INFORMATION COMMUNICATION TECHNOLOGY STRATEGY AND THE COMPETITIVENESS OF EQUEST LIMITED – KENYA

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DECLARATION

This report is my original work and has not been submitted to any other institution of higher learning for the award of any academic certificate.

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God bless you all.

DEDICATION

I wish to dedicate this research project to my husband Etinick Mutinda, my children Ira Kasimu, Izabella Imani and Ian Mfalme. My parents Davis and Izabella, my siblings, Tina and Roni for their patience, never ending encouragement and tireless support. God bless you all.

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ABBREVIATIONS AND ACRONYMS

CRM Customer Relationship Management

EDI Electronic Data Interchange

ERP Enterprise Resource Planning

ICDL International Computer Driving License

ICT Information and Communication Technologies

IS Information Systems

ISP Internet Service Provider

IT Information Technology

MSE Medium and Small Enterprises

SCM Supply Chain Management

SME Small and Medium Enterprises

UK United Kingdom

RBV Resource Based View

ABSTRACT

This purpose of the study was aimed at deriving the importance of ICT in business. Information and communication technology (ICT) is a vital component in the present "knowledge economy". It is used by many global businesses to remain competitive. In order to compete with big business, small to medium enterprises (SMEs) need to implement ICT as an essential part of their business. The study was guided by the following research question: what is the role played by ICT strategy in the competitiveness of E-quest limited? The research design was based on a case study and primary sources of data collected through interview guides. The findings reflected that the education levels of the staff of the interviewed ranged from college to degrees, with two of them having IT/ICT related skills. The findings also confirmed the fact that current technology implementation was not planned but random. They also mentioned a lack of strategic plan. The study recommends Equest needs to come up with an ICT strategy based on business goal and objectives, make sure the ICT strategy is aligned with the business strategy and identify the role the ICT will be playing within the business. The study contributed to many theories related to firm competitiveness especially the Porter and Millar theories. It contributed in practice where there was promotion of e-skills for business employees to work longer and help increase company's productivity. The study also contributed in the value of knowledge that SMEs who employ ICT have a better chance of becoming commercially successful when following the critical success factors.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The importance of SMEs in Africa is primarily attributed to their potential for transforming local and metropolitan economies into dynamic innovation systems. Other benefits include employment creation and the ease with which they can adapt to market changes. Products from such enterprises are also increasingly popular locally because of their affordability. One main outstanding policy concern for Kenya is how to improve performance of MSE clusters to achieve faster economic transformation (McCormick, 1998; Adeya, 2003; Opiyo and K'Akumu, 2006).

In Kenya, this strategy is documented in the paper "*Industrial Transformation to the Year 2020"* and the *"Kenya Vision 2030: A Global Competitive and Prosperous Kenya"* both of which seek to encourage the expansion of micro, small and medium-sized enterprises (SMEs) to address rising unemployment rates caused by civil servant retrenchments and the backlog of university graduates who cannot find "white collar" jobs (Kenya Vision 2030). Moreover a large number of jobholders in the public and private sectors are forced to supplement their incomes by establishing small business on the side.

Information and communication technology (ICT) is a vital component in the present"knowledge economy". It is used by many global businesses to remain competitive. In order to compete with big business, small to medium enterprises (SMEs) need to implement ICT as an essential part of their business. However, SMEs often appear slow to adopt ICT, for several reasons. There are unique challenges that SMEs face with regard to the adoption of ICT.

1.1.1 Concept of Strategy

Strategy is a framework through which an organisation can assert its vital continuity whilst managing to adapt to the changing environment to gain competitive advantage. According to Igor Ansoff (1984), Strategic Management is a systematic approach to the major and increasingly important responsibility of general management to position and relate the firm to its environment in a way which will assure its continued success and make it secure from surprises.

Strategic management has now evolved to the point that its primary value is to help the organization operate successfully in dynamic, complex environment. To be competitive in dynamic environment, corporation has to become less bureaucratic and more flexible. In stable environments such as those that have existed in the past, a competitive strategy simply involved defining a competitive position and then defending it. Because it takes less and less time for one product or technology to replace another, companies are finding that there are no such thing as competitive advantage.

1.1.2 Information Communication Technology Strategy

Information and communication technology has revolutionised business organisations bringing forth new ways of doing business that are innovative, efficient and more effective. Organizations today confront new markets, new competition and increasing customer expectations hence the need to efficiently manage the information about competitors, their products, market trends, customer demands and technology developments (Laudon, 2000).

Alter (2001) notes that organisations invest in information systems because they believe the systems will make a difference in the way the organisation conducts its business-process and functions, basically giving the enterprise competitive advantage. Competition among various business is the main force behind strategic moves that each enterprise takes. For Glazer (1993), successful firms have invested in ICT like everyone else but have differentiated themselves by viewing the management of information produced by these systems as being of paramount importance. As these organizations identify the relationship between corporate and ICT strategies, they use information to integrate and manage links between the two – the corporate and ICT. Such organizations succeed because of their ability to differentiate themselves from their competitors, especially on the ICT platform.

1.1.3 Competitive Advantage

A firm's competitive advantage often arises from one or more of the following three sources: ownership-based; proficiency-based; and access-based. That is, a firm can gain advantage by ownership or possession of certain valuable assets or factors, for example Strong market position (Porter, 1980), unique resource endowment (Barney, 1991), or reputation (Hall, 1992); by opportunity or rights to gain superior access to inputs and markets (Lieberman and Montgomery, 1988), for example Exclusive relationship with supplier or distribution channel; by superior knowledge, competence, or capabilities in conducting and managing its business process (Nonaka, 1991; Prahalad and Hamel, 1990: Teece*et al.*, 1997): producing quality products at lower costs and delivering the right products and/or service to its customers in the right place at the right price and time through the right channels. Simply put, to achieve any advantage in business, a firm has to look deeply and systematically into what it has, what it knows and does and what it can get.

According to Michael Porter, "The first fundamental determinant of a firm's profitability is industry attractiveness. In any industry, whether it is domestic or international or produces a product or a service, the rules of competition are embodied in five competitive forces: the entry of new competitors, the threat of substitutes, the bargaining power of buyers, the bargaining power of suppliers, and the rivalry among the existing competitors." (Porter, 2008) The collective strength of these five competitive forces determines industry profitability. Each of the generic strategies involves different route and target to competitive advantage, "The cost leadership and differentiation strategies seek competitive advantage in a broad range of industry segments, while focus strategies aim at cost advantage (cost focus) or differentiation (differentiation focus) in a narrow segment. " (Porter, 1985).

1.1.4 ICT Training Industry in Kenya

After several years of effort, Kenya promulgated a National ICT Policy in January 2006 that aims to "improve the livelihoods of Kenyans by ensuring the availability of accessible, efficient, reliable and affordable ICT services." The national policy has several sections, including information technology, broadcasting, telecommunications, and postal services. However, it is the section on information technology that sets out the objectives and strategies pertaining to ICT and education. The relevant objective in this section states that government will encourage "...the use of ICT in schools, colleges, universities and other educational institutions in the country so as to improve the quality of teaching and learning" (Mwololo, 2005).

The related strategies, under the heading "E-Learning," are to: Promote the development of e-learning resources; Facilitate public-private partnerships to mobilise resources in order to support e-learning initiatives; Promote the development of an integrated e-learning

curriculum to support ICT in education; Promote distance education and virtual institutions, particularly in higher education and training; Promote the establishment of a national ICT centre of excellence; Provide affordable infrastructure to facilitate dissemination of knowledge and skill through e-learning platforms; Promote the development of content to address the educational needs of primary, secondary, and tertiary institutions; Create awareness of the opportunities offered by ICT as an educational tool to the education sector; Facilitate sharing of e-learning resources between institutions; Exploit e-learning opportunities to offer Kenyan education programmes for export; Integrate e-learning resources with other existing resources (National ICT Policy, 2006).

Kenya has placed considerable emphasis on the importance of ICT in its Education Sector Support Programme as evidenced in the recent promulgation of the National ICT Strategy for Education and Training. The Ministry of Education has taken steps to support the implementation of the strategy either by direct action or through the various institutions and agencies with which it works. In addition, there are many other organisations not involved directly with the Ministry of Education that continue to be active in implementing and supporting projects involving ICT in education.

1.1.5 E-Quest Limited

E-Quest Limited, a company established in 2008 was appointed as ICDL Africa's In-Country Partner for Kenya. By virtue of this appointment, Equest is authorized to carry out and facilitate the development and promotion of the ICDL Certification, align ICDL Certification in support of government's initiatives aimed at bridging the digital divide, integrate the effective use of ICT in education and training (capacity building), getting involved in the registration of ICDL Centres and quality assurance which includes audits of ICDL Centres.

ICDL Africa promotes the International Computer Driving License (ICDL) certification in Africa. ICDL Africa recognizes the importance of digital literacy and ICT skills in driving economic development in developing countries (*ICDL* Africa, 2012). The company's mission is to enable proficient use of Information and Communication Technology (ICT) that empowers individuals, organisations and society, through the development, promotion, and delivery of quality certification programmes in Kenya. Equest is a quality assurance body that deals with basic digital literacy, logistical support for the ICDL Certification programme and accreditation of new ICDL partner institutions. To achieve this, the company accredits Technical, Industrial, Vocational and Entrepreneurship Training (TIVETS) that are registered by the Ministry of Higher Education, Science and Technology under the Directorate of Technical Accreditation and Quality Assurance.

1.2 Research Problem

Information and communications technology strategy and competitiveness of SMEs' is somewhat mixed. Although Levy et al. (2005) found that strategic intent did influence the decisions by SMEs in the UK West Midlands to invest in electronic business, much of the literature on strategic ICT use by SMEs highlight the mostly operational nature of such use. The role of ICT strategy in competitiveness has great influence to the contribution of ICT success in SME.

Small and medium enterprises (SME) are viewed as a key driver of economic and social development in the African context. They represent a large number of businesses, generate a relative large proportion of employment and are widely considered to be vital for a country's competitiveness (Lin & Chen 2007). SMEs contribute greatly towards the growth of the

GDP and the reduction of unemployment in the Kenyan economy and as a result they need to stay competitive and up to date with economic changes. To be competitive one of the key ingredients they need is ICT. In Kenya, E-quest Limited is an In-Country partner of ICDL Africa and was established in Kenya in 2008 to advocate for digital literacy, logistical support for the ICDL Certification programme and accreditation of new ICDL partner institutions. As a strategic tool, E-questimproves efficiency of the procurement process by using web based system to activate ICDL tests; provides ICDL training materials in E-learning format that is deployed in a local area network; provides distance learning kits for ICDL in a DVD for self-paced learning; provides its customers with various reports from the central online system; has implemented a computerized financial and accounting system; provides its partners with information in digital format that is ICDL syllabus, marketing materials. In addition, an online testing system ensures that all partner institutions/customers can upload test results real-time.

Various studies have been carried out in the field of ICT. Levy et al., (2001) found that SMEs can behave strategically when it comes to ICT use, they also point to literature highlighting the operational nature of most SME investments in ICTs to being often driven by cost and efficiency considerations. In Kenya, Opiyo and K'Akumu (2006) studied how available ICT facilities are located vis-à-vis other MSME activities within the Kariokor Market cluster in Nairobi. Waruingi, (2003) did a survey of the extent of information communication technology strategy to business strategy for companies quoted at the NSE while Ougo, (2010) did a study on information communication technology as a strategic orientation for service delivery in the office of the Vice-President and Ministry of Home Affairs. These two studies however did not address ICT strategy and SME competitiveness.

E-Quest Limited which offers ICDL (known as ECDL in Europe) is the international standard in end-user computer skills. It is the world's largest end-user computer skills certification programme, with over 11 million candidates to date, and is available in 41 languages throughout 148 countries (*ICDL* Africa, 2012). ICT has helped improve service delivery, control test fraud, manage supply chain, provide accurate management reports, improved communication with network of partners and improved efficiency. With these strategies, Equest has managed to remain ahead of its competitors who include Computer Society of Kenya, Microsoft Office User Specialist (MOUS), Kenya National Examination Council (KNEC), Association of Business Executives (ABE) and other Institutions offering computer packages whose operations remain mainly manual. The studies above have not addressed the strategic role of ICT in enhancing competitiveness of SMEs in Kenya. This study sought to fill the research gap by addressing the research question; what is the role played by ICT strategy in the competitiveness of E-Quest Limited?

1.3 Research Objective

The objective of this study was to investigate the role played by ICT strategy in the competitiveness of E-quest ltd.

1.4 Value of the Study

The study contributed to the body of knowledge through showing how ICT was strategically adopted to give SMEs a competitive edge. The study also contributed to the many theories related to firm competitiveness. In particular, the study contributed to Porter and Millar theories. Porter's theories, said that ICT added value to SMEs while Millar's theories, believed that ICT did not really add any value since it was a commodity, just like electricity,

available to everyone. Yet, they agreed that competitiveness of an SME depended on the way in which ICT was used to support business processes. Therefore, having ICT implemented in a business likely gave a competitive advantage.

In practice, there was a promotion of e-skills training for business employees so that they can work longer and help increase their company's productivity. The study was of value to the knowledge that SMEs that employ ICT had a better chance of becoming commercially successful when following the critical success factors that included: owner motivation, experience and management skills; expertise in managing growth; access to resources (money, technology and people); innovation, a competitive advance and flexibility. In terms of value to the policy of management and organisation of technology, there was emphasis on the strategic approach of ICT by SMEs and on the capabilities and structures of the SMEs.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

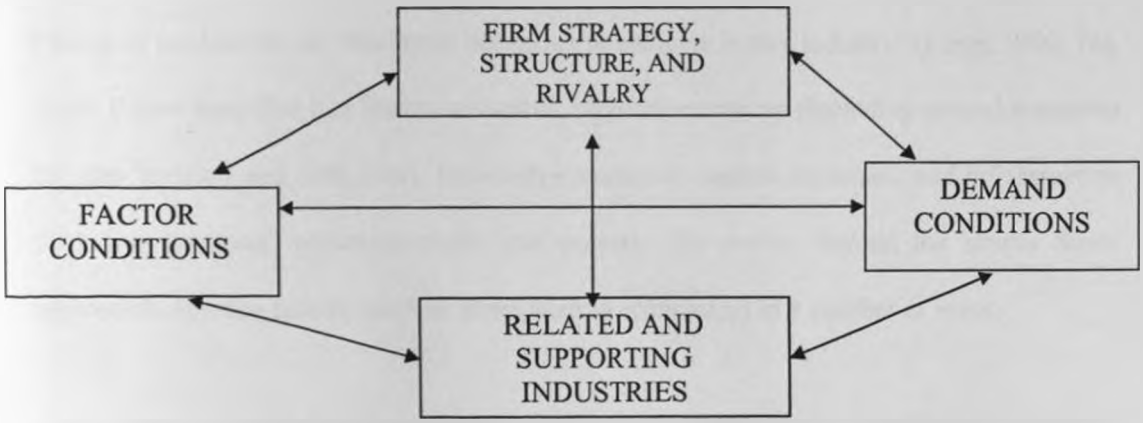
This chapter details a review of literature on the role of ICT strategy in enhancing the competitiveness of SMEs. The role of ICT strategy in competitiveness and its contribution to ICT success in SMEs.

2.2 Theories of Competitive Advantage

According to Porter's competitive forces model (Laudon and Laudon, 2009), the success or failure of a business depends on its ability to respond to its external environment. The external environmental factors are (Laudonand Laudon, 2009): Competitors: These are other firms who are in the same business or same market and compete against the firm by producing similar or substitute products or services. New market entrants: These are new enterprises that join in a particular market or business by producing similar or substitute products or services. Substitute products and services: Within a market there are similar or substitute products or services being offered by competitors, and customers can switch to them owing to their better quality or low price.Customer: These are potential buyers in a given market. With abundance of information at their disposal, customers can make more informed decisions on the choice of product or service they want to buy. Suppliers: These are entities that supply goods or services to the organization.

A number of studies have shown that effective and efficient ICTs allow SMEs to respond positively to the external factors (Ayyagari et al., 2007; Dhillon et al., 2009; Katz and Green, 2010). SMEs can use ICTs to respond to external factors, thereby gaining a competitive

advantage in one of the following four ways (D'Atri and Sacca, 2009; Dhillon et al., 2009): low-cost leadership, product differentiation, focus on market niche, and strengthening customer and supplier intimacy. Hill (2000: 139) declares that Porter's "diamond" consists of four broad attributes nation that shape the environment in which local firms compete, and these attributes promote or impede the creation of competitive advantage. These attributes are factor conditions, demand conditions, related and supporting industries, firm strategy, structure and rivalry.



Source: Adapted from Porter (1990: 72)

Figure 2.1: Porter's diamond

According to Porter (1990: 71), the determinants, individually and as a system, create the context in which a nation's firms are born and compete. The context in which a firm is born and competes can be described as the availability of resources and skills necessary for competitive advantage in an industry, the information that shapes what opportunities are perceived and the directions in which resources and skills are deployed, the goals of the owners, managers, and employees that are involved in or carry out competition and most importantly, the pressures on firms to invest and innovate. Porter (1990: 71) stresses that nations succeed in particular industries because their home environment is the most dynamic

and the most challenging and this stimulates and encourages firms to upgrade and widen their advantages over time. Porter feels that one must look for the independent variables—the determinants of competitive advantage - at industry or even segment level. His ideas are therefore quite appropriate for those seeking to study at the level of an IT sector. These determinants, in part, can be summed up by a "diamond" of four main determinant categories (Porter 1990, 72).

Factor Conditions

Factors of production are "the inputs necessary to compete in any industry" (Porter 1990, 76), which Porter classifies into human resources, physical resources (including natural resources but also location and time zone), knowledge resources, capital resources, and infrastructure (including transport, communications, and power). He moves beyond the simple factor approaches of other models (such as some used in economics) in a number of ways:

The richness of categorization (Grant 1991): where simple factor models might use just "labor," "capital," and "land," Porter provides a much richer perspective on production inputs. He identifies "*basic factors* . . . natural resources, climate, location, unskilled and semiskilled labor, and debt capital" and "*advanced factors* . . . modern digital data communications infrastructure, highly educated personnel . . . and university research institutes" (Porter 1990, 77) as well as "*generalized* factors . . . the highway system, a supply of debt capital . . . [that] can be deployed in a wide range of industries" and "*specialized* factors [that] involve narrowly skilled personnel, infrastructure with specific properties" and that have limited applicability (78). Echoing the ideas of resource- based theory, he finds that the latter in each category – that is, the advanced and the specialized factors - are those that are more significant for competitive advantage, partly because they are hardest to imitate.

Demand Conditions

One theme of this determinant category is once again that of moving beyond the assumptions of simple economic models, which would concern themselves mainly with market size. For Porter, market size is of relatively limited importance. He allows that a large local market can encourage scale economies and also that it may hinder export drive. Instead, what matters is the composition of demand, specifically of domestic demand because, "where foreign and home market needs diverge, signals from the home market usually dominate" (1990, 87). The composition of domestic demand can be factored in terms of the nature of the market such as its growth rate, number of buyers and the particular segments that dominate, how sophisticated and demanding local buyers are and the relation of those buyers to global trends and markets, with competitive advantage accruing if local buyers anticipate global demands and/or if they can provide channels for internationalizing local demand (for example, if they are multinationals). The overall message is that the more innovative pressure local buyers place on firms, which they do more through qualitative than quantitative factors, the greater the competitive advantage.

Related and Supporting Industries

As with demand, there is a domestic focus in this determinant, which looks at "the presence in the nation" of suppliers and others who are internationally competitive (Porter 1990, 100). Suppliers to the focal industry are particularly important: if they are competitive, they can supply the focal industry with low-cost and/or high-quality and/or early-access inputs but they can also act in a less formal way by giving new ideas, through joint problem-solving, and generally by stimulating innovation.

Related industries (for any of the IT sectors one could probably count most of the other IT sectors and also professional services such as management consulting) can also help if they are competitive. They can provide "information flow and technical interchange." In addition, international demand for what a related and competitive industry provides can "pull through" demand for what the focal industry produces.

Firm Strategy, Structure, and Rivalry

Retitled in later works "context for firm strategy and rivalry," in the original, this covers not just context but also a number of other factors. Three main elements are identified: *Domestic firm strategy and structure:* this begins with some clarity in arguing that "nations will tend to succeed in industries where the management practices and mode of organization favored by the national environment are well suited to the industries' sources of competitive advantage" (Porter 1990, 108). For example, the Italian "national environment" seems to favor fragmented structures and niche strategies. The elements that constitute the national environment are quite broad, though they would be readily recognizable to those working from a new institutionalist perspective. They include "attitudes towards authority, norms of interpersonal interaction, attitudes of workers towards management and vice versa, social norms of individualistic or group behavior, and professional standards. These in turn grow out of the educational system, social and religious history, family structures, and many other often intangible but unique national conditions" (1990, 109). "Language skills," "government policy," and "a nation's political stance" are also seen to play a role.

Goals: "Nations will succeed in industries where . . . goals and motivations are aligned with the sources of competitive advantage" (1990, 110). For company goals, this alignment will be determined by "ownership structure, the motivation of owners and holders of debt, the

nature of the corporate governance, and the incentive processes that shape the motivation of senior managers" (110). Incentive systems but also national attitudes toward things like money, success, and risk will similarly influence alignment of individual goals. Both will be affected by a sector's national prestige and priority and by the ability of sectoral actors to show sustained commitment to building up the sector.

Domestic rivalry: where the other two elements are rather broad and loose, this is rather clearer: "Among the strongest empirical findings from our research is the association between vigorous domestic rivalry and the creation and persistence of competitive advantage in an industry" (117). Where there are several strongly-competing domestic rivals - which support for new business formation will foster - they push each other to seek out new markets (often overseas), to compete on cost and quality, to develop new products, and to look for higher-order factors of production. The complete systemic map of determinants of competitive advantage must add in two further elements that sit outside the diamond, chance and government: Chance describes elements outside the control of firms or sectors, such as wars or surges in demand or major technological changes. Chance is seen as lying outside the diamond because it is the core determinants that decide which nations or sectors gain or lose from chance. Porter takes a similar line on government policy. It is an "important influence on competitive advantage" (1990, 128) but lies outside the diamond because its role is as a positive or negative influence on the four determinants. Of itself, he argues, government cannot create competitive advantage.

2.3.1 Resource Based View (RBV) and Competitive Advantage

The RBV emerged as a complement or dual to Porter' s theory of competitive advantage (Barney & Arikan, 2001). Initially, Wernerfelt (1984) developed a theory of competitive

advantage based on the resources a firm develops or acquires to implement product market strategy. Wernerfelt"s (1984) primary contribution to the RBV literature was recognizing that firm specific resources as well as competition among firms based on their resources can be essential in order for organizations to gain advantages in implementing product market strategies (Barney & Arikan, 2001). A different perspective is presented by Rumelt (1984) who focuses on economic rents and created a theory of rent generation and appropriating characteristics of firms (Barney & Arikan, 2001). Moreover, Rumelt (1984) in his strategic theory offered many characteristics which were later associated with the RBV. For example his view on "firms as collections of productive resources" as well as his suggestion that the imitability of these resources depends on the extent to which they are protected by an "isolation mechanism" (Barney & Arikan, 2001). The third resource-based article in the field of strategic management was published by Barney in 1986. Barney introduced the concept of strategic factor markets as the market where firms acquire or develop the resources they need to implement in their product market strategies.

According to Barney (1991), a firm is argued to have a competitive advantage when it is implementing a value creating strategy which a current or potential competitor is not implementing at the same time. Moreover, a firm is argued to have a sustained competitive advantage when it is implementing a value creating strategy which a current or potential competitor is not implementing at the same time and when these other firms are unable to duplicate the benefits of this strategy (Barney, 1991).

2.3.2 Porter's Five Forces Model

One of the basic areas of concern in industrial economics is the interaction between firm and the characteristics of the market forces. Economists, belonging to this school of thought, perceive the significance of the link between environment and strategies employed by the

firm. They use the structure–conduct-performance diagram. Such a paradigm assumes basic conditions of supply (input, technology) and demand (growth of demand, price elasticity). Market structure is then put into perspective in terms of number of market players (buyers and sellers), barriers to entry, cost structure and product differentiation in relation to conduct that is illustrated in the pricing, product strategy, research and innovation (Porter 1985).

The interaction would follow through and lead to the enterprise's performance represented by its production efficiency, employment of resources and degree of progress. In this respect, the market structure comprises the environment within which the firm operates. Within such a paradigm, market structure, strategy and performance would comprise the variables that influence the firm's competitiveness (Kazem 2004). Porter (1980) attempts to explain the existence of the above-normal profits, as an expression of the firm's market power and his starting point was the "Structure-Conduct - Performance (SCP)" paradigm (Van Gils 2000). In this paradigm, the industry-structure determines the firm conduct (for example pricing, advertising), which in turn determines the economic performance.

Porter (1980) interpreted this line of thought by substituting conduct with strategy and arguing that the firm performance is dependent on industry structure. Therefore, the level of analysis is the industry rather than the individual firm. Industry attractiveness depends on the level of the opportunity and the threat in an industry. The average performance of firms in the economically very attracted industries will be greater than the average performance of firms in the economically unattractive industries as explained by Barney (2002). Chaffey (2002) supports Porter's classic model of the five main competitive forces and he says that it still provides a valid framework for reviewing threats arising in the e-business era.

Some of the critiques on Porter's theory of the five forces are: Traditional Porter's thinking was largely limited to achieve a better competitive position against other players. Now it is more important to form co-operations for mutual benefits. With this focus, it dos not really take into consideration strategies like strategic alliances, electronic linking of information systems of all companies along a value chain, virtual enterprise-networks or others. However, Porter (2001) says that the Internet has a powerful impact on the supply of information to customers and relationship between firms and their suppliers and there is no need to change the theory of strategy to deal with the Internet. Porter's theories based on the economic situation in the eighties.

This model might not explain today's dynamic changes. Porter's five forces model may have some major limitations in today's market environment. It does not reflect the inevitability of certain dis-intermediation effects and new partnering realities such as brokers. In the economic sense, the model assumes a classic perfect market. The more an industry is regulated, the less meaningful insights the model can deliver. The model is best applicable for the analysis of the simple market structures. A comprehensive description and analysis of all five forces gets very difficult in complex industries with multiple interrelations, product groups, by-products and segments.

According to Porter (1985), the rules of competition are represented in "five competitive forces". These competitive forces are entry to the new competitors, threat of substitutes, bargaining power of buyers, bargaining power of suppliers, and rivalry among the existing competitors. Porter (1985) explains that the industry structure is relatively stable, but can change over the time as an industry evolves, and the strength of the five competitive forces varies from one industry to another. The five forces determine the industry's profitability because they influence the price, cost, and the required investment of the firms in an industry.

2.3.3 Porter's Generic Strategies

Porter (1980) determines three generic strategies firms can posses: the cost leadership, differentiation and focus. Sources of cost advantage are likely to be rare including learning-curve economies, differential low-cost access to factors of production, and technology. Firms can differentiate their products in different ways: product features, linkages between functions, timing, location, product mix, links with other firms, product customization, product complexity, consumer marketing, distribution channels, service and support and reputation. Firms focus on a particular market niche and company resources are devoted to maintain market leadership in that niche. By concentrating on the industrial level, Porter (1979, 1980, 1985) underestimated the importance of the unique resources within the firm. Moreover, his work has been criticized for becoming too eclectic (Van Gils 2000).

Furthermore, recent work contradicts Porter's assertion about being "stuck in the middle." This work suggests that the firms that are successful in both cost leadership and product differentiation can often expect to gain sustained competitive advantage (Barney 2002). Firms that are able to differentiate successfully their products and services are likely increasing their volume of sales. An increased volume of sales can lead to economies of scale, learning curve, and other forms of cost reduction. Differentiation is more attractive to small companies, particularly when linked with focus. In a survey to the 1500 smaller companies across Europe, the 3i European Enterprise Center (1994) found that the companies that achieved growth in sales and/ or profits were implementing the differentiation strategy. In 1993, 3i carried out a survey to the 3500 UK super league companies.

It concluded that most of these high-growth companies served niche markets following a strategy of differentiation. Providing higher quality products when compared to competitors and being innovative are the key elements of the differentiated strategy (Jones and Tilley 2003). Besides that, marketing, development of alliances and the focus on the ethical issues comprise important components of the differentiated strategy (Kazem 2004). The generic strategies rely on a static picture of competition, and thus understate the role of innovation (Stalk et al. 1992). As well, they overemphasize the importance of industry structure (Rumelt 1991) and the wider environment, while they de-emphasize the significance of individual company differences in the procession of resources, capabilities and competence (Prahalad and Hamel 1990). O'Gorman (2001) notes that 'success strategies' are characterized as high growth businesses. High growth businesses in turn are competitive on product quality, price and new product offering.

2.4 ICT Strategy models

ICTs are technologies and tools that people use to share, distribute, and gather information and to communicate with one another, one on one, or in groups, through the use of computers and interconnected networks. In addition ICTs are mediums that utilize both telecommunications and computer technologies to transmit information. Levy et al. (2001) have found that investment in ICT is successful when it takes one of the following two forms: providing efficiency and savings or enabling added value. Henry Mintzberg (1994) suggests that strategy can have a number of meanings, namely: Strategy is a plan, a "how," a means of getting from here to there; Strategy is a pattern in actions over time; for example, a company that regularly markets very expensive products is using a "high end" strategy. Strategy is position that is, it reflects decisions to offer particular products or services in particular markets and Strategy is perspective, that is, vision and direction."

2.4.1 ICT Strategic Alignment Model

The model, termed the Strategic Alignment Model, is defined in terms of four fundamental domains of strategic choice: business strategy, information technology strategy, organizational infrastructure and processes, information technology infrastructure and processes-each with its own underlying dimensions (Henderson and Venkaterman, 1993). Four main fundamental domains are illustrated in two main building blocks on horizontal and vertical level. The power of this model lies in two fundamental characteristics of strategic management: strategic fit and functional integration or 'fit between strategic and operational level and 'link' between Business and ICT domain. In order to understand the MIT model and the relations between the four main fundamental domains, it is necessary firstly to understand individually each domain.

Business Strategy - The concept of strategy is overarching and covers a broad terrain with multiple meanings, definitions, and conceptualizations (Henderson and Venkatraman, 1992). In most discussions it deals with next three elements: business scope, distinctive competencies and business governance. Organizational infrastructure and processes domain is consisted of: administrative infrastructure, processes and skills.

ICT strategy - By drawing an analogy to business strategy, we conceptualise ICT strategy in terms of three domains (Henderson and Venkatraman, 1992): ICT scope, ICT system competences and ICT governance. ICT infrastructure and processes - Following organizational infrastructure and processes this domain can be defined in terms of: ICT infrastructure, ICT processes, ICT skills. The four fundamental domains are divided in two main building blocks in horizontal and vertical levels. The horizontal block consists external and internal domains, which are related through a so called strategic fit. Business and ICT domains are parts of the vertical block and they are related through integration relation.

2.4.2 Relationships within Strategic Alignment Model

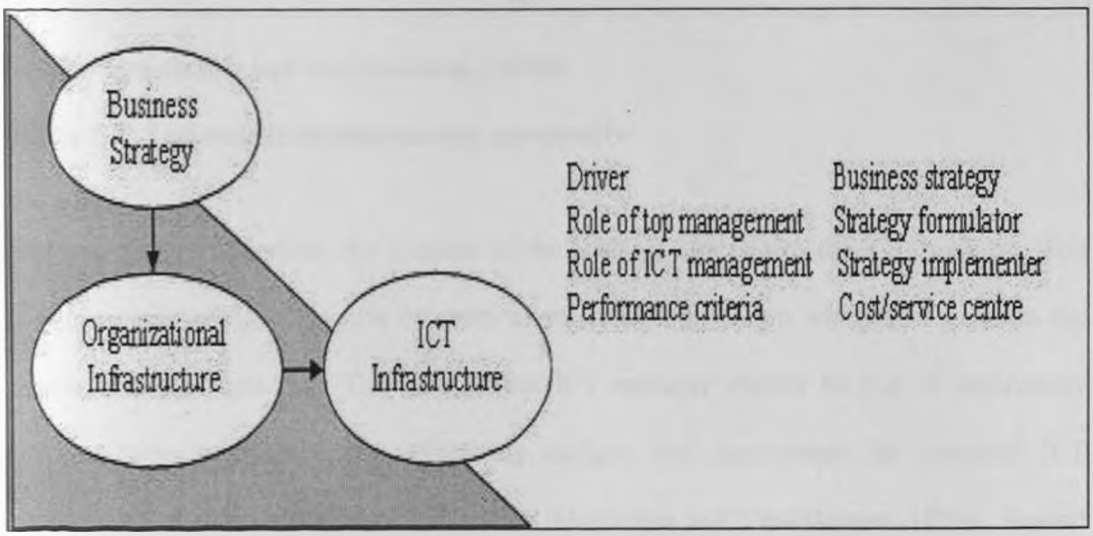
Strategic fit facilitates organizational business and ICT strategies in establishing communalisation, 'fit' between external and internal domains. If for the business domain, the fit between the external domain-business strategy and internal-organizational set up, is critical for maximizing economic performance, following the same logic for the ICT domain the fit between external domain-ICT strategy and internal domain-ICT systems it is with equal relevance. Adequate fit between external and internal domains of ICT can be reasonable success factor and benefit from ICT investments.

Functional integration relation establishes integration, link, between Business and ICT domain. In dynamic markets business strategies often changes, ICT strategy, architecture and processes must be adequately designed to follow these changes. Functional integration gives the ICT opportunity to provide competitive advantage to the organization. The third relation arises from effective ICT management which can provide balance between the choices made across all four domains, the logic of strategic alignment. The MIT model calls for the recognition of multivariate relationships or more precisely, cross-domain relationship (Henderson and Venkaterman, 1993).

2.4.3 Four dominant alignment perspectives

First two cross-domain relation perspectives come up when business strategy is observed as driving force, business strategy as the diver. Perspective one: Strategy execution. It reflects to the most common and widely understood perspective as it corresponds to the classic, hierarchical view of strategic management. To make this perspective operational several different analytical methodologies should be considered: critical success factors, business system planning and enterprise modeling.

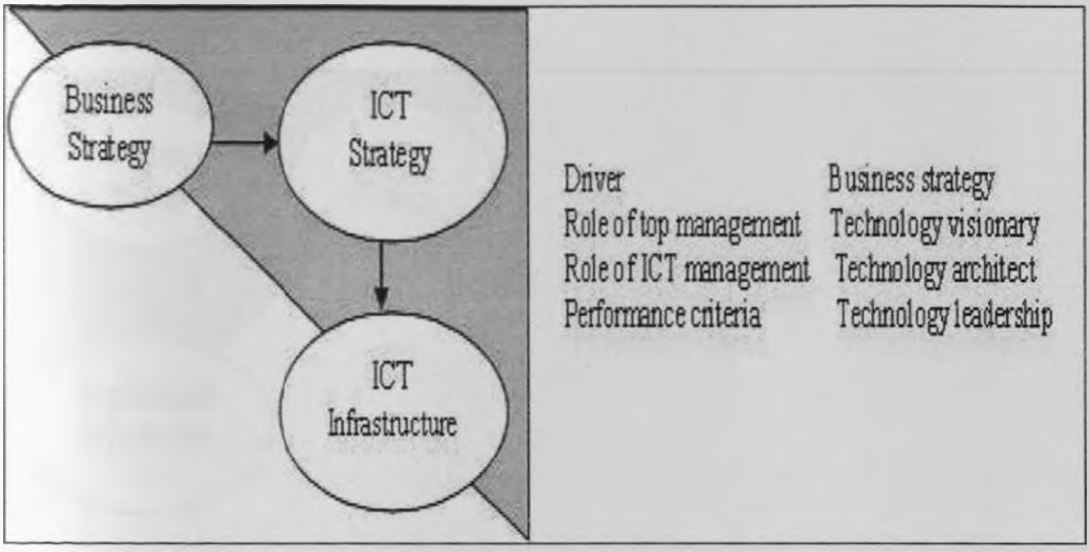
Management formulates strategy, which is a driver or direction for further organizational and ICT infrastructure design choices for achieving the strategy. For successful execution of this perspective the roles of the managers should be clearly defined. Top management is the strategy formulator who formulates strategy according to the logical needs to successfully run the business. ICT manager has a role of strategy implementer. The performance criteria for assessing the ICT function of this perspective is based on financial parameters reflecting a cost center focus.



Source: Henderson and Venkaterman, (1993)

Figure 2.2: Strategy execution perspective

Perspective two: Technology transformation. This perspective involves assessment of implementation of chosen business strategy through appropriate ICT strategy and required ICT infrastructure and processes. It is not focused on current business process design. Technology transformation perspective responsibility is to identify best possible ICT competencies and corresponding ICT systems.

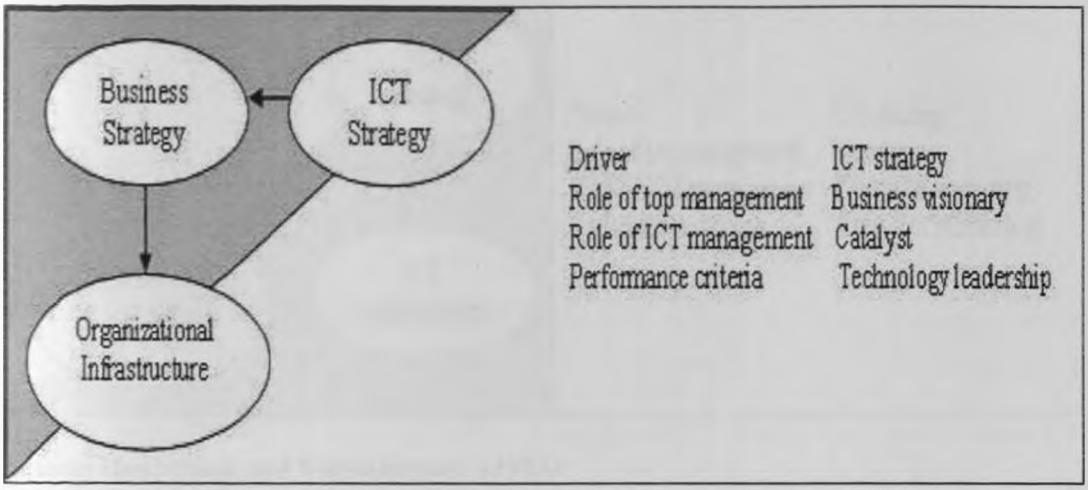


Source: Henderson and Venkaterman, (1993)

Figure 2.3: Technology transformation perspective

This perspective underlines the impacts of the business strategy to the ICT strategy. Top management is playing the role of provider of technology vision which best supports the chosen business strategy. The role of the ICT manager should be that of technology architect, who efficiently and effectively designs and implements the required ICT infrastructure that is consistent of ICT vision (Henderson and Venkaterman, 1993). Second two cross-domain relations appear when ICT strategy is considered as the driver.

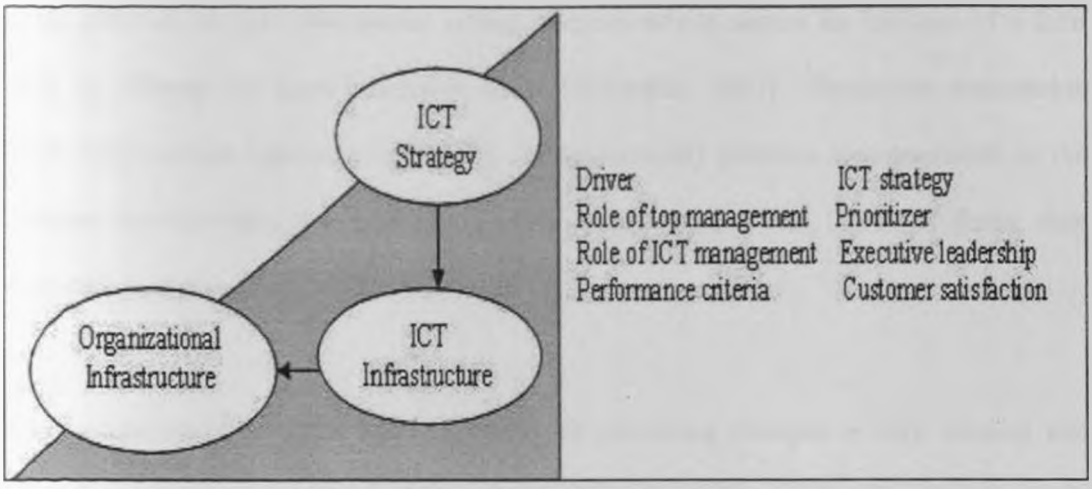
Perspective three: Competitive potential. This perspective allows the adaptation of business strategy through emerging ICT potential to generate competitive advantage, by enhancing products or by improving processes. To make this perspective successful top management should have a role of business visionary-express how emerging ICT would impact on the business strategy and ICT manager should have a role of catalyst-identifies and interprets the latest ICT to business managers to understand potential opportunities and threats from ICT perspective.



Source: Henderson and Venkaterman, (1993)

Figure 2.4: Competitive potential perspective

Perspective four: Service level. This alignment perspective focuses on how to build up a world-class ICT service organization. This perspective is often viewed as necessary (but not sufficient) to ensure the effective use of ICT. The ICT organization must deploy resources and be responsive to the growing and fast-changing demands of the end-user side population (Henderson and Venkaterman, 1993). The role of the top management in this perspective is that of prioritizer and the role ITC manager is one of executive leadership. The performance criteria in this case are based on customer satisfaction.



Source: Henderson and Venkaterman, (1993)

Figure 2.5: Service level perspective

This model implies that effective and efficient utilisation of information technology requires the alignment of IT strategies with business strategies, and reflects the view that business success depends on the linkage of business strategy, information technology strategy, organizational infrastructure and processes, as well as IT infrastructure and processes (Burn and Szeto, 2000). The strength of this model lies in its ability to establish a relationship between the strategic and operational aspects of the organization's objectives and its ICT policy (Molen, 2003a). As stated above strategy development, policy development, development of business goals, and improvements in products and cadastral processes can only be done in alignment with the development of an ICT strategy and development of ICT systems: business alignment (Aleksic et al., 2005).

2.5 Competitiveness

Competition in economics is a term that encompasses the notion of individuals and firms striving for a greater share of the market. Merriam-Webster defines competition in business

as the effort of two or more parties acting independently to secure the business of a third party by offering the most favourable terms (Wikipedia, 2007). Businesses competition exists under certain approving conditions. If the necessary provisos are nonexistent or the business environment is essentially counter competition, other forms of firms than competitive organisations will exist instead.

Firm competitiveness is the basic capability of perceiving changes in both external and internal environment and the capability of adapting to these changes in a way that the profit flow generated guarantees the long term operation of the firm. There is an ongoing struggle for survival (Chikan, 2001). Tyson (1993) argued that competitiveness is the ability to produce goods and services that meet the test of international competition, while the citizens enjoy a standard of living that is both rising and sustainable. Competitiveness should be understood as the ability of companies, industries, regions, nations to generate, while being and remaining exposed to international competition, relatively high factor income and employment on a sustainable basis (OECD 1998).

It can be argued that small firms are more likely to introduce fundamentally new innovations as they have less commitment to existing practices and products (Storey, 1994). At the same time they may be able to take advantage of existing software that has been thoroughly tested through its utilisation within other organisations (Perry, 1999). Similarly, small organizations may be less likely to be exposed to unproven technology (Gordon and Gordon, 1995). Technical advances have made computers more powerful and less expensive giving small firms the potential to use software to make the business more competitive (Steinhoff and Burgess, 1993).

To take advantage of current initiatives it may be necessary to challenge the current status quo within small firms (Mole, 2002). It may be difficult for small firms to see the role of ICT as part of a future business plan. Many entrepreneurial businesses experience strategy formation as being emergent rather than planned even when they are in complex and multi-faceted sectors (Fletcher and Harris, 2002). Those outside consultants that view businesses as independent entities as opposed to supply chains are doing their clients a disservice. In future they will need to advance their skills in managing under uncertainty (Sparrow and Bushell, 1997). It may also be difficult for small organizations to acquire the necessary technical skills alongside the in-depth understanding of their particular business (Foley and Green, 1989).

Poutsma and Walravens (1989) continued this theme by suggesting that small firms used their computers as tools rather than communications media. Kagen et al. (1990) in their later survey of 884 small firms in the USA found that the majority of small businesses still used mostly word processing, payroll applications, and inventory packages. Since, then, however, the increasing availability of new IT and applications suggests that SMEs may have changed their use of ICT. There may be economic reasons for this potential change. Pollard and Hayne (1998) highlighted this, and stated that in the last 15 years hardware costs have fallen dramatically, while processing power and storage capacity have grown.

There has also been an increase in the range of affordable, "off-the-shelf" packages, which has given small businesses the potential to take advantage of the opportunities offered by ICT. With the introduction of personal computers, file servers and networks, small firms have the potential to take advantage of the same technology that large business has access to (Pollard and Hayne, 1998). This suggests that the gap in usage between large and small firms

has narrowed. This is further enhanced when one considers the possibilities that the use of communications technology can have for SMEs, that is electronic data interchange (EDI) could allow SMEs to link up with customers and suppliers. Pollard and Hayne (1998) also noted that small firms are able to create their own web pages and through the use of electronic mail may be able to reach a larger market.

However, the question still remains as to whether SMEs can utilise ICT strategically, that is. in ways, which give them a competitive advantage? Rivard et al. (1988) conducted a survey of what were seen as the key management issues in the IS of 660 public sector organisations, and small and large private firms. They conclude that the managers of smaller firms were more concerned with operational issues than the managers of larger firms. Certain concerns, such as software quality were seen as top five concerns by both large and small firms. However, what is significant for this research is the comparative importance attached to the competitive use of ICT. Though being ranked second by the managers of larger firms, in small firms it was only ranked 18.

Pollard and Hayne (1998) conducted another survey, examining the ICT issues small companies considered important, including the competitiveness of IS. The top ranking of the use of IS for competitive advantage represents a significant change from the Rivard et al. (1988) study. On this basis Pollard and Hayne (1998) suggested that small firms are "going beyond using IS to support everyday administrative functions to viewing IS as a tool for enabling strategic planning and enhancing an organisation's market share". However, their study does not detail how SMEs are to use IT for competitive advantage. See the table below.

Table 2.1 The Ten Most Important Issues On The Use of ICT

Ranking	Issue
1	Using ICT for competitive advantage
2	Improving ICT project management practices
3	Improving effectiveness of software development
4	Building a responsive IT infrastructure
5	Aligning the IS organisation enterprise
6	Coping with the degree of technological change
7	Managing and planning communication networks
8	Facilitating and managing business process redesign
9	Educating the user
10	Recruiting and developing IS human resources

Source: Pollard and Hayne (1998)

This study questions the extent to which SMEs are able to achieve competitive advantage through the use of ICT. This question is of added significance as SMEs have a major impact on the economy. This makes the role of SMEs in e-business even more pertinent. A number of writers believe that the role of ICT in business has changed over the last decade (Brooke and Maguire, 1995, 1998).

The question of whether these changes have affected ICT use in SMEs needs to be answered by first considering how SMEs use ICT. Early studies such as those of Farhoomand and Hrycyk (1985) and Nickell and Seado (1986) indicated that small companies confined their use of IT to word processing, spreadsheet analysis, accounting and budgetary control. This was at a time when database software was available (Meyer and Boone, 1987).

2.5.1 Ways in which SMEs could use ICT to Become Competitive

Schubert and Leimstoll (2007) touch on an important question, that of ICT value. According to Schubert and Leimstoll (2007), there are two schools of thought with regard to the issue of ICT value. The one, known as Porter's theories, says that ICT adds value to SMEs and the other, known as Millar's theories, believes that ICT does not really add any value since it is a commodity, just like electricity, available to everyone. In conclusion they agree that competitiveness of an SME depends on the ways in which ICT is used to support business processes. So having ICT implemented in a business does not necessarily give the business any competitive advantage, but having it linked to the business processes and strategy will most likely give a competitive advantage.

In general it appears that SMEs that employ ICT according to the critical success factors below have a better chance of becoming commercially successful, according to Taylor and Murphy (2004). The critical success factors are as follows: Owner motivation, experience and management skills; Expertise in managing growth; Access to resources (money, technology and people); Innovation, competitive advantage and flexibility; Close contact with customers; Focus on profit rather than sales; Strong demand and operating in a growth market.

In order to achieve the above critical success factors, the SMEs need to embark on the following: They need to have a clear ICT strategy that will govern the adoption process within that particular SME; They need to make sure the ICT strategy is aligned with the business strategy, which means that the ICT strategy should support and achieve business goal; The SME should make sure that it employs the right skills (permanent or contracted) and identifies the roles that these skills will play in making sure that the SME is successful in leveraging ICT. These three steps will be discussed in detail below.

2.5.2 Set up of the ICT strategy

SMEs need to define an ICT strategy for the business; this will help the business understand the potential of ICT and outline the processes and methods to be followed during adoption. SMEs need to recognise the impact of ICT on their business and should invest in efforts to take advantage of it. The South African Government is busy with awareness campaigns and has set up non-profit organisations that should help SMEs obtain the necessary ICT resources and advice.

The owner-manager needs to understand that he cannot be everything in the business and needs to employ or outsource the ICT function. Software is becoming a service: a good example is ABSA bank, which is providing a payroll solution to its SME clients. For the SME, this leads to a reduction in the costs of developing or acquiring payroll solutions, and means that maintenance and upgrading of the solutions is taken care of. SMEs need to spend money and time on getting the relevant advice from ICT experts and consultants in order to set up the ICT strategy, based on the SME business strategy.

By defining the strategic objective of the SME, the SME can decide which strategic investment to make. Levy et al. (2001) have found that investment in ICT is successful when it takes one of the following two forms: providing efficiency and savings, or enabling added value. The former form is taken by SMEs in the Low and Medium user of ICT groups where ICT is used for transaction processing and does not play a huge role, while the latter is adopted by the High user of ICT group; here ICT is used for technical and operational integration and inter-organisational integration.

The focus-dominance model in Figure 2 shows the different possible ICT solutions. As mentioned, it is based on the following dimensions of the SME: strategic focus (cost reduction versus value adding) and customer dominance (few versus many customers) (Levy et al., 2001:135). Customer dominance refers to the power of the customers, as "SMEs are driven primarily by customer needs" (Levy et al., 2001:135). The model's four domains: coordination, efficiency, collaboration, and innovation, create competitive scenarios.

Customer dominance	Cost saving	Value adding
Low	***Coordination*** *Word processing* *Accounting* *Customer databases*	***Innovation*** *Word processing* *Accounting* *Electronic business*
High	***Efficiency*** *Word processing* *Accounting*	***Collaboration*** *Word processing* *Accounting* *MRP* *EDI*

Strategic focus

Source: Levy, Powell & Yetton, (2001)

Figure 2.6: The focus-dominance model

The small business would need to identify the quadrant into which it falls in the above focus-dominance model, by determining whether its strategic focus is cost saving or value adding, and then determining whether the customer dominance is high or low. For example, if the majority of the clients of the SME (high customer dominance) use a specific technology, then it will influence the ICT adoption. Once the strategic positioning is done then the focus will be on getting the right tools and technology to achieve the strategy.

2.5.3 Alignment of business strategy with ICT strategy

Aligning the ICT strategy with the business strategy will ensure that ICT is used to deliver on the SME's objectives. The ICT strategy design should be based upon the business strategy, as the SME should not be driven by technology needs but by business needs. Earlier research on this topic was focused more on the technology perspective and the management and

organisation of technology perspectives, overlooking the small firm's perspective, but now the focus is moving towards the relationship between SMEs and ICT from the small firm's point of view. Authors have begun to take the latter perspective more seriously because they have seen the importance of ICT supporting the business process.

2.6 Stumbling Blocks for SMES in Using ICT as a Competitive Tool

There are a number of stumbling blocks or barriers that make it difficult for SMEs to adopt ICT. Ngwenyama and Morawczynski (2007) argue that everyone assumes that ICT will successfully bring about benefits, but not all environments are the same. The issues affecting successful implementation or adoption of ICT are both socio-economic and technological. MacGregor and Vrazalic (2006) agree with the findings of Ngwenyama and Morawczynski (2007) that the barriers to adopting ICT by SMEs are both socio-economic and technological, by pointing out that the barriers can be caused by factors external and/or internal to the organisation, which in this case is the SME.

These include: Strategic: This level addresses issues that impact on the direction of the business (business strategy), capital investments and networks in relation to ICT. SMEs should formulate their own IT/ICT strategic objectives. Technological: This level deals with issues relating to the complexity of technology and professional support for the technology in relation to the production of goods and services. This level should underpin the above level of strategy, by implementing IT/ICT strategic plan in order to build a good IT/ICT architecture. Organisational and behavioural.

2.6.1 Lack of knowledge about the strategic use of ICT

There is a lack of knowledge about the potential benefits of ICT and strategies to support SMEs in achieving their business objectives. SMEs face the challenge that generally they are owner managed and the owner makes all or most of the decisions about the business (strategic direction). Unfortunately the owner-manager's limitations become limitations of the business. This barrier can be classified as a strategic level problem. ICT needs to be considered a key player in the SME reaching its goals.

2.6.2 Lack of necessary IT skills-base

As already expressed, the owner is the centre of the business, making all or most of the decisions in the small business, so the adoption of ICT by the small business depends on the owner's ICT skills, personality and attitude towards technology. The IT-skills problem forms part of the bigger problem of a shortage of specialists in IT/ICT in Africa. However, the owner-managers' attitudes towards ICT and its value needs to change and each SME needs expertise to work with. The ideal staff level for an SME that considers ICT to be the core of its business strategy is that of a high user group. "Pervasive use of ICT in the economy depends on well-trained human resources for developing relevant applications, supporting and maintaining systems" (Mutula & Brakel, 2007:232). If they have a well-trained ICT staff, SMEs are likely to adopt and use ICT as a competitive tool successfully. Martin (2005) highlights his findings that successful Internet adoption depends on different roles of employees and uses combat names to describe them, such as warriors, interpreters, clerks and priests.

The main aim for using such names was to make them easy to relate to and to give them the kind of responsibility and respect associated with those roles. The separate roles are

described in the following way (Martin, 2005): Warriors: (leading the way to adoption). This role is the driver of the adoption process, and the person in this role should be passionate and support the adoption. This person does not necessarily need to be a technical person but needs to have a high purpose for the adoption (business reasons). Normally this person is the owner-manager. Interpreters: (translating the technology to the ordinary employee). This role is that of the person who understands the technology and can sell this to the rest of the employees of the small business, enabling them to understand it. Clerk: (the administrator of the adoption process and documentation keeper).

This role is that of "bringing order to chaos" (Martin 2005:196). What this means is that this person should be an administrator and should organise the information of the adoption process and make sure that the staff know where to get what information in order to make it easy. Priest: (technology specialist). This role is that of the specialist, the person who gives direction with regard to technology best practices, which application to go with, turnarounds and the like.

The important thing here is that different roles are essential in achieving a good implementation and separation of duties. The roles can be named in any way that staff can relate to and understand. This stumbling block to the adoption of ICT can be classified under both the strategic and the organizational and behavioural levels of barriers. Getting the right skills is part of the strategic function of the organization, since understanding that ICT plays a critical role in the business will help in planning the right budget, creating the right job description and knowing how to interview for ICT skills. The role creation covers behavioural aspects, making staff excited about ICT.

2.6.3 Perceived high setup cost

ICT is perceived to be expensive by SMEs so they often do not have a budget for it. The other problem with regard to the cost of ICT is that SMEs may invest in unnecessarily big solutions due to sale pitches, hype of specific products or market patterns without considering their real need. Often they could have purchased a less complicated, smaller package or programme to meet their needs, and thus paid less. This would be like a farmer buying a 10 ton truck to deliver 200 kg of vegetables - it will work, but be inefficient and a waste of money. These are the kind of things that give SMEs the impression that the adoption of ICT is very expensive.

There are different types of costs associated with ICT: product/solution, development, connectivity, hardware, software, maintaining workforce and hidden costs such as annual license fees, upgrade fees, tanning fees etc. These costs can be overcome by having the right knowledge and knowhow. For example, there are lots of open source software (OSS) programmes available - these are free or low cost ICT tools and solutions written by open source communities. These solutions can be used to support business. The perceived high cost of ICT can be classified as a strategic and/or technological barrier. Technology can be expensive or cheap, depending on which technology platforms are chosen.

2.6.4 Ever-changing ICT environment

The ICT environment is ever changing, so constant learning and updating of technologies is needed. Technology is constantly evolving, getting faster, smaller, more powerful, or digital, for example. There are two issues here, on the one hand the SMEs need to monitor the kind of technologies that their clients are using and try to make sure that they are on a par in order to serve them. On the other hand the SMEs do not need to change every time there is a

change in technology, this depends on the focus area of the SMEs. This latter situation is described in the focus-dominance model of Levy, et al (2001:135). The focus-dominance model is based on the dimensions of strategic focus (cost reduction versus value added) and customer dominance (few versus many customers).

The model has four domains: coordination, efficiency, collaboration and innovation, which create competitive scenarios. Which domain the business falls into will determine the rate at which the business needs to change its technology. If an SME is doing business in the innovation and collaboration domain, it might require constant change of technology, while an SME that functions in the coordination and efficiency space is only required to change after a long time. This stumbling block touches on all three categories of barriers and diffusion agents. The ICT strategy of the SME needs to take into consideration that technology changes at a rapid rate, the different technologies need to be monitored as they evolve into the future, and the staff need to be excited enough to have an interest in the changes as they happen.

2.7 Competitive Elements and the ICT

Lord (2000) shows that few companies are running a full-blown e-business and most of the firms are offering varying levels of e-commerce. Some of the benefits of the electronic commerce (OECD 2000) are: Electronic commerce technologies allow automation of common processes, such as distribution, sales, after-sales service and inventory management. This automation support the SMEs to reduce transaction costs, improve product quality/customer service and reach new customers and suppliers in existing markets and expanding in new markets.

E-commerce could be used as a defensive reaction to competitors engaging in e-commerce and it is also a requirement by large businesses. Internet-based applications can be used in product design (shortening the design process and leading to a higher level of product customization and standardization of parts) and in production and logistics (lower inventory costs, faster production and lower supply costs). Electronic commerce technologies help the SMEs actively to create new products, adopt new business practices and change their way of interacting in the marketplace, (their relations with customers, suppliers, intermediaries and competitors). Engaging in business-to-business or business-to-consumer ecommerce induces small firms to improve controlling of their business process organization. Business procedures that were conducted informally are rationalized and institutionalized.

Electronic commerce applications push firms to reexamine the cost structure of the value chain and their competitive strategies by redefining functions and skills. The networking and sharing of functions enable firms to amplify the gains of electronic commerce. New opportunities for the SMEs stem from the integration of supply and demand chains through horizontal inter-firm linkages between suppliers and customers and from the creation of production clusters. They can contribute to solving the SMEs' problem of lack resources and access to technology by promoting transfer of knowledge through the use of integrated processes.

Smallbone et al. (2003) are concerned with the nature and extent of product and process innovation and adoption of the ICT in the SMEs. Their paper is based on extensive postal surveys conducted in southeast (SE) England, Northern Ireland (NI) and the Republic of Ireland (RoI). Data collected from all three surveys show that sales growth, employment growth and profit margins were higher for innovators than growth, for non-innovators. With regard to the nature and extent of the use of the ICT and e-business, the survey found a higher

level of adoption of nearly all ICT facilities in SE England compared with the levels in NI and the RoI. Tetteh (1999) and O'Toole (2003) describe a framework for the analysis of online infrastructure of the SMEs based on the concepts of business networks and virtual organization. Tetteh (1999) explains that the extended business scope enhances the firm's strategic opportunities and can contribute to its competitive performance.

Small and Medium Sized Enterprises (SMEs) in developing countries need to be able to figure out how, when and where to use the e-commerce techniques to reap the above gains. The main obstacles of using the e-commerce in the developing countries are higher costs to access the Internet and language barrier in addition to the lack of understanding of e-commerce techniques and the technology needed to use it. The usage of e-commerce for growing SMEs in developing countries is becoming a prerequisite for competing well in markets and for dealing with other business partners and customers. Furthermore, the SMEs in the developing countries are facing more challenges when trying to gain from ecommerce than businesses in the developed countries. Some of these challenges are relating to technical infrastructure, laws and regulations and limited logistics systems (OECD 2000).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter set out various stages and phases that were followed in completing the study. It involved a blueprint for the collection, measurement and analysis of data. The chapter described the research design, data collection instruments and procedures and the techniques for data analysis.

3.2 Research Design

This study was carried out through a case study. The case study was preferred because it will enable the researcher to have an in-depth understanding of adopting a business study in response to the role of ICT strategy in enhancing the competitiveness of E-quest Limited. According to Yin (1994), the central components of a case study design includes answering the questions "how" and "why" and focuses on a contemporary phenomenon within its real-life context.

The research setting was E-Quest Limited's strategic initiative to adopt ICT in its operations. The choice of the E-Quest Limited as the organization of study was made in consideration of the renewed realization of the intense potential in ICT education provision in Kenya, the ICDL certification program which consists of modules which define the skills and competencies necessary to be a proficient user of a computer and common computer applications.

3.3 Data Collection

This study used primary sources of data collection. The data was obtained by use of personal interview guide with the respondents. This was through the use of an interview guide. The interview guide had open ended questions. The interview guide focused on the ICT strategies adopted to enhance competitiveness of E-Quest Limited.

It was administered to the CEO of the company as well as the IT Manager, Finance Manager and the Business Development Administrator, who numbered four in total. The respondents were expected to give an insight into the ICT strategies that they have adopted in order to remain ahead of the competition with regard to SMEs information technology adoption strategies.

3.4 Data Analysis

The data gathered from the interviews was analyzed using content analysis. This type of analysis was suitable in that it did not limit the respondents on answers and had potential for generating more information with more details. The content was thematically compared to determine the extent to which it collaborates or contradicts. The content analysis provided evidence that ICT strategy enhances competitiveness at E-quest Limited and also highlighted the challenges.

Content Analysis is useful for tabulating the results of open-ended survey questions and multiple interviews. It is also useful to clarify trends in activities, assess alignment between such activity and stated goals, objectives and strategies. An evaluation was done to show the role of ICT strategy whether the objectives of the strategy had been achieved. Findings were then summarized into a report, discussed and conclusions made.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the study. Analysis was carried out through content analysis. The response rate recorded for the study was 80%. All the respondents interviewed had a workforce within the required range as discussed in the definition of SME. The number of employees ranges from 5 up to 100. This reflects that the chosen respondents were the right ones. The employees of all four respondents had a minimum qualification of a degree education and were computer literate.

4.2 Findings

This section provides the results gathered from respondents. The responses were collected from interview guides filled by the interviewed respondents from E-Quest Limited. Collected data was analysed using content analysis as shown below. The section contains the various themes that were obtained from the interview guide.

The study targeted four senior managers and results show that four out of four respondents filled in and returned the interview guide contributing to 100% response rate. Respondents interviewed came from the senior management that is the CEO, IT Manager, Finance Manager and the Business Development Administrator, since they were involved more in the strategy part of business operations.

4.2.1 Technology adoption

Respondents were asked whether E-Quest Limited relied on technology. From the results, all respondents agreed that the business relied on technology. From the responses, E-Quest Limited being a computer literacy certification organization, it relied on technology for procurement, supply chain, technical support, administration, accounting and communication. For communication purposes, the organization used skype, outlook, gmail and google for research purposes. Further it was discovered that the institution used technology in the delivery of its products which was done through software systems (applications) that facilitated e-learning.

Respondents said that the major driver which influenced ICTs adoption was pressure from competitors. This clearly demonstrated that E-Quest Limited was compelled to adopt ICTs in their businesses to compete with other business in the environment in this era of globalisation. The internal factors which influenced ICTs adoption by E-Quest Limited as rated by most of the respondents were to improve customer services. Thus, businesses which are continuously improving their customer services are in the position to survive and grow in this era of globalisation. To increase sales was also mentioned as a driver to ICTs adoption by E-Quest Limited.

4.2.2 Meaning of ICT & its place at E-quest Limited

Respondents were asked what they understood by ICT. From the responses, they said that ICT involved technologies that facilitated access to information through telecommunications. In addition, respondents said that ICT is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. These included computers, networks and internet.

About the various ICTs available at E-Quest, respondents said they included; Computer Based Assessment Systems, Accounting and Administration System, e-learning solutions, interactive websites, e-meeting solutions, webex meetings, skype, remote support via teamviewer. Others included telephones, google talk, blackberry phones, emails, facebook and twitter.

4.2.3 Knowledge Economy

Respondents were asked what they understood by a knowledge economy. From the responses, respondents understood knowledge economy as a system of consumption and production based on the value of an individual's knowledge. They understood it to be a new economy where competition and value addition is on intangible assets like research and development, software design and development of human capital and ICT.

In addition respondents understood it to mean the overall economic structure that emerges with the revolution of information technology. It was also understood to be one that builds the intellectual capacity of a nation or an economy. Others understood is as a system of consumption and production based on the value of an individuals knowledge.

4.2.4 ICT Decisions at E-Quest Limited

Respondents were asked to say who made decisions at the company. From the results, ICT decisions were consultative among all stakeholders, both internal and other external including suppliers and customers. The Director/ CEO and the IT manager were singled out to play a leading role in making ICT related decisions.

All of them said that when there was a need for technology implementation, they go to IT shops to get advice on the matter or they ask friends and family that have knowledge of IT. Attending of technology related exhibitions also increase their knowledge on investments.

The danger with this approach is that they rely on sales people who do not have any knowledge of their business to advise them on their ICT decision. The kind of information that the owner-manager gets from this process will not be strategic and in line with the business goals. This reflects the lack of ICT specialist at E-Quest Limited. From some respondents, decisions were made randomly - there were no frameworks or decision structures for ICT. Ad-hoc decisions are also taken avoiding calculated and planned decisions on structured budgets which would lead to unsound conclusions on investments and information technology.

4.2.5 Employees and Technology

Respondents were asked whether they considered their employees' technology savvy. All respondents said that all employees were aware of technology and that all of them were required to undertake the ICDL Certification as proof that they understood the basics in computer literacy, since computer skills was one of the most important tools needed in order to be ahead of the competition.

The ICDL Core Product consists of the following seven (7) modules namely: Basic Concepts of IT, Using a Computer and Managing Files, Word Processing, Spreadsheets, Database, Presentation and Information and Communication. Some of the employees also had advanced skills for technical support. In order to stay relevant in the market, the ICDL

certification. which is a skills certification, has also been upgraded to keep up with the challenges of the modern ICT. The recent move of syllabus 4 to 5 has had a great impact.

4.2.6 Usefulness of ICT

About the usefulness of ICT to E-Quest Limited operations, respondents agreed that ICT played a key role in operations as the company relied on technology for supply chain management, in communication and in accounting. In addition respondents said that ICT reduced the costs of operations through communication, marketing and record keeping efficiencies. Technology also helped in relaying information accurately and also attaining customer satisfaction. Overall, ICT helps E-Quest Ltd to deliver real-time solutions to their clients.

Broadly speaking, respondents viewed the benefits arising from ICT as one of product and service enhancement, not just resource saving. For example, the opportunity to make staff savings were mentioned by very few of the respondents. The overwhelming response in the study suggests that E-Quest Limited perceived that their ICT investment represented good value for money. The most advantage being a paperless workplace therefore reducing clatter as all transactions and operations are through ICT, going green and promoting the green image of the company.

4.2.7 Customer Information Storage & Recording of Transactions

Respondents said that customer information was stored through Customer Relationship Management software systems which enabled to retrieve timely information thus quickening decision making. In addition respondents said that the company stored client data in a database which was always protected by a password as well as having a website that had customer information in it.

On how transactions were being recorded at E-Quest Limited, respondents said that the company used Quick Books for accounting transactions, ledgers and on Customer Relationship Management software Systems. Other instruments like external hard drives and flash discs were also used. Spreadsheets were also in great use as this was how the transactions were recorded initially before installation of the Quickbooks. This was normally used to train interns before using the new software.

4.2.8 Barriers to ICT Implementation & ICT Strategy

Respondents were asked to mention some of the barriers that the company encountered when implementing ICT. From the responses, steady and reliable services from ISPs and interference with the fibre optic cable network led to slow internet speeds which were a major barrier. In addition, legal and regulatory issues, excessive reliance on foreign technologies, cost of software, rate of technology change were other major barriers to implementation of ICT by E-Quest Limited.

Further, respondents listed additional barriers that prevented them from implementing ICT, ranging from lack of money, power cuts, lack of knowledge, possibility of fraud, technology intimidation, (perceived) high cost of ICT. The listed barriers are very much in line with the literature, with the addition of power cuts as a new barrier that is probably unique to Kenya. On whether E-Quest Limited had an ICT strategy, all the respondents said that an ICT strategy was lacking.

4.3 Discussion

Information and Communication Technology covers technologies like the simple telephone, point-of-sale systems, stand-alone PCs, networked environments, Internet, and credit card facilities. Ritchie and Brindley (2005) define ICT as "the array of primarily digital technologies designed to collect, organise, store, process and communicate information within and external to an organisation and, in our case, SMEs" (Ritchie & Brindley 2005:206). ICT is a broad concept that covers Information Systems (IS), Information Technology (IT) and digitalisation.

Many authors (Ritchie & Brindley 2005, Martin and Matlay (2001), Fulantelli & Allegra 2003) on this topic concur that ICT brings changes in the global information flow, behaviour, patterns and options of customers and SMEs stand to benefit from ICT in reduced transaction costs, inventory controls, quality controls, access to a wider market space and leveraging economies of scale. According to Moodley (2002), ICT is an enabler for global "networking" economy. "Information and Communication Technology (ICT) offer enterprises a wide range of possibilities for improving their competitiveness: they provide mechanisms for getting access to new market opportunities and specialized information services such as distance consulting, continuous training, new advisory modes, etc." (Fulantelli & Allegra 2003:45)

Organisations use ICT for diverse purposes in order to complement their business model. Thus ICT can be categorised into different groupings from the business, or in this case SME, point of view, according to Lucchetti and Sterlacchini (2004). Depending on the business strategy an SME can choose a specific category as its ICT direction. SMEs realise that ICT can give them competitive advantage over their competitors.

Arthur Goldstuck of World Wide Worx supports this statement by saying that the Internet tends to make a company more competitive (Jackson, 2007). Jackson (2007) emphasises that emerging ICT technology, if used, is most likely to result in a competitive advantage. This competitive advantage is a result of the innovation and flexibility that ICT affords SMEs. This means it will be easier for SMEs to come up with new and creative products and services that are quick to implement, given the decision-making structure of SMEs as opposed to that of larger companies.

Buckley and Montes (2002) explain that compared with big business, SMEs that compared with big business, SMEs are generally found to spend less per employee on ICT employee and also spend less on computers and communication. Moreover, SMEs generally do not have R & D (research and development) or innovation departments, but in order for them to survive in the digital or knowledge economy, it is very important that they develop these.

One characteristic that almost all small businesses have in common is that they are owner managed. The owner is the centre of the business, making all or most of the decisions and thus the owner's personality and attitude towards technology have an impact on the adoption of ICT by the small business. Martin (2005:191) agrees that the owner-manager has limitations, such as "Owner-manager capability gaps or knowledge gaps prevent effective new technology use and selection. Intuitive and organic styles of management and operation impact significantly on technology evaluation and implementation because they make it difficult for the owner-manager to make confident decisions. Owner-manager motivations, value, attitudes and abilities dominate organisation knowledge.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The purpose of this study was to investigate the role played by ICT strategy in the competitiveness of E-quest ltd. The chapter presents the summary of the study, conclusion and recommendations. The majority of the participants agree that to a large extent that the company relies on technology to run its businesses. The company has basic ICT technologies implemented, such as telephone, fax and phone devices, as well as Internet access. When examining the answers it appears that implementation of ICT has not been done from a strategic point of view, but is based more on specific needs that E-quest ltd has or might have. The fact that all the respondents indicated that they know about the knowledge economy but have not implemented an ICT strategy, confirms that E-quest ltd implements ICT because of market forces rather than from a strategic point of view.

This situation is aggravated by the fact that E-quest ltd is managed by the owners, who play a major role in decision making in the business, as highlighted in the questionnaire. The problem is that unless they come from an ICT background, the owners do not have any experience or knowledge of ICT and are intimidated by technology, as one respondent pointed out. Age may play a role in this, as most of the interviewed candidates were 35 years and above; further studies should be done to confirm this. This affects ICT-related decisions, because they are not based on sound knowledge. E-quest ltd should thus employ an ICT specialist to look after the ICT needs of the business, or get a consultant to advise the owner on ICT-related matters at a strategic level. This should improve awareness and knowledge of ICT, thus improving decision making related to ICT in the company.

5.2 Summary of Findings

From the study, E-Quest Limited being a computer literacy certification organization relies on technology for procurement, supply chain, technical support, administration, accounting and communication. Respondents understood what is ICT. From the responses, they said that ICT involved technologies that facilitated access to information through telecommunications. About the various ICTs available at E-Quest, respondents said they included; Computer Based Assessment Systems, Accounting and Administration System, e-learning solutions, interactive websites, e-meeting solutions, webex meetings, skype, remote support via teamviewer.

Others included telephones, google talk, blackberry phones, emails, facebook and twitter. From the study, respondents understood knowledge economy as a system of consumption and production based on the value of an individual's knowledge. The Director/ CEO and the IT manager were singled out to play a leading role in making ICT related decisions. All respondents said that all employees were aware of technology and that all of them were required to undertake the ICDL Certification as proof that they understood the basics in computer literacy.

About the usefulness of ICT to E-Quest Limited operations, respondents agreed that ICT played a key role in operations as the company relied on technology for supply chain management, in communication and in accounting. In addition respondents said that ICT reduced the costs of operations through communication, marketing and record keeping efficiencies. Technology also helped in relaying information accurately and also attaining customer satisfaction. Overall, ICT helps E-Quest Ltd to deliver real-time solutions to their clients.

Respondents said that customer information was stored through CRM systems which enabled to retrieve timely information thus quickening decision making. In addition respondents said that the company stored client data in a database which was always protected by a password as well as having a website that had customer information in it. Respondents were asked to mention some of the barriers that the company encountered when implementing ICT. From the responses, steady and reliable services from ISPs and interference with the fibre optic cable network led to slow internet speeds which were a major barrier.

In addition, legal and regulatory issues, excessive reliance on foreign technologies, cost of software, rate of technology change were other major barriers to implementation of ICT by E-Quest Limited. On whether E-Quest Limited had an ICT strategy, all the respondents said that an ICT strategy was lacking. However, respondents understood the importance and use of an ICT strategy in their firm. Respondents said that ICT gave them a competitive edge as it improved efficiency in operations and service delivery as a whole. Respondents also said that they remained ahead of their competitors who continued offering paper based testing system.

5.3 Conclusion

The findings reflect that the education levels of the staff of the interviewed businesses range from college to degrees, with one of them having IT/ICT related skills. Knowledgeable and skilled ICT employees are very important in the knowledge economy for successful adoption and implementation of ICT. As mentioned before, there is a need to have someone championing ICT in the business and driving the adoption/implementation process. Generally this person needs to be someone with the right authority and influence; in the case of SMEs the owner can play this role.

This role makes sure that any technology that is adopted and used by the business is in line with the business goal and strategies. The findings validate the significant role that ICT knowledge and skills play. All the interviewed respondents agree that they do know about ICT and knowledge economy and they recognise the impact that ICT is making on the economy. The interviews show that in E-Quest Limited, some basic technologies such as telephones, fax machines and computers are already implemented for some sections of the business.

This means that the basic technologies are in place but Internet connectivity and mobile technologies still need to be increased. E-Quest Limited recognises that technology is an important part of their clients' lives, which means that it becomes important for their businesses too. All the interviewed respondents said that their business was impacted by ICT in some way. The findings also confirm the fact that current technology implementation is not planned but random. All the interviewed respondents admit that they did not have a plan in place when they introduced the current technologies into the business.

The finding from the interviews was that the decision-making process is one sided. These results confirm the statement in the literature that the owner is the centre of the SME business, making all or most of the decisions. This is a weakness, as the literature indicates, because the owner-manager of the SME is the decision maker in all aspects of the business, including ICT, without necessarily having proper knowledge of the ICT environment. The owner-manager's capability gaps or knowledge gaps, intuitive or organic styles, and motivations will influence his or her decisions. One of the reasons for this problem is the fact that the owner-manager may not have prioritised ICT as a functional area. ICT is seen more as a "nice-to-have", something that you should have but could do without.

Planning the ICT implementation is essential if any business wants to employ it successfully. This means planning what to use, how to use it, when to use it, who is going to use it, what alternatives to use if it is not working, the infrastructure of it, how to grow it, when to retire it, etc. These are very important questions to answer before implementing ICT - it is critical to have someone with the right knowledge and expertise answering them. The answers in the interviews regarding the barriers to successfully implementing ICT are in line with what most authors in the literature review have identified as obstacles.

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

There is one obstacle that stood out, that of the present power shortage problem, which is a disaster and a threat to Kenyan businesses. The problem is that customers start experiencing delays because the systems are offline, which destroys the benefits that technology should bring to businesses. The other obstacles discussed above can be overcome by employing experts with ICT skills and investing in ICT knowledge within the business. Most of the benefits of ICT come from the data captured from the customer, such as personal details and

transactions details. The reason why the new economy is called the "knowledge economy" is due to the heavy reliance on information and data that is turned into knowledge/intelligence. This knowledge is then used by the business to help its decision-making process. By keeping records of transactions a business can learn and discover new information about the customers, such as their buying patterns or their tastes. Even if an SME has a database, like E-Quest Limited, the information is not exploited in any way that could highlight opportunities for marketing or growth.

5.4 Limitations of the Study

Rigidity to information disclosure by the respondents posed a great limitation. This challenge was handled through public relation and the use of letters of identification from the university to support the research that was done. Time was also a limitation since respondents were busy and could not easily spare time for answering questions. They were however convinced to spare time during lunchtime or their tea break and through booking of appointments during their specified time were done at their convenience. It was difficult to access data because some respondents failed to give adequate information for fear of victimization by management and also some respondents misunderstood the questions. However the researcher assured them that the information was confidential and would be used only for research purposes.

Another limitation of the study is the use of subjective self-reported perceptual measures in assessing the studies. Even though, an attempt was made to identify the best respondents by contacting the key personnel that provide the best information, the accuracy of self perceptions might be strongly influence by the respondent experience in the management of the organizations and frame of reference at the point in time. For instance, perceive biasness

may occur if a person with a high reputation strongly believes that their management practices are more advanced compared to other people. In addition to the above limitations, the findings cannot be generalized in a larger context across the cultures of other business environments.

5.5 Recommendations

The following recommendations were suggested; The first thing that needs to happen is that E-Quest Limited must establish ICT as a functional area, just like the functional areas of finance or human resources. By doing so, it will be recognising ICT as an important function that deserves to be taken seriously. Once that is done they need to identify fitting roles for this function and establish their specifications, to know what abilities, skills and experience they are looking for when they want to fill the roles. When looking for staff to fill the positions they should make sure that they get people with the right qualifications and experience to do the job.

If the problem is that E-Quest Limited cannot afford someone with the required skills, then it could hire a consultant who can give advice and training. The objective will be to get a consulting company that understands both ICT and the business aspect. E-Quest Limited should start considering the adoption of the various new technologies it has for example VoIP and mobile technologies, making sure that such technologies are aligned with their business objectives. This needs to be done at a strategic level, meaning that E-Quest Limited should employ the right people to assist in these studies and the implementation thereof.

Constant communication with staff about what is happening is important to make all employees comfortable with it. E-Quest Limited should also invest in training its staff about technology and encourage employees to use technology. The aim is to make technology easy

and understandable so that everyone feels comfortable with it and applies it effectively. Knowledge is the answer to decision making, therefore the owner-manager needs to be equipped with ICT knowledge or surrounded by knowledgeable ICT people. E-Quest Limited needs to establish ICT as a function, with ICT represented at the strategic level with input into decisions affecting the future direction of the business. The company should have a dedicated person or group with the main aim of driving and looking after the technology needs of E-Quest Limited, with the relevant powers to be able to execute such decisions. The ICT decision makers should include different roles, such as leader of technology (warrior), translator of technology (interpreter), documenter of technology (clerk) and holder of special knowledge (priest). The objective in assigning roles is to make ICT more manageable and less intimidating.

On ICT barriers, the first step is to classify all the obstacles or stumbling blocks into impact areas, such as strategic, technological, or organisational and behavioural. Once that is done, a plan of action should be drawn up of how to overcome the obstacles. For example, some of the barriers can be dealt with more quickly as they do not require money, while others can be planned for when funds become available. The advantage of grouping the obstacles is that you might find that the organisational and behavioural barriers can be solved with relative ease, while solving technology-related barriers might take time. Education about ICT will solve issues such as lack of knowledge, feeling intimidated by technology and security, which fall in the organisational and behavioural grouping of barriers. Regarding security issues, there is a possibility of fraud in any system, not only an ICT system, but awareness of how to protect oneself in the ICT environment will reduce the risks. The problem of power cuts can be overcome by investing in alternative energy sources like generators or solar power.

Storing data is very important but will not result in any benefit or competitive advantage unless E-Quest Limited takes that data, starts analysing it and studying patterns in it and uses it to draw up business strategies. So apart from the database, the company needs to invest in or outsource analytical tools and skills in order to explore the information for potential benefits. This again reflects the need for knowledge and skills related to ICT. Based on the literature review, the following general steps to using ICT as a competitive tool are suggested.

Set up ICT strategy based on the business goal and objectives. This means a strategy of how technology will be used to help the business achieve its objectives and optimise its business processes. This would include choosing the type of technology, infrastructure and architecture that will best achieve business goals and maximise benefits. Make sure the ICT strategy is aligned with the business strategy. This means that the ICT strategy should support the business strategy. ICT should not run the business. Identify the role that ICT will be playing within the business. These roles are, for example, the driver of ICT, the maintainer, or the administrator. E-Quest Limited should hire knowledgeable staff or consult with ICT professionals.

5.6 Recommendation for further research

The study focused on one small and medium enterprise in the information communication technology industry (E-Quest Limited). Further studies could be conducted to include a cluster of SMEs in Kenya in order to create comparisons. The findings from E-quest Limited's replies to the questionnaire reflect the need for further investigation on how SMEs can achieve understanding of the knowledge economy and the effect of ICT on it.

5.7 Implication of the Study on Theory, Policy and Practice

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

This study applies Porter's diamond and five forces framework on these SMEs in order to contribute towards a better understanding of the sources of competitive advantage. Thus, in order to build a sustainable competitive advantage for the SMEs in Kenya, there is a need to improve the sources of competitive advantage.

The study also implies that SMEs should work into building a dynamic clustering for creating competitive advantage. Networking allows the SMEs to combine the advantages of smaller scale and greater flexibility with economies of scale and scope in larger markets. The links might take different shapes in which different firms join together to co-produce, co-market, or co-purchase, cooperate in new product development, or share of information.

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APPENDICES

Appendix I: Letter of Introduction

UNIVERSITY OF NAIROBI
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TO WHOM IT MAY CONCERN

The bearer of this letter ..... GEORGETTE K WACHEGA

Registration No D61/71293/2008

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

UNIVERSITY OF NAIROBI
12 JUL 2012
P.O. Box 30197 - 00100

IMMACULATE OMANO
MBA ADMINISTRATOR
MBA OFFICE, AMBANK HOUSE

Appendix II

Interview Guide

Section A: General Information

1. Name (optional).....

2. Position in this company.....

3. Number of years working with the company.....

4. Current Level of Education.....

Section B: ICT Strategy and Competitiveness related questions

(Kindly provide as much information as possible)

5. Does this business rely on technology? If Yes, How?

.....

6. What do you understand by ICT?

.....

7. What Information and Communication Technologies are in place in this company?

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8. What do you understand about knowledge economy?

.....

9. Who makes ICT related decisions in your company?

.....

10. Is your employees' technology savvy? Elaborate

.....

11. How dependent is your company on ICT? Explain how ICT is useful to your company's operations.

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12. How do you store customer information in your company?

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13. How do you record transactions?

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14. How do you do your financial recording or bookkeeping?

.....

15. What barriers do you find in implementing ICT solutions in your company?

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16. Does this company have an ICT Strategy?

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17. What would you say are the roles played by ICT strategy in the competitiveness of E-quest Limited?

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18. What is your opinion that ICT has leveraged the competitiveness of E-quest limited among its competitors?

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THANK YOU FOR YOUR TIME