Establishment of on-going coordination and inter-linkages between the value chains of firms and their suppliers. Competitive advantage stems out of intimate working relations between top-notch suppliers and the industry (Porter, 1990); and
- Local suppliers assist firms to realise new methods and opportunities to apply unfamiliar and innovative technologies. They help companies facilitate the process of innovation and upgrading.

2.2.4 Firm strategy, structure and rivalry

Firm strategy, structure and rivalry focuses on the conditions that govern how the nation's firms are formed, organised and managed and the nature of domestic rivalry. Porter (1990) concluded that domestic rivalry creates pressure for firms to force each other to fight for lowered price offerings, upgrade quality and services, innovate and build new products and processes. Not only does domestic rivalry pressure companies into innovating but it also pushes them to innovate in methods that improve the competitive advantage of the nation's firms (Porter, 1990).

In conclusion, the determinants of the diamond model are dependent on one another and together act as a system (Porter, 1990).

2.2.5 Chance

Chance illustrates incidents that have little to do with the state of affairs in a nation and are mostly beyond the influential power of firms (Porter, 1990). Such events may include wars, significant shifts on world financial markets and technological discontinuities. The role of chance is vital in creating discontinuities, which further allow shifts in competitive positions.

The role of government is discussed in Section 2.4.1 of this chapter.

2.2.6 Critiques of Porter's concept of national competitiveness

Various studies have criticised and attempted to improve Porter's diamond model. Krugman (1994) referred to the concept of national competitiveness as rather vague and dangerous due to the fact that countries cannot be treated as if they are companies, as companies compete with similar products in the market. Based on his argument, when a firm is deemed uncompetitive, it means that its market position cannot be sustainable and unless it improves its performance, the firm will go out of business and cease to exist. On the other hand, whether countries are satisfied or dissatisfied with their economic performance, they will not go out of business and cease to exist, hence the illusion of the concept of competitiveness of a nation (Krugman,1994). Furthermore, he argued that international trade is not a zero-sum game. This is based on the fact that markets are interconnected since industrial countries trade with one another. Kohler (2006) also supported the belief that countries

do not compete. But Porter (1990) argued that similarly to firms, countries do compete for their reasonable share of the global market.

Cellini and Soci (2002) also criticised the concept of national competitiveness as referred to in the previous studies. They stated that competitiveness has become a fuzzy concept regarded with scepticism by different intellectuals. They further mentioned that the missing fit between a unique clear concept of competitiveness and macro-performance could be the reason why there seems to be vagueness in measures of competitiveness. Furthermore, Cellini and Soci (2002) questioned how something so vague could be measured.

However, Moon, Rugman, and Verbeke (1998) indicated that the determinants of competitive advantage are helpful terms of reference in assessing a nation's competitiveness although Porter's work has a notable weakness. The shortcoming is based on the fact that it solely focuses on a single home base concept. Therefore, Porter's single home based concept limits the ability of a company to tap into locational advantages of other countries (Moon et al., 1998).

Balkyte and Tvaronavičiene (2010) emphasised that competitiveness is not just about growth or economic performance. They suggested that it should also consider "soft factors" of competitiveness, such as the quality of life, environment, technology and knowledge. Dimian and Danciu (2011) argued that with the development of the endogenous growth theory, the vision of the determinants of competitiveness has gradually changed from the importance attributed to the classical production factors to the so called "soft" factors. Technological development is the "basic means by which companies, industries, and countries can foster their competitive capabilities and increase their competitive advantage" (Wang et al., 2007, p.1358). Based on these three studies, technology is part of the soft factors and is a common factor that contributes towards competitiveness.

Kao et al. (2008) cited Dunning (1992) who argued that Porter's diamond model of national competitiveness undervalued the significant role of globalisation and markets for the competitive advantage of nations. This view was further supported in the study conducted by Rugman and D'Cruz (1993), which suggested that one of the biggest flaws to Porter's work was the narrow definition applied to foreign direct investment (FDI). According to Rugman and D'Cruz (1993), Porter only defined outward FDI as being helpful in creating competitive advantage and further stated that foreign businesses are not sources of competitive advantage. But FDI may influence the

technological capabilities of rival domestic firms and in return be influenced by them (Dunning, 1992). So, Dunning who was one of the founders of international business theory, regarded multinational activity as the third external variable that must be added to Porter's diamond model (Dunning, 1992). The other two external variables are chance and government (Porter, 1990). The Costa Rican government provides a good example where, in an attempt to create a Silicon Valley clone attracted FDI to promote its new ICT cluster (Ciravegna, 2011; Nelson, 2005). Kenya is also viewed as attempting to establish a Silicon Valley clone through its Konza Techno City (MoICT, 2014).

The next section of this literature review explores how foreign multinational investors are attracted into a country. The role that such multinational companies play in contributing towards national competitiveness of a host country is also addressed.

2.3 DETERMINANTS OF FOREIGN DIRECT INVESTMENTS

Globalisation has significantly increased the flow of FDI during the last few decades (Du, Lu, & Tao, 2012). It has also promoted an increase of multinational presence in emerging and developing economies which has improved the competitiveness of host countries (Anyanwu, 2012; Dunning, 1992; Morris & Aziz, 2011). FDI has a great influence on income, production, prices, employment, economic growth, development as well as general welfare of recipient countries (Ranjan & Agrawal, 2011). Many African countries have responded by making efforts to increase investment opportunities in infrastructure development, natural resource extraction, exploration, technology, agriculture and trade to attract FDI (Morris & Aziz, 2011). Despite these efforts, FDI inflows to Sub-Saharan Africa (SSA) still lags behind those to other regions (Anyanwu, 2012; Morris & Aziz, 2011). This is attributed to the fact that foreign investors often view the SSA region as risky considering the historical records of violence, corruption and political interferences (Okafor, 2015).

Wahid, Sawkut, & Seetanah (2009) cited Dunning (1981,1988), where he discussed the "eclectic paradigm" which suggests that FDI is decided by three advantages, which direct investment should possess over and above other institutional mechanisms present for a company in order to meet the needs of its customers locally and in other foreign countries.

The first advantage is ownership specific. This entails a firm's advantage over its competitors through its intangible assets such as brand name, patent, knowledge,

technology, skilled management and marketing (Mina, 2007; Wahid et al., 2009). Wahid et al. (2009) also stated that the ownership advantage enables companies to compete with each other within the markets they serve even if such markets are in foreign countries.

In as far as a brand name of an organisation is concerned, Harrison, Cooper & Wolfe (2004), in their study of the technology cluster in Ottawa, Canada, confirmed that it is organisations that attract high talent to specific locations. This behaviour is exemplified by the findings on a study done by Harrison et al. (2004), whereby, top Furthermore, Harrison et al. (2004) referred to such organisations as magnet organisations. Magnet organisations were defined as those types of firms, which have a high, technically oriented reputation and often play a very vital part in the development of technology clusters as they have the ability to attract highly skilled individuals, engineers and scientists into a region (Harrison et al., 2004). Lucas et al. (2009) argued that the role of a magnet organisation could be played by a lead anchor firm or a private sector research institutes or a public sector research organisations.

The second advantage is location specific. The location advantage emerges from assets available in foreign markets. These assets include plenty natural resources, large market size, inexpensive factors of production and favourable business environments. Favourable business environments include trade openness, low tax rates and institutions that protect property rights (Mina, 2007). Jensen (2008) also argued that institutions that protect property rights are important to foreign MNCs involved in technology joint ventures as such MNCs are often involved in patent developments. Therefore, MNCs involved in technology joint ventures are even more wary of technological leakages or insufficient enforcement of property rights as these have the potential of threatening their investments (Jensen, 2008).

Mina (2007) added that FDI is attracted to larger markets as these minimise costs of production and provide economies of scale. According to UNCTAD (2014), large or growing markets in developing countries will be more attractive though the consideration for market size will often depend on the product offered. Asiedu (2006) mentioned that a common perception is that in the Sub-Saharan Africa (SSA), FDI is largely driven by market size and natural resources, further confirmed this. Large market size denotes a greater potential for product intake resulting in more trade opportunities. Ranjan and Agrawal (2011) point out that market size is measured in GDP or GDP per capita income and size of the middle class population. They went

further to state that MNCs have a tendency to invest in the trade partner economies with which they are more familiar. Well-developed infrastructure facilities report on the well-being of a country and provide possibility for FDI (Asiedu, 2006; Doh, Bunyaratavej, & Hahn, 2009; Ranjan & Agrawal, 2011).

Location advantages may also include political stability, an educated labour force and absence of corruption (Asiedu, 2006; Wahid et al., 2009). Lucas et al. (2009) also confirmed the role of an educated labour force in attracting FDI. Their study confirmed that a single important local aspect in contributing towards the attraction and retention of firms into a region was a concentration of skilled labour. Boja (2011) also confirmed that social and political stability of a region encourage investment and play a huge role in the trust companies have in public administration and long term objectives. Contrary to the positive relationship between political stability and FDI, in their study, Holburn and Zelner (2010) found that in many instances, MNCs do invest in politically risky host countries.

According to Wahid et al. (2009), the government has the ability to only influence the location specific determinants. Costa Rica poses as an ideal example where the government positively influenced location determinants such as political stability. Costa Rica has enjoyed a stable and peaceful democratic period since the 1970s, which has resulted in various MNCs choosing to locate their Central American regional headquarters in the country (Villalobos & Monge-González, 2011).

The third advantage is the internationalisation advantage, whereby firms engage in production in other countries instead of relying on the local market. This may be through licensing or subcontracting due to prevailing higher transaction costs (Mina, 2007).

Multinational companies operating in foreign countries would then form part of an industry cluster within a nation (Porter, 1998). The next section of this chapter discusses what constitute a cluster, how they are formed and the role that multinational companies play in knowledge transfer and ultimately national competitiveness.

2.4 CLUSTER THEORY

The cluster concept is traced back to Alfred Marshall who in 1890, observed that firms from similar industries tend to group together in the same geographical location in order to optimise their business activity. Marshall's observation was popularised by

Porter (1998) who defined a cluster as “a critical mass of interconnected companies in a specific field in a particular location, whether it is a country, a state or a region or a city” (Porter, 1998, p.10). The definition was further supported by studies conducted by Guihang, Qian, and Guangfan (2014) and Malmberg, Sölvell, and Zander (1996).

Silicon Valley’s semiconductor cluster in California exemplifies this definition (Kukalis, 2009). This cluster is the best known example of clustering within the ICT industry. The cluster includes computer networking, internet, computer, and software companies; research universities; electronics research centres; and a pool of venture capital firms (Kukalis, 2009). The success of this cluster has led to efforts from companies and governments wanting to encourage the development of similar clusters in various parts of the world (Niu, Miles & Lee, 2008).

Porter (1998) mentioned that the formation of clusters might vary due to depth or sophistication but mostly comprise of a collection of firms, suppliers of specialised inputs, machinery, components, and services, and companies in related industries. Meyer, Mudambi, and Narula (2010) argued that clusters vary with regards to the sophistication of both tangible and intangible resources. Oftentimes, clusters grow and evolve from an infancy phase, followed by a growth stage then increased maturity and either stagnation or decline (Maskell & Malmberg, 2007). Therefore, new and emergent clusters have shallower and less sophisticated local resource pools as compared to older and more established ones (Meyer et al., 2010).

According to Porter (1990, 1998) and Wolman and Hincapie (2014), clustering provides the following advantages:

- Assists in increasing information flow between people;
- Provides new ways of thinking about the economy as well as organising economic development attempts in various countries; and
- Provides new entry from spin-offs, downstream, upstream and related industries.

Technology transfer and innovation are considered as some of the advantages of clustering (Tan, 2006). Clusters also increase the rate of productivity for firms located within them (Huggins, 2008; Porter, 1998). As a result, firm productivity and productivity growth is greater within a cluster as compared to companies that operate

in isolation (Porter, 1998). This is due to the fact that clusters have the ability to drive and set the pace for innovation, improve access to specialised inputs and information as well as to lower the barriers to new business formation (Ketels, 2006; Porter, 1998). They also provide opportunities for collaboration in resource complementarity, technological know-how, capability boost and innovativeness (Niu et al., 2008). Collaboration may be in a form of strategic alliances, joint ventures, partnerships, R&D consortia, licence agreements, coalitions, associations, clusters and networks (Ozcan & Islam, 2013).

Geographic concentration of an industry performs a huge role in attracting high skilled and talented people (Porter, 1990). However geographic clustering of firms can result in congestion and intense competition in input markets, represented by real estate, top talent and capital (Porter, 1990; Guihang et al., 2014).

Just like in Silicon Valley and the biotech cluster in North Carolina, academic institutions play a vital part in the creation of a cluster (Boja, 2011; Ketels & Memedovic, 2008). Porter (1990) argued that academic institutions located within a cluster are more than likely to take notice of the industry cluster and respond accordingly. In return, companies in the industry cluster also respond by funding and supporting those academic institutions (Porter, 1990). Lucas et al. (2009) also found that the existence of a strong network of educational institutions is a crucial factor to cluster development but may not necessarily result in a successful cluster. Collaborations between universities and the industry serve as a conduit for knowledge transfer (Bramwell & Wolfe, 2008; Nishimura & Okamuro, 2011). Bramwell and Wolfe, (2008) noted that closeness to the source of research is important for successful research transfer from the laboratory to firms for commercial exploitation.

Porter's work on cluster theory did not go without any criticism. Some scholars argued that Porter's definition of a cluster is very ambiguous (Martin & Sunley, 2003; Motoyama, 2008). They believed that it fell short of defining clear and precise boundaries, both industrially and geographically. So, from an industrial point of view, they argued that:

- The definition failed to outline the extent of industrial aggregation that a cluster should be described upon;
- It also fell short of explaining the scope of related industries and undertakings that should be incorporated within a cluster;

- The theory does not give details on how strong the linkages between firms within a cluster should be;
- It also does not explicitly explain how a concentration of firms should be economically specialised in order to constitute a cluster; and
- The definition fails to clarify spatial scale and geographical scope upon which clustering practices such as inter-linkages within firms, knowledge spillovers, rivalry, business and social network should have (Martin & Sunley, 2003).

Furthermore, Martin and Sunley (2003), argued that although Porter emphasised the significant role of 'geographical proximity' in the creation, performance and identification of clusters, the term was certainly not precisely defined resulting in yet another ambiguity. They furthermore argued that the current state of the cluster theory has a fundamental limitation in the sense that it detaches clusters from the rest of the economy, and disregards other types of regional and local economic development and growth. In other words, the theory falls short of considering the dynamics of an inter-regional system in entirety or the evolutionary trajectories and interdependencies of companies within clusters compared to those that are operating outside of a cluster (Martin & Sunley, 2003).

Successful industries in a nation's cluster are often linked through vertical or horizontal linkages (Porter, 1990). Vertical relationships include buyers or suppliers while horizontal relationships may include common customers, technology or channels (Porter, 1990). Linkages are defined as channels for the efficient transfer of resources such as technology, knowledge and capital (Lorenzen & Mudambi, 2012). The most difficult part is promoting inter-linkages of a cluster (Motomoya, 2008). Cluster theory fails to address, for instance, how government can promote inter-linkages, spillovers or synergistic effects within firms in the cluster. The current cluster theory may indicate that the government should do something but fails to explain how (Motoyama, 2008).

Previous ICT cluster studies (Ciravegna, 2011, 2012; Iammarino & McCann, 2006; Porter, 1990) have traditionally focused on other countries with very limited attention into African countries. In terms of developing countries, very limited work has been done. In developing countries, the study conducted by Guihang et al. (2014), where the formation of an e-commerce cluster in Junpu Taobao Village, China was investigated provided a good example of clustering in developing regions. The success of this

village was made possible by the involvement of the Jieyang municipal government policy initiatives.

Ciravegna (2012) found that despite the fact that the Costa Rican ICT cluster is used as a benchmark by other Latin American countries, there is empirical evidence that inter-linkages between foreign multinational firms and other local organisations in the cluster are weak. There is a need for adequate linkages between foreign multinational firms and local organisations in order for technology transfer to take place. Therefore, weak linkages may result in limited technological transfer (Fu, Pietrobelli & Soete, 2011).

Furthermore, Ciravegna (2012) emphasised that Latin American countries that are promoting ICT clusters should not only just learn from Costa Rica's success but should try and draw lessons of the difficulties the Costa Rican ICT cluster experienced in fostering inter-linkages between firms. Wolman and Hincapie (2014) argued that though different clusters in different regions may contain similar components such as industries, research facilities and academic institutions, they might not all perform effectively in contributing to economic growth. This may be due to their different stages of clusters in different regions or the quality of clusters in each region. Inter-linkages between different players in the cluster form part of the quality of the cluster (Wolman & Hincapie, 2014).

2.4.1 The role of government in competitiveness and clustering

Porter (1990) also acknowledged the role that government plays in achieving national competitiveness. Apart from maintaining political stability, government's role is to influence the determinants of the diamond model while trying to create a national competitive advantage (Porter, 1990, 2000). Ketels (2006) argued that the role of government is to influence each element of the business environment, at a particular location, thereby influencing the determinants of the diamond model. Ketels (2006) further viewed the government as an important player which influences competitiveness by enabling domestic competition leading to the creation of more value.

Government policies can also be influenced by the four determinants of the diamond model. Porter further mentioned that successful policies perform well in industries where fundamental determinants of national competitive advantage exist and where the government is supportive and reinforces them (Porter, 1990). Furthermore, he

argued that though the role of government is significant, it is however contributory as the best government policy interventions are doomed to fail if there are no underlying national circumstances that support competitive advantage (Porter, 1990).

Porter (1998) outlined that governments have a crucial role in ensuring that relevant factor inputs such as skilled labour and infrastructure, are available to create an enabling environment to attract foreign investment and for businesses to thrive. Through specific government policies, nations try and attract investors through various means such as tax subsidies and intellectual property rights (Berger, 2008).

Therefore, governments can motivate, facilitate, and provide incentives for collective action by the private sector (Porter, 2000). Even though governments use different incentive policies to attract FDI, the motivation to invest plays a far greater role (Cleeve, 2008). Government policies can also influence the creation of clusters and their development by attracting foreign investors, providing the infrastructure and extending policy measures in other areas such as education (Boja, 2011).

Ketels (2006) argued that government policy-making should take cognisance of the fact that the importance of foreign multinational companies differs across clusters. He further argued that the significance of these companies is more critical in new and emerging cluster locations than in those that are global cutting-edge where multinational companies might be more of an indicator of their success (Ketels, 2006).

Lucas et al. (2009) argued that in an attempt to adopt cluster-based approach, government policy should focus on identifying location-based assets existing within the cluster and establish initiatives to harness and mobilise them.

Apart from the fact that clusters provide a new way of thinking in terms of economic policies, they are seen as a new lever for governments in improving productivity and prosperity of the entire nation (Porter, 1998). Wolman and Hincapie (2014) argued that though clusters are viewed as a new and innovative approach towards economic development, policy implications still remain unclear.

Porter (1998) further argued that most treatments of economic policies completely disregard the attention towards the demand side initiatives, or advocate such things as promoting aggregate demand or increasing the local market size. According to him, not only does cluster theory put emphasis on the size of home demand but also on its role in innovation and upgrading, which further relies on the quality or nature of demand

than the size. Porter went further to mention that policies or regulations which promote the early formation of home markets for new products, or those which promote the consumption of a variety of advanced product have a strong effect on competitiveness than supply side policies (Porter, 1998).

Porter (1990) acknowledges four stages of economic development, which are factor-driven, investment-driven, innovation-driven and wealth-driven. Each nation goes through the stages in its own exceptional way. Developing through the different stages often occur in bursts of rapid upgrading followed by periods of recognizable change (Porter, 1990). Furthermore, Porter argued that a competitive success in one industry stimulates upgrading or new entry and formations in other industries.

According to Porter (1990), appropriate government policy in a specific industry will tend to shift as a nation progresses to successive stages of competitive developments (Porter, 1990). He further argued that the government has the most significant role to influence competitive advantage in a nation during the factor and investment-driven stages of development. At these early stages, the government is able to channel scarce capital resources to specific industries. During these early stages, Porter (1990) argued that the government should take a lead especially in factor creation. Factor creation could take the form of encouraging savings or foreign borrowing to accumulate capital, improving human capital through education and upgrading infrastructure, and starting the development of technological bases. The government is seen as a primary mover at this stage of the development process, though it cannot succeed without the active involvement of domestic rivalry, corporate and individual goals that support investments (Porter, 1990).

As a nation moves from investment-driven stage to the innovation-driven stage, firms should be more involved and become primary drivers while the government's task at this stage is to continuously create an environment in which firms continue to be innovative and dynamic (Porter, 1990). Porter concluded that the upgrading of an industry would be negatively impacted if national policy towards an industry does not shift as a nation moves to the maximum level of a more advanced stage.

2.5 CONCLUSION OF THE LITERATURE REVIEW

As outlined by previous researchers, nations cannot be treated like firms since nations do not compete rendering the concept of national competitiveness vague (Kitson et al., 2004; Krugman, 1994). Governments feel the pressure to compete with other countries for foreign investments, which often result in multinational companies opting to locate certain product line home bases in other countries (Berger, 2008; Ketels, 2006; Porter, 1998). Similar to Costa Rica, foreign investment has led to multinational companies such as Intel investing in the country in order to promote the growth of the ICT sector (Nelson, 2005).

As mentioned in Porter (1998), multinational companies form part and parcel of industry cluster and through collaborations and inter-linkages with other organisations in the cluster, technology transfer occurs. Literature informs us that in as much as governments across the globe are attempting to establish Silicon Valley clones, they need to take cognisance of the fact that every cluster is unique and that clusters vary (Meyer et al., 2010; Porter, 1998). For instance, new and emergent clusters have shallower and less sophisticated local resource pools as compared to older and more established clusters (Meyer et al., 2010). Therefore, governments should aim to identify location-based assets that are present within a cluster and establish initiatives to harness and mobilise them (Lucas, et al., 2009).

Literature also informed us that nations do progress through successive stages of competitive developments. The government's role is crucial in the early stages of competitive development as they are often the main drivers to factor creation such as infrastructure or upgrading of education. As the nation progresses through the next stages, government should allow firms to take the primary role in creating competitiveness.

Therefore, the research aims to gain understanding on the how government policy is structured to influence the determinants of competitive advantage that creates an enabling environment to attract foreign investment. It explores some of the key determinants of FDI in an African country adopting ICT as an enabler of economic growth. It looks at the Kenyan ICT cluster and determines the dynamics that govern the cluster by comparing with the ICT cluster of Costa Rica.

3 CHAPTER 3: RESEARCH QUESTION

3.1 INTRODUCTION

This chapter presents the research questions for this research project. These questions are in alignment with the research objectives and motivation covered in Chapter 1. Based on the literature review covered, this research will answer the following questions:

3.1.1 Research question 1

How did the Kenyan Government ICT policy contribute towards creating national competitiveness?

Using the concept of competitive advantage of nations and cluster theory, this question attempts to gain insights into the role that government policy plays in growing ICT connectedness, attracting multinationals and building national competitiveness. It also looks at the effectiveness of the ICT policy in addressing the factors that contribute to national competitiveness.

3.1.2 Research question 2

How do MNCs in ICT contribute towards creating country competitiveness?

The overall objective of question 2 is to improve the understanding of the role played by MNCs in ICT towards creating comparative advantage of the industry thus contributing to national competitiveness. Matinde, (2014), Okuttah (2013) and Omwenga, (2012) have recently observed that MNCs, especially those within the ICT sector, are choosing Kenya as their destination of choice in their investments in Africa. The research question will seek to gain insights on the “eclectic paradigm” determinants that play a role in attracting ICT MNCs to the Kenyan market. The form that knowledge transfer takes within this ICT cluster will also be investigated.

3.1.3 Research question 3

What is considered as the next phase of growth for such a market within an African context?

As Porter (1990) argued that in the factor and investment-driven early stages of competitive development, government often takes a leading role. This role is geared

towards factor creation including the upgrading of education and infrastructure. Beyond these stages, firms must increasingly become prime movers (Porter, 1990). Therefore, this research question seeks to get a better understanding on the next stage of growth for a developing economy that has fully adopted ICT as an enabler to economic growth. The challenges that hinder adoption of ICT in Kenya will be identified. The spillover effects of the growth of ICT adoption are explored. Progressing through the different stages of competitive development implies that the government takes a different role. This aspect will also be looked into.

4 CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

This chapter focuses on the research methodology adopted in this study. It describes in detail the research design followed and the rationale for the design. It also describes the population study, unit of analysis and the sample nature and size used during the interviewing process. The data collection process was broken down into:

- Phase 1: Secondary data collection on Costa Rica for the preparation of a comparative analysis to Kenya; and
- Phase 2: Semi-structured interviews in Kenya.

Data analysis is also described in this chapter. The limitations of the study are also identified and outlined

4.2 RESEARCH DESIGN

The research design was qualitative in nature. Saunders and Lewis (2012) outlined three types of research design in qualitative studies, which are namely:

- **Exploratory:** This type of study seeks to explore general information concerning a topic not well understood by the researcher. An exploratory study also provides insights and fuller understanding on issues or situations not well understood by the researcher;
- **Descriptive studies:** As a forerunner to an explanatory study, a descriptive study is intended to accurately describe a person, event or situation. Even though it is a good approach, this study method falls short of becoming too descriptive; and
- **Explanatory studies:** This research approach looks for specific explanations behind a particular incident. It is often referred to as causal research.

An exploratory study was adopted for this research. Cooper and Schindler (2014), support Saunders & Lewis (2012) in that exploratory research is useful when a researcher does not have a full understanding of the problems that will be encountered during the study. This research design was deemed appropriate as little is known about the role that government policy plays towards national competitiveness within an

African context. A similar research design was followed on the study of the Costa Rican ICT cluster. The purpose of the Costa Rican study was to investigate the obstacles that prevent the formation of linkages among local firms, multinational corporations and universities in the ICT cluster (Ciravegna, 2012).

A single case study method was applied in this research as described in Section 4.3.

4.3 RESEARCH STRATEGY: CASE STUDY METHODOLOGY

Eisenhardt (1989) defined a case study as a research strategy that is focused on gaining understanding of dynamics present within a single setting. Yin (2003) took this definition further by defining a case study as an empirical study with an ability to investigate a current existing occurrence within its real-life context, especially when boundaries between the occurrence and the context are not clearly evident (Yin, 2003). Furthermore, Yin stated that a case study has unique strengths in the sense that case studies possess abilities to deal with a full variety of evidence such as documents, artefacts, interviews and observations.

Yin (2003) also mentioned that a case study method is preferred in examining contemporary events and in order to understand complex social phenomena. The developments in the Kenyan ICT industry and its contribution to the economy may be deemed contemporary. Furthermore, the motivation behind a case study is to detect the effects of an event or policy intervention on a certain outcome of concern by focusing on a particular instance in which the extent of the event or intervention is large, relative to other determinants of the outcome, or in which identification of the effects of interest is facilitated by some other characteristics of the intervention (Abadie, Diamond & Hainmueller, 2010). The role of government ICT policy towards creating an enabling environment in Kenya is of key interest in this research.

A comparative analysis was conducted between the role that government policy and regulations played in Kenya and Costa Rican ICT industries. A study of similar nature was conducted relating to Spain and Ireland, where the objective of the research was to identify the main policy instruments used to encourage inward R&D-intensive FDI and to explore how those policies were designed and implemented (Guimón, 2009).

4.4 RATIONALE FOR THE SELECTED CASE STUDY APPROACH

According to Yin (2003), the rationale behind a multiple case study is to either:

- Conduct a literal replication, which is defined as the prediction of similar results;
or
- Conduct a theoretical replication, which implies prediction of contrasting results but for predictable reasons.

The selected approach was aimed at identifying similar and contrasting strategies that each country adopted in formulating and implementing ICT policies. This research was aimed at gaining an understanding on building national competitiveness through ICT policy in Kenya. It focused on analysing and comparing how Costa Rica and Kenya were able to achieve positive results in adopting specific policies to achieve national competitiveness.

Costa Rica is relevant as it is one of the few developing countries that have successfully adopted an ICT investment strategy in recent years. Its success can be attributed to major public policies that have fostered the rapid and sustainable growth of its ICT sector (Villalobos & Monge-González, 2011). Despite the fact that Costa Rica is a small economy with a population of approximately 4.5 million people, it has a larger and more sophisticated ICT sector than any other Latin American country (Monge-González & Hewitt, 2010). On the other hand, Kenya has adopted Vision 2030, which focuses on government policies that promote ICT as a driver of economic growth. Therefore, it would be worthwhile to conduct a comparative analysis of Costa Rica and Kenya to assess similar and contrasting elements of the strategies of the two countries in creating national competitiveness through ICT.

4.5 POPULATION AND SAMPLING UNIT

4.5.1 Population

The population of this research is comprised of any individual that is or was directly involved in ICT policy formulation and implementation or one who has been impacted by Kenya's ICT policy. This includes government policy officials and multinational companies within the ICT sector in Kenya.

4.5.2 Sample unit

The unit of analysis for this research was the ICT sector.

4.6 SAMPLE SIZE AND SAMPLING METHOD

4.6.1 Sampling method

Since there was no sampling frame available, none was used. A sampling frame is defined as a complete list of all the members of the population being studied (Saunders & Lewis, 2012). For this part of the research, non-probability sampling techniques were used. According to Cooper and Schindler (2014), non-probability techniques are suited when the total population may not be available and if time and money are limited. This research adopted a purposive sampling technique. Purposive sampling is used to specifically select a small sample during data collection on a qualitative research. In purposive sampling, a researcher's judgement is often used to select interviewees who would best answer the research questions and objectives (Saunders & Lewis, 2012).

The judgement used in the sample selection included the researcher's network in Nairobi, the capital city of Kenya. The researcher's network included relationships with individuals who work in various Government departments in Kenya. Using the researcher's network increased accessibility to potential respondents. Other respondents were identified and initially approached by Dr Bitange Ndemo, who is the former Permanent Secretary in the Ministry of Information and Communications. During his term of office, he established relationships with different stakeholders within the ICT sector. He was identified as a key expert for this study as he was involved in policy formulation and his existing relationship with some of the technology multinational companies in Kenya was of great value particularly his assistance in contacting potential respondents. Therefore, through Dr Bitange Ndemo, snowball sampling was also partly used to identify other respondents. Snowball sampling is a non-probability sampling method whereby the first respondent is used to identify other subsequent respondents with characteristics, experiences or attitudes similar to their own (Cooper & Schindler, 2014).

4.6.2 Sample nature and size

A certain degree of homogeneity of the sample was assumed. This is due to the fact that in a purposive sample, participants are by definition chosen according to some common criteria (Guest, Bunce, & Johnson, 2006). Furthermore, Guest et al. (2006)

mentioned that data saturation is often reached sooner when more participants in a sample have similar experiences with regards to the research domain. In this research, the sample was considered homogeneous as all participants were familiar with the National ICT Policy and operated within Kenya's ICT sector.

Sample sizes for qualitative research vary by technique but are generally small (Cooper & Schindler, 2014). The sample size for this research was limited to eight respondents. The other identified interviewees either cancelled due to other commitments or did not confirm the final interviews. Out of the five interviews conducted with multinational company representatives, four were conducted face to face and held at the respondent's offices in Nairobi, while one was conducted via Skype. Two face-to-face interviews were also conducted with the government policy experts and the third one was performed through Skype. In order to maintain the anonymity of the respondents, codes were assigned to each respondent as shown in Table 2 below:

Table 2: List of interviewees

NAME	TYPE	DESIGNATION
Company A	Manufacturing	Country Manager
Company B	Business Application	Country Manager
Company C	Research & Development	VC Research President
Company D	Manufacturing	Country Manager
Company E	Business Application	Business Development Manager
Policy Expert A	Consultant to government	Director
Policy Expert B	Government	Official
Policy Expert C	Government	Former Permanent Secretary

4.7 DATA COLLECTION

A case study protocol is an important tool in enhancing the reliability of a case study research (Yin, 2003). Yin (2003) proposes that it should be developed and used for data collection during case study research. The study protocol, which included all the questions to be covered during the line of enquiry, was accordingly developed. Identifying initiatives that were adopted in Costa Rica and aspects that led to its success and failure during the cluster formation assisted in developing the interview questions.

Multiple research sources were also used during the data collection process. According to Yin (2003), the main advantage for using multiple sources of evidence is to provide the researcher with the opportunity to develop converging lines of enquiry.

A summary of the data collection and analysis process is illustrated in Table 3 below:

Table 3: Summary of data collection and analysis process

	ITEM	DESCRIPTION
Data Collection	Secondary Data (Costa Rica)	<ul style="list-style-type: none"> • Inter-American Development Bank • The World Bank Group • The Central Intelligence Agency • UNCTAD • Academic journal articles
	Primary Data (Kenya)	<ul style="list-style-type: none"> • Semi-structured interviews
Data Analysis	Type	<ul style="list-style-type: none"> • Triangulation
	Research Question 1	<ul style="list-style-type: none"> • Comparative analysis of interview transcript from Kenya with secondary data with Costa Rica
	Research Question 2	<ul style="list-style-type: none"> • Semi-structured interview transcript
	Research Question 3	<ul style="list-style-type: none"> • Semi-structured interview transcript

A descriptive process is outlined in the next sections.

4.7.1 Secondary data

Secondary data consists of documents such as websites and published reports from various agencies. According to Yin (2003), documentation is mostly important when used to collaborate and supplement evidence from other sources. Furthermore, Yin stated that the use of multiple sources of evidence, or data, increases construct validity. Accordingly, archival data and reports from institutions such as UNCTAD, The World Bank Group, and the Inter-American Development Bank were collected and compiled for the purposes of understanding the case studies. Past academic journal articles were also used. These documents were used in order to build the case study and further triangulate the data collected on the Kenya case study with interview transcript.

4.7.2 Primary data

Primary data is defined as data collected specifically for the research project being undertaken (Saunders & Lewis, 2012). Semi-structured interviews were used to collect primary data and to provide a real life situation, which could complement theory. A semi-structured interview is a method of data collection whereby the interviewer asks about a set of themes using some pre-set questions, but varies the sequence in which the themes are covered and questions asked (Saunders & Lewis, 2012). An interview guideline, which is attached as **Appendix 1**, was used to conduct all interviews.

Prior to commencement of the semi-structured interviews, all interviewees were contacted and issued a formal letter of introduction, which described the nature of the research, confirmed the legality of the research and were also given consent form for voluntary participation on the interview. It was also highlighted to the interviewees that they could withdraw at any time during the interview and had a right not to answer any question without a need to explain the reason. All this was done in order to make the interviewees feel at ease during the interviewing process. A copy of these letters, which were further signed by each interviewee, are attached as **Appendix 2** in this research document.

The interviews were conducted with each interviewee individually, within their offices to minimise any potential for disruptions during the interviewing process and to afford

them convenience. It was notable that the ability to minimise disturbances was minimal to the interviewer during the Skype interviews. Every interview session was tape-recorded and each interviewee was asked permission to audio record prior to the interview session. Tape recording of interview session offered the researcher an opportunity to fully concentrate on asking questions and responding to the interviewees' answers. For each interview, a transcript log was created and is attached on a data disc as part of supporting document to this research project. Each interview session was completed between 30 to 50 minutes. The researcher conducted all the interviews.

For this type of the interview process, the number of interviews to be conducted before data saturation is reached was crucial. Data saturation is described, as a point where any additional interview held provides very few or no new insights or new knowledge (Saunders & Lewis, 2012). Consensus theory was also considered during data collection. Consensus theory is based on the belief that experts tend to agree more with each other, with respect to their specific domain of expertise than do novices (Guest et al., 2006). It was realised that this theory applied since the interviews were conducted with top management personnel who were experts in company strategy within the Kenyan context.

4.8 DATA ANALYSIS

4.8.1 Data preparation

Firstly, the interview recordings were converted to text format to ensure compatibility with Atlas ti, the electronic qualitative data analysis software. Secondly, as the audio recordings were transcribed by a third party, the transcripts were edited by replaying the audio recordings while simultaneously re-reading the transcripts in order to remove any inconsistencies, gaps and typographical errors occurring during transcribing.

4.8.2 Data analysis

Firstly, using deductive reasoning, the first set of codes was established by using pre-determined themes evident in the existing theories covered in Chapter 2. Such themes were based on the theory of national competitiveness, cluster theory and eclectic theory. A second analysis of data was conducted whereby; inductive reasoning was adopted in order to establish any new codes that might have been omitted by the deductive reasoning approach. Furthermore, these codes were used to uncover other

more existing theories or new occurrences. Out of 33 codes that were identified, the researcher refined the set in order to identify the most relevant codes and ended up with a final list of 26 codes. The codes were identified by doing a cross participant analysis in order to determine common patterns and differences from each transcript. These codes were further regrouped into super families or categories then into themes identified through inductive reasoning. Atlas ti was used to source quotes as per each respondent and category. The researcher used the most appropriate quotes in Chapter 5.

A cross-case analysis technique was used with the interview findings and case study findings to answer Research Question 1. For Research Questions 2 and 3, the interview transcripts were used to analyse relevant data.

4.9 RESEARCH LIMITATIONS

Some of the possible limitations of this research included:

- **Research boundary:** Since a complete cluster includes different organisations within a sector and linkages that exist between them, this research was limited to multinational companies and the government only. Interviewing local firms within the ICT sector would have given more insights pertaining to the collaborations that exist between multinational companies and these local firms. Including local firms would have highlighted the presence of knowledge transfer between MNCs and local firms as this further enhances competitiveness of Kenya's ICT sector. A similar view is shared in relation to academic institutions.
- **Homogeneity of sample:** The sample was considered homogeneous and poses a further limitation in the sense that the findings cannot be completely generalised to other industries. A more diverse view could have been obtained if the research was not limited to the ICT industry.
- **Geographical location:** In trying to compare Kenya to Costa Rica, it was realised that geography and distance limited the study. It would have been ideal to also collect primary data in Costa Rica but due to time allocation, geographical distance; it was not practical for this research.
- **Language:** The fact that a comparative study was conducted with Costa Rica, which is a Spanish speaking country, some research journals were written in Spanish. This limited the source of data during data collection.

5 CHAPTER 5: RESULTS

5.1 INTRODUCTION

This chapter presents the results from data analysis of the responses to the research questions outlined in Chapter 3 and research conducted through the methodology outlined in Chapter 4. The first part of the chapter presents the results of the secondary data research on how the Costa Rican ICT policy was formulated to facilitate the creation of the ICT cluster. The second part presents an outline of the interviews conducted, details the characteristics of the respondents and highlights observations before and during the interviewing process. Such observations are further used in Chapter 7 to suggest a different angle on how a similar research could be conducted effectively in the future.

Thirdly, the chapter presents findings based on the interviews held with the respondents in Kenya. No other information was sourced concerning the respondents outside the interviews. The findings on this third section of the chapter are structured according to the different research questions. The identified themes have been allocated to address each question.

5.2 SECONDARY DATA ON COSTA RICA

5.2.1 The role of government policy on cluster creation in Costa Rica

This section details the role of government policy in creating the ICT cluster in Costa Rica. According to Villalobos and Monge-González (2011), the success of Costa Rica's ICT sector can be accounted for by three major public policies. These are the human capital policies, foreign trade and FDI promotion policies and the reduction of internal taxes and trade barriers in technological products.

5.2.1.1 Human capital policies

Costa Rica is known for high levels of human development, whereby in 2011, it scored 0.725 in the Human Development index (HDI). This score was higher than the world average of 0.624 and the region of 0.706 (Villalobos & Monge-González, 2011). A constitutional reform established in the 1990s, guaranteed that public expenditure on education was at least six percent of GDP. In terms of this reform, it became a constitutional mandate to provide free primary and secondary education until grade 11 and mandatory until grade 9 (The World Bank Group, 2009). This enabled Costa Rica

to be ranked 1st on the Global Competitiveness Index (GCI) report 2010-2011 for primary school enrolment and overall 33rd for the quality of primary education (World Economic Forum, 2010). As part of the drive to become an innovation-driven economy, Costa Rica also established, by law in 1941, a universal healthcare system under a strong social security structure (The World Bank Group, 2009). Therefore, as part of the strategic development, Costa Rica has continuously invested in education and health, which are perceived as key enablers in creating a competitive advantage (Villalobos & Monge-González, 2011).

5.2.1.2 Foreign trade and FDI promotion policies

In order for Costa Rica to shift its economic development model from import based to export promotion, it had to adopt several measures to liberalise trade and deregulate the economy (Villalobos & Monge-González, 2011). Apart from creating a solid platform of institutions and regulations for consolidated processes, Costa Rica encouraged companies such as Intel to operate under the Free Trade Zone (FTZ) regime. This came with benefits such as being exempt from import duties, raw materials, components, corporate income tax, export taxes and excise taxes. This FTZ regime also offered expedited on-site customs clearance and a possibility to sell to exporters within Costa Rica. The FTZ regime emerged in Costa Rica with the proclamation of Law 6695 of December 10, 1981, the Export Processing Zones and Industrial Parks Law (Monge-González, Rivera, & Rosales-Tijerino, 2010).

5.2.1.3 Reduction of internal taxes and trade barriers in technological products

In order to help create demand for ICT products, a committee was created in 1986 under a presidential mandate to study best practices for the introduction of computers in public schools. This was followed by the formation of the National Program of Educational Informatics (NPEI) and Omar Dengo Foundation, who focused on meeting various goals in 1987. These goals included strategies on improving the quality of teaching, making informatics known to the people, creating better-prepared Costa Ricans for the future, reducing the country's technological gap with regards to developed nations, democratizing access to science and technology, promoting the development of cognitive processes, and stimulating creativity and logical thinking (Villalobos & Monge-González, 2011,p.122). NPEI and Omar Dengo Foundation were driving educational informatics right from primary school level as compared to the global standards, where it was driven from a secondary school level.

Still in 1987, the government introduced a significant reduction in internal taxes on computers to facilitate the population's access to informatics therefore promoting ICT readiness and diffusion in the country (Villalobos & Monge-González, 2011). As an early supporter and signatory of the Information Technology Agreement (ITA) and founding member of WTO, Costa Rica enjoyed the benefits of the decision to eliminate tariffs on a wide range of IT products. Costa Rica also modified its WTO schedules of tariff concessions accordingly (Villalobos & Monge-González, 2011).

Though Costa Rica is seen as a benchmark to other countries in the region, it faces some challenges towards creating national competitiveness. Regardless of the free secondary schooling, Costa Rica faces a high rate of failure, grade repetition and dropouts at the secondary school level. Only a third of pupils who enter grade 7 successfully complete secondary school. This situation costs the nation close to 0.5 percent of GDP every year. With five state universities and approximately 50 private ones, Costa Rica produces few science and engineering graduates, limiting the country's competitiveness and poses challenges the journey towards an innovation-driven economy (The World Bank Group, 2009). Costa Rica recorded no PhDs in engineering and computer sciences between 2007 to 2009 and thereby faces a misalignment of skills produced and industry requirements (OECD, 2012).

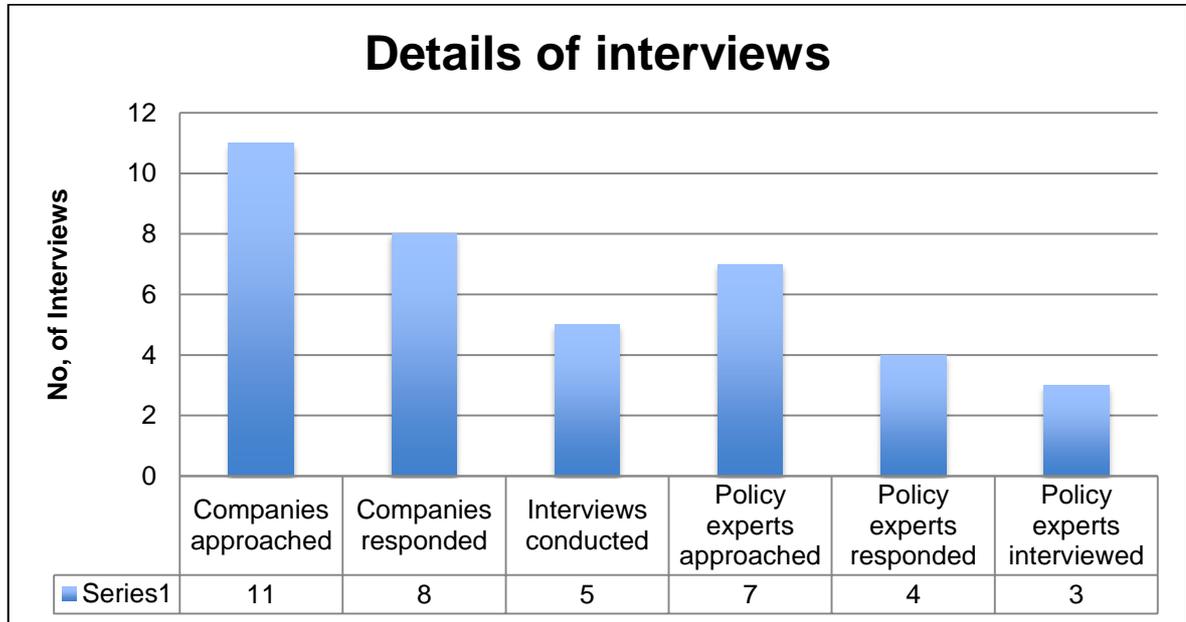
Costa Rica invests very little to R & D. Though Costa Rica has seen a gradual increase towards multinational company activities in its economy, private sector commitment towards R&D remains very low as compared to other emerging economies such as China and Malaysia (OECD, 2012). Linkages between MNCs and domestic companies remain weak and need further development. This is a limiting factor towards knowledge transfer.

The next section on this chapter reports on the findings based on primary data collected from the interviews in Kenya.

5.3 DESCRIPTIVE SUMMARY OF THE RESPONDENTS

5.3.1 Description of sample

Figure 3: Breakdown of interviews



As indicated in Figure 3 above, eleven multinational companies were approached for possible interviews; eight responded and only five interviews were conducted at the end due to cancellations as well as respondents not honouring their interviews. Since a diversified sample was ideal in order to gain a varied insight from the players within ICT in Kenya, approaching policy experts was very important for this research. Seven policy experts were approached and only three interviews were conducted due to similar reasons as the multinational company representatives.

5.3.2 Descriptive summary of the respondents

Three out of six respondents from the multinational companies were expatriates, while the rest were all Kenyans. All respondents were professionals familiar with Kenya's ICT policy. This supported the consensus theory.

5.4 QUALITATIVE INTERVIEWS

This section of the research reports on the research findings from data collected during the interviews. The data has been sorted according to identified themes and relevant research questions. Direct quotes have been included in this section while full and detailed interview transcripts are included in a separate CR-ROM, which contains all

supporting documents. Only commentaries have been included in this section with detailed analysis included in Chapter 6.

5.4.1 Research Question 1: How has the government ICT policy contributed towards creating competitiveness of Kenya?

The commentaries from this section include findings from the MNCs and the policy experts interviewed.

5.4.1.1 Government ICT policy

With the objective of gaining an understanding of the measures undertaken in terms of the Kenya National ICT policy of 2006 in order to create a competitive advantage for the ICT sector, the respondents were asked:

- **What policy measures and regulation actions has the Kenyan Government put in place to build a competitive advantage of the ICT sector?**

A policy measure that was reported as the most contributing factor to national competitiveness was the development of technology infrastructure, which is considered as an advanced factor condition on Porter's determinants. This initiative dealt with the supply side of necessary broadband infrastructure to attract competition and push the connectivity costs down. The increasingly frustrating slow pace of implementing the project, which involved 22 other countries, encouraged this policy initiative. Due to the challenges of getting cooperation from other countries, Kenya opted to venture into technology infrastructure development in terms of laying fibre optic cables alone and without the assistance of donor funding. Four other policy initiatives were also adopted to support the development and adoption of ICT. In supporting the delivery of infrastructure projects, the second policy initiative was formulated to address the supply side of the ICT policy. This initiative was aimed at encouraging collaboration between the public and the private sector.

The third policy initiative was focussed on the demand side by creating demand through the promotion of relevant local content to citizens. This policy initiative was created to also encourage innovation in the country and positively affect the demand conditions of Porter's determinants of competitiveness. And the fourth policy initiative was also supply side focussed. It focussed on building massive capacity by focusing on developing the necessary skillset. Under the fourth policy initiative, the government

also invested in building a national fibre backbone by further distributing public broadband network to most district headquarters and border towns in order to attract and stimulate private sector participation in rural areas. The last policy initiative was to attend to the challenge of unemployment. Policy expert C articulates this best by stating the following:

Policy expert C: *“We came up with five policy statement. So, the first policy statement was to look at developing infrastructure, which was lacking both locally and internationally. Basically, we needed to create affordable infrastructure...We needed to encourage public/private partnerships...And because of that we knew that we needed to encourage local content development, not just the content but we also wanted to see whether our youth could be innovative... The fourth was that we leveraged to build massive capacity...And then the fifth was to create employment.”*

Though a similar question was not asked to the respondents from the multinational companies, but based on the discussions held, similar views emerged from some of the respondents during the discussions. They had the following to say:

Company A Representative: *“The government is proactively driving ICT policies that will enhance and encourage Kenya as a frontier growth country as opposed to any other country in the region.”*

Company B Representative: *“All the fibre cables that came in etc., made it easier to do business in the country.”*

5.4.1.2 Funding

- How were the ICT policy initiatives funded?

The objective of this question was to identify how the ICT policy initiatives were funded and whether there is a foreseeable decrease in the budget now that the ICT sector is considered to be well established. Since donor funding often comes with specific conditions, the Government of Kenya (GoK) expressed unwillingness to adhere to any donor funding conditions and opted to exclude potential donors from the onset. The findings demonstrated that the funding structure was public-private sector focused. The respondents had the following to say:

Policy expert A: *“So, they are funded from multiple sources.”*

Policy expert C: *“We needed to encourage public/private partnerships...We started to think outside the donors because any donor money comes with a lot of instructions on how to use it.”*

In order to gain further understanding on whether the funding requirements might increase or decrease, a follow up question was asked.

- **How will it change in the next one to two years?**

It was apparent that the government’s strategy was not to significantly increase the budget. The government had in the past taken up a leading role of being a catalyst and creating an enabling environment. The industry has successfully taken off. It was perceived that the government should now avoid creating a perception that the initiatives are “government only programs”. A time had come for the private sector to start commercialising innovative ideas and take over the leading role from the government. A respondent said:

Policy expert A: *“I think the strategy was not to significantly increase budget for those kinds of projects... The private sector should now take a lead and create a commerciality of these ideas. Because that's the only way the business or the market can grow.”*

5.4.1.3 Challenges to ICT policy

In gaining an even deeper understanding of the challenges that were experienced during ICT policy formulation and its implementation, the following question was posed to policy experts and multinational companies:

- **What were the most significant challenges faced in the formulation and implementation of the ICT National policy?**

Firstly, execution of the policy during the implementation phase was a challenge. The findings also highlighted a lack of shared vision between the government and those working to implement the government’s vision. A shared sense of accountability did not seem to exist. The respondents said:

Company B Representative: *“And therefore they don’t put specific milestones in place. And that has a negative impact on the overall growth. So the policy side of it becomes challenging quite often.”*

Company A Representative: *“It’s true, our leadership has a vision of diversification of the economy, but then that’s the president’s mission, and the people working under him do not share the same. They are not in sync at all.”*

Secondly, the lack of supporting policies to the National ICT policy and its initiatives was a challenge. The findings indicated that for instance, the National ICT policy lacked supporting policies, which address email use as an official means of communication. Email use is a great tool to foster an ICT conscious culture amongst government employees.

Policy expert B: *“There may not have been certain policies or administrative regulations in place. For example the question of use of emails for official communication was a concern.”*

This respondent also confirmed the views shared by Company A Representative as follows:

“To actually have that vision on what they want to do. They want to have, vision for 2030, they say they want to have a mid-income economy by then, then challenge is, is that if you want a mid-income economy by then, what do you have to do now, we are only 14 or 15 years from there, so we are in a lot of ways already behind, in order to achieve that.”

5.4.1.4 Incentives

To further understand some of the incentive programmes that the ICT policy has put in place in growing this sector, the respondents were asked:

- **What incentives are in place to attract MNCs to invest in the ICT sector?**

In order to attract multinational companies to invest in a country, certain incentives must be put in place to encourage their decisions to invest. The evidence collected from the respondents highlighted contradicting views between the policy experts and the multinational companies. The policy experts confirmed existing incentives, which are also being extended towards attracting multinational companies to invest in Konza Techno City. The respondents had the following to say:

Policy expert C: *“What we also had, we removed taxes. The taxes have now been re-introduced... So, we gave incentives for some of the organisations to come and invest, like [company name withheld].”*

Policy expert A: *“Right now they are probably negotiating a lot of tax holidays for various companies that are going to come and set up in Konza Techno City since it's too far out from the city. In as much as companies desire to get involved at Konza Techno City, it's located far out. So, obviously there are tax incentives that, if not in place, have to be negotiated to be in place to allow for these multinationals to invest.”*

A similar question was asked to the multinational company respondents. The respondents from the multinational companies painted a totally different picture. To them, the incentive programme is only extended to companies that are investing into Kenya on bigger projects such as construction of roads and oil explorations. It was also highlighted that the tax incentives were more directed towards electronic consumers and not to them. The lack of clear incentives to the multinationals was seen as a shortcoming from the government side in promoting the cluster growth. The respondents said the following:

Company A Representative: *“There are tax incentives but in a broader, really larger type. That's where there are benefits but not for medium sized type of company investments. There are tax incentives for large corporates. They have a huge tax breaks for oil.”*

Company B Representative: *“So they have not done any of that, and that is one of things where we believe it's a shortcoming on the government side.”*

It was highlighted that since there are no incentives directed to multinationals in the sector, it is just a business decision for them to invest in Kenya in support of their company strategies:

Company C Representative: *“No multinational to the best of my knowledge gets incentives just to put up here, ultimately that's a business decision.”*

It was indicated that tax incentives were more focused on consumer products and not companies. This is a move towards the promotion of ICT adoption at citizen level:

Company E Representative: *“I think the incentives are more consumers facing than to the multinationals. So, for instance they would offer zero duty or whatever for importing devices, which is something that is here and it’s great but that’s because the device needs to be affordable to the consumer.”*

5.4.1.5 Capacity Building

The issue of capacity building was of great concern since the ICT sector requires a specific level of skill in order to achieve competitiveness. Therefore, gaining deeper insight on what was the government’s role in promoting capacity building was crucial. The question was as follows:

- **What is the government’s role in encouraging collaboration between the different players in the ICT cluster?**

The GoK was involved in building internal capacity by providing physical infrastructure and human resources. The government also collaborated with the private sector to develop specific skills and in developing technology incubation centres located in academic institutions. The respondents said:

Policy expert A: *“There are collaborations where Government works with the private sector to develop a certain niche skillset that is required. We also have a lot of Non-government Organisations (NGOs) and donor agencies, like Department for International Development (DFID) and others who are developing certain critical skills in certain areas.”*

Policy expert B: *“Government is also building internal capacity in terms of its own physical infrastructure and the human resources. So in every Government department there is a unit or section or more importantly officers who are thoroughly trained and have opportunities to train continually.”*

Policy expert C: *“We wanted to have several incubation centres at every university, which would help in creating the skills. Then provide technology parks in a large scale, where they can train those wishing to embark on a technology career. Also provide refresher training courses to those who wish to renew their technical knowledge.”*

5.4.2 Research Question 2: How do multinational companies in ICT contribute towards creating country competitiveness?

The second research question related to how multinational companies in ICT are contributing towards national competitiveness. The role of firm strategy as well as factors that contributed towards a decision to choose to invest in Kenya was explored. Quality of local talent, capacity building and any challenges associated with operating in an African developing country within an ICT environment were all captured through the interview process.

5.4.2.1 Firm strategy

In order to gain insights on how multinational companies in ICT are contributing towards country competitiveness in Kenya, it was important to first understand the company's strategy for Kenya and the East African region. The following question was posed:

- **What is your regional strategy for East Africa and Kenya in particular?**

It was observed that all companies interviewed were concerned about growing their businesses into this part of the world. The respondents had this to say:

Company C Representative: *"Our strategy is to bring our products, our solutions here into this market, to essentially also provide those who haven't worked with [company name withheld] in the past, give them an option, in terms of solutions, in terms of technologies."*

Company E Representative: *"Growing access to internet is one of the strategies for [Company name withheld] in Africa."*

Diversification of the client portfolio was also seen as part of firm strategy:

Company D Representative: *"So, our strategy here is really two things: one, looking at how we can increase our footprint in public sector, financial services and in energy natural resources. We are also looking at Small Medium Enterprises (SME's) quite strongly, and then also branching into other areas of solutions outside application."*

For some, getting closer to the market that is being served was of key importance to the strategy:

Company A Representative: *“So, for this region, it’s to grow business in the region, provide unique, innovative technologies and solutions to the market. It is also to create customer confidence as well as customer service and support for what we sell.”*

Some respondents considered the period within which return on investment is realised to be an important part of the firm’s strategy in this market. The respondents said the following:

Company B Representative: *“We sometimes invest ahead of the growth.”*

This respondent went on further to give an example on the consequences of having a short-term focus in investing in a growing market.

“[Company name withheld] did not see long term and wanted quick results. And so [company name withheld] that is across from us here, they are gone, because they did not see the return quick enough.”

Company C Representative: *“I think in general when you are in the growth market you have to think almost 10 years out.”*

As part of strategy, some respondents highlighted the issue of localisation as a key component to their firm strategy. It was noted that for some, localisation is a sure way to ensure that sales are increased. These respondents said:

Company A Representative: *“But if you look at it, localised with Kenyan content it will sell more than you would sell just from one of the shelves.”*

Company E Representative: *“The second part is making it relevant, so making it relevant means localising the content, localising by language, localising by type of content, bringing in local content online.”*

Policy experts also confirmed the issue of localisation by articulating it as:

Policy expert A: *And then number two is to develop content, local content because the person out there in Kajiado or somewhere needs to create something*

big. They couldn't before for the longest time. Now they [government] wanted to be able to see whether they can generate local content to allow for there to be vibrancy in the ICT environment so that if people are shooting movies or creating web content or creating translation of, let's say, the Bible to Masai land or you know all those kinds of things, that can happen in a more enriched environment that has faster access to the last point."

As noted above, the localisation is in terms of content but other companies have tackled the strategy to localise in terms of employees. These companies understood the role that employing people who are more familiar with the environment they operate in was a key element to a successful operation. Those respondents said:

Company D Representative: *"So, looking at [company name withheld], we have grown now, we are 55 people, out of which we have one expatriate, and that expatriate is actually from Ethiopia... So, that also gives us the ability to really get to market with people who understand the market."*

Company B Representative: *"I'm the only expat."*

5.4.2.2 FDI investment decision

With the objective of gaining a better insight of the factors that contributed towards investing into Kenya, the company respondents were asked:

- **What have been the key drivers in the decision to invest in Kenya?**

Market seeking efficiencies were noted to have driven foreign investments in ICT within Kenya and the region of East Africa. Most respondents indicated the need to exploit the growing market size. The respondents had this to say:

Company A Representative: *"We have identified an opportunity to grow in this particular market. But we see a bigger growth potential once people are educated and more aware of the benefits of technology and innovation."*

Company B Representative: *"Kenya is by far the largest in terms of business opportunities. That is because of the disposable income from consumers, the GDP of the country, a lot of those economic factors plays a role, and looking at the consumption of ICT within this market. So, Uganda and Tanzania are the 2nd and 3rd largest ones."*

Other companies noted that not just Kenya's market size growth but the rest of Africa is also attractive. They said:

Company E Representative: *"I think there is a general understanding in the tech world, that Africa is untapped from a technology perspective. There is still a lot of rolling out in technology that needs to be done. There is still a lot of connectivity that still needs to be brought in, and there is still a lot of universal access that needs to be addressed. There are a lot of marginalized areas that do not have access to internet."*

Company D Representative: *"The real opportunity in terms of growth is in the rest of Africa and East Africa is kind of a perfect launch pad to go into East and Central Africa."*

Other respondents also shared the same view of seeing Kenya as the launch pad to East and Central Africa. The following was confirmed:

Company A Representative: *"Nairobi is called [company name withheld] East Africa. And it takes care of East and Central Africa."*

Two out of five multinational company representatives interviewed commented on the role of leader's vision as one of the drivers to invest in Kenya. Those respondents said the following:

Company B Representative: *"[Company name withheld] has a very strong focus on Africa, this is what our Chief Financial Officer (CEO) considers as her legacy so she wants [company name withheld] to be present in Africa so she is extremely dedicated to this mission of establishing [company name withheld] as the number one IT player, the solutions player in Africa."*

Company C Representative: *"The change of management in SA saw the potential of business in the rest of Africa and started investing heavily in the rest of Africa."*

Air connectivity was also raised as a factor that improves the ease of doing business in the region. The respondent had this to say:

Company D Representative: *"Kenya and Ethiopia Airlines are able to cover more than 46 countries in Africa. So, one is able to get to different destinations with no*

problems. And these airlines, I would say, depending on where it is that you are doing business, you can have two or three flights a day to particular places, while other airlines will fly only once or twice a week. It is not hard for me to go to Uganda in the morning and come back at lunch time.”

Kenya, especially Nairobi, is positioned such that it is able to offer an opportunity to experience the real Africa in a modern city and that is an attractive characteristic for some multinationals.

Company D Representative: *“Nairobi is also not a bad place to live, so we are also able to attract people if needs be since we sometimes have to get foreigners on project assignments to come through and be in Kenya for a short time. So, these are some of the comments I have picked up from a couple of people, if you are in Nairobi you do have some of the benefits of kind of a modern developing country, but you are still in Africa, when you are in Johannesburg you feel like you are in Europe, there’s a disconnect, you are not in Africa, you are in a different place, the market is completely different.”*

A few respondents indicated the negative impact that government policy on Broad-Based Black Economic Empowerment (BBBEE) in South Africa (SA), which have encouraged other multinationals to rather choose Kenya instead. The respondents said:

Company B Representative: *“The reason why a lot of multinationals have invested here is for instance, there has been an exodus out of SA, because in SA the government started having the BBBEE policies in place, which made it more difficult for a lot of the companies.”*

5.4.2.3 Political instability

Furthermore, a need to gain better understanding on the role that political instability has on the decision to operate within Kenya was raised. The respondents were asked:

- **To what extent does political instability affect your country strategy?**

The respondents raised three forms of political instability. They were terrorism, transition in government regime and instability of the government due to the International Criminal Court (ICC) case. The ICC prosecuted the current president of

Kenya and the deputy president on crimes against humanity following the 2007 post-election violence. The responses were as follows:

Company B Representative: *“It does not directly impact us but indirectly it does. So for instance, the whole terrorism aspect etc., has obviously an impact on the overall economy, has a big effect on the tourism industry etc.”*

Company C Representative: *“I think, it wasn’t really instability so far, there was a transition in government that happens in every single country that we work in, so it’s nothing special, you have to build new relationships, you have to find new partners and you have to get to know the new government.”*

Policy expert A: *“So for instance the country wasn’t very politically stable to attract as much investments that it has. Remember the 2007 election clashes? Even this International Crime Court (ICC) case, it has put a cloud over a lot of people’s heads. And the terrorist attacks.”*

5.4.2.4 Local talent

To further understand the quality of local talent and how this plays a role in attracting multinational companies to invest in Kenya, the respondents were asked:

- **What is your opinion of local talent?**

To some extent there were mixed views on the quality of local talent within Kenya. To some, the quality was good and this was proudly articulated by:

Company A Representative: *“Kenya has very good ICT skillset. I would say the background of Kenya, since independence has been embraced with a very sound education. We have the lots of foreigners coming to study here. The education skillset is good and that promotes curiosity, awareness and a very good work skill.”*

A need to draw skills from out of Kenya was raised depending on the project requirements.

Company E Representative: *“The larger pool is local but we always have people from other areas. So, we are very project based right, so you bring people to a project.”*

It was evident that other respondents had a different perspective to this. These respondents indicated that the quality of local talent was not good. The respondents had the following to say:

Company B Representative: *“The challenge that we have in Kenya is that the talent pool is unfortunately, very small. And this comes back to what is a country doing to uplift the overall skills sets of the graduates, because it is not necessarily very high quality unfortunately.”*

This respondent also raised the difference between the quality of a Kenyan who studied abroad with one who studied locally. In this case, exposure plays a huge role. This respondent had this to add:

Company B Representative: *“If you look at the students and their skills etc., and that of guys that have studied abroad versus locally, there is a big discrepancy, a really big gap. Now, it doesn’t mean that the guys that have studied locally are not qualified or they are not capable, it is just that they have not been exposed to some of the other stuff, in a way.”*

The lack of local leadership was also a concern to some. The findings indicated that knowledge transfer and skills development take a trajectory growth approach over time. It all depends on what the government is doing right now to grow the necessary skills.

Company C Representative: *“So I think that there is local talent, there is sufficient local talent; I do think that there is a lack of local leadership... I don’t see yet this to be a healthy market from that perspective, that will still take, I would say easily a decade until we see the right level of skills coming out, people are establishing themselves, so there is a lot of talent here, but in terms of the actual skills and also the distribution of skills, grow with the market or grow with the opportunities, it will grow with the ability to also bring talent back to Africa, in fact, that is even bigger problem in SA than it is here.”*

Based on the previous responses concerning the view that the talent pool to choose from is rather small, an added perspective was raised concerning the rising competition for talent. There is high mobility of local talent, coupled with inter-firm mobility of this talent due to the rising competition levels. This may indicate characteristics of a healthy market. The respondents had this to say:

Company B Representative: *“But if I look at, the people that we have, that we can hire from, the pool is very small. So the challenge for that is that everyone is getting offered the same package deal...If I look at the hiring I have done over the last 2 years, I could see people jumping from company to company, just because they are getting better packages, and it is scary to see the increases they get year after year. And it is sad, because it creates a really negative perception, or negative impact on the overall market and business.”*

Policy expert A: *“But the ICT industry itself, it’s riddled with a lot of poaching...So, and that has hiked up what you’d call the fees for technical talent because they can’t stay at a place for very long without getting a better offer.”*

In order to deal with competition for talent as well as increasing salary costs, another respondent raised the fact that development of interns was key to combat the challenges. The respondent had the following to say:

Company D Representative: *“So what this does is try and bring in more people into the market at a slightly cheaper rate because they have less skill and less experience they are cheaper and they are willing to work for less to gain the experience and if we keep churning them out, hopefully it will bring down the cost of our projects.”*

5.4.2.5 Capacity building

With the aim to gain an understanding on how the respondents were contributing towards talent development, capacity building within the ICT sector and the overall society, they were asked:

- **What role does your company play in building and developing the ICT sector in Kenya?**

Evidence demonstrated that multinational companies are strongly entrenched into the academic space and are engaging in various platforms in order to contribute towards capacity building.

Scouting is being used as a way to develop and build talent through on-job training:

Company A Representative: *“I have a young guy here whom I picked up five years ago and he was a merchandiser and today he is a senior manager in five years. So, we kept seeing the talent from him then encouraged and groomed him and gave the motivation needed to develop...He had a degree in IT, could not get the job.”*

Internship programmes to university students were used as another platform for capacity building:

Company B Representative: *“So we currently have, we actually have three interns right now. We can work with them and see how to develop them. Eventually, they become potential candidates for us to hire in the future. If we do not hire them, it’s still fine as they will go somewhere else.”*

A free engineering academic programme is offered for two years to students:

Company A Representative: *“We have an engineering academy. We graduate around two hundred students every year and we do not charge anything to them. We come and teach them skill sets... I have taken about twenty or so from there but our partners as well, the mobile operators, the supermarkets, the little vendor shops, then also some go.”*

Integrating the ICT industry requirements with the university curriculum is used as another platform to build the necessary capacity. This platform has also been extended to high school pupils:

Company D Representative: *“ We have something else we call University Alliance Program, we have four universities which we have gone into an alliance with, and [company name withheld] becomes part of the curriculum for two years for graduates, so they come out with some basic knowledge...And one of the more exciting programs is called skills for Africa, we piloted it in Kenya last year where we got graduates, certified graduates straight out of college, ... We were able to take them through our 6 week course ... And from there all of them were able to get jobs*

as interns whether they were partners, customers or whatever, ... And then there's another program that we are running also with high schools, but this is more around innovation, competitive stuff, I think the more not really famous ones but more well-known ones is the Lego League where kids put together robots and stuff, using technology, so that is it".

Technology hubs are also used to provide a platform, which gives access for innovators to explore innovative solutions for the Kenyan market:

Company E Representative: *"So, right now you know we work with all the tech hubs, that's one area. So, we are giving them access to open standards, open platforms that they use."*

5.4.2.6 Collaboration

There was a need to have a deeper understanding of the existence of any collaboration within this cluster. The respondents were asked:

- **What form of collaborations does the company have with other players in the sector?**

It was evident that collaborations existed with specific players within this cluster. Such collaborations are with the academic institutions, local partners, clients, technology hubs and the government. It was noted that the respondents did not mention any local ICT firms.

Collaborating with the universities and engaging the education sector to further develop teachers is critical to the success of this cluster:

Company A Representative: *"We have also partnered with Strathmore which is another leading private, local university where we do research and development together."*

Company B Representative: *"At the same time we work with Minister of Education on things such as how do we improve the capacity development for teachers, on how do they use technology in the classroom. It is not about illiteracy, it's about how do you use technology to better deliver a maths lesson, so that the children have better experience and can learn better...One of the things that we are working with, with the retailers on, is to help train their sales people on some of those skills. So*

there is a lot of capacity development that we are doing in that specific space. So that is just the normal retail chain”.

Collaboration with clients and other partners is also seen as a way to contribute towards the success of the cluster:

Company C Representative: *“Yes we collaborate with our own clients, with universities, quite a bit with government.”*

Company D Representative: *“A number of partners literally, we used to have 3, 4 partners... But now we are talking close to 18 partners across the region in all the countries who are able to sell implement [company name withheld].”*

Collaborating with different technology hubs is also key in embracing innovation and upgrading the overall industry:

Company E Representative: *“We work with all the technology hubs.”*

It was also highlighted that the government is doing its bit to encourage collaboration between local firms and multinational companies. A respondent had this to say:

Policy expert C: *“Not to force but we would say, for this tender, it’s highly encouraged that an international company work with local companies then they can help them by themselves.”*

5.4.3 Research Question 3: What is considered as the next phase of growth for such a market within an African context?

The third research question related to where the next stage of growth can be anticipated for this economy, in essence, where the spillover effects were identified, as well as challenges to ICT adoption.

5.4.3.1 Challenges in ICT adoption

In order to understand the next phase of growth within this economy, it was vital to first gain insights on issues that hinder ICT adoption. The respondents were asked:

- **Generally, in your view, what are the major impediments facing developing countries as they attempt to accelerate the adoption and utilisation of ICTs?**

The re-introduction of VAT on ICT products is a great hindrance towards ICT adoption. In this case, government policy is being counterproductive towards the overall ICT adoption. The re-introduction of VAT has resulted in the emergence of a grey market or rather counterfeits, which are a challenge for the government and other businesses. The respondents had the following to say:

Company A Representative: *“So, counterfeit is big and that same thing is for the government to regulate how people import.”*

The rise of the grey market is threatening potential future investment and of the multinationals who are already operating in this market. The grey market gives a wrong impression to the international audience on the actual growth of ICT within this country. It causes senior company leaders to question the decision to invest in Kenya in the first place.

Company B Representative: *“Our market side, typical numbers are being projected, by international organisations like International Telecommunication Union (ITU). So, ITU looks at the numbers and realises how the numbers are dropping. This is due to the fact that they cannot effectively reflect the numbers that are coming in from the grey market. No one knows where it is coming from. So, although the overall market size is down, the numbers that are reported are down even further. Since they are coming in through the grey channels, and not through the official channels. So, at headquarter level, the multinationals look at the data and wonder on what is actually happening in Kenya, or Uganda or Tanzania. Tanzania is implementing a 20% VAT in December. Uganda followed very quickly after Kenya.”*

A lack of funding to promote innovative solutions that are designed for African problems is also a challenge towards ICT adoption:

Company E Representative: *“There is a lot of innovation that is coming out of Africa, but most of the people who are innovating do not have access to the capital they need to scale the innovations.”*

Adaptability of existing foreign technologies, which are mainly designed for a developed country, was also seen as a challenge:

Policy expert B: *“Most of these technologies are not home grown... They are imported, and to adapt them to our situations, many African countries have challenges.”*

Fear of change was also seen as a threat to ICT adoption:

Company A Representative: *“It’s the old school mentality and the fear of change and the fear of the unknown. People are very, very resistant to change at all times... and leadership.”*

Policy expert B: *“But there could be a few issues of fear of change. And especially when it comes to thinking that some of these technologies will take over their jobs.”*

Some respondents perceived old school mentality from the leaders as a hindrance to ICT adoption and it is unfortunately viewed as an African problem. The leaders are still stuck in the old way of doing things. Kenya suffers from population divide and there seems to be an inability for the leaders to fully grasp the fact that a significant portion of the population they lead is more technology savvy. A different way of doing things should be embraced in order to tap into this young population.

Policy expert C: *“The problem is conventional leaders and that’s the biggest problem... Like if you know the youth is into Skype, Facebook, Twitter and whatever. They get confused in this. And until they accept this part of change, we will move ahead. There is recent statistics, which stated that almost 40% of the population in Nairobi is below 18 and that is scary. And 75% is below 35 years old and is even very scary. We must have leaders who would change that and bring this new breed into an environment that they understand better than their fathers did.”*

5.4.3.2 Stage of growth

Firstly, before exploring the next stage of growth, it was important to start by understanding the spillover effects that have resulted in the growth of the ICT sector. So, in gaining further understanding on the impact of ICT in other industries, the respondents were asked:

- **What spillover effects do you anticipate with the growth of this sector?**

It was evident that the growth of the ICT sector had given rise to an entrepreneurial ecosystem, which is supported by the technology hubs around Nairobi. This innovative and entrepreneurial environment has brought about the rise to technology solutions that are mainly focused on solving African problems. Such mobile phone solutions include iCow and M-Pesa, which has even been exported to other countries such as South Africa, India and Afghanistan:

***Policy expert A:** “If you look at agriculture, there are people who are now designing applications like iCow to help farmers manage their herd and the milk production. So, such applications assist in order to manage the flow of milk, monitor the kind of beef and all this is happening because of this growth.”*

***Policy expert B:** “There are also the issues around the banking industry. Even using your phone to get your money and send your money from wherever you are seated, thus creating convenience and a conducive environment.”*

***Policy expert C:** “In Kenya it’s affecting everywhere because in agriculture, the middle man used to exploit the farmers and now they don’t do that anymore because the farmers can get the prices from source, in healthcare we are beginning to see an impact. In the financial sector, there are benefits from the efficiencies in terms of money transfer and other things.”*

This insight led to the policy expert respondents being asked the following:

- **What would you consider as the next level of growth for Kenya’s overall economy with regards to ICT?**

The respondents expressed mixed views. To some, the spillover effects to other industries have a good impact towards the ability to export solutions and produce from

the local farmers. Therefore, it was realised that the next phase of growth is around supply management. The policy experts had the following to say:

Policy expert A: *“Generally I think it's in the supply chain management.”*

Policy expert B: *“The government wants to do away with manual systems especially in payments, in registering procurement and things like that...So, those initiatives are trying to commercialize the entire environment...But in all this I see more of Kenyans trading online with the outside world.”*

Contrary to what the other government policy experts said, government policy expert C believed that there is still a lot to be done before Kenya can even consider the next phase of growth. Digitisation is seen as the major step before the next stage of growth is even realised. The respondent said the following:

Policy expert C: *“We actually have not scratched the surface because as I told you we have just started to diffuse technology and the area where we are focusing more on now is around digitisation. And the moment we digitise everything and everything is on digital platform that's when we can say we have succeeded.”*

5.5 CONCLUSION OF RESULTS

This chapter presented findings that arose from the Kenya case study. A comparative analysis was conducted with Costa Rica and this saw a few similarities and differences between the two countries. The findings from the semi-structured interviews conducted with policy experts as well as representatives from the multinational companies were also covered. The Kenyan government adopted five policy initiatives. The policy initiatives focused on the demand and supply side approaches. The technology infrastructure has been distributed to the whole country in order to encourage connectedness. The findings also outlined opposing views with regard to incentive programmes that have been put in place to attract multinational companies in this sector. The government policy experts stated that there are incentives that were put in place to attract MNCs while MNC representatives indicated that there were none. To their knowledge, incentives were only extended to consumers as well as large-scale investors for projects in civil infrastructure development as well as oil exploration projects but excluded the ICT sector.

Secondly, multinational companies indicated that they perceive an opportunity to grow in this market, as there is a remarkable growth of the market size in this region. The importance of being able to invest with a long-term perspective was crucial in growing markets. To some, Kenya was perceived as their launch pad into East and Central Africa. Mixed views were shared around the issue of political instability. Multinational companies also indicated their involvement in capacity building of the much needed skills for this sector. There exist collaboration initiatives between multinational companies, government, academic institutions and local businesses. The multinational companies expressed that political instability did not affect them directly but rather the tourism sector.

Thirdly, the findings outlined that leadership; the rise of counterfeit products; old school mentality; and the fear of change were amongst the issues that hindered ICT adoption. It also became apparent that sometimes changes in policy could be counterproductive towards ICT adoption. In this case, the re-introduction of VAT to ICT products was a concern. The growth in the ICT sector resulted in the birth of an entrepreneurial behaviour amongst the citizens. Though a lot still needs to be done around digitisation, the next phase of growth for this market was considered by some to be in the supply chain management and with that enhancing Kenya to be an exporter of solutions to other countries. M-Pesa is one of the solutions that have been exported to other developing markets such as South Africa, India and Afghanistan.

The findings presented in this chapter are discussed in detail in the next chapter. A detailed discussion is aligned with the literature covered in Chapter 2 and includes a comparative analysis of the findings between Costa Rica and Kenya with an aim of drawing lessons from the two countries.

6 CHAPTER 6: ANALYSIS OF RESULTS

6.1 INTRODUCTION

The previous chapter presented results from the research questions posed in Chapter 3, which emerged from the theories covered during the literature review. The research questions were tested, through the use of semi-structured interviews conducted with three government policy experts and five senior management representatives from technology multinational companies operating within Kenya's ICT sector. This chapter discusses and interprets the results from Chapter 5 in alignment with the literature and the research objectives.

This chapter is structured to provide a comparative analysis of how Kenya and Costa Rica's government policies, which were developed to shape their respective ICT clusters and create competitiveness for these two nations. This is discussed as part of research question 1. Interview findings are also discussed as part of research question 1. Research question 2 and 3 are addressed by the interview findings only.

Table 4 presents the breakdown of the policy initiatives adopted by Kenya and Costa Rica for ICT adoption.

Table 4: Policy initiatives per country

KENYA	COSTA RICA
1. Infrastructure development	1. Human capital policies
2. Public-Private Partnership development	2. Foreign trade and FDI promotion policies
3. Local content development	3. Tax reduction
4. Human capital	-
5. Unemployment	-

Each policy initiative is discussed in a comparative analysis in the relevant research question. Table 5, below presents a summary of the shortcomings of the ICT policies in the two countries. These shortcomings are further discussed in detail in the subsequent sections of this chapter.

Table 5: Shortcomings of policies per country

KENYA	COSTA RICA
1.Lack of effective execution of the National ICT policy	1. Lack of alignment of university curriculum with industry requirements
2.Lack of integrated and supporting policies to the national ICT policy	2. Shortage of graduates in the science and engineering field
3.Lack of clear incentives to MNCs in the sector	3. Financial expenditure towards innovation and R&D
4.Re-introduction of VAT on ICT products	-
5. Execution	-

6.2 RESEARCH QUESTION 1: HOW DID THE KENYAN GOVERNMENT ICT POLICY CONTRIBUTE TOWARDS CREATING NATIONAL COMPETITIVENESS?

6.2.1 Government ICT policy

According to Porter (1990), government policies are able to influence each determinant of competitiveness either positively or negatively. The determinants of competitive advantage include factor conditions, demand conditions, related and supporting industries as well as firm strategy, structure and domestic rivalry (Porter, 1990). Furthermore, Porter (1990) argued that though the role of government is significant, it is however contributory as the best government policy interventions are doomed to fail if there are no underlying national circumstances that support competitive advantage (Porter, 1990).

The findings presented in Section 5.4.1.1 indicated that the first policy initiative of the Kenyan National ICT policy was to address the supply side of ICT by developing technology infrastructure through undersea fibre optic cables. This, according to Porter (1990) could be referred to as advanced factor conditions. The fibre optic cables were further spread throughout the country in order to promote connectedness amongst the Kenyan citizens. Costa Rica did not follow this particular policy initiative.

Well-developed infrastructure facilities are an indication of the prosperity of a country and provide incentives for FDI (Asiedu, 2006; Doh et al., 2009; Ranjan & Agrawal, 2011). Access to technology infrastructure lowered connectivity costs within Kenya and

reduced the barriers to entry into this industry and thereby attracted more local and international companies investments. This was clearly stated by a representative from a multinational company interviewed, Company B Representative: *“All the fibre cables that came in, made it easier to do business in the country.”* A similar view was shared by the media where it was stated that the move towards investing in fibre optic cables positioned Kenya on the global map making it a preferred destination for multinational companies seeking a foothold in Africa (Gashiri, 2014). Therefore, the findings confirmed this part of literature.

But Bollou and Ngwenyama (2008) concluded their study by stating that it is not sufficient to increase investment in ICT infrastructure, the stimulation of demand for ICT services is also crucial in increasing productivity. Kenya’s third policy initiative was able to address the concerns raised by these two researchers. Kenya focused on creating demand by promoting local content development. The impact of this policy initiative is discussed in detail in Research Question 2 below.

Heeks (2010) argued that initiatives towards infrastructure and access are just input to ICT development and can only be the starting point but real attention should be focused on output to ICT development. He identified such outputs as micro-level behavioural changes associated with technology use. Heeks (2010) went further to cite Heeks and Molla (2009) who listed new communication patterns as part of outputs. So, in the case of Kenya, the findings discussed in Section 5.3.1.3 indicated that one of the main challenges encountered during ICT policy implementation was the lack of supportive legislation as stated by Policy expert B: *“There may have not been certain policies or administrative regulations in place. For example, the use of emails as official means of communication.”*

6.2.2 Further comparative analysis

Costa Rica’s population is approximately 4.4 million as compared to 44 million in Kenya. Costa Rica recently recorded a GDP per capita of US \$ 8,740 in 2013 (Central Intelligence Agency, 2014a; 2014b; The World Bank Group, 2014 c). Costa Rica has only seven provinces while Kenya, on the other hand has established 47 counties. Based on the findings, the number of counties may pose a challenge to the ICT policy budgets, as Company B Representative stated that *“doesn’t make economic sense. The overhead of these county systems, local current etc., and the lack of skills in them, combined with that, is causing too big of a burden on the overall tax payer.”* This implies that local government structures may have a negative impact on the ICT policy

budget initiatives as it may be challenging to fairly distribute the funds in all the counties.

Unlike Kenya, Costa Rica abolished its army in 1948; it has peacefully celebrated 17 democratic elections and 17 changes to administration resulting in a ranking of 35 out of 148 countries in terms of business costs of terrorism (World Economic Forum, 2013). On the other hand, Kenya is characterised by sporadic incidents of terrorism and political election unrest, ranking at 140 out of 148 in terms of business costs of terrorism (World Economic Forum, 2013). The relative peacefulness of Costa Rica since the 1970s is unique in Central and Latin America. This has attracted many multinational companies to establish their Central America region headquarters within its borders (Villalobos and Monge-González, 2011).

A non-political, non-profit, autonomous organisation, CINDE, drove most of the ICT policy initiatives with the support of the Costa Rican government and this may have been a reason for the better implementation and execution as compared to the Kenyan case. In Kenya, the government was solely involved in ICT policy formulation and implementation. A Kenyan government department known as ICT Authority drove the policy initiatives. The findings discussed in Section 5.4.1.3, demonstrated that resistance and execution are some of the challenges to the implementation of the ICT policy in Kenya. Therefore, having an independent body to support and implement the government's vision is of critical importance.

CINDE was instrumental in targeting specific multinational companies, starting with Intel, which further reinforced the decision to invest into Costa Rica. A similar move was identified in Kenya, where the government strategically funded a specific multinational company and provided it with a reliable platform to test its products, as an incentive to establish a research institute in the country to foster innovation.

As a means to increase demand, tariffs on ICT products were eliminated in Costa Rica. This is similar to what Kenya had initially done though the findings indicated that VAT had recently been re-introduced resulting in a potential negative effect on ICT adoption. In their study, Ngwenyama and Morawczynski (2009) confirmed that in developing countries, ICT services are very price sensitive; any slight increase in price can push certain people out of the market and increase barriers to entry for newcomers. Respondents' statements on the re-introduction of VAT in Kenya seemed to concur with Ngwenyama and Morawczynski's (2009) findings.

It seemed evident that the Costa Rican academic sector lacked linkages with the private sector. This could be attributed to the tradition amongst academics to avoid such relationships (Ciravegna, 2012). Unless the academic sector adopts a friendlier attitude towards collaborating with the private sector, it seems that the private sector would continue to be reluctant to approach academic institutions for collaborations (Ciravegna, 2012). Again, the academic institutions in Costa Rica have failed to align academic curriculum with the industry requirements. This absence of collaboration between academic institutions and the private sector posed a concern for new and emergent clusters as discussed in the existing literature. As for Kenya, Section 5.4.2.6 of the findings indicated that strong collaborations existed between academic institutions and the industry. This may imply that the academic institutions are taking notice of the industry and are reacting by shaping university curriculums to suit industry needs. Company D Representative exemplifies this: *“We have something else which we call the University Alliance Program. We have four universities which we have gone into an alliance with, and [name withheld] becomes part of the curriculum for two years to the students”*. Therefore, this finding supports literature discussed by Porter (1990), who stated that universities located within an industry cluster are more likely to notice that particular industry, regard it as important and act accordingly.

6.3 RESEARCH QUESTION 2: HOW DO MULTINATIONAL COMPANIES IN ICT CONTRIBUTE TOWARDS CREATING COUNTRY COMPETITIVENESS?

6.3.1 Firm strategy

As presented in Section 5.4.2.1, the underlying strategy for the firms interviewed indicated that they are focussed on growing their services and businesses in markets that have had limited access to their products. Since it takes time to create product and consumer awareness, a long-term view on the investment strategy was necessary in order to succeed in this market. Company C Representative articulated this: *“I think generally when you are in a growth market; you have to think almost 10 years out.”* Therefore, three out of five companies mentioned the need to be able to invest ahead of the growth.

Part of the strategy for these companies was the ability to localise through:

- Product or services as mentioned by Company E representative: *“The second part is making it relevant, so making it relevant means localising the content”* and Policy expert C: *“We needed to encourage local content development.”*

- Local employees as clearly stated by Company B representative: "*I'm the only expat.*"

Past literature cites that the "way in which firms are managed and choose to compete is affected by national circumstances" (Porter, 1990, p.108). In this case, the drive towards local content development is considered a national circumstance. It should also be noted that unless technology is made adaptable to local context, it remains irrelevant. Furthermore, Porter (1998) mentioned that the style of how firms compete in a market is strongly driven by the quality of the business environment. In this case, firms are able to remain innovative in local content development as they have access to skilled, innovative local talent developed by academic institutions and technology hubs. In light of these findings, existing literature is supported.

6.3.2 FDI investment decision

The findings presented in Section 5.4.2.2 indicated that the growing market size is one of the main reasons for the multinational companies to choose Kenya as an investment destination. The growing market size is measured by GDP per capita (Ranjan & Agrawal, 2011). The GDP per capita of Kenya was recorded as US \$1522 in 2012, which was an increase of about 6% over the last two decades (The World Bank Group, 2014c). This increase in GDP per capita has resulted in an increased disposable income for consumers who are now able to afford more ICT products as evidenced by approximately 31.3 million cell phone subscribers in a 44.4 million population (The World Bank Group, 2014c). As the findings indicate, there ought to be a significant size of the market to attract MNCs.

Literature suggests that the increase in market size increases the prospects for the efficient utilisation of resources and economies of scale (Ang, 2008; Goh & Wong, 2011; Montero, 2008). Therefore, the results are in line with the findings of the literature (Anyanwu, 2012; Asiedu, 2006) that concluded that market size is a determinant of FDI inflows especially in SSA countries.

Linked to the decision for FDI investment in this market is the role of fiscal incentives in attracting multinational companies. The Costa Rican government provided incentives such as tax holidays and access to operate under the Free Trade Zone (FTZ) regime for companies wanting to invest in the ICT sector. Unfortunately, the findings on Kenya discussed in Section 5.4.1.4 indicated that there were no fiscal incentives extended to multinational companies to invest in Kenya yet multinational firms continued to invest

nonetheless. This is indicated by *Company C Representative*: “No multinational to the best of my knowledge gets incentives just to put up here, ultimately that’s a business decision.” Based on this, it may be inferred that fiscal incentives such as tax incentives do not play a role in a decision for FDI investment.

Nations are engaging different fiscal incentive policies as part of attracting FDI (Berger, 2008). But literature suggested that fiscal incentives might be linked to a decision to invest in a market (Cleeve, 2008). According to Cleeve (2008) fiscal incentives could be a significant determinant of FDI inflows into SSA if the motivation to invest is only efficiency seeking or strategic asset seeking. The findings for Kenya indicated that the investment motivations are more market seeking and proves true to Cleeve, who argued that in SSA countries, only a few countries that possess locational advantages attract efficiency seeking investments. Counted amongst those countries are South Africa and Mauritius but Kenya is not one of them. Therefore, the results prove similar to the literature as covered by Cleeve (2008).

6.3.3 Political instability

The findings presented in Section 5.4.2.3 indicated that there are three forms of political instability experienced by the multinational companies. They are terrorism, government transition and government instability due to the pending ICC case. Both impact the MNC operations in different levels. The findings highlighted the need to develop new relationships with new governments during times of change in political power. A change in government may result in changes to existing policies and requires that businesses must be able to apply certain strategies in order to manage this political risk.

On this specific type of risk, literature stated that foreign businesses ought to become mindful of incoming governments, as they may not share the same economic views as their predecessors. This may impact political stability and the business environment (Ekpenyong & Umoren, 2010). The fact that multinational companies are even thinking of developing new relationships with incoming government indicates their thoughtfulness towards this transition.

In terms of terrorism, the findings suggest that this form of political instability affects different industries in varying forms. The findings suggested that the tourism industry is affected directly as most of the terrorist attacks occur at the Coast of Kenya, which is heavily dominated by the hotel industry as compared to the ICT sector located in

Nairobi. Though, the impact affects the overall economy directly, it only affects the ICT industry indirectly.

Literature suggests that political instability is a strong deterrent of FDI especially in SSA countries (Asiedu, 2006). The findings failed to fully support literature on the notion that FDI is attracted by location advantages such as political stability (Asiedu, 2006; Wahid et al., 2009). Regardless of the fact that a country could be in political crisis, a need to communicate and access technology will still be there.

The attitude demonstrated by the respondents may infer that the benefit (market size, skilled labour) of operating within a market threatened by sporadic political instability in the form of terrorism far outweighs the risks. Furthermore, media also confirmed that the rising consumer spending power, vibrant private sector and Kenya's position as a hub for East Africa are very strong economic drivers that outweigh sporadic disruptions from terrorist attacks (Gachiri, 2014).

6.3.4 Local Talent

The findings presented in Section 5.4.2.4 suggested that the quality of talent in Kenya was generally good. This is supported by a ranking of 44th out of 148 countries on the Global Competitiveness Index report of 2013-2014 in terms of the quality of education and availability of research and training facilities (World Economic Forum, 2013). In as much as the quality of local talent is good, it is however small and suffers from high competition. As articulated by *Policy expert A*: "*But the industry itself is riddled by a lot of poaching*", the findings illustrated that the talent pool is small and that gives rise to competition for talent amongst the different players in the ICT cluster. This behaviour has a negative impact on the ease of doing business in this country as the operating costs are increasing.

The existence of competition for local talent confirms literature, which state that firms in a geographical proximity can result in congestion and vicious competition in input markets represented by real estate, capital and skilled labour (Guihang et al., 2014; Porter, 1990). Furthermore, literature stated that clusters vary in terms of the sophistication of tangible and intangible local resources (Meyer et al., 2011). In addition, Meyer et al. (2011) mentioned that in older and more established clusters resource pools are deeper and sophisticated than in newer clusters. The Kenyan ICT cluster is fairly new and as could be expected, the talent pool would be smaller

compared to older and more sophisticated clusters. Therefore, this finding confirms that of Meyer et al. (2011).

The findings also raised a concern for the shortage of talent at leadership and management levels. Three out of five respondents interviewed from the multinational companies were at senior management levels but they were also expatriates. This observation may imply a shortage of local talent at top management level within this ICT cluster. Lucas et al. (2009) also confirmed that as a cluster grows and evolves, firms expand their market reach and that results in a greater need for a wider range of skills especially management and marketing skills, which are necessary to improve the firm's capabilities. This further impacts the ability of firms to grow within a cluster.

6.3.5 Knowledge transfer within the cluster

The results presented in Section 5.4.3.5 and 5.4.3.6 indicated that the multinational companies use various forms to contribute to the capacity building of the ICT sector. These include:

- Scouting for talent
- Internship programmes
- Free training offered over a time period
- Influence into the university curriculum to suit the industry
- Technology hubs

Existing collaborations were seen to be a contributing factor towards capacity building. Collaborations with the government, retailers, vendors, technology hubs, distributors and academic institutions were seen as a means for knowledge transfer. Knowledge transfer also exists in the form of high skilled labour mobility due to competition for talent within firms. The findings support the literature, which concluded that since clustering promotes information flows between people, high degree of labour circulation improve firm performance in the long run (Eriksson & Lindgren, 2008).

Literature also stated that clusters offer an opportunity to collaborate. Through collaboration, firms are able to become more strategic in terms of resource complementarity, technological know-how, capability boost and innovativeness (Niu et al., 2008). As Company A Representative stated, *"We have partnered with Strathmore, which is another university where together we do research and development of products which are market adaptable to the local needs"*. This implies that through

such collaborations, the industry is able to come up with innovative market adaptable products. Collaboration between universities and the industry serve as a conduit for knowledge transfer (Bramwell & Wolfe, 2008; Nishimura & Okamuro, 2011). This finding is supportive of the literature in Lucas et al. (2009), which concluded that close collaboration between academic institutions and the industry fostered the transfer of innovative research resulting in successful commercial products.

Furthermore, the limitations identified in literature indicated that the cluster theory fails to specify exactly how the government can foster inter-linkages within a cluster (Motomoya, 2008). The findings of this research provided an example of how a government can encourage collaborations between multinational and local companies to jointly tender for work and eventually work together, thus fostering knowledge transfer. Policy expert C confirms this: *“But we would say, for this tender, it’s highly encouraged that international companies works with local companies.”* In this instance, the findings add to the existing literature as it presents a way in which a government can encourage inter-linkages within a cluster.

6.4 RESEARCH QUESTION 3: WHAT IS CONSIDERED AS THE NEXT PHASE OF GROWTH FOR SUCH A MARKET WITHIN AN AFRICAN CONTEXT?

6.4.1 Challenges to ICT adoption

The findings presented in Section 5.4.3.1 indicated that sometimes change in policy could be detrimental to ICT adoption. This is in light of the fact that the re-introduction of VAT on ICT products has resulted in a negative impact on overall adoption of ICT. VAT on ICT products has resulted in increased product costs for consumers, thus increasing the barriers to entry. The re-introduction of VAT has also resulted in the proliferation of counterfeit goods, which pose a threat to genuine products in the market as well as firm strategy for this market. Company B Representative: *“The other problem, is because the VAT is high, it opens up the grey market.”* The rise of the counterfeits goods through the grey market is posing a financial threat to multinational companies. This is due to the fact that figures for ICT adoption in Kenya tend to be presented incorrectly at the international platform. As the findings indicated, the falling figures are a concern to multinational companies who may reconsider their investments. The findings seemed to support Du, Lu, and Tao (2012) who confirmed that in China, the rising number of counterfeiting and piracy has posed a tremendous threat to foreign business interests.

The findings also indicated that the rate of adoption of products challenged ICT adoption. This is in light of the fact that most of the technologies used in Africa are not home grown. This poses a challenge in adaptability of the product to local context and its adoption.

The findings also presented population divide as another challenge to ICT adoption. It was highlighted that 75% of the Kenyan population is below 35. This is a young population, which uses social media to communicate. At the same time, the country leaders are way above 50 years of age and are locked in the old school mentality; they are not as technologically savvy and seem to fear change. The findings indicated a need for mindset change, especially at government level. Policy expert C even jokingly said *“We need to get everybody above 40 and lock them in prison and begin to change things.”* Unfortunately, this is not just a Kenyan problem but also a challenge to many African countries. Based on these findings, it may be inferred that there exists technological disparities within this country.

6.4.2 Next phase of growth

Before the next phase of growth is discussed, it was crucial to understand where spillover effects had occurred due to developments in the ICT sector. The findings discussed in Section 5.4.2.2 indicated that the country has experienced spillovers in specific areas such as the agricultural sector, business sector and health industry. Policy expert C articulated this by saying: *“In Kenya it’s affecting everywhere.”*

The development of an enabling environment has attracted multinationals into this industry. This has resulted in knowledge transfer through collaboration and capacity building initiatives, which in turn have enabled individuals to start their own companies, and creating an ecosystem of entrepreneurship. Individuals are designing software application to solve typical African problems. Company E Representative indicated that through collaborations with all the techno hubs, they give access to open standards and platforms for students and tech entrepreneurs to start developing innovative solutions.

Though there seemed to be differing views on the next phase of growth for such an economy, the findings indicated that spillover effects towards the agricultural sector assisted farmers in increasing their yield and fighting unfair trade. According to the World Bank Group (2014), the agricultural sector makes about 29% of the Kenyan

economy and any increase in yield may further result in improved exports of agricultural produce to other markets.

With regards to funding and taking a lead in the policy initiatives, the findings in Section 5.4.1.2, highlighted that the government's strategy going forward should be to take a back seat and allow the private sector to take the lead especially as it has been heavily involved in the creation of factor conditions. These findings seemed to agree with literature where Porter (1990) stated that as nations aspire to move further in the competitiveness development stages, firms must increasingly become the prime movers.

6.5 CONCLUSION

Reflecting back on Costa Rica, the findings demonstrated areas where Kenya is adopting similar initiatives to build its competitiveness through ICT. Similar to Costa Rica, investing in human capital is crucial in promoting competitiveness within a nation. Unlike Kenya, the implementation of the ICT plan in Costa Rica was conducted through the help of an independent non-political agency. This organisation was responsible for supporting the government in the execution of the ICT plan. Some of the challenges that Kenya experienced during the formulation and implementation stages were execution related. This may imply that it may be necessary to adopt a similar style as Costa Rica.

The findings also indicated that when the motivation to invest is market seeking, the size of the market and growth play an even bigger role in attracting multinationals to invest in this industry as compared to the provision of fiscal incentives. The findings also confirmed that sometimes multinationals do invest in politically unstable environments (Holburn & Zelner, 2010). In this case, the findings reported that political instability affects different industries at varying degrees. In this case, it was realised that the effect of political instability in the tourism sector would be more than that of the ICT industry. As expected, in a new and emergent cluster, even in the case of Kenya, the pool of local talent is small and that has given rise to fierce competition amongst the various firms.

The findings indicated that it is not sufficient to just implement policy initiatives that are only focused on supply of infrastructure but the focus must also be put on how to create demand for ICT. Collaboration within different players in the ICT cluster is vital in promoting knowledge transfer and capacity building. The presence of academic

institutions is playing a significant role on the success of this cluster. This significance is most felt when there are strong collaborations between the industry and the academic institutions.

The findings also demonstrated that the growth in the ICT sector has resulted in spillovers to other industries and the formation of new businesses as well as entrepreneurs who are bringing innovative ideas that contribute to Kenya as an exporter of innovative solutions such as M-Pesa, which is a mobile money payment solution designed for the low income group. The findings also indicated that it is now expected that the firms will take a more active role in taking this cluster to its next level of competitive development.

7 CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.1 INTRODUCTION

The previous chapter discussed the findings of this research report in light of existing literature on national competitiveness, cluster theory as well as FDI. The discussion was mainly focused on how national ICT policy influenced the determinants of competitiveness to create Kenya's comparative advantage. The discussion further assessed factors that contributed towards attracting foreign multinational companies to establish operations in Kenya and contribute towards the competitiveness of the country. Lastly, the discussion gave some insights on challenges to ICT adoption and the spillover of the ICT industry growth to other industries.

This chapter reviews the background of the research problem and the underlying objectives of this research. The main findings are also summarised and a model giving a consolidated framework on how national competitiveness can be leveraged through ICT is provided. Based on the summary of the main findings, recommendations to different stakeholders are highlighted. Furthermore, the limitations of this research are discussed with suggestions for future research.

7.2 RESEARCH BACKGROUND AND OBJECTIVES

The recent developments on the impact of ICT towards economic growth and national competitiveness have created an interest amongst developing countries to adopt ICT policies to improve their competitive advantages.

It is for this reason that this research sought to gain an understanding on how ICT has attracted foreign direct investments (FDI) to create competitiveness at national level. Kenya's ICT industry was used as a case study. The study also illustrated how Costa Rica was able to successfully develop its ICT cluster.

Therefore, the research objectives were:

- To understand the role of government ICT policy in creating a competitive ICT cluster that attracts foreign investors who would assist in increasing the country's competitiveness;
- To gain an understanding on how foreign multinational companies contribute towards national competitive; and

- To explore where the next phase of growth would be for an African country that has promoted ICT for economic growth.

7.3 RESEARCH FINDINGS

Research Question 1: How did the Kenyan Government ICT policy contribute towards creating national competitiveness?

The findings demonstrated that the national ICT policy influenced the determinants of competitive advantage in various forms, which are outlined in this section. Policy initiatives were implemented in order to deal with the demand and the supply side of ICT adoption. The supply side focused on installation of technology infrastructure distributed countrywide in order to promote connectedness. In this case, the emphasis on the demand side policy initiatives included promotion of local content development, innovation, elimination of VAT and tax reductions helped promote local market demand.

The liberalisation and provision of necessary infrastructure have had a positive role in attracting multinational companies and created spin-offs of local firms into the industry. The liberalisation of the market has enabled more players within the sector. Therefore, there exists intense competition for top talent amongst rivals. This is an expected behaviour when firms are located within a geographic proximity to each other. The ICT industry requires a specific skill to develop and grow. The focus on human capital policy initiatives is useful in improving the quality of local talent necessary for the cluster.

African markets are very price sensitive; any changes to policy could have negative impacts on the general adoption of ICT. In this case, the re-introduction of VAT on ICT products is creating a false perception of the Kenyan ICT industry with the potential to adversely impact FDI inflows.

As demonstrated by Costa Rica, a non-political and independent agency supporting the government to execute the national ICT plan is crucial to the successful implementation of the plan. The absence of policies supporting the national ICT policy proved to be one of the key challenges.

Research Question 2: How do multinational companies in ICT contribute towards creating country competitiveness in Kenya?

In serving the local market, multinational companies are adopting a localisation strategy to deal with the local market needs. This is done in terms of employing Kenyan people who are familiar with the market and its needs. Localisation is also achieved through developing local content and as well as participating in research and development of products adaptable to local market needs.

Depending on the motivation to invest, fiscal incentives do not necessarily play a role in attracting multinational companies into a market. These incentives could be significant determinants of FDI inflows into SSA if the motivation to invest is either efficiency or strategic asset seeking.

Although political instability generally deters FDI inflows, the deterrence seems to be industry dependent affecting different industries at varying degrees. The findings confirmed that FDI does go to politically unstable environments. It was also apparent that multinational companies learn to implement ways to handle political risk. In this case, developing new relationships with incoming governments was key.

Strong collaborations between the industry and academic institutions is important for the successful development of this cluster. Geographic proximity between the industry and the academic institutions in this cluster plays a crucial role in promoting technology transfer through collaborations, Academic institutions provide product research and development capabilities while the industry provides a platform for testing innovations.

Research Question 3: What is considered as the next phase of growth for such a market within an African context?

The findings indicated that unless technology is adaptable, it fails to make sense to a local person. In adopting ICT for economic growth, it is vital to ensure that technology provided resonates with the local citizens, as imported technology is often unsuitable to local conditions. Therefore, the growth of the ICT sector in Kenya has led to the emergence of an entrepreneurial ecosystem of individuals who develop innovative solutions suitable for addressing typical African problems.

Some of the challenges that hinder growth into the next stage of economic development for an African country adopting ICT to grow its economy include, fear of

change, old school mentality and a population gap as countries such as Kenya have about 75% of the population below 35 years old. The young population is characterised by being technologically inclined through use of various social media platforms. There seems to be a disconnect between the leaders and the people they lead.

The findings also indicated that there was still a lot to be done before Kenya could realise the next stage of growth within this particular industry. Resistance to adoption has played a key role in delaying the overall process.

A summary of the findings of the report is presented in a model in Figure 4, which illustrates how national competitiveness can be influenced through use of the ICT sector in an African country. The model was created by taking into consideration the insights gathered from the research findings pertaining to key success elements that contributed towards Costa Rica's ICT cluster. It also included areas of concern as raised in previous literature on Costa Rica. The elements crucial to Kenya's success are also included. Overall, the model pulls together insights on national competitiveness, FDI and cluster theory.

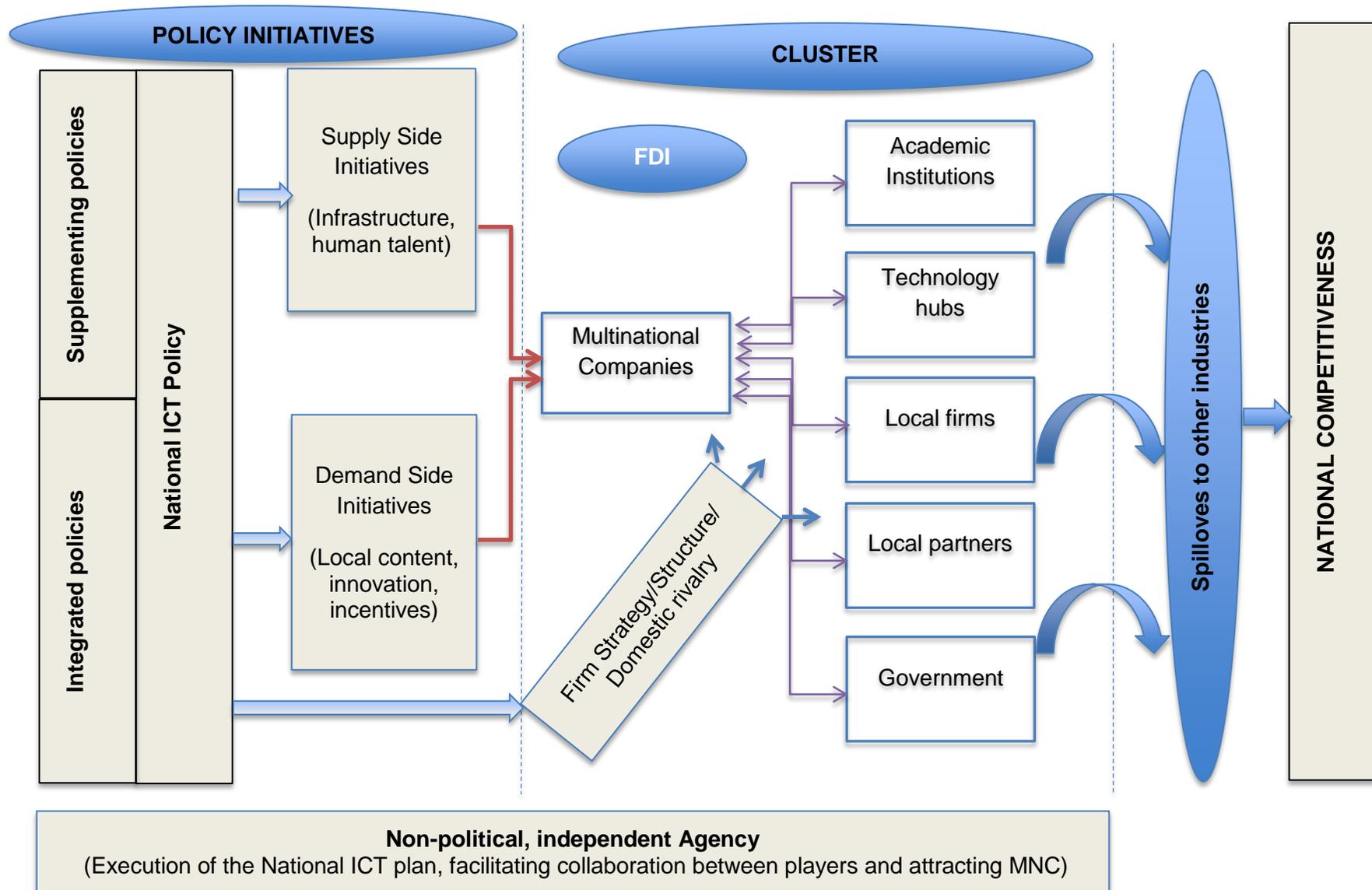
Firstly, the model proposes that three areas should be the foundation of the national ICT policy in an African context. These are:

- Supplementing policies, which are there to support the development of the national ICT policy. For instance, a policy on the official use of email or policies that deal with aspects pertaining to indigenous innovations;
- Integrated policies able to draw from all the necessary sectors forming part of the overall national ICT policy. This implies that the national ICT policy cannot be formulated in isolation.
- An independent, non-political organisation or agency that operates in the same way as CINDE in Costa Rica. Its responsibility would be to support the government and facilitate the execution of the plan, work on initiatives to attract FDI and foster collaborations between players in the ICT cluster. This ensures that the challenge of the absence of accountability and execution from government officials is eliminated.

Secondly, as in the case of Kenya, policy should look at the demand and the supply side initiatives, which are crucial in improving determinants of competitive advantage of nations thereby attracting FDI for cluster development (Porter, 1990). The model proposes the extension of fiscal incentives to the MNCs as this lowers their operating

costs. As the findings revealed, lack of fiscal incentives for MNCs limits their capacity to hire more local labour, which would decrease the unemployment rate. Through an independent, non-political agency, collaborations should be encouraged between the MNCs and the rest of the cluster players. This ensures knowledge transfer, which has positive spinoffs in the formation of new businesses. One of the most crucial collaborations and inter-linkages is between the MNCs and the academic institutions, which was lacking in Costa Rica. Thirdly, once knowledge transfer is established, local businesses, entrepreneurs and innovators are able to create new businesses, which have an impact on other industries, thereby creating the overall national competitiveness.

Figure 4: Creating national competitiveness through the ICT Policy



7.4 RECOMMENDATIONS

7.4.1 Recommendations to policy makers

It is recommended that government should consider taking an active role in enforcing collaboration between the multinational companies and local players in the cluster. Costa Rica provided an ideal example where the government did not play an active role in fostering inter-linkages and collaborations between organisations within the cluster. In Costa Rica, academic institutions failed to realise the role that the industry could play in their advancement within the cluster and a similar view is shared by the industry. This ought to be avoided, as the link between the two sectors is vital to developing local talent needed by the cluster. It would be more ideal if this role was played by an independent organisation representing and supporting the government.

Formulating national ICT policies in isolation could be detrimental to the implementation process. Therefore, it is recommended that ICT policies should take an integrated form, by ensuring that other sectors and government departments are consulted and relevant input is adopted. Supporting policies geared to issues such as cyber security for the government or incentives that deal with encouraging national talent located abroad. The return of such talent may assist in reversing the brain drain into brain circulation within the cluster (Guimón,2009).

Governments must take cognisance of the impact of the old school mentality and be willing to embrace change. Willingness to change, the capacity to change, and the opportunity to change should be considered not just at institution level but at personal level as well. It should become a shared value (Patanakul & Pinto, 2014). In adopting ICT as an enabler of economic growth, it is vital that a changed mindset is adopted. A mindset that is able to understand the technology gap between government leaders and the population they lead. The portion of a young population, which is technologically inclined, is significant in Kenya. The results demonstrated the fact that there is a serious disconnect and resistance to change in Kenya.

It is recommended that in times of transition between governments, the incoming government should take careful consideration in implementing amendments to existing policy, which might have been implemented by the previous government. This is in light of the fact that, such policy amendments may be counterproductive to the initial objectives of the policy. As in the case of Kenya, the benefits of removing VAT on ICT goods far outweigh that of re-introduction of VAT on ICT products.

7.4.2 Recommendations for multinational companies

One of the key recommendations to multinational companies is to take cognisance of the role that academic institutions play towards the development of the industry. Academic institutions provide a necessary platform for research and development especially when the focus is to provide the local market with products that are adaptable to local needs. Secondly, investing in a growing market calls for companies to pursue these markets with a long-term perspective in mind. As the return on the investment may only be realised at a later stage, once the necessary product awareness and necessary groundwork is achieved.

7.5 RECOMMENDATIONS FOR FUTURE RESEARCH

In order to improve the transferability of this research, it would be ideal to conduct a similar study, which will not just look at the ICT industry but also look at multinational companies in other sectors.

An industry cluster consists of a group of firms, suppliers of specialised inputs, downstream industries, producers of complementary products and other entities such as academic institutions, think tanks and standard setting agencies (Porter, 1998). This research was limited to multinational companies and policy makers. A future research study could take a similar form but investigate how local firms and academic institutions are contributing towards building national competitiveness through clusters.

Another research could look at the impact of collaboration and inter-linkages that promote technology transfer from the perspective of the academic institutions as well as local firms.

It became evident that the growth of the ICT sector had resulted in spillovers into other industries the scale of which could not be investigated further as it was beyond the scope of this research. A future research could attempt to gain more insights on this aspect.

7.6 CONCLUSION

But just like firms, countries compete for scarce capital resources such as FDI. Governments feel the pressure to compete with other countries for foreign investments by using specific policy interventions, which ultimately attracts multinational companies

to locate their activities in foreign countries (Ketels, 2006; Porter, 1998). It is through these policy interventions that the determinants of national competitive advantage are influenced to create an enabling environment for businesses to thrive. Porter (1990) concluded that government policy is bound to fail if it is the only source of national competitive advantage without the underlying determinants of national advantage.

So, in attempting to replicate the successes of Silicon Valley or Costa Rican ICT clusters, governments should be aware of the fact that clusters are unique, vary and have different challenges. The aim should rather be to focus on identifying location-based assets existing within the cluster and establish initiatives to harness and mobilise such assets (Lucas, et al., 2009) including local talent. It is crucial that initiatives should be focused on continuously trying to improve local talent in order to be able to further upgrade and innovate within industries. Therefore, this calls for a balance of a mix of government policies. Whether or not African countries can benefit from channelling resources towards developing the ICT infrastructure and clusters, as an enabler to economic growth remains a very interesting aspect in research.

8 REFERENCE LIST

- Abadie, A., Diamond, A., & Hainmueller, J. (2010). Synthetic control methods for comparative case studies : Estimating the effect of California's tobacco control program. *Journal of the American Statistical Association*, 105(490), 493–505. doi:10.1198/jasa.2009.ap08746
- Ang, J. B. (2008). Determinants of foreign direct investment in Malaysia. *Journal of Policy Modelling*, 30(1), 185–189. doi:10.1016/j.jpolmod.2007.06.014
- Anyanwu, J. C. (2012). Why does foreign direct investment go where it goes ?: New evidence from African countries. *Annals of Economics and Finance*, 13(2), 425–462.
- Asiedu, E. (2006). Foreign direct investment in Africa : The role of natural resources, market size, government policy, institutions and political instability. *The Worlds Economy*, 29(1), 63-77.
- Balkyte, A., & Tvaronavičiene, M. (2010). Perception of competitiveness in the context of sustainable development: Facets of “sustainable competitiveness.” *Journal of Business Economics and Management*, 11(2), 341–365. doi:10.3846/jbem.2010.17
- Baxter, P., & Jack, S. (2008). Qualitative case study methodology : Study design and implementation for novice researchers. *The Qualitative Report*, 13(4), 544–559. Retrieved from <http://www.nova.edu/ssss/QR/QR13-4/baxter.pdf>
- Berger, T. (2008). *Concepts on national competitiveness*. *Journal of International Business and Economy*, 9(1), 3–17.

- Boja, C. (2011). Clusters models, factors and characteristics. *International Journal of Economic Practices and Theories*, 1(1), 34-43.
- Bollou, F., & Ngwenyama, O. (2008). Are ICT investments paying off in Africa? An analysis of total factor productivity in six West African countries from 1995 to 2002. *Information Technology for Development*, 14(4), 294–307. doi:10.1002/itdj
- Bramwell, A., & Wolfe, D.A. (2008). Universities and regional development: The entrepreneurial University of Waterloo. *Research Policy*, 37(8), 1175 - 1187. doi:10.1016/j.respol.2008.04.016
- Brooker, D. (2013). From “wannabe” Silicon Valley to global back office? Examining the socio-spatial consequences of technopole planning practices in Malaysia. *Asia Pacific Viewpoint*, 54(1), 1–14. doi:10.1111/apv.12001
- Carral, R., & Capote, A. (2010). Knowledge management, ITC and spillover effects in Mexico. *Journal of Strategic Innovation and Sustainability*, 6(4), 109-123.
- Cellini, R., & Soci, A. (2002). Pop competitiveness. *PNL Quarterly Review*, 55(220), 71-101.
- Ciravegna, L. (2011). FDI, social ties and technological learning in new Silicon Valley clones. Evidence from the Costa Rican ICT cluster. *Journal of Development Studies*, 47(8), 1178-1198. doi:10.1080/00220388.2010.547935
- Ciravegna, L. (2012). Linkages in the new ICT clusters of Latin America: Evidence from Costa Rica. *Journal of Latin American Studies*, 44(3), 553-580. doi:10.1017/S0022216X12000417
- Cleeve, E. (2008). How effective are fiscal incentives to attract FDI to Sub-Saharan Africa? *The Journal of Developing Areas*, 42(1), 135–153.

- Cooper, D. R., & Schindler, P. S. (2014). *Business Research Methods* (12th ed.). New York, NY: McGraw-Hill/Irwin.
- Dimian, G. C., & Danciu, A. (2011). National and regional competitiveness in the crisis context: Successful examples. *Theoretical and Applied Economics*, 18 (11), 67–78.
- Doh, J. P., Bunyaratavej, K., & Hahn, E. D. (2009). Separable but not equal : The location determinants of discrete services activities offshoring activities. *Journal of International Business Studies*, 40(6), 926–943. doi:10.1057/jibs.2008.89
- Du, J., Lu, Y., & Tao, Z. (2012). Institutions and FDI location choice: The role of cultural distances. *Journal of Asian Economics*, 23(3), 210–223. doi:10.1016/j.asieco.2010.11.008
- Dunning, J.H. (1992). The competitive advantage of countries and the activities of transnational corporations. *Transnational Corporations*, 1(1), 135-168.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532–550.
- Ekpenyong, D. B. & Umoren, N. J. (2010). Political risk and the business environment: An examination of core challenges. *Journal of Financial Management and Analysis*, 23(1), 27-32.
- Eriksson, R., & Lindgren, U. (2008). Localized mobility clusters: Impacts of labour market externalities on firm performance. *Journal of Economic Geography*, 1-21. doi:10.1093/jeg/lbn025
- Fu, X., Pietrobelli, C., & Soete, L. (2011). The role of foreign technology and indigenous innovation in the emerging economies: Technological change and

catching-up. *World Development*, 39(7), 1204-1212. doi:10.1016/j.worlddev.2010.05.009

Gachiri, J. (2014, June 18). Kenya ranked second in Africa as investment hub for global firms. *Business Daily*. Retrieved from <http://www.businessdailyafrica.com/Kenya-ranked-second-in-Africa-as-investment-hub-for-global-firms/-/539552/2353266/-/118e6hiz/-/index.html>

Goh, S.K., & Wong, K.N. (2011). Malaysia's outward FDI: The effects of market size and government policy. *Journal of Policy Modelling*, 33(3), 497-510. doi:10.1016/j.jpolmod.2010.12.008

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59 – 82. doi:10.1177/1525822X05279903

Guihang, G., Qian, L., & Guangfan, L. (2014). Effects of clusters on China's e-Commerce: Evidence from the Junpu Taobao village. *International Journal of Business and Management*, 9(6), 226–233. doi:10.5539/ijbm.v9n6p180

Guimón, J. (2009). Government strategies to attract R&D-intensive FDI. *The Journal of Technology Transfer*, 34(4), 364–379. doi:10.1007/s10961-008-9091-1

Harrison, R. T., Cooper, S. Y., & Mason, C. M. (2004). Entrepreneurial activity and the dynamics of technology-based cluster development: The case of Ottawa. *Urban Studies*, 41(5-6), 1045-1070. doi: 10.1080/00420980410001675841

Heeks, R. (2010). Policy arena: Do information and communication technologies (ICTs) contribute to development? *Journal of International Development*, 22, 625–640. doi:10.1002/jid.1716

- Holburn, G. L., & Zelner, B. A. (2010). Political capabilities, policy risk, and international investment strategy: Evidence from the global electric power generation industry. *Strategic Management Journal*, 31(12), 1290-1315. doi: 10.1002/smj.860
- Huggins, R. (2008). The evolution of knowledge clusters: Progress and policy. *Economic Development Quarterly*, 22(4), 277-289. doi:10.1177/0891242408323196
- Iammarino, S., & McCann, P. (2006). The structure and evolution of industrial clusters: transactions, technology and knowledge spillovers. *Research Policy*, 35(7), 1018–1036. doi:10.1016/j.respol.2006.05.004
- ITU (2014). The World in 2014: ICT facts and figures. *International Telecommunication Union*. Retrieved from <http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2014-e.pdf>
- Jensen, N. (2008). Political risk, democratic institutions, and foreign direct investment. *The Journal of Politics*, 70(4), 1040–1052. doi:10.1017/S0022381608081048
- Kamel, S., Rateb, D., & El-Tawil, M. (2009). The impact of ICT investments on economic development in Egypt. *The Electronic Journal on Information Systems in Developing Countries*, 36(1), 1–21.
- Kao, C., Wu, W.Y., Hsieh, W.J., Wang, T.Y., Lin, C., & Chen, L.H. (2008). Measuring the national competitiveness of Southeast Asian countries. *European Journal of Operational Research*, 187(2), 613–628. doi:10.1016/j.ejor.2007.03.029
- Ketels, C. H. (2006). Michael Porter's competitiveness framework - Recent learnings and new research priorities. *Journal of Industry, Competition and Trade*, 6(2), 115-136. doi: 10.1007/s10842-006-9474-7

- Ketels, C.H., & Memedovic, O. (2008). From clusters to cluster-based economic development. *International Journal of Technological Learning, Innovation and Development*, 1(3), 375 - 392.
- Kitson, M., Martin, R., & Tyler, P. (2004). Regional competitiveness: An elusive yet key concept? *Regional Studies*, 38(9), 991-999. doi:10.1080/0034340042000320816
- Kodakanchi, V., Kuofie, M. H., Abuelyaman, E., & Qaddour, J. (2006). An economic development model for IT in developing countries. *The Electronic Journal of Information Systems in Developing Countries*, 28.
- Kohler, W. (2006). The “Lisbon Goal” of the EU: Rhetoric or substance? *Journal of Industry, Competition and Trade*, 6(2), 85–113. doi:10.1007/s10842-006-9473-8
- Krugman, P. (1994). Competiveness a dangerous obsession. *Foreign Affairs*,73(28).
- Kukalis, S. (2009). Agglomeration economies and firm performance: The Case of Industry Clusters. *Journal of Management*, 36(2), 453–481.
doi:10.1177/0149206308329964
- Larson, J.F., & Park, J. (2014). From developmental to network state: Governmnet restructuring and ICT-led innovation in Korea. *Telecommunication Policy*,38(4), 344-359. doi:10.1016/j.telpol.2013.10.001
- Lorenzen, M., & Mudambi, R. (2012). Clusters, connectivity and catch-up: Bollywood and Bangalore in the global economy. *Journal of Economic Geography*, 3(34), 1-34. doi:10.1093/jeg/lbs017
- Lucas, M., Sands, A., & Wolfe, D. A. (2009). Regional clusters in a global industry: ICT clusters in Canada. *European Planning Studies*, 17(2), 189–209.
doi:10.1080/09654310802553415

- Malmberg, A., Sölvell, Ö., & Zander, I. (1996). Spatial clustering, local accumulation of knowledge and firm competitiveness. *Geografiska Annaler. Series B, Human Geography*, 78(2), 85–97.
- Martin, R., & Sunley, P. (2003). Deconstructing clusters: Chaotic concept or policy panacea? *Journal of Economic Geography*, 3(1), 5–35.
- Maskell, P., & Malmberg, A. (2007). Myopia, knowledge development and cluster evolution. *Journal of Economic Geography*, 7(5), 603–618.
doi:10.1093/jeg/lbm020
- Matinde, V. (2014, April 3). Kenya's improving tech skills attract top tech labs. IT Web Africa. Retrieved from <http://www.itwebafrica.com/ict-and-governance/256-kenya/232653-kenyas-improving-tech-skills-attract-top-tech-labs>
- McKinsey Global Institute. (2013). *Lions go digital: The internet's transformative potential in Africa* (pp. 1–124). Retrieved from http://www.mckinsey.com/insights/high_tech_telecoms_internet/lions_go_digital_the_internets_transformative_potential_in_africa
- Meyer, K.E., Mudambi, R., & Narula, R. (2011). Multinational enterprises and local contexts: The opportunities and challenges of multiple embeddedness. *Journal of Management Studies*, 48(2), 235–252. doi:10.1111/j.1467-6486.2010.00968.x
- Mina, W. (2007). The location determinants of FDI in the GCC countries. *Journal of Multinational Financial Management*, 17(4), 336–348.
doi:10.1016/j.mulfin.2007.02.002
- Mirchandani, D., & Condo, A. (2005). Doing business in Costa Rica. *Thunderbird International Business Review*, 47(3), 335–363. doi:10.1002/tie.20055

- MolICT (2014). A brief on the Konza Techno City. *Ministry of Information, Communications and Technology*. Retrieved from <http://www.information.go.ke/?p=773>
- Monge-González, R., & Hewitt, J. (2010). *Innovation , R & D and productivity in the Costa Rican ICT sector : A case study* (No. IDB-WP-189). Washington DC: Inter-American Development Bank. Retrieved from <http://hdl.handle.net/10419/89144>
- Monge-González, R., Rivera, L., & Rosales-Tijerino, J. (2010). Productive development policies in Costa Rica: Market failures, government failures, and policy outcomes (No. IDB-WP-157). Washington DC: Inter-American Development Bank. Retrieved from http://www.iadb.org/en/research-and-data/publication-details,3169.html?pub_id=idb-wp-157
- Montero, A. P., (2008). Macroeconomic deeds, not reform words: the determinants of foreign direct investment in Latin America. *Latin American Research Review*, 43(1), 55-83.
- Moon, H. C., Rugman, A. M., & Verbeke, A. (1998). A generalized double diamond approach to the global competitiveness of Korea and Singapore. *International Business Review*, 7(2), 135–150.
- Morris, R., & Aziz, A. (2011). Ease of doing business and FDI inflow to Sub-Saharan Africa and Asian countries. *Cross Cultural Management: An International Journal*, 18(4), 400–411. doi:10.1108/13527601111179483
- Motoyama, Y. (2008). What was new about the cluster theory?: What could it answer and what could it not answer? *Economic Development Quarterly*, 22(4), 353–363. doi:10.1177/0891242408324373

- Nelson, R. C. (2005). Competing for foreign direct investment: Efforts to promote nontraditional FDI in Costa Rica, Brazil, and Chile. *Comparative International Development*, 40(3), 3–28.
- Ngwenyama, O., & Morawczynski, O. (2009). Factors affecting ICT expansion in emerging economies: An analysis of ICT infrastructure expansion in five Latin American countries. *Information Technology for Development*, 15(4), 237-258. doi: 10.1002/itdj.20128
- Nishimura, J., & Okamuro, H. (2011). R & D productivity and the organization of cluster policy: An empirical evaluation of the industrial cluster in Japan. *Journal of Technology Transfer*, 36(2), 117- 144. doi:10.1007/s10961-009-9148-9
- Niu, K., Miles, G., & Lee, C. (2008). Strategic development of network clusters. A study of high technology regional. *International Business Journal*, 18(3), 176–191. doi:10.1108/10595420810905966
- OECD. (2012). Attracting knowledge-intensive FDI to Costa Rica: Challenges and policy options. *OECD*. Retrieved from <http://www.oecd.org/dev/americas/E-book%20FDI%20to%20Costa%20Rica.pdf>
- Okafor, G. (2015). Locational determinants of US outward FDI into Sub-Saharan Africa. *The Journal of Developing Areas*, 49(1), 187-205.
- Okuttah, M. (2013, February 6). IBM chiefs visit Nairobi to lay strategy. *Business Daily Africa*. Retrieved from <http://www.businessdailyafrica.com/Corporate-News/IBM-chiefs-visit-Nairobi-to-lay-strategy/-/539550/1686920/-/nuklItt/-/index.html>
- Omwenga, G. (2012, October 18). Multinationals now turning Nairobi into hub for Africa. *Emerging Frontiers*. Retrieved from

<http://www.emergingfrontiers.com/article/9587-multinationals-now-turning-nairobi-into-hub-for-africa>

Önsel, Ş., Ülengin, F., Ulusoy, G., Aktaş, E., Kabak, Ö., & Topcu, Y. İ. (2008). A new perspective on the competitiveness of nations. *Socio-Economic Planning Sciences*, 42(4), 221–246. doi:10.1016/j.seps.2007.11.001

Ozcan, S., & Islam, N. (2013). Collaborative networks and technology clusters - The case of nanowire. *Technological Forecasting & Social Change*, 82, 115-131. doi:10.1016/j.techfore.2013.08.008

Patanakul, P., & Pinto, J.K. (2014). Examining the roles of government policy on innovation. *Journal of High Technology Management Research*, 25(2), 97-107. doi:10.1016/j.hitech.2014.07.003

Porter, M. E. (1990). *The competitive advantage of nations* (First.). New York, NY: The Free Press.

Porter, M. E. (1998). The Adam Smith address location, clusters, and the “ new ” microeconomics of competition. *Business Economics*, 33(1), 7–13.

Porter, M. E. (2000). Location, competition, and economic development: Local clusters in a global economy. *Economic Development Quarterly*, 14(1), 15–34. doi:10.1177/089124240001400105

Ranjan, V., & Agrawal, G. (2011). FDI inflow determinants in BRIC countries: A panel data analysis. *International Business Research*, 4(4), 255–264. doi:10.5539/ibr.v4n4p255

Rohman, I. K. (2012). Will telecommunications development improve the quality of life in African countries? *Info*, 14(4), 36–51. doi:10.1108/14636691211240879

- Rugman, A.M., & D'Cruz, J.R. (1993). The "Double Diamond" model of international competitiveness: The Canadian experience. *MIR: Management International Review*,3(2),17-39.
- Saunders, M., & Lewis, P. (2012). *Doing research in business and management: An essential guide to planning your project*. England: Pearson Education Limited.
- Tan, J. (2006). Growth of industry clusters and innovation: Lessons from Beijing Zhongguancun Science Park. *Journal of Business Venturing*, 21(6), 827–850. doi:10.1016/j.jbusvent.2005.06.006
- The World Bank Group. (2009). *Costa Rica competitiveness diagnostic and recommendations*. Retrieved from <https://openknowledge.worldbank.org/handle/10986/3092>
- The World Bank Group. (2014a). Costa Rica. Retrieved from <https://data.worldbank.org/country/costa-rica>
- The World Bank Group. (2014b). Kenya. Retrieved from <https://www.worldbank.org/en/country/kenya>
- The World Bank Group. (2014c). Executive summary. Kenya economic update. Ed 10. *Washington DC. The World Bank Group*, 10(2). Retrieved from <http://documents.worldbank.org/curated/en/2014/06/19769261/take-off-delayed-kenyas-economy-facing-headwinds-2014-special-focus-delivering-primary-health-care-services-vol-1-2-executive-summary>
- UNCTAD. (2014). *World Investment Report 2014*. Retrieved October 11, 2014, from http://unctad.org/en/PublicationsLibrary/wir2014_en.pdf

- Villalobos, V., & Monge-gonzález, R. (2011). *Costa Rica's efforts toward an innovative-driven economy: The role of the ICT sector. The Global Information Technology Report 2010-2011, 119–126.* World Economic Forum and INSEAD.
- Vu, K. M. (2011). ICT as a source of economic growth in the information age: Empirical evidence from the 1996–2005 period. *Telecommunications Policy, 35*(4), 357–372. doi:10.1016/j.telpol.2011.02.008
- Wang, T.Y., Chien, S.C., & Kao, C. (2007). The role of technology development in national competitiveness- Evidence from Southeast Asian countries. *Technological Forecasting and Social Change, 74*(8), 1357-1373. doi:10.1016/j.techfore.2007.01.001
- Wahid, A. N. M., Sawkut, R., & Seetanah, B. (2009). Determinants of foreign direct investments (FDI): Lessons from the African Economies. *Journal of Applied Business and Economics, 65*(1), 70-82.
- Wolman, H., & Hincapie, D. (2014). Clusters and cluster-based development policy. *Economic Development Quarterly, 20*(10), 1-15. doi: 10.1177/0891242413517136
- World Economic Forum. (2010). *The Global Competitiveness Report 2010-2011.* Geneva. World Economic Forum
- World Economic Forum. (2013). *The Global Competitiveness Report 2013-2014.* Geneva. World Economic Forum
- Yin, R. K. (2003). *Case Study Research-Design and Methods* (5th ed.). California: Sage Publications.
- Yunis, M. M., Koong, K. S., Liu, L. C., Kwan, R., & Tsang, P. (2012). ICT maturity as a driver to global competitiveness: A national level analysis. *International Journal of*

Accounting and Information Management, 20(3), 255–281.

doi:10.1108/18347641211245137

APPENDIX 1

INTERVIEW GUIDELINES

This is a semi-structured interview, which encourages respondents to speak freely without being steered towards a specific direction.

Inquiry 1: To investigate the role that government policy and regulations have played in enabling growth and encouraging innovation within the ICT sector in Kenya.

This section is focused on government ICT policy experts in Kenya. The following questions will be covered:

1. What policy measures and regulation actions has the Kenyan government put in place to build a competitive advantage of the ICT sector?
2. How were these initiatives in the ICT policy funded? How will it change in the next one to two years?
3. What were the most significant challenges faced in the formulation and implementation of the ICT National policy?
4. What incentives are in place to attract MNCs to invest in the ICT sector?
5. How is the government role in encouraging collaboration between the different players in the ICT cluster?

Inquiry 2: What is the role that ICT multinationals play towards building national competitiveness in Kenya?

This enquiry will seek to answer the following questions to the representatives from the MNCs:

1. What is your regional strategy for East Africa and Kenya in particular?
2. What have been the key drivers in the decision to invest in Kenya?
3. What incentives has the government put in place to attract MNCs like you?
4. To what extent does political instability affect your country strategy?
5. What is your opinion of local talent?
6. What role does your company play in building and developing the ICT sector in Kenya?
7. What form of collaborations does your company have with other players in the sector?

Inquiry 3: What will be the next stage of growth for an African country with an ICT driven economy?

This question will be directed to government ICT policy experts as well as representatives from the MNCs. The following questions will be covered?

1. Generally, in your view, what are the major impediments facing developing countries as they attempt to accelerate the adoption and utilization of ICTs?
2. What would you consider as the next level of growth for Kenya's overall economy with regards to ICT?
3. What spillover effects do you anticipate with the growth of this sector?

APPENDIX 2

CONSENT LETTER

I am conducting a research on **“Leveraging country competitiveness through the ICT sector: The case of Kenya.”** The focus of this research is within the ICT industry of Kenya.

Our interview is expected to last for about an hour and will tremendously assist in gaining a deeper understanding of the role that multinational firms in ICT play towards building national competitiveness.

Kindly note that your participation is voluntary and you can withdraw from the interview at any time without any penalty. The data would be treated and kept with confidentiality. The interview will be conducted for the sole purposes of informing the investigation and this consent provides me with your permission to use the information shared for the purposes of the MBA research and a journal article publication.

If you have any concerns, kindly contact my supervisor or me. Our details are provided below:

Research Name: Ntombi Mkhize	Research Supervisor: Dr. Lyal White
Email: 444544@mygibs.co.za	Email: whitel@gibs.co.za
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Thanking you kindly, your assistance is greatly appreciated.

Signature of participant: _____

Date: _____

Signature of researcher: _____

Date: _____

