THE STRATEGIC VALUE OF E-COMMERCE ADOPTION IN SMALL AND MEDIUM ENTERPRISES IN NAIROBI, KENYA

BY

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DECLARATION

This research project is my original work and has never been presented in any other University/College for the award of degree/diploma/certificate.

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DEDICATION

This work is dedicated to my beloved sons Terrence, Price and Michael

May you grow to be God-fearing and law-abiding citizens

Dad

To my wife Janice, I love you

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ABSTRACT

The study set out to determine the extent of e-commerce adoption, the factors influencing e-commerce adoption, and the strategic value of e-commerce adoption in small and medium enterprises in Nairobi, Kenya. The population of interest for the study was all small and medium enterprises with official premises in Nairobi County. The study is a descriptive survey and a sample size of 176 firms was used. Out of the 176 small and medium enterprises targeted, 163 firms responded which translates to 93% response rate. The study was successful in determining the extent of e-commerce adoption in small and medium enterprises in Nairobi, Kenya. The findings indicate that e-commerce is not widespread among small and medium enterprises in Nairobi. A meager 3% of the firms use the internet for online sales. On the other hand, the study established several factors that influence e-commerce adoption in the SME sector. The most important factors were the perceived cost of implementing e-commerce technologies and lack of awareness with regard to e-commerce. Nonetheless, the availability of a specific e-commerce strategy is a critical input. In addition, the study established that e-commerce is a critical part of business strategy for most adopters. Out of the original 163 respondent firms, only 93 firms exhibited some degree of e-commerce adoption. This group formed the basis for the determination of the strategic value of e-commerce adoption. Thus, for the adopters, e-commerce was found to provide strategic value in creating new business opportunities, sales, customer service, cost reduction, efficiency, new product development, innovation, access to international markets, linkages, marketing and communications. And while some small and medium enterprises in Nairobi have not adopted e-commerce, the study has established that generally there is a positive perception of the business value of e-commerce. The study thus recommends that comprehensive mechanisms be put in place by policy makers and practitioners to drive up adoption so as to realize the full potential of e-commerce among small and medium enterprises. More in-depth case studies should also be carried out regarding e-commerce adoption in small and medium enterprises. The study further recommends that efforts be initiated to quantify the tangible benefits of e-commerce in SMEs. In conclusion the researcher has predicted that a meaningful impact of e-commerce on the industry structure is to be expected as and when the level of adoption in small and medium enterprises attains the requisite critical mass threshold.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

All organizations operate within an environment that influences the way in which they conduct business. An organization relies on the environment for its input resources, transforms them into outputs which go back to the environment. The external environment influences a firm's choice of direction and action. Understanding the trends characterizing the external environment helps in formulating strategy. The external environment forces include among others changing consumer needs, economic conditions, natural weather phenomena, trading blocks, competition, socio-cultural, politico-legal and technological factors (Pearce & Robinson, 2003). Accordingly, strategy development should be strongly influenced by considering the environment the business operates in. To inform e-commerce strategy, the most significant influences are those of the immediate marketplace of the micro-environment that is shaped by the needs of customers and how products and services are provided to them. Wider influences are provided by local and international economic conditions and legislation together with whatever business practices are acceptable to society. Technological innovations are vital in creating opportunities to provide superior services and in changing the shape of the marketplace (Chaffey, 2009).

Technological platforms and innovations provide an important foundation for competitive advantage. In the 15 years since it began in 1995, e-commerce has continued to grow globally bringing about enormous changes in business firms, markets and consumer behaviour. Economies and business firms around the globe are being similarly affected. Laudon and Traver (2009) further states that e-commerce in all of its forms is projected to continue growing at double-digit rates, becoming the fastest-growing form of commerce in the world. E-commerce has opened up more business opportunities for organizations everywhere. It has introduced new opportunities for small and large organizations to compete in the global marketplace. It has also changed the way we think about business strategies and sources of competitive advantage.

Thompson and Strickland (2003) suggest that in today's business environment, competitive advantage goes to those organizations most able to mobilize information and create systems to use knowledge effectively. Accurate, timely information allows organizational members to assess markets, monitor progress and take corrective action promptly. Innovative, state-of-the-art systems can be a basis for competitive advantage if they give firms capabilities that rivals cannot match. Thus companies everywhere are rushing to install the support systems they need to participate in one or more segments of the rapidly expanding internet economy and enable better execution of their business strategies. Well-conceived state-of-the-art support systems not only facilitate better strategy execution, but also strengthen organizational capabilities enough to provide a competitive edge over rivals.

1.1.1 Overview of E-commerce

E-commerce, which stands for electronic commerce, has been defined by Laudon and Traver (2009) as the use of the internet and the Web to transact business. More formally, it focuses on the digitally enabled commercial transactions between and among organizations and individuals. And as they have suggested, each of these components of the working definition of e-commerce is important. Digitally enabled transactions include all transactions mediated by digital technology. For the most part, this means transactions that occur over the internet and the Web. Commercial transactions involve the exchange of value (such as money) across organizational or individual boundaries in return for products and services. But e-commerce involves much more than electronically mediated financial transactions between organizations and customers. As Chaffey (2009) states, e-commerce should be considered as all electronically mediated transactions between organization and any third-party it deals with. By this definition, non-financial transactions such as customer requests for further information would also be considered to be part of e-commerce. The United Kingdom government also uses a broad definition when explaining the scope of e-commerce to industry as the exchange of information across electronic networks, at any stage in the supply chain, whether within an organization, between businesses, between businesses and consumers, or between the public and private sector, whether paid or unpaid (UK Cabinet Office, 1999).

There are a variety of different types of e-commerce and many different ways to characterize these types. According to Laudon and Traver (2009), there are five major types of e-commerce based on the nature of the market relationship namely Business-to-Business (B2B), Business-to-Consumer (B2C), Consumer-to-Consumer (C2C), Peer-to-Peer (P2P) and Mobile Commerce (M-commerce). Kalakota and Whinston (1997) refer to a range of different perspectives for e-commerce, namely communications perspective, business process perspective, service perspective and online perspective.

E-commerce has introduced new opportunities for both small and large organizations. But unlike larger organizations who already operate in the global marketplace and heavily rely on internet technologies to conduct business, most governments are looking to encourage small and medium enterprises to use e-commerce to tap into the international market. More recent research suggests small and medium enterprises have been relatively slow to adopt e-commerce due to limited usage of the internet (Arnott & Bridgewater, 2002). Their findings indicate that majority of small and medium enterprises use the internet for information provision rather than interactive, relationship-building or transactional facilities. They also find that smaller firms use significantly fewer internet tools than their larger counterparts. Meckel et al (2004) found that fewer than 15% of small and medium enterprises had formal, documented e-commerce strategies. Quayle (2002) attributes this to the strategic importance of e-commerce in this type of organizations.

1.1.2 Strategic Value of E-commerce

Strategy articulates the overall direction of the firm. Johnson and Scholes (2002) defines strategy as the direction and scope of an organization over the long-term which achieves advantage for the organization through its configuration of resources within the changing environment and to fulfill stakeholder expectations. Strategy links the organization and its environment thereby matching the resources and capabilities of an organization to that environment. Thus, strategy is about aligning every activity to create an offering that cannot easily be emulated by competitors. E-commerce seeks to capitalize on opportunities the environment offers. It is employed in the organization's relentless search for sustained uniqueness and out-performance in terms of value creation for customers, suppliers, shareholders and other stakeholders. According to Porter (1998), for an organization to achieve a competitive advantage over competition, it has to tap that advantage through cost leadership, innovation, focus and speed. Organizations are creating, sustaining and compounding these advantages through e-commerce. Thus, e-commerce improves the organization's strategic capability thereby enabling organizations to provide products and services that are valued by customers and by enhancing competitive performance.

As Chaffey and Wood (2004) have stated, much of the organizational value created by e-commerce is due to more effective use of information. Value addition is achieved by providing better-quality products and services to an organization's customers. Information can be used to better understand customer characteristics and needs and their level of satisfaction with products and services. Cost reduction is realized by making the business processes more efficient. Efficiency is achieved by using information to source, create, market and deliver products and services using fewer resources. Risk management is a well-established use of information within organizations and this has created different functions in organizations. Marchand (1999) uses the expression 'create new reality' to refer to how e-commerce can be used to develop new products and services.

Laudon and Traver (2009) points to the fact that e-commerce inherently makes it easy for new competitors to enter the marketplace and offer substitute products or channels of delivery. Trott (2008) points to some benefits of adopting e-commerce such as the ability to enter international markets or sell to different types of customers more readily. Mureithi (2000) identifies lower barriers to entry as a business benefit. This tends to intensify competition. Because information becomes available to everyone, the internet inherently shifts power to buyers who can quickly discover the lowest-cost provider in the market. The internet also presents many new opportunities for creating value, for branding products and charging premium prices and for enlarging existing businesses.

E-commerce changes industry structure and business strategy. According to Porter (1998), an industry structure is characterized by five forces namely rivalry among existing competitors, the threat of substitute products, barriers to entry into the industry, the bargaining power of suppliers, and the bargaining power of buyers. E-commerce has the potential to change the relative strength of these competitive forces. Although the internet is a unique marketplace, the same principles of strategy and business apply. Successful e-commerce strategies involve using the internet to leverage and strengthen existing businesses, and to use the internet to provide products and services that competitors cannot copy in the short term (Porter, 2001).

1.1.3 Small and Medium Enterprises in Kenya

In Kenya, the Micro, Small and Medium Enterprises Bill (2009) has used number of employees and turnover to categorize small and medium enterprises. Micro enterprises are those with 10 or fewer employees and an annual turnover not exceeding Ksh. 500,000. Small enterprises have 10 but less than 50 employees and an annual turnover ranging between Ksh. 500,000 and Ksh. 5M, while Medium enterprises have 50 to 100 employees and an annual turnover of Ksh. 5M to Ksh. 800M.

The National Micro, Small and Medium Enterprises Baseline Survey (1999) provides the most comprehensive picture of small and medium enterprises (SMEs) in Kenya. The report estimated that there were approximately 1.3 million small and medium enterprises in Kenya, employing about 2.3 million people. Close to two-thirds of all enterprises were in the trade sector, meaning that a large proportion of small and medium enterprises were involved in the buying and selling of commodities; thirteen and fifteen per cent respectively were involved in manufacturing and services.

According to the Sessional Paper No. 2 of 2005, the overall goal of the Kenya SME policy framework is to develop a vibrant SME sector capable of promoting the creation of durable, decent and productive employment opportunities, stimulating economic growth, reducing economic disparities, strengthening linkages between firms, diversifying the domestic production structure and industrial base, leveling the playing field between small and medium enterprises and the larger enterprises, improving the SME sector funding and enhancing institutional collaboration and coordination of interventions in the SME sector in the country (Research ICT Africa, 2006).

1.2 Research Problem

E-commerce offers huge potentials to small and medium enterprises. With the rapid advancement in information and communications technologies, businesses around the world are increasingly changing the way they do business. Furthermore, with the emergence of the global economy, e-commerce is fast being regarded as the way to go global for virtually every industry and business, large or small (Turban et al., 2004).

However, UNCTAD (2003) has argued that in spite of the many potential benefits of e-commerce, pressure from trading partners and encouragement from governments, e-commerce adoption remains limited in developing countries. But Hallberg (2000) has stated that the SME sector has an important role to play in the economic development of developing countries.

Accordingly, the government, donors and the private sector have recognized the important role of the SME sector in the overall development of the Kenyan economy. Arising from this, Kariuki (2009) says that one of the key issues is to identify the current technological practices and needs, as well as the benefits and obstacles that Kenyan small and medium enterprises face in their daily business activities. But while the most important motivators for the adoption of e-commerce would be the promise of a relative advantage for the organization over its competitors through improved efficiencies and cost savings, Kinyanjui and McCormick (2002) have stated that the e-commerce technology is not firmly established in many sectors of the Kenyan economy. This they say is despite the sustained increase in internet coverage and many assertions in literature on e-commerce about the potential benefits for firms. It is therefore imperative to establish the real extent and drivers of e-commerce adoption in small and medium enterprises in Kenya.

MacGregor et al (1996) argued that the perception of management towards the benefits of e-commerce is an overriding factor in its adoption. Jones, Benyon-Davies and Muir (2003) also mention that it is the ignorance about e-commerce benefits that inhibits its adoption. Chin and Castleman (2002) agree with this position stating that knowledge and awareness about the benefits of e-commerce motivates small businesses to adopt increasingly sophisticated e-commerce solutions. These studies are useful, but need to be validated locally.

And although several studies on e-commerce have been carried out at the University of Nairobi, they have provided little insight into the strategic value of e-commerce adoption for SMEs in Nairobi as they have tended to focus on either usage, challenges or factors influencing e-commerce adoption in other sectors of the economy. For instance, Mbuvi (2000) and Korir (2005) studied the impact and potentials of e-commerce adoption by tour operators in Nairobi. Ojung'a (2005) and Nyaanga (2007) studied e-commerce usage in Kenyan commercial banks. Wataku, (2007) studied the extent to which the adoption of e-commerce has facilitated business in clearing and forwarding firms in Nairobi. Kipkech, (2009) evaluated e-commerce applications in microfinance Institutions. Musembi (2001) investigated the factors that have influenced the adoption of e-commerce in the retailing industry, while Kiyeng (2003) studied the challenges of business e-commerce in Kenya. Since none of these studies has specifically looked at the strategic value of e-commerce in small and medium enterprises in Nairobi, this study aims to fill the gap and provide a holistic view of e-commerce marketplace. The overall research question which this study seeks to answer is "what is the strategic value of e-commerce adoption in small and medium enterprises in Nairobi, Kenya?"

1.3 Research Objectives

The overall objective of this study is to establish the strategic value of e-commerce adoption in small and medium enterprises in Nairobi, Kenya. Specifically the study intends to meet the following objectives:

i. Determine the extent of e-commerce adoption among small and medium enterprises in Nairobi, Kenya
ii. Establish the factors that influence e-commerce adoption in small and medium enterprises in Nairobi, Kenya
iii. Determine the strategic value of e-commerce adoption in small and medium enterprises in Nairobi, Kenya.

1.4 Value of the Study

The study contributes to the raging debate among academia and practitioners about the impact of e-commerce on firms in developing countries by examining its strategic value in small and medium enterprises in Nairobi. A study based on small and medium enterprises is particularly important since small and medium enterprises continue to play an important role in the national economy. According to the Economic Survey (2006), the sector contributes over 50% of the new jobs created in the country.

The study provides a basis for policy makers, especially the government's Ministry of Information and Communication, to assess the extent of acceptance and perceived benefits of e-commerce adoption. This information is vital in developing policies to support the growth e-commerce technologies.

The study contributes to existing knowledge of e-commerce. As such, the findings will be useful in enlightening academia on the strategic value of e-commerce in small and medium enterprises in Nairobi. The study will also be of value to researchers as a basis for further research in e-commerce.

The study will be useful to the business managers in small and medium enterprises involved in crafting strategy as e-commerce is viewed as a valuable component of corporate strategy. The study will provide vital insights about the opportunities presented by e-commerce.

E-commerce practitioners such as service providers will benefit from this study as it provides information necessary to understand the requirements of small and medium enterprises in terms of technology, products and pricing. The study will be significant to the business community in understanding e-commerce technologies. This is particularly critical at a time when the government and other stakeholders are partnering with the private sector to realize the goals of Vision 2030.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of literature on the strategic value of e-commerce adoption in small and medium enterprises. It looks at the concept of e-commerce, types of e-commerce, the e-commerce environment, e-commerce infrastructure, drivers of e-commerce adoption, strategic value of e-commerce and adoption of e-commerce in small and medium enterprises. The sources of literature include books, internet articles and published studies in journals.

2.2 The Concept of E-commerce

The concept of e-commerce has been broadly written about as well as variously defined. According to Jelassi and Enders (2008), e-commerce stands for electronic commerce which deals with the facilitation of transactions and selling of products and services online, that is, via the internet or any other telecommunications network. This involves the electronic trading of physical and digital goods, quite often encompassing all the trading steps such as online marketing, online ordering, e-payment and, for digital goods, online distribution and after-sales support activities.

E-commerce is often thought simply to refer to buying and selling using the internet; people immediately think of consumer retail purchases from companies such as Amazon. But e-commerce involves much more than electronically mediated financial transactions between organizations and customers. E-commerce should be considered as all electronically mediated transactions between organization and any third-party it deals with. By this definition, non-financial transactions such as customer requests for further information would also be considered to be part of e-commerce (Chaffey, 2009).

Kalakota and Whinston (1997) refer to a range of different perspectives for e-commerce, namely communications perspective, that is, the delivery of information, products or services or payment by electronic means; business process perspective through the application of technology towards the automation of business transactions and workflows; service perspective by enabling cost cutting at the same time as increasing the speed and quality of service delivery; and online perspective which is the buying and selling of products and information online. The United Kingdom government also uses a broad definition when explaining the scope of e-commerce to industry as the exchange of information across electronic networks, at any stage in the supply chain, whether within an organization, between businesses, between businesses and consumers, or between the public and private sector, whether paid or unpaid (UK Cabinet Office, 1999).

These definitions show that electronic commerce is not solely restricted to the actual buying and selling of products, but also includes pre-sale and post-sale activities across the supply chain. E-commerce is facilitated by a range of digital technologies that enable electronic communications. These technologies include internet communications through websites and e-mail as well as other digital media such as wireless or mobile and media for delivering digital television such as cable and satellite (Chaffey, 2009). He goes on to state that when evaluating the strategic impact of e-commerce on an organization, it is useful to identify opportunities for buy-side and sell-side e-commerce, since systems with different functionalities will need to be created to accommodate transactions with buyers and suppliers. Buy-side e-commerce refers to transactions to procure resources from suppliers, while sell-side e-commerce refers to transactions involved with selling products to customers. So e-commerce transactions in organizations can be considered from two perspectives: sell-side from the perspective of the selling organization and buy-side from the perspective of the buying organization.

2.2.1 Types of E-commerce

There are a variety of different types of e-commerce and many different ways to characterize these types. For purposes of this study, and according to Laudon and Traver (2009), there are five major types of e-commerce based on the nature of the market relationship, that is, who is selling to whom. The exceptions are P2P and M-commerce, which are technology-based distinctions.

Business-to-Business (B2B) e-commerce, in which businesses focus on selling to other businesses, is the largest form of e-commerce. The other types include Business-to-Consumer (B2C) e-commerce, the most commonly discussed type of e-commerce, in which online businesses attempt to reach individual consumers. Consumer-to-Consumer (C2C) e-commerce provides a way for consumers to sell to each other, with the help of an online market maker such as the auction site eBay. Peer-to-Peer (P2P) e-commerce enables internet users to share files and computer resources directly without having to go through a central Web Server. This is the purest form of P2P. Mobile commerce, or M-commerce, refers to the use of wireless digital devices to enable transactions on the Web. M-commerce involves the use of wireless networks to connect cell phones, handheld devices and personal computers to the Web.

2.2.2 The E-commerce Environment

Several factors in the environment influence e-commerce adoption by organizations. Table 2.0 presents the main marketplace or macro-environmental factors and the micro-environmental factors that directly affect an organization.

Table 2.1 - Factors in the Macro- and Micro-environment

Macro-Environment	**Micro-environment**
Social	The Organization
Legal, Ethical	Its Customers
Economic	Its Suppliers
Political	Its Competitors
Technological	Intermediaries
Competitive	The Public at large

Source: Chaffey (2009). E-business and E-commerce Management: Strategy, Implementation and Practice, 4th Edition, pg 193.

2.2.3 E-commerce Opportunities

According to Laudon and Traver (2009), e-commerce has introduced new opportunities for small and large organizations to compete in the global marketplace. Many commentators have noted that one of the biggest changes introduced by electronic communications is how approaches to transmitting and transforming information can be used for competitive advantage. The internet also provides significant opportunities for many businesses to build closer relationships with their stakeholders.

Encouraging the use of e-commerce services by customers and suppliers can significantly reduce costs while providing a new, convenient channel for purchase and customer service. Encouraging the use of online services can help achieve ‘soft lock-in’. This means that a customer or supplier continues to use a service since they find the service valuable and they have also invested time in learning that service or integrating it with their systems and there are some costs in switching (Chaffey, 2009).

2.2.4 Business Models for E-commerce

A review of the business models made available through e-commerce is of relevance to existing companies. Venkatram (2000) points out that existing businesses need to use the internet to build on current business models, while at the same time experimenting with new business models. New business models may be important to gain a competitive advantage over existing competitors, while at the same time heading off similar business models created by new entrants.

Timmers (1999) defines a business model as architecture for products, services and information flows, including a description of the various business actors and their roles; and a description of the potential benefits for the various business actors; and a description of the source of revenue. The business model for e-commerce requires consideration of a company and its position in the market which relate to structure of the micro-environment. He further states there are eight key elements of the business model to be defined which summarizes the organization's e-commerce strategy as value proposition, market revenue models and cost base, competitive environment, value chain and marketplace positioning, representation in the physical and virtual world, organizational structure and management.

2.2.5 E-commerce Infrastructure

According to Chaffey (2009), e-commerce infrastructure refers to the combination of hardware such as servers and client personal computers in an organization, the network used to link this hardware and the software applications used to deliver services to partners and customers. Infrastructure also includes the architecture of the networks, hardware and software and where it is located. Infrastructure can also be considered to include the methods for publishing data and documents accessed through e-commerce applications. A key decision with managing this infrastructure is which elements are located within the company and which are managed externally as third-party applications, data servers and networks.

The internet enables communication between millions of connected computers worldwide. The internet refers to the physical network that links computers across the globe. Requests are transmitted from personal computers and mobile devices whose users request services to server computers that hold information and host business applications that deliver the services in response to requests. Thus, the internet is a large-scale client/server system. Client computers within homes and businesses are connected to the internet via local Internet Service Providers (ISPs) which, in turn, are linked to larger ISPs with connection to the major national and international infrastructure or backbones which are managed by commercial organizations such as UUNET. A facility exists to connect multiple backbones of the major ISPs onto a single high-speed link out of a country and to the world. Globally, there are many submarine cables which form the backbone between countries (Chaffey, 2009).

Ochieng (2009) states that the arrival in 2009 of fibre optic cable heralded a new era of better, faster and more affordable internet connectivity. Defining an adequate technology infrastructure is vital to all companies adopting e-commerce. This is because infrastructure directly affects the quality of service experienced by users of the system in terms of speed and responsiveness. The e-commerce services provided through a standardized infrastructure also determine the capability of an organization to compete through differentiating itself in the marketplace. It is also important that the e-commerce infrastructure and the process of reviewing new technology investments be flexible enough to support changes required by the business to compete effectively.

2.2.6 E-commerce Payment Systems

According to Laudon and Traver (2009), the emergence of e-commerce has created new financial needs that in some cases cannot be effectively fulfilled by traditional payment systems. E-commerce technology offers a number of possibilities for creating new payment systems to substitute for existing systems, as well as for creating enhancements to existing systems.

E-commerce payment systems in use today include online credit card transactions, digital wallets, digital cash, online stored value payment systems, digital accumulating balance payment systems, digital checking payment systems and wireless payment systems. In 2008, credit cards were estimated to account for over 60% of online transactions, although the use of debit cards has been increasing. However, eMarketer (2008) alludes that the different types of e-commerce payment systems have varying popularity in different parts of the world.

2.2.7 Risks and Barriers to E-commerce Adoption

Opportunities have to be balanced against the risks of introducing e-commerce, which risks vary from strategic risks to practical risks. One of the main strategic risks is making the wrong decision about e-commerce investment. In every business sector, some companies have taken advantage of e-commerce and gained a competitive advantage. But others have invested in e-commerce and have not achieved the hoped-for returns, either because the execution of the plan was flawed, or simply because the planned approaches used for their market were inappropriate. As well as the strategic risks, there are also many practical risks which can lead to bad customer experiences and damaged company reputation. An example is hackers penetrating the security of the system and stealing customers' credit card details. The perception of these risks may lead to limited adoption of e-commerce in many organizations. This is particularly the case for small and medium enterprises (Chaffey, 2009).

A UK Department of Trade and Industry (DTI, 2002) study evaluated some of the barriers to B2B e-commerce which remain valid today. It was concluded that reasons of cost were the most important factors. This suggests the importance of business managers assessing e-commerce to develop a cost-benefit analysis that considers both the initial investment costs and the ongoing maintenance costs that form the Total Cost of Ownership (TCO) against the value created from the tangible and intangible benefits. The study found typical barriers to development of online technologies to include: set-up cost, running costs, lack of time, lack of skills, reluctance of staff, lack of knowledge, difficulty integrating IT systems, not relevant to business, lack of technology, lack of management support, difficulty in changing processes, no benefits, security concerns, reliability, reluctance of business partners, insufficient government support, and current bandwidth restrictions.

2.3 Drivers of E-commerce Adoption

Business adoption of e-commerce is driven by benefits to different parts of the organization. First and foremost, managers are concerned about how the benefits of e-commerce will impact on profitability or generating value to an organization. There are two main ways in which this can be achieved. One is potential for increased revenue arising from increased reach to larger customer base and encouraging loyalty and repeat purchases among existing customers. Two is cost reduction achieved through delivering services electronically. Reductions include staff costs, transport and costs of materials such as paper (Chaffey, 2009).

At a relatively early point in e-commerce adoption, the UK Department of Trade and Industry (DTI, 2000) identified two main categories of drivers which remain relevant today. Cost/efficiency drivers include increasing speed with which supplies can be obtained, increasing speed with which goods can be dispatched, reduced selling and purchasing costs, and reduced operating costs. Competitiveness drivers include **c**ustomer demand, improving the range and quality of services offered, and avoiding losing market share to businesses already using e-commerce.

More recently, Perrott (2005) identified four key areas driving performance which are cost-benefit, competitive pressures, market advantage and value adding. When reviewing potential benefits, it is useful to identify both tangible and intangible benefits. An analysis was performed to identify the barriers and drivers of e-commerce adoption by Doherty et al (2003). These authors researched the drivers and barriers to retailers' adoption to determine the most important factors. They concluded that the two most important factors which correlate with adoption are one, 'Internet target segment', that is, customers in their market are typically adopters of the internet, and two, 'Internet strategy', that is, a defined internet strategy is in place. This suggest, as would be expected, that companies that do not have a coherent internet or e-commerce strategy are less likely to use higher levels of internet services.

2.4 Strategic Value of E-commerce

The internet and the web have changed the business environment in the last decade, including industry structures, business strategies, industry and firm operations, business processes and value chains. In general, e-commerce is available to all players, and this fact inherently makes it easy for new competitors to enter the marketplace and offer substitute products or channels of delivery. This tends to intensify competition. Because information becomes available to everyone, the internet inherently shifts power to buyers who can quickly discover the lowest-cost provider in the market (on the web). On the other hand, the internet presents many new opportunities for creating value, for branding products and charging premium prices and for enlarging and already powerful physical business (Laudon & Traver, 2009).

E-commerce changes industry structure. Industry structure refers to the nature of the players in an industry and their relative bargaining power. An industry structure is characterized by five forces, namely rivalry among existing competitors, the threat of substitute products, barriers to entry into the industry, the bargaining power of suppliers, and the bargaining power of buyers (Porter, 1998). When you describe an industry's structure, you are describing the general business environment in an industry and the overall profitability of doing business in that environment. According to Laudon and Traver (2009), e-commerce has the potential to change the relative strength of these competitive forces.

Although the internet is a unique marketplace, the same principles of strategy and business apply. Successful e-commerce strategies involve using the internet to leverage and strengthen existing business (rather than destroy existing business), and to use the internet to provide products and services that competitors cannot copy in the short-term and that means developing unique products, proprietary content, distinguishing processes (like Amazon's one-click shopping concept), and personalized or customized services and products (Porter, 2001).

Adopting a strategy of cost competition means a business has discovered some unique set of business processes or resources that other firms cannot obtain in the marketplace. E-commerce offers some new ways to compete on cost. Firms can lower the cost of order entry by having a single order entry system worldwide; and leverage richness, interactivity, and personalization by creating customer profiles online and treating each individual customer differently without the use of an expensive sales force that performed these functions in the past. The firms can also leverage the information density of the web by providing customers with detailed information on products, without maintaining expensive catalogs (Laudon & Traver, 2009).

In totality, the differentiation features of a product constitute the customer value proposition. According to Jelassi and Enders (2008), the internet and the web offer some unique ways to differentiate products. The ability to personalize the shopping experience and to customize the product to the particular demands of customers is perhaps the most significant ways in which e-commerce can be used to differentiate products. E-commerce can also differentiate products by leveraging the ubiquitous nature of the web, its global reach, richness and interactivity, and information density.

Laudon & Traver (2009) further identifies two other generic business strategies as scope and focus. A scope strategy is a strategy to compete in all markets around the globe, rather than merely in local, regional, or national markets. The internet's global reach, universal standards, and ubiquity can certainly be leveraged to assist businesses attain a global presence and becoming global competitors. On the other hand, a focus strategy is a strategy to compete within a narrow market or product segment. This is a specialization strategy with the goal of becoming the premier provider in a narrow market. E-commerce offers capabilities for a focus strategy. For example firms can leverage the web's rich interactive features to create highly focused messages to different market segments; the information intensity of the web makes it possible to focus e-mail and other marketing campaigns on small market segments; personalization and related customization means the same products can be customized and personalized to fulfill the very focused needs of specific market segments and consumers.

2.5 Adoption of E-commerce in Small and Medium Enterprises

More recent research suggests small and medium enterprises have been relatively slow to adopt e-commerce. Consequently, large firms are most dominant and more pervasive than small and medium sized firms as far as e-commerce is concerned (Daniel & Grimshaw, 2002). Research by Arnott and Bridgewater (2002) suggests limited usage of internet technologies. The authors tested the level of sophistication by which small and medium enterprises are using the internet and they found that the majority of firms are using the internet for information provision rather than interactive, relation-building or transactional facilities. They also find that smaller firms are using significantly fewer internet tools than their larger counterparts.

The organizational context can motivate or inhibit the adoption of e-commerce. MacGregor et al (1996) in their study of attitudes of small businesses to the implementation and use of ICT have argued that the perception of management towards the benefits of e-commerce is an overriding factor in its adoption. When looking at inhibitors to e-commerce in SMEs, Jones, Benyon-Davies and Muir (2003) also mention that it is the ignorance about e-commerce benefits that inhibits its adoption. Chin and Castleman (2002) agree with this position in their study on e-commerce and the competitiveness of small enterprises in Melbourne, stating that knowledge and awareness about the benefits of e-commerce motivates small businesses to adopt increasingly sophisticated e-commerce solutions. Perceived complexity plays a role in the motivation or inhibition of e-commerce adoption by small and medium enterprises. MacGregor (2003) found that the complexity is a major inhibitor of the adoption of e-commerce. Conversely, research shows a strong link between management attitudes towards e-commerce and the level of e-commerce adoption. Al-Qirim (2003) stated that the characteristics of senior management play an important part in the level of e-commerce adoption. He suggested that the involvement and interest of senior management in e-commerce initiatives would lead to the deployment of additional resources devoted to e-commerce implementation.

Quayle (2002) has assessed issues considered by SMES to be strategically important. Issues of marketing, leadership and waste reduction were given highest priority, while supplier development, financial management, time to market and supply chain management were medium priority. Perhaps unsurprisingly, the lowest priority was given to technology, research and development and customer management – all closely related to e-commerce. The alignment of e-commerce with the organization's strategy and processes needs to be present for an organization to adopt e-commerce. Love et al (2001) found that small businesses reported that the adoption of an e-commerce solution was inhibited when not aligned with the organization's strategy and processes. Jones et al (2003) also mention this inhibitor, stating that the e-commerce solution has to be applicable to the organization to motivate adoption, hence the need for alignment between e-commerce and the strategic context of the firm.

In further research, Meckel et al (2004) analyzed e-commerce adoption by several hundred SMEs and found that fewer than 15% had formal, documented e-commerce strategies which is a limiting factor in adoption. Jones et al (2003) mentions that it is not just knowledge about e-commerce, but that it is also important for SMEs to gain knowledge about how e-commerce affects the firm and its environment. They further state that an over-reliance on third parties to provide knowledge and expertise would make redundant the need to acquire knowledge, with the firm's learning and strategy development processes being hijacked by external parties.

There is pressure for SMEs to conform to industry standards or to a competitor's level of technology. Castleman and Chin (2002) found that a majority of SMEs would decide to implement e-commerce if the level of adoption in the industry was high enough. They found that the e-commerce adopters they studied had adopted e-commerce to keep up with the times and with shifts in industry practices. This is consistent with the theory of critical mass (Markus, 1987), which states that adoption in an industry would be self sustaining once a certain level of adoption is reached. This can be seen in the findings of Castleman and Chin (2002), with majority of respondents in their study stating that adoption would take place in the organization if a high level of adoption occurred in the industry. Another reason to adopt e-commerce is for SMEs to gain a strategic edge over competitors. MacGregor (2003) found that being in a strategic alliance affected the barriers to adopting e-commerce due to the fact that a strategic alliance would provide the organization with more technical and business knowledge about e-commerce.

A useful guide to risks and rewards of e-commerce for small and medium enterprises has been produced by Computer Weekly (2004). The author suggests that the level of risk and reward can be accessed through a combination of four factors namely revenue, reputation, strategic importance and regulatory compliance.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with the description of the methods that were applied in carrying out the research. It covers research design, population of study, sampling design, data collection and data analysis. The research instrument that was used for data collection is provided in appendix I.

3.2 Research Design

A cross-sectional survey was adopted for this study. This means that the sample measurements were carried out at a single point in time. According to Orodho (2003), descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals.

The rationale for a descriptive research was description of the state of affairs as it existed. Kerlinger (1969) points out that descriptive studies are not only restricted to fact finding, but may often result in the formulation of important principles of knowledge and solution to significant problems.

3.3 Population of Study

The population of interest in this study was all small and medium enterprises (SMEs) that have official premises in Nairobi County. The county is fairly urban and is divided into eight administrative divisions. By definition, small enterprises have 10 but less than 50 employees while Medium enterprises have 50 to 100 employees.

According to Kagwaini (2008), there are approximately 98,078 micro, small and medium enterprises in Nairobi and approximately 1.6% of these enterprises employ atleast ten workers which translated to 1,569 firms.

3.4 Sampling Design

The study employed probability sampling. A sample size of 176 firms was used based on Cooper and Schindler (2008) recommendation that 10%-20% of population size is sufficient sample size. Thus, using simple random sampling, 22 firms were drawn from each of the eight administrative divisions of Nairobi namely Central, Dagoretti, Embakasi, Kasarani, Kibera, Makadara, Pumwani and Westlands.

This sampling design greatly enhanced representativeness of the sample as data was collected from a wide geographical area to ensure variability in characteristics of firms and the environment in which they operated. In addition, each firm was given an equal chance to be selected. Hence the unbiased results were deemed suitable for generalization to the larger population.

3.5 Data Collection

Primary data was collected using structured questionnaire. Since the implementation of e-commerce technologies is a huge investment for firms, it must involve management. For this reason, questionnaires were directed to either a business manager, IT manager or their representatives for each target firm. The questionnaires were administered through email and 'drop-and-pick-later' method.

The questionnaire was divided into three sections (see appendix I). The objective of section one was to provide a classification of the businesses and help collect other general information deemed relevant for the study. Section two sought to establish the extent of e-commerce adoption and factors that influence e-commerce adoption while section three of the questionnaire was useful in determining the strategic value of e-commerce adoption. This section thus contained detailed questions which point to the indicators of strategic value of e-commerce adoption. Overall, the questions were asked to solicit responses with regard to drivers, benefits, marketplace, business processes, products, services and other relevant factors of e-commerce adoption.

3.6 Data Analysis

Since some of the issues addressed in this study involved perception, descriptive statistics was deemed the most appropriate method of data analysis. The descriptive techniques were chosen for this study because they are more than just a collection of data. As Kombo and Tromp (2006) have stated, they involve measurement, classification, analysis, comparison and interpretation of data with the benefit of describing the state of affairs as it exists.

The data collected from this study was edited for completeness and consistency, cleaned, coded and keyed into Spreadsheets application (Microsoft Excel) for analysis. The data was then analyzed using statistical tools of analysis such as means, frequencies, and percentages to determining the proportion of respondents for each of the strategic value indicators. To determine the relative importance of the various strategic value dimensions, the study used mean scores and standard deviations. The findings were presented through summarized figures and tables.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter covers analysis of the research data and discussions of the findings in line with the research objectives. The study set out to determine the extent of e-commerce adoption, factors influencing e-commerce adoption and the strategic value of e-commerce adoption in small and medium enterprises in Nairobi, Kenya. The population of interest for the study was all small and medium enterprises that have official premises in Nairobi County. A sample size of 176 firms was used. In order to meet the research objectives, the respondents were required to complete three sections of the questionnaire. Section one sought responses on organizational profiles of the target firms. Section two required the respondents to identify the extent of e-commerce adoption and factors influencing e-commerce adoption in their respective firms. In section three the respondents were asked to state the extent to which e-commerce has facilitated the realization of each of the strategic value indicators described by scoring on a 5-point Likert Scale. Primary data was provided by IT and business managers of the target firms. Out of the 176 SMEs served with questionnaires, 163 firms responded which translates to 93% response rate.

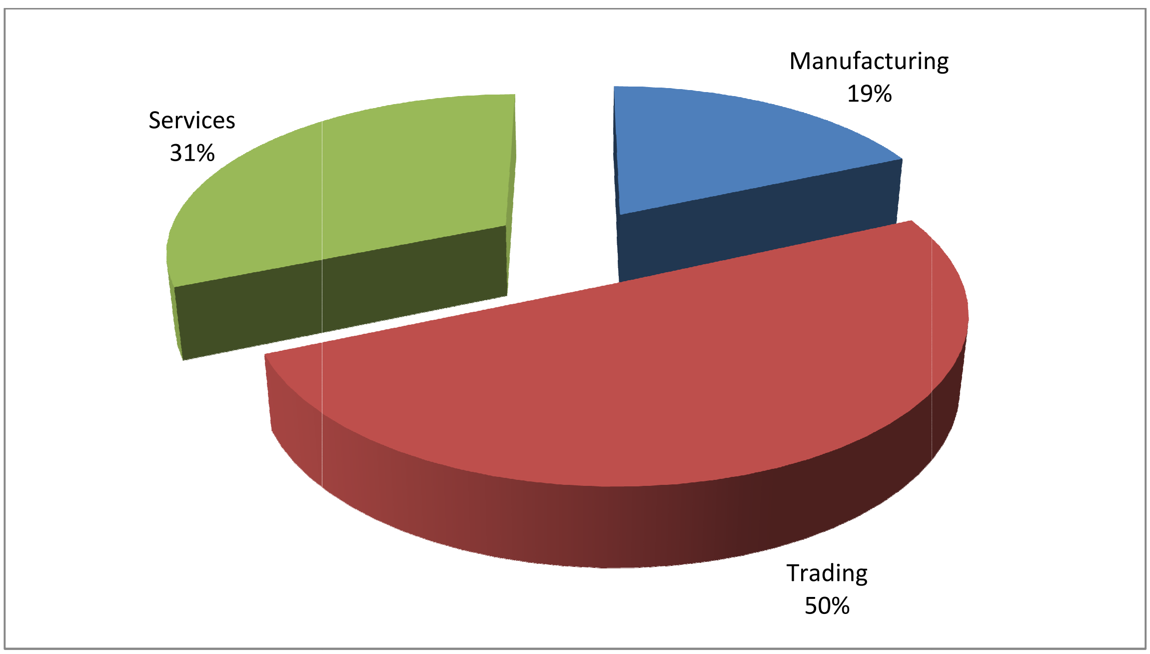
4.2 Organizational Profiles

Organizational profile covers the general aspects of the target firms which were considered useful in classification of businesses in order to derive e-commerce adoption patterns. The aspects considered included type of business, ownership structure, firm size and geographical coverage of the firms. The following sections describe briefly the findings of these four areas of interest.

4.2.1 Type of Businesses

The study begun by looking at the type of business that the firms were involved in. Figure 4.1 indicates that 50% of all firms were in trading, meaning that a large proportion of small and medium enterprises were involved in the buying and selling of commodities; nineteen and thirty-one percent respectively were involved in manufacturing and services.

Figure 4.1: **Type of Businesses**

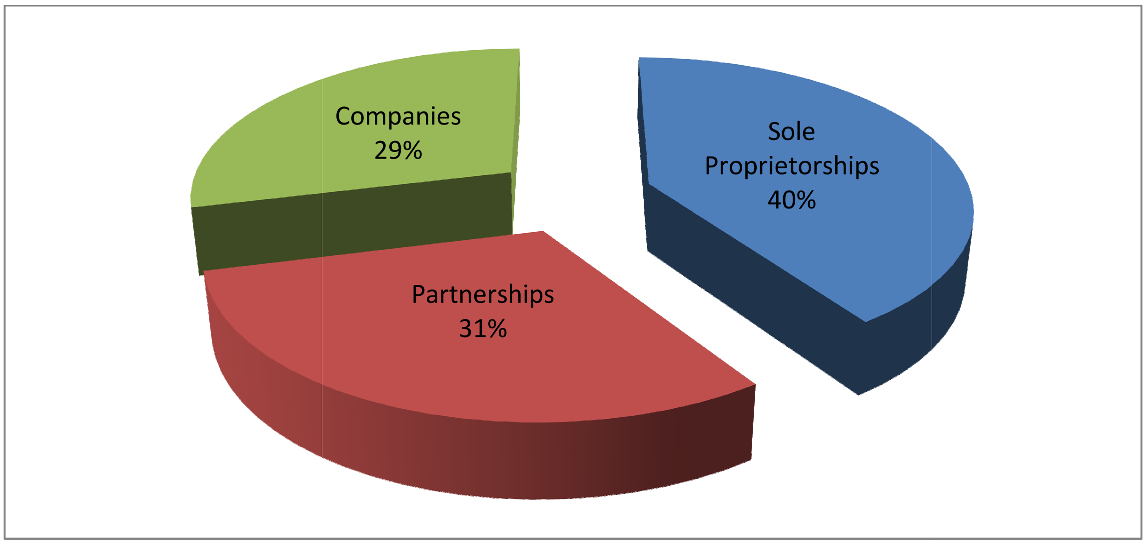


Source: Research Data (2011)

4.2.2 Ownership Structure

Under ownership structure, the study sought to find out if the firm was a sole proprietorship, partnership or company in order to determine the decision making process as it relates to e-commerce adoption. Figure 4.2 shows this categorization, which indicates that majority of the firms (40%) are sole proprietorships, 31% are partnerships while 29% are private companies.

Figure 4.2: **Ownership Structure**



Source: Research Data (2011)

4.2.3 Firm Size

The other area of interest was firm size. The number of employees was used to determine the size of the firm and to evaluate the opportunities offered by e-commerce adoption with regard to tangible cost saving related to headcount. Table 4.1 shows the research findings with respect to firm size. Thus a majority of all the firms (69%) surveyed had between 10 and 50 employees.

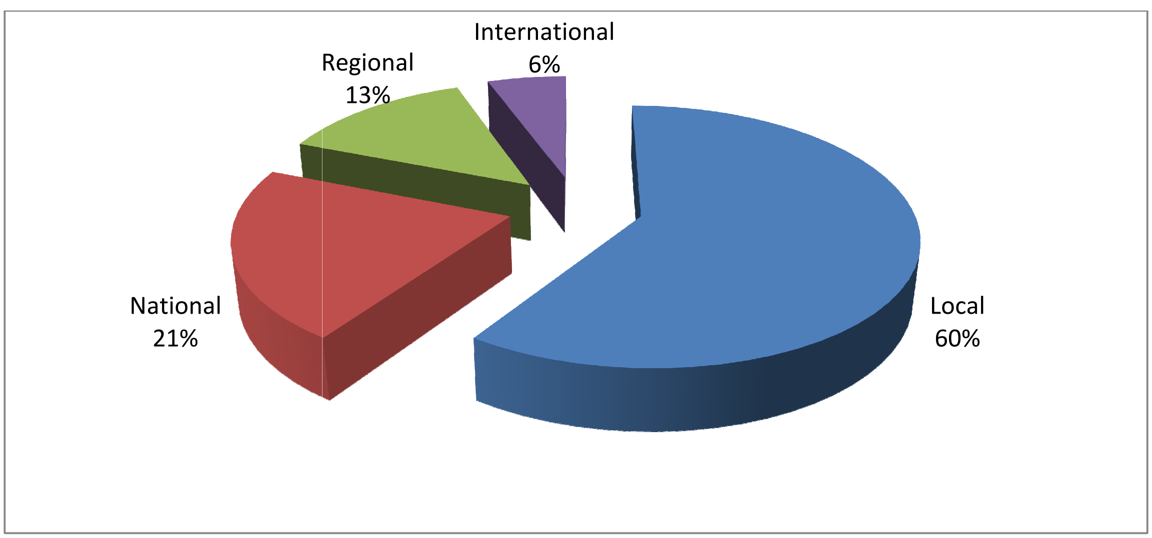
Table 4.1: Firm Size (Number of Employees)

Number of Employees	Frequency	Percent
10 – 50	112	68.71
51 – 100	51	31.29
TOTAL	163	100.00

Source: Research Data (2011)

The study then looked at the organizations' dispersion as depicted by geographical coverage. This was useful in identifying the markets served by the firm (whether local, national, regional or international) as justification for investment in e-commerce technologies. Figure 4.3 indicates that majority of the firms surveyed (60%) are local and serve Nairobi market, 21% have a presence in other towns in Kenya, 13% have a niche in the East Africa regional market, while 6% serve international markets.

Figure 4.3: Geographical Coverage of Firms



Source: Research Data (2011)

4.3 The Extent of E-commerce Adoption

In determining the extent of e-commerce adoption, data was collected to establish the status of internet connection which is considered an important prerequisite for e-commerce adoption. Table 4.2 presents the existing internet connection status. The data shows over 90% of the firms surveyed had a functioning internet connection.

Table 4.2: Internet Connection Status

Status	Frequency	Percent
Connected	148	90.80
Not connected	15	9.20
TOTAL	163	100.00

Source: Research Data (2011)

Table 4.3 summarizes the duration of internet connection for the respective firms. The data reveals that in excess of 79% of all connected firms had had the connection for a period of four years or more.

Table 4.3: Duration of Internet Connection

Duration (Years)	Frequency	Percent
Below 1 Year	4	2.70
1 - 3 years	27	18.24
4 - 6 years	52	35.14
7 - 9 years	25	16.89
Over 10 years	40	27.03
TOTAL	148	100.00

Source: Research Data (2011)

The study also sought to determine the use of internet connection by firms. Table 4.4 shows the various uses of internet connection by the respective firms. E-mail is the most common use of existing internet connection followed by browsing and research.

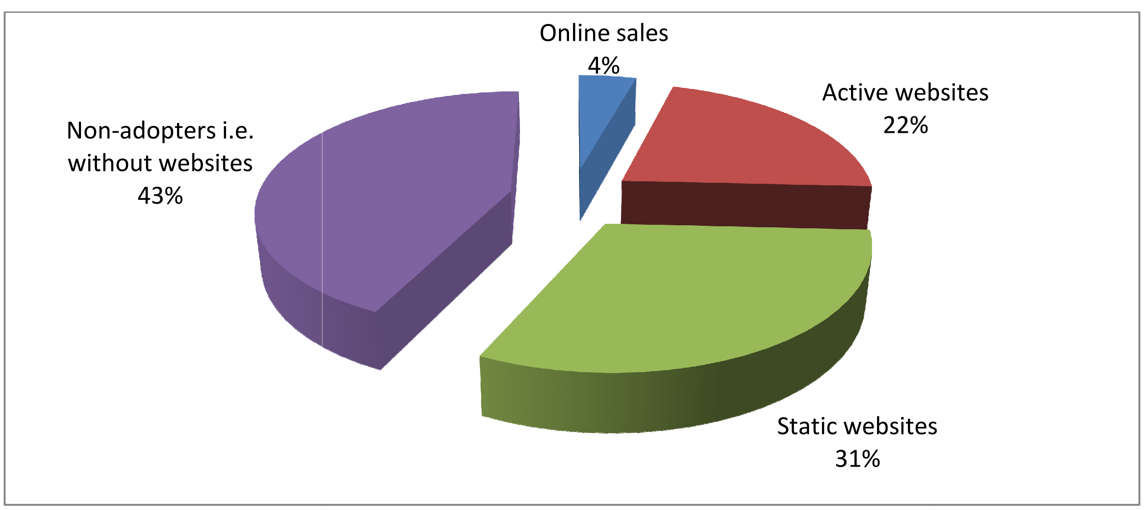
Table 4.4: Use of Internet Connection

Use	Frequency
Access internet (browse)	125
Buy online	32
E-mail	136
Information/research	105
Sell online	7
E-banking	23

Source: Research Data (2011)

Further, the study sought to categorize e-commerce adopters. Figure 4.4 categorizes all the surveyed firms according to level of adoption whether online sales, active websites, static websites and non-adopters.

Figure 4.4: Categories of E-commerce Adopters



Source: Research Data (2011)

Figure 4.4 indicates that only 4% of the firms surveyed use the internet for online sales. 43% of the firms did not have functioning websites, 31% of the firms had static websites that convey general information about the business and its products, while 22% of the firms had active websites that allow interactive communication with customers.

4.4 Factors Influencing E-commerce Adoption

Data was collected to establish the factors influencing e-commerce adoption among small and medium enterprises in Nairobi. Table 4.5 lists these factors and their ranking based on frequency. Cost of e-commerce implementation, lack of awareness and security concerns were said to be the most important determinants of e-commerce adoption.

Table 4.5: Factors Influencing E-commerce Adoption

S/No.	Description	Frequency	Ranking
1	Cost of e-commerce	125	1
2	Consumer preference	79	5
3	Payment method	58	6
4	Security concerns	103	3
5	Awareness	107	2
6	Skills	98	4

Source: Research Data (2011)

Data was also collected to establish how many firms had e-commerce strategy in place. Table 4.6 summarizes the finding with 80% of the firms indicating that they did not have a specific e-commerce strategy.

Table 4.6: Firms with Specific E-commerce Strategy

Response	Frequency	%
YES	20	12.27
No	130	79.75
Don't know	13	7.98
TOTAL	163	100.00

Source: Research Data (2011)

4.5 Strategic Value of E-commerce Adoption

Data was collected to determine the strategic value of e-commerce adoption in small and medium enterprises in Nairobi. Out of the original 163 respondent firms, only 93 firms exhibited some degree of e-commerce adoption (Figure 4.4). This group formed the basis for the determination of the strategic value of e-commerce adoption. To measure the strategic value of e-commerce, respondents were presented with statements describing various indicators of the strategic value of e-commerce. They were then asked to rate on a scale of 1-5 the extent to which e-commerce provided the said value to their firms. The findings were summarized in Table 4.7.

Table 4.7: The Strategic Value of E-commerce Adoption

Strategic Value Indicator	Response	Frequency	Percent	Mean Score	Std Dev
E-commerce is part of business strategy	Not at all	9	9.68	3.41	1.24
	To a very little extent	12	12.90		
	To a moderate extent	25	26.88		
	To a great extent	26	27.96		
	To a very great extent	21	22.58		

E-commerce leads to restructuring	Not at all	14	15.05	3.17	1.33
	To a very little extent	18	19.35		
	To a moderate extent	15	16.13		
	To a great extent	30	32.26		
	To a very great extent	16	17.20		
E-commerce is an effective marketing tool	Not at all	11	11.83	3.52	1.28
	To a very little extent	8	8.60		
	To a moderate extent	19	20.43		
	To a great extent	32	34.41		
	To a very great extent	23	24.73		
E-commerce improves provision of product information	Not at all	10	10.75	3.58	1.26
	To a very little extent	8	8.60		
	To a moderate extent	17	18.28		
	To a great extent	34	36.56		
	To a very great extent	24	25.81		
E-commerce useful in managing customer information	Not at all	13	13.98	3.34	1.34
	To a very little extent	13	13.98		
	To a moderate extent	17	18.28		
	To a great extent	29	31.18		
	To a very great extent	21	22.58		
E-commerce improves customer service	Not at all	14	15.05	3.43	1.35
	To a very little extent	7	7.53		
	To a moderate extent	21	22.58		
	To a great extent	27	29.03		
	To a very great extent	24	25.81		

E-commerce is a channel for product and service delivery	Not at all	49	52.69	2.09	1.37
	To a very little extent	14	15.05		
	To a moderate extent	10	10.75		
	To a great extent	13	13.98		
	To a very great extent	7	7.53		
E-commerce reduces cost of products and services	Not at all	31	33.33	2.57	1.44
	To a very little extent	19	20.43		
	To a moderate extent	15	16.13		
	To a great extent	15	16.13		
	To a very great extent	13	13.98		
E-commerce creates efficiency in business operations	Not at all	10	10.75	3.63	1.30
	To a very little extent	9	9.68		
	To a moderate extent	15	16.13		
	To a great extent	30	32.26		
	To a very great extent	29	31.18		
E-commerce improves the speed of service delivery	Not at all	14	15.05	3.17	1.36
	To a very little extent	18	19.35		
	To a moderate extent	18	19.35		
	To a great extent	24	25.81		
	To a very great extent	19	20.43		
E-commerce reduces buyer power	Not at all	42	45.16	2.18	1.34
	To a very little extent	19	20.43		
	To a moderate extent	12	12.90		
	To a great extent	13	13.98		
	To a very great extent	7	7.53		

E-commerce reduces the threat of substitute products	Not at all	48	51.61	2.04	1.29
	To a very little extent	15	16.13		
	To a moderate extent	14	15.05		
	To a great extent	10	10.75		
	To a very great extent	6	6.45		
E-commerce changes the level of rivalry	Not at all	10	10.75	3.26	1.29
	To a very little extent	17	18.28		
	To a moderate extent	27	29.03		
	To a great extent	17	18.28		
	To a very great extent	22	23.66		
E-commerce supports the sales process	Not at all	21	22.58	3.00	1.41
	To a very little extent	11	11.83		
	To a moderate extent	27	29.03		
	To a great extent	15	16.13		
	To a very great extent	19	20.43		
E-commerce reduces operational costs	Not at all	11	11.83	3.51	1.35
	To a very little extent	11	11.83		
	To a moderate extent	20	21.51		
	To a great extent	22	23.66		
	To a very great extent	29	31.18		
E-commerce supports product differentiation & innovation	Not at all	18	19.35	2.90	1.32
	To a very little extent	20	21.51		
	To a moderate extent	20	21.51		
	To a great extent	23	24.73		
	To a very great extent	12	12.90		

E-commerce creates new business opportunities	Not at all	10	10.75	3.38	1.32
	To a very little extent	16	17.20		
	To a moderate extent	20	21.51		
	To a great extent	23	24.73		
	To a very great extent	24	25.81		
E-commerce promotes market specialization	Not at all	16	17.20	2.90	1.28
	To a very little extent	19	20.43		
	To a moderate extent	30	32.26		
	To a great extent	14	15.05		
	To a very great extent	14	15.05		
E-commerce creates profitable linkages with business partners	Not at all	10	10.75	3.28	1.26
	To a very little extent	13	13.98		
	To a moderate extent	32	34.41		
	To a great extent	17	18.28		
	To a very great extent	21	22.58		
Promotes new products through E-commerce	Not at all	11	11.83	3.48	1.35
	To a very little extent	11	11.83		
	To a moderate extent	22	23.66		
	To a great extent	20	21.51		
	To a very great extent	29	31.18		
E-commerce facilitates access to the international market	Not at all	11	11.83	3.47	1.37
	To a very little extent	14	15.05		
	To a moderate extent	17	18.28		
	To a great extent	22	23.66		
	To a very great extent	29	31.18		

E-commerce reduces supplier power	Not at all	26	27.96	2.54	1.32
	To a very little extent	23	24.73		
	To a moderate extent	23	24.73		
	To a great extent	10	10.75		
	To a very great extent	11	11.83		
E-commerce enhances communication with customers	Not at all	7	7.53	3.89	1.21
	To a very little extent	5	5.38		
	To a moderate extent	17	18.28		
	To a great extent	26	27.96		
	To a very great extent	38	40.86		

Source: Research Data (2011)

Table 4.7 gives a list of indicators of the strategic value of e-commerce to the adopting firms. In a further categorization of responses based on the level of rating given by the respective firms, the data indicates that: One, to a great extent (mean score of four) e-commerce is an effective marketing tool, improves provision of product information, creates efficiency in business, reduces operational costs and enhances communication with customers.

Two, to a moderate extent (mean score of three) e-commerce is part of business strategy, leads to restructuring, is useful in managing customer information, improves customer service, improves speed of service delivery, changes level of rivalry, supports sales process, creates new business opportunities, supports innovation, promotes market specialization, creates linkages with business partners, promotes new products, facilitates access to international markets and reduces supplier power.

Three, to a very little extent (mean score of two) e-commerce reduces the threat of substitute products and the bargaining power of buyers. Overall, it was noted that the data generally exhibited a low standard deviation (less than two) for each indicator which implies that the responses were clustered around the mean hence low variability within the ratings.

4.6 Perceived Business Value of E-commerce Adoption

Finally, data was collected on the perceived business value of e-commerce adoption. This section presents a summary of these benefits and their respective rankings by non-adopters. The rankings are based on the frequency of responses.

Table 4.8 indicates that improved marketing is perceived to be the most important business value of e-commerce among non-adopters, followed by better customer service and improved communication respectively. The other perceived benefits are new business opportunities, cost reduction and efficiency. Competition, product delivery, new product development, sales support, linkages and access to global markets as additional perceived benefits of e-commerce adoption among non-adopters

Table 4.8: The Perceived Business Value of E-commerce

S/No.	Description	Frequency	Ranking
1	Improved marketing	55	1
2	Improved communication	49	3
3	Access to global market	21	12
4	Support sales process	28	10
5	Better customer service	53	2
6	Enhance competition	39	7
7	New business opportunities	47	4
8	Increase business efficiency	40	6
9	cost reduction	44	5
10	New product development	38	9
11	Improved product delivery	39	8
12	Linkages with business partners	28	11

Source: Research Data (2011)

4.7 Discussions

This section discusses the findings of the study in line with the research objectives. The expectations of the study are argued and supported using existing literature. The section focuses on extent of e-commerce adoption, factors influencing e-commerce adoption and strategic value of e-commerce adoption.

The first objective of the study was to determine the extent of e-commerce adoption among small and medium enterprises in Nairobi, Kenya. In so doing, data was collected to establish the status of internet connection which is considered an important prerequisite for e-commerce adoption. The study found that majority of the firms surveyed had a functioning internet connection. The study also sought to determine the use of internet connection by firms and the results indicate that e-mail was the most common use followed by browsing and research.

It was established that the most common use of the existing internet connection was e-mail communication, browsing and information search. A sizeable number of firms did not have websites. Only a small proportion of firms had active websites to support online sales. Thus, the study findings indicates that e-commerce is not widespread among small and medium enterprises in Nairobi. This means that the full potential of e-commerce has not been realized in the SME sector. The finding agrees with Kinyanjui and McCormick (2002) who have stated that e-commerce is not firmly established in many sectors of the Kenyan economy.

The second objective of the study was to establish the factors influencing e-commerce adoption in small and medium enterprises in Nairobi, Kenya. According to the study findings, the most critical factor that determines e-commerce adoption is the perceived cost of implementing e-commerce technologies. This finding agrees with a UK Department of Trade and Industry (DTI, 2002) study which concluded that reasons of cost were the most important factors for e-commerce adoption. The lack of awareness with regard to e-commerce ranks second in importance. Chin and Castleman (2002) agree with this position in their study on e-commerce and the competitiveness of small enterprises, stating that knowledge and awareness about the benefits of e-commerce motivates small businesses to adopt increasingly sophisticated e-commerce solutions. The other factors that influence adoption, in order of importance, are security concerns, skills, consumer preference and payment method for e-commerce respectively.

The study findings also indicate that over 80% of all firms surveyed did not have a specific e-commerce strategy in place which explains the low levels of adoption since businesses lack a formal plan to guide e-commerce development. This finding agrees with earlier studies. According to Doherty et al (2003), companies that do not have a formally defined and coherent e-commerce strategy are less likely to use higher levels of internet services. In further research, Meckel et al (2004) analyzed e-commerce adoption by several hundred SMEs and found that fewer than 15% had formal, documented e-commerce strategies which is a limiting factor in adoption.

The study purposed to determine the degree to which e-commerce had been an integral part, or in fact changed, the development of business strategies. The study found that to a moderate extent e-commerce is part of business strategy for the respective firms. This finding is consistent with the suggestion by Laudon & Traver (2009) that e-commerce offers capabilities for scope, cost and focus strategies. Love et al (2001) found that small businesses reported that the adoption of an e-commerce solution was inhibited when not aligned with the organization's strategy and processes. Jones et al (2003) also mention this inhibitor, stating that the e-commerce solution has to be applicable to the organization to motivate adoption, hence the need for alignment between e-commerce and the strategic context of the firm.

The study set out to measure the value of e-commerce in marketing. The respondents indicated that to a great extent e-commerce was an effective marketing tool. This finding concurs with Laudon & Traver (2009) that firms can leverage the web's rich interactive features to create highly focused messages to different market segments; the information intensity of the web makes it possible to focus e-mail and other marketing campaigns on small market segments; personalization and related customization means the same products can be customized and personalized to fulfill the very focused needs of specific market segments and consumers.

The study undertook to examine the potential of e-commerce to improve customer service. It was found that to a moderate extent e-commerce improved customer service. As Chaffey and Wood (2004) have stated, information can be used to better understand customer characteristics and needs and their level of satisfaction with products and services leading to better customer service. E-commerce also enables better management of customer information to capture trends and customer preferences.

The study sought to establish the relationship between e-commerce and efficiency in business operations. It was reported that to a great extent e-commerce had increased efficiency of business operations of the adopting firms. This finding agrees with the observation by Chaffey and Wood (2004) that through e-commerce efficiency is achieved by using information to source, create, market and delivers products and services using fewer resources than in manual setups.

The study undertook to determine the potential of e-commerce to change industry structure as characterized by five forces, namely rivalry among existing competitors, the threat of substitute products, barriers to entry into the industry, the bargaining power of suppliers, and the bargaining power of buyers. The findings indicate that the potential to change the level of rivalry in the market and potential to reduce supplier power were rated highly. On the other hand, by providing access to markets, e-commerce has eased the barriers to entry into the industry. The study findings agree with the assertion by Laudon and Traver (2009) that e-commerce has the potential to change the relative strength of the competitive forces. Furthermore Porter (1985) states that e-commerce changes industry structure.

However, there was low impact of e-commerce on the threat of substitute products and the bargaining power of buyers in the market. Since a good number of small and medium enterprises surveyed had not adopted e-commerce, the finding is consistent with the theory of critical mass (Markus, 1987), which states that adoption in an industry would be self sustaining once a certain level of adoption is reached. This study expects that meaningful impact on the threat of substitute products and the bargaining power of buyers would be expected if the level of adoption in the industry was high enough. A study by Castleman and Chin (2002) found that the e-commerce adopters they studied had adopted e-commerce to keep up with the times and with shifts in industry practices.

The study investigated the potential of e-commerce to cut costs. Most of the firms surveyed observed that to a great extent e-commerce had reduced operational costs in their businesses. This finding agrees with Chaffey's observation that encouraging the use of e-commerce services by customers and suppliers can significantly reduce costs while providing a new, convenient channel for purchase and customer service. Chaffey further stated that cost reduction is achieved through delivering services electronically leading to lower staff costs, transport and costs of materials such as paper. Cost reduction is also realized by making the business processes more efficient (Chaffey, 2009).

The study examined the potential of e-commerce to create new business opportunities for the firms. The respondents agreed to a moderate extent that e-commerce had created new business opportunities. This finding is corroborated by Laudon and Traver (2009) who points to the fact that e-commerce inherently makes it easy for new competitors to enter the marketplace and offer substitute products or channels of delivery. They further state that the internet also presents many new opportunities for enlarging existing businesses.

The study investigated the role of e-commerce in promoting new product development and innovation. The respondents indicated that to a moderate extent e-commerce supported new product development, differentiation and innovation in their respective firms. This conclusion is in agreement with Marchand (1999) who uses the expression 'create new reality' to refer to how e-commerce can be used to develop new products and services in the market.

The study sought to establish the value of e-commerce in enhancing access to international markets. The study confirms to a moderate extent that e-commerce has facilitated entry into the global market. This finding is consistent with Trott (2008) who states that a benefit of adopting e-commerce is the ability to enter international markets. Mureithi (2000) also identifies lower barriers to entry as a business benefit.

The study further looked to determine the value of e-commerce in communication. It was revealed that to a great extent e-commerce enhances communication with customers. Laudon and Traver (2009) noted that one of the biggest changes introduced by electronic communications is how approaches to transmitting and transforming information can be used for competitive advantage. In an effort to find out if e-commerce had created linkages with business partners, the study agrees with Chaffey (2009) who stated that e-commerce infrastructure creates a link used to deliver services to business partners.

Since some of the small and medium enterprises surveyed had not embraced e-commerce technologies, the questionnaire set out to investigate what these non-adopters thought the business value of e-commerce would be in their respective firms. The study findings indicate marketing, customer service, communication, new business opportunities, cost reduction and efficiency as some of the perceived benefits.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study looked at the extent of e-commerce adoption, factors influencing e-commerce adoption and the strategic value of e-commerce adoption in small and medium enterprises in Nairobi, Kenya. In this chapter, the findings of the study are summarized and discussed with regard to the study objectives. Also presented in this chapter are the conclusions, limitations of the study and recommendations for further research.

5.2 Summary

The first objective of the study was to determine the extent of e-commerce adoption in small and medium enterprises in Nairobi, Kenya. It was established that e-commerce is not widespread. 43% of all the firms surveyed had no functioning websites. 31% of the firms had static websites, while 22% of the firms had active websites that allowed interactive communication with customers. However, only 4% of the firms use the internet for online sales.

The second objective was to establish the factors that influence e-commerce adoption in small and medium enterprises in Nairobi, Kenya. The study found out that the most critical factor that determines e-commerce adoption is the perceived cost of implementing e-commerce technologies. The lack of awareness with regard to e-commerce was also important and so was security concerns, skills, consumer preference and payment method respectively. Over 80% of all firms surveyed did not have a specific e-commerce strategy in place which explains the low levels of adoption since businesses lack a formal plan to guide e-commerce development.

Finally, the study intended to determine the strategic value of e-commerce adoption in small and medium enterprises in Nairobi, Kenya. The indicators of strategic value of e-commerce included the value of e-commerce in business strategy, efficiency, cost reduction, new product development, marketing and communication, customer service, access to international markets and changes to the industry structure. It was established that in general e-commerce was an integral part of business strategy for most e-commerce adopters. It was also established that e-commerce created efficiency in business operations. New product development and innovation is critical for businesses and e-commerce was found to play an important role with respondents rating it highly. It was further established that e-commerce was an important tool for marketing and communications as well as in promotion of firms' products and services. Other areas where e-commerce was found to provide strategic value included improvement in customer service, reduction of costs, creation of new business opportunities and access to international markets.

However, it should be noted that the there was low impact of e-commerce on the threat of substitute products and the bargaining power of buyers in the market owing to low level of adoption. The study suggests that meaningful impact of e-commerce adoption on the threat of substitute products and the bargaining power of buyers, with the resultant change in industry structure, would be expected as and when the level of adoption hits the critical mass threshold.

While e-commerce was found to provide strategic value to adopters, it was noted that a good number of small and medium enterprises in Nairobi had not embraced the technology. Interestingly, the non-adopters did indicate benefits in marketing, customer service, communication, efficiency and cost reduction as some of the areas where e-commerce was perceived to provide value for businesses.

5.3 Conclusion

The study was successful in determining the extent of e-commerce adoption in small and medium enterprises in Nairobi, Kenya. The findings indicate that e-commerce is not widespread among small and medium enterprises. A meager 3% of the firms use the internet for online sales. On the other hand, the study established several factors that influence e-commerce adoption in the SME sector. The most important factors were the perceived cost of implementing e-commerce technologies and lack of awareness with regard to e-commerce. Nonetheless, the availability of a specific e-commerce strategy is a critical input. In addition, the study established that e-commerce is a critical part of business strategy for most adopters. Thus, e-commerce adoption provides strategic value in new business opportunities, customer service, cost reduction, efficiency, new product development, access to international markets, marketing and communications.

Furthermore, while some small and medium enterprises have not adopted e-commerce, the study has established that generally there is a positive perception of the business value of e-commerce. The study further predicts that a meaningful impact on the industry structure is to be expected if the level of adoption in the industry attains the critical mass threshold.

5.4 Recommendations for Policy and Practice

The study findings indicate that e-commerce is not widespread among small and medium enterprises in Nairobi. This means that the full potential of e-commerce has not been realized in the SME sector. In order to drive up adoption in the industry, the study recommends that mechanisms should be put in place by policy makers and practitioners to exploit the positive perception among non-adopters.

This goal could be met through Private-Public-Partnership (PPP). The relevant government department should partner with SME business owners to create awareness of the business value of e-commerce technologies, roll out infrastructural facilities to all parts of the country, revamp existing legislation to guide e-commerce adoption and provide incentives to businesses in order to boost adoption levels.

5.5 Limitations of the Study

First and foremost, this study is a cross-sectional survey and the results could be different if an in-depth study were to be done using case studies. Thus, the study findings should be interpreted with several considerations in mind. One, that it was not possible to get 100% response rate owing to the busy schedule of some business managers of the target firms. In some instances, there was suspicion on the part of respondents some of whom opted not to fill the questionnaires even after presenting an introductory letter from the university. Two, that the real identity of the respondents could not be verified beforehand and that it is possible some questionnaires might have been completed by people other than the intended persons.

In addition, the study was limited to small and medium enterprises in Nairobi. It should however be noted that the Nairobi County is fairly urban and results may differ significantly from other parts of the country due to variability in infrastructure and other relevant services.

5.5 Suggestions for Further Research

The researcher feels that more in-depth case studies should be carried out regarding e-commerce adoption in small and medium enterprises. Such studies will be useful in unearthing trends and other factors critical to e-commerce adoption in the marketplace. More detailed studies should also be undertaken in other parts of the country to corroborate the findings of this study.

The researcher further recommends that studies should be initiated to quantify tangible benefits of e-commerce adoption. These studies should especially be geared towards coming up with detailed models for measuring the real value of e-commerce adoption in small and medium enterprises.

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APPENDICES

Appendix I: Questionnaire

Dear Respondent,

This survey seeks to assess the strategic value of electronic commerce in small and medium enterprises in Nairobi, and you have been chosen as a respondent. Please note that the findings of the study will be used for academic purposes only and any information given will be treated with utmost confidentiality. Thank you for your cooperation.

Section 1 – Organizational Profile

1. Name of the firm ______________________________________
2. Location ____
3. Year of registration _____________________________________
4. What is the core business of your firm? (please tick one)

   Manufacturing [ ]   Trading [ ]   Services [ ]

5. What is the ownership structure of the firm? (please tick one)

   Sole proprietorship [ ]

   Partnership [ ]

   Company [ ]

   Other [ ]

   (If other, please specify) ________________________________

6. Number of employees (please tick one)

   Below 10 [ ]

   10 – 50 [ ]

   51 – 100 [ ]

7. What is the geographical coverage of the firm's operations? (Please tick one)

   Local (operates within Nairobi only) [ ]

   National (has branches in other towns in Kenya) [ ]

   Regional (has branches in East Africa Region) [ ]

   International (has presence Worldwide) [ ]

Section 2 – Drivers of E-commerce Adoption

8. Do you have internet connection? (Please tick one)

   YES [ ] NO [ ]

9. How long have you had this connection? (Please specify) ______________________

10. What do you use the internet for? (please tick all that apply)

    Access internet (browsing) [ ] E-mail [ ]

    Buying Online [ ] Selling Online [ ]

    Information/Research [ ] E-banking [ ]

    Other [ ]

    (If other, please specify) ____

11. Does the firm have a web site? (please tick one)

    YES [ ] NO [ ]

12. If the answer to 11 above is NO, why? (please specify) ________________________

13. If the answer to 11 above is YES, who developed the web site? (please tick one)

    Internal staff [ ] Third-party [ ] Don't know [ ]

14. If the answer to 11 above is YES, what is the address of your website? ____________

15. What type of web site is it? (please tick one)

    Static website [ ] Active website [ ] Transactional site e.g. online sales [ ]

16. Is any of your IT systems linked with your customers or suppliers? (please tick one)

    YES [ ] NO [ ]

17. Does your firm have a fully-fledged IT Department? (please tick one)

    YES [ ] NO [ ] Don't know [ ]

18. If the answer to 16 above is YES, who heads the IT Department? (Give title)

    ____

19. To whom does the above named head (if any) report to? (Give Title)

    ____

20. Does your firm have an IT strategy? (please tick one)

    YES [ ] NO [ ] Don't know [ ]

21. If answer to 19 is YES, was the IT strategy developed in-house? (please tick one)

    YES [ ] NO [ ] Partly [ ] Don't know [ ]

22. If your answer to 20 above is NO or Partly, which external parties were involved in developing your firm's IT strategy? (Please specify) ____________________________

23. If your answer to 20 above is YES, then who in your firm is involved in the development of the IT strategy? (please tick all that apply)

    IT strategy committee [ ]   CEO [ ]

    Senior management [ ]   IT management [ ]

    Other [ ]   (If other, please specify) ______________________

24. Does your firm have a separate e-commerce strategy? (please tick one)

    YES [ ]   NO [ ]   Don't know [ ]

25. In your view, what factors determine the level of e-commerce adoption in small and medium enterprises? (Please tick all that apply)

    Cost [ ]   Security concerns [ ]

    Consumer preference [ ]   Lack of knowledge/skills [ ]

    Payment method [ ]

    Other [ ]   (If other, please specify) ______________________

26. If your firm is <u>NOT</u> on e-commerce, what do you think would be the business benefits of adopting e-commerce technologies? Please tick all that apply:

    Improved marketing [ ]   Better customer service [ ]

    Cost reduction [ ]   Improved communication [ ]

    Better competition [ ]   Improved value of products [ ]

    Enter global market [ ]   New business opportunities [ ]

    Improved speed of delivery [ ]   Support sales process [ ]

    Improve business efficiency [ ]   Create linkages with partners [ ]

Section 3 – Strategic Value of E-commerce

The following statements describe the strategic value of e-commerce in your firm. Please indicate the extent to which your firm uses e-commerce for each of the strategic value indicator described. Use the scale below:

1-Not at all   2-To a very little extent   3-To a moderate extent

4-To a great extent   5-To a very great extent

Please tick one

S/N	Statement	1	2	3	4	5
1	E-commerce is part of the firm's business strategy					
2	E-commerce has led to far reaching changes and restructuring					
3	E-commerce has been used as a marketing tool for the firm's products					
4	E-commerce has enabled the firm to provide better product information					
5	The firm has used e-commerce to capture customer information					
6	The firm has used e-commerce to improve customer service					
7	E-commerce has enabled the firm to offer electronic products/services					
8	The firm has used e-commerce to lower the cost of products/services					
9	E-commerce has increased efficiency of business operations					
10	E-commerce has improved the speed of product delivery to the market					
11	The firm has used e-commerce to reduce the power of customers to switch products and suppliers in the market					
12	The firm has used e-commerce to deter customers from buying substitute products in the market					
13	E-commerce has made it possible for the firm to deal with its rivals					
14	The firm has used e-commerce to support the sales process using online catalogs, price lists, promotions and after-sales service					
15	E-commerce has reduced operational costs of the business by reducing paper work, administrative costs and transportation costs					
16	E-commerce has supported the firm's product differentiation strategy by adding value or new and unique features to products					
17	E-commerce has created/opened new business opportunities					
18	The firm has used e-commerce to achieve market specialization, that is, concentrating on a particular market/product niche					
19	E-commerce has enabled the firm to create strong and profitable linkages with its suppliers and customers through better exchange of information					
20	The firm has used e-commerce to market its new products/services					
21	E-commerce has helped the firm to enter the international market					
22	The firm has used e-commerce to reduce the power of suppliers to dictate prices of inputs in the market					
23	E-commerce has enabled the firm to better communicate with customers					

Appendix II: Letter of Introduction

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
MBA PROGRAM – LOWER KABETE CAMPUS

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE.......17/08/2011...........

TO WHOM IT MAY CONCERN

The bearer of this letter ....Joshua Mutua......................

Registration No: ....D61/71871/2008...........................

is a Master of Business Administration (MBA) student of the University of Nairobi.

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 if you assist him/~~her~~ by allowing him/~~her~~ to collect data in your organization for the research.

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.

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CO-ORDINATOR, MBA PROGRAM