AN INVESTIGATION INTO THE FACTORS THAT HAVE INFLUENCED THE ADOPTION OF E-COMMERCE IN THE RETAILING INDUSTRY: THE CASE OF SUPERMARKETS IN NAIROBI

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A MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE MASTER IN BUSINESS ADMINISTRATION DEGREE, FACULTY OF COMMERCE,
UNIVERSITY OF NAIROBI

AUGUST 2001

DECLARATION

This project is my original work and has not been submitted for a degree in any other University.

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ACKNOWLEDGEMENT

Many individuals have in different ways positively contributed to the development of this project. My special thanks go to Dr R. Musyoka of the Department of Business Administration without whose guidance and timely advice this work would not have been completed. I also want to thank him very much for his tireless efforts and willingness to go the extra mile in meeting my tight time requirements.

My deepest gratitude is extended to my family - especially my parents Joseph and Phyllis, who gave me a lot of encouragement with each passing semester of this program. Thanks Philip and Irene too for all the laughs (and meals!) in the late hours, not to mention your God-given flexibility during your busy wedding arrangements.

My appreciation is also extended to all the lecturers who taught me and more so, those who provided valuable assistance in shaping this project to what it has become during the proposal stage. I would also like to sincerely thank all the people who I interacted with in the supermarkets, and who took the time to fill out the questionnaire, without which I would not have gained the required information to successfully carry out this project.

To Forre, Kombe, Beato and Mus - you guys were there for me even before I started this degree and your friendship was at times all I had left. Thanks for all your prayers, earnest and practical, invaluable support all through!

Last but not least, I'd like to specially thank Jazz for helping me, in a very real way, work through this program. The countless hours spent studying, completing assignments preparing for tutorials, presentations and exams - and researching - will always be remembered.

Your devotion and commitment was a true inspiration. I don't think I'd have done it without you!

Above all, thanks be to God for graciously granting me this wonderful milestone in my life - to Him who is able to do **more** than all we ask or imagine! - to Him be glory forever.

ABSTRACT

This research aimed at accomplishing two important things. The first was to determine the awareness level of e-commerce in supermarkets in Nairobi and the second was to find out the factors that have served to influence its adoption. The rationale of the study arose from the fact that e-commerce has rapidly grown in other parts of the world, with the retailing industry being one of the leading adopters. However, even with the emergence of the Internet in Kenya and the ability to access it through the growth of Internet Service Providers, very little has practically been done in the area of e-commerce.

The study required collecting information from the supermarkets in Nairobi and twenty-two of them responded positively. Data was collected using structured questionnaires, which were normally dropped and picked up later at an agreed date The data was analyzed using descriptive statistics and Factor Analysis, through the use of the SPSS (Statistical Package for Social Sciences) computer program.

Results following the analysis indicated that there is still a lot of ignorance with respect to e-commerce. This affects the management attitude in implementing and for many establishments, it is not yet integrated into their business plan, evidenced by their low budgetary commitment. As such, the staff are not properly trained to prepare themselves for the challenges of emerging technology and the strong tides of globalization. Only a few supermarkets realize its vast potential and the opportunity to reap a host of benefits through competitive advantage.

Further, it was found out that the depressed economic climate has not favoured new investment. The telecommunications industry also needs to be fully liberalized for supermarkets to take advantage of lower connectivity costs through the introduction of better technology and hopefully, more competitors.

CHAPTER ONE - INTRODUCTION

1.1 OVERVIEW AND BACKGROUND

Trade has been carried out from time immemorial, since people have always needed to transact in order to acquire goods and services which meet their needs and wants. Over a long period of time, trade has been limited to "arms length" transactions, as there was no other way two or more interested parties could meet. With the advent of the telephone, people's requirements for mobility reduced since they could now communicate without necessarily being in physical proximity of each other.

With the revolution of the computer in recent years, it has now become possible to stretch the imagination and communicate with individuals groups and organizations around the globe, in real time. This concept was the brainchild of Sabeer Bhatia and John Smith when in 1996, they launched Hotmail, the world's first free, web-based email service which was later sold to Microsoft for $400 million (Malik, 1999).

From the regime of sending and receiving simple messages on-line, the business circuit has now experienced a tremendous change with respect to the execution of transactions. E-Commerce therefore has become a form of business, administrative transaction or information exchange that is executed using any information and communications technology.

The growth of e-commerce has its origins in the introduction of the Internet and the World Wide Web. But how did the Internet come to be?. It began in 1969 when the United States Defense Department financed a network for doing civilian research. Their concern was to ensure that information could be sent around the world in peacetime or during a war even if cities and hence computer networks were destroyed (Bolles, 1997). Experts figured out that it was safe to avoid a concentration of networks between researchers for one apparent reason : What happens if a nuclear attack wipes out the entire research data? The apprehension led to the decision to link different networks of computers so that libraries of information remained at diverse locations. (Mugala, 1999).

In the 1980's, the Internet was adopted as a high-speed computer network connecting the computational centres funded by the National Science and encouraged instant exchange of information and sharing of data between different institutions including defense, education and research (Mugala, 1999). The Internet was therefore designed to break down each message into electronic "packets" and have those packets take random routes to their destination where they are reassembled (Johnson, 1998). To this network, Tim Berners-Lee added hypertext to create the World Wide Web, now the most popular part of the Internet. Hypertext provides a computer user enormous potential power in information retrieval. By clicking on an underlined or "linked" text element in a document or networked computer, you can instantly be transported (in theory at least) to one of 30 million computers or hosts connected to the Web (Internet[1], 1998). This gives a single user access to a huge range of material.

The Internet is therefore a collection of geographically dispersed computers or computer networks that are connected to one another so that they can communicate and share resources (Miruka, 2000). It is a complex mesh of websites , email and news ... it is a global network of networks based on a simple foundation - IP, Internet Protocol,(Young, 2000). It is the fastest growing communications medium in the world (Johnson, 1998), and has become a very important tool in today's ultra-sophisticated business environment. The technology is speedily changing the traditional trading models and organizational cultures.

For millions of people around the globe, internet-based resources have fast become a way of life. Businesses must move quickly to compete, not just so as to have an opportunity to get a piece of the global pie, but to ensure that they can offer the same services and products as the US and European sites that are selling ... via the internet (Warner, 2001).

And how will they do this? Through E-commerce. E-commerce is a term coined to describe "electronic trading" that takes place over the Internet (Johnson, 1998). Instead of ordering products over the phone or visiting a retail outlet, customers connect to a company's "virtual store" laid out in a Web page. This enables graphics of available products to be displayed. A secure server enables the customer to order the goods, which are then physically shipped to the customer. (Johnson, 1998).

E-commerce is not just about changing the means by which we make a sale. It is a paradigm shift in the way we do business (ACN, 1998). It offers users twenty four hour accessibility and availability. Businessmen, housewives and children go on-line everyday to satisfy their diverse requirements. From spare-parts to books; clothing to antiques - people are seeking to meet their needs through various products and services. Due to the emergence of technology, these people want to do this without leaving their offices, homes or even bedrooms.

1.2 STATEMENT OF THE PROBLEM

The Internet first became available in Kenya to a small group of technical enthusiasts in 1993, and the African Regional Centre for Computing (ARCC), an NGO based in Nairobi, became the first provider of web-based Internet service. The first commercial Internet Service Provider (ISP), Form-net began operating in 1995. Soon competition increased with the entry of three other ISP's. (Mweu, 2000). Today, while the number of ISP's has grown from zero to forty three in a space of not more than six years, a corresponding growth rate in companies adopting e-commerce practices has not been seen. There should be matched growth between the two. However, only a handful of firms have embraced e-commerce.

Owing to this mismatch, there must be factors that have hindered the potentially phenomenal growth of e-commerce in this country. Could it be due to a lack of any of the following issues : strategic planning, inadequate in-house skills, Board-level support, privacy and security, legal jurisdiction, taxation issues, customer demand, investment in market research, online applications and operational support? Or are there a host of other factors that have caused this lag in Kenyan companies?

This paper seeks to investigate the issues that have served to influence the growth of e-commerce in Kenya, given that we are keeping pace with the global Internet technology and practices. **Why does the Nairobi supermarket hesitate to incorporate e-commerce into their day to day operations?** Only very few have ventured into these technological waters, with the majority still out of the circle. Kenyan companies would do much better to focus on the big potential of the business-to-business e-commerce opportunities which remain largely untapped (A.N., 2001)

1.3 RESEARCH OBJECTIVES

The objectives of the study will be :

1. To determine the awareness level of e-commerce and its practices in supermarkets in Nairobi
2. To determine the factors that have influenced the adoption of e-commerce in supermarkets in Nairobi

1.4 IMPORTANCE OF THE STUDY

This study is expected to be useful to :

1. The Internet Service Providers in determining their market reach and subsequent business potential in this market.
2. The supermarkets studied, to give them an indication of their status in relation to technology-based marketing.
3. The researchers in this area, to shed light on the current trends in the adoption of e-commerce in the retail industry.
4. Marketers interested in targeting Kenyan supermarkets, to estimate the likely degree of success of their products and/or services.
5. Potential suppliers in providing them with information on how technologically - focussed their target supermarkets are.

CHAPTER TWO - LITERATURE REVIEW

2.1 THE MARKETING ENVIRONMENT

The marketplace has evolved over time. Forces of demand and supply are being redefined on the basis of a variety of other factors at play. It is therefore changing radically as a result of major societal forces such as technological advances, globalization, regionalization and deregulation. The customers have not been left out in these trends. They now increasingly expect higher quality and service and some customization (Kotler, 2000)

The origins of e-commerce spring from the need to exchange goods and services. Marketing is the function that enables the producer to establish a link with the consumer. In times past, the producer used to produce as many products as was possible; and strive to attain the highest quality through continued research and innovation. The producer believed that the consumer would be inclined to purchase the products because they were readily available and were produced at the highest quality level. These ideas capture the former school of thought, embodied in the "product" and "production" concepts of marketing (Kotler, 2000).

However, a relatively large proportion of what is available on the Internet is in the form of sellers trying to push their products into the market. This sales orientation makes the assumption that people will want to buy a product or service that an individual, firm or organization can supply. It does not consider whether it is first necessary to establish what the consumer really wants. The operationalization of this concept implies that it is only necessary to inform people about a product, persuade them it is the one they require, and make it available for them to purchase (Proctor, 1996).

It encompasses the combination of four typical selling situations outlined below :

1. Order takers and those who respond to requests
   These people can be likened to shop assistants or van salespeople. They do little more than take orders and respond to inquiries
2. Missionary salespeople
   These adopt a low-key approach and primarily seek to provide information and advice about a product. This is typically seen in the sales of pharmaceutical products
3. Technical salespeople
   These persons possess technical competence as well as selling skills. They offer technical advice to clients as well as helping to supply goods and services to meet their needs and wants. This is especially true in the sale of industrial goods.
4. Creative salespeople
   These have probably the most difficult task since they have to actively persuade people to purchase. The customer may not really be aware of the need for the product or service, or how it can satisfy their needs better than others that are currently available (Proctor, 1996).

Marketers are not guaranteed of sales once they take on any of the above roles. In addition, they need to combine four variables - commonly referred to as the "4P's" - to influence the manner in which consumers needs are met. They are outlined below :

(i) Product - which refers to the quality, features, styling, options, brand name, packaging, sizes, services.

(ii) Price - which refers to the list price, discounts, allowances, payment period, credit.

(iii) Promotion - which refers to advertising, personal selling, sales promotion, merchandising, public relations.

(iv) Place - which refers to distribution such as channels, coverage, locations, inventory, transport.

These four variables above, impact consumers in different ways, and a marketer's success will be based on how well these variables are combined to create a synergy in the form of an offering.

Alongside the four P's, there must to be a platform atop which the buyers can meet and interact with the sellers. This is known as a market. It serves to facilitate the exchange process, or transaction, between a willing buyer and a willing seller. The exchange will involve the payment of some agreed form for the acquisition of a desired product or service.

In many situations however, the platform through which the buyers and sellers interact is through an intermediary. Owing to the distribution channel of goods and services, some products require to pass through a series of steps before the seller can meet with the buyer. Intermediaries normally achieve superior efficiency in making goods widely available and accessible to target markets. Through their contacts, experience, specialization and scale of operation, intermediaries usually offer a firm (manufacturer or seller) more than it can achieve on its own (Kotler, 2000).

According to Stern and El-Ansary (1996),

> "Intermediaries smooth the flow of goods and services ..... this procedure is necessary in order to bridge the discrepancy between the assortment of goods and services generated by the producer and the assortment demanded by the consumer. The discrepancy results from the fact that the manufacturers typically produce a large quantity of a limited variety of goods, whereas consumers usually desire only a limited quantity of a wide variety of goods."

This study focuses on the retailing industry. Typically, it consists of a one-level distribution channel meaning that it contains one selling intermediary. However, often times there are situations where the retailers are part of a two-level channel, such that there are two intermediaries (Kotler, 2000). With the advent of the Internet and Electronic Commerce, companies can use the zero-level channel or direct marketing channel, where the manufacturer sells directly to the final consumer. The different types of retailers are now defined and discussed.

2.2 DEFINITION OF RETAILING

Retailing - the merchandising aspect of marketing - includes all activities required to sell directly to consumers for their personal, nonbusiness use. The firm that performs this consumer selling-whether it is a manufacturer, wholesaler, or retailer-is engaged in retailing. Retailing can take many forms: goods or services may be sold in person, by mail, telephone, television, or computer, or even through vending machines. These products can be sold on the street, in a store, or in the consumer's home. However, businesses that are classified as retailers secure the vast majority of their sales volume from store-based retailing (Britannica, 2000)

2.3 TYPES OF RETAILERS

There are different types of store retailers that participate in retail merchandising. The following is a brief description of the most important store retailers.

2.3.1 Specialty stores

A specialty store carries a deep assortment within a narrow line of goods. Furniture stores, florists, sporting-goods stores, and bookstores are all specialty stores. (Kotler, 2000)

2.3.2 Department Stores

Department stores carry a wider variety of merchandise than most stores but offer these items in separate departments within the store. These departments usually include home furnishings and household goods, as well as clothing, which may be divided into departments according to gender and age (Britannica, 2000). Departments within each store are usually operated as separate entities, each with its own specialist buyers or merchandisers, promotions, and service personnel. (Kotler, 2000).

2.3.3 Supermarkets

A supermarket may be defined as a relatively large, low-cost, low-margin, high-volume, self-service operation designed to serve total needs for food, laundry and household maintenance products. Supermarkets earn an operating profit of only about one percent on sales and ten percent on net worth. (Kotler, 2000)

Supermarkets are characterized by large facilities (15,000 to 25,000 square feet [1,394 to 2,323 square metres] with more than 12,000 items), low profit, high volume, and operations that serve the consumer's total needs for items such as food (groceries, meats, produce, dairy products, baked goods) and household sundries. They are organized according to product departments and operate primarily on a self-service basis. (Britannica, 2000)

2.3.4 Convenience stores

Located primarily near residential areas, convenience stores are relatively small outlets that are open long hours and carry a limited line of high-turnover convenience products at high prices (Kotler, 2000). Although many have added food services, consumers use them mainly for "fill-in" purchases, such as bread, milk, or miscellaneous goods. (Britannica, 2000)

2.3.5 Superstores

Superstores, hypermarkets, and combination stores are unique retail merchandisers. With facilities averaging 35,000 square feet, superstores meet many of the consumer's needs for food and nonfood items by housing a full-service grocery store as well as such services as dry cleaning, laundry, shoe repair, and cafeterias. Combination stores typically combine a grocery store and a drug store in one facility, utilizing approximately 55,000 square feet of selling space. Hypermarkets combine supermarket, discount, and warehousing retailing principles by going beyond routinely purchased goods to include furniture, clothing, appliances, and other items. Ranging in size from 80,000 to 220,000 square feet, hypermarkets display products in bulk quantities that require minimum handling by store personnel. (Britannica, 2000)

2.4 HISTORY OF RETAILING

For centuries most merchandise was sold in marketplaces or by peddlers. In many countries, hawkers still sell their wares while traveling from one village to the next. Marketplaces are still the primary form of retail selling in these villages. This was also true in Europe until the Renaissance, when market stalls in certain localities became permanent and eventually grew into stores and business districts. (Britannica, 2000)
Retail chains are known to have existed in China several centuries before the Christian era and in some European cities in the 16th and 17th centuries. However, the birth of the modern chain store can be traced to 1859, with the inauguration of what is now the Great Atlantic & Pacific Tea Company, Inc. (A&P), in New York City. During the 15th and 16th centuries the Fugger family of Germany was the first to carry out mercantile operations of a chain-store variety. In 1670 the Hudson's Bay Company chartered its chain of outposts in Canada (Cullen, 2000)

Department stores also were seen in Europe and Asia as early as the 17th century. However, the modern department store had its beginnings in France in the mid-1800s. Paris' Bon Marché (French for cheap or bargain) revolutionized retailing by relying on volume rather than high markup to make its money. The store also offered customers a money-back guarantee on purchases. By 1897, the store sold more than $30 million worth of goods per year; its name became so famous that unaffiliated stores in Brooklyn, Seattle and England also took the name Bon Marché. By the middle of the 20th century, department stores existed in major U.S. cities, although small independent merchants still constitute the majority of retailers. (Cullen, 2000)

Shopping malls, a late 20th-century development in retail practices, were created to provide for a consumer's every need in a single, self-contained shopping area. Although they were first created for the convenience of suburban populations, they can now also be found on main city thoroughfares. (Britannica, 2000)

2.5 THE INTERNET AND E-COMMERCE

For eons, the exchange process of goods and services had only occurred where the willing buyer and willing seller were in view of each other, or were otherwise familiar with one another. With the development of the Internet, people are now able to communicate with each other around the world. They become part of a worldwide network. Therefore, as long as two or more parties can communicate with each other through the Internet, it is as though they are in a market.

This however is not all. The Internet has grown by leaps and bounds. One way to think about Internet growth is to compare it to other technologies from the past. It took 38 years for the telephone to penetrate 30% of U.S. households. Television took 17 years to become that available. Personal computers took 13 years. Once the Internet became popular because of the World Wide Web, it took less than 7 years to reach a 30% penetration level (USIC, 1999). As a result, the development of the Internet has led to a new economy often referred to as Electronic-Commerce, or just e-commerce in short - an economy that is driving the world's fastest growing markets (Webpage, 2001).

The Internet provides an enabling environment for buyers and sellers to meet and interact with one another and ultimately engage in the exchange of goods and services. With its rapid expansion and growing user base, several market segments have begun to experience remarkable growth. In Europe, the Middle East and Asia, the best sectors that have seen steady growth are travel, media, electronic, retail, telecommunications, automotive, finance and pharmaceuticals (Webpage, 2001).

One of the biggest advantages of the Internet is that it captures a wide audience, who in turn get an opportunity to evaluate what is on offer and make a purchase decision. The Internet is suitable for both mass marketing and niche marketing, depending on consumers needs. It can also be used for direct selling and is an indispensable advertising tool, owing to its graphic capabilities. This research will look at how this technology has influenced the retailing environment in this country, and what the key constraints to its success are.

2.5.1 Emergence of the Internet Economy

The emergence of an "Internet economy" is unarguable: explosive growth in net-based buying, selling and customer service operations has radically realigned traditional buyer-seller relationships. Consumers now shop the world, enjoying unprecedented opportunities for price and product comparison, often completely bypassing the local storefront retailers who one defined their shopping horizons. (Internet[2])

The advent and proliferation of electronic marketplaces is simply too important to be ignored. This is a phenomenon that promises to richly reward early adopters and severely penalize latecomers. The stakes may be nothing less than survival, as traditional sales and distribution channels crumble and the new electronic processes succeed them.

Internet will, perhaps, have its strongest impact on the conduct of business-to-business commerce. To date, commerce processes - the critical links between buyers and sellers - have remained basically unchanged. Faxes, phone calls, and endless paper trails continue to clog the communication channels between businesses, creating inefficiencies at every point in the commerce chain. Now, the Internet offers innovative new ways to streamline commerce processes, reduce costs, and increase revenue

For business-to-business commerce, the Internet tears down geographical boundaries, providing buyers with access to new suppliers and opening new channels of distribution for sellers. It dramatically accelerates the speed of commerce, increasing the rate at which companies must disseminate information and process transactions. And, it forms entirely new internet-based markets by implementing new methods of dynamic trading (Internet[2]).

Electronic commerce is widely regarded as one of the most important forces of change the retail industry around the world. Retailing is likely to be impacted by e- commerce more than most other sectors of the economy because of the position which retailers occupy as the interface between product suppliers and end customers. As well as within their own operations, e-commerce has the potential to impact on retailers' relationships with their suppliers and with their customers (ACRS, 1999).

The Internet and e-commerce are growing at alarming proportions in the western world. Three quarters of America's fastest growing companies have already embrace e-business (Collins, 2000). Business-to-business e-commerce is set to grow dramatically in both the US and Europe in the coming years, according to a pair of reports. A report by The Yankee Group has found that B2B e-commerce in the US is expected to grow at a compound annual growth rate of forty-one (41) percent over the next five years. In Europe, Visa International has found that B2B e-commerce will grow at a rate of about 30 times the growth of the GDP of most European countries (Pastore, 1999). Online retail sales are expected to grow by upwards of five hundred (500) percent over the next two years (InternetNews.com, 1999)

The market for e-commerce services in the United States is predicted to boom, and is expected to reach more than $64 billion in 2003. Forrester Research Inc. further predicts that e-commerce will grow to US $ 327 million by the year 2002, and says the explosive growth will come about as companies grapple with complex initiatives, linking internal technologies and processes to suppliers and customers (Green and Browder, 1998). By the year 2003, the value of business-to-business E-Commerce worldwide is forecasted to exceed $3.2 trillion (Corkey, 2000).

A survey on the use and perspectives of e-commerce amongst Australian Retailers concluded that the major barriers to the more widespread take-up of e-commerce in retail businesses are consumer issues and internal management and organizational issues. Technology issues were seen to be of relatively less importance (ACRS, 1999).
From less than $200 million in 1999, it is estimated that the online grocery spending in the United States will top $8.8 billion in 2004. This market is taking a growth path that no other e-commerce business has tread (Internet.com, 2000)
In her study of the potential for adoption of E-Commerce by Tour Operators in Nairobi : The case of Kenya Association of Tour Operators (KATO) members, Mbuvi (2000) found out that eighty-seven percent (87%) of respondents from the tourism industry were enthusiastic about the adoption of e-commerce, and had intentions of adopting the technology. However, there was no actual E-commerce being conducted among the firms (Mbuvi, 2000). She suggested that Tour Operators will be among the

first organizations to adopt in Kenya. Several months later, this has yet to be seen.

Supermarkets have excellent opportunities for incorporating e-commerce in their operations due to the high level of competition within the retailing industry. Karemu (1993), who examined supermarkets with respect to the state of strategic management practices in the retailing sector, concluded her study by noting that "supermarkets must devise ways to gain and maintain an edge over their competitors". On the other hand, Munyoki (1997) concluded that "other retail outlets dealing in similar merchandise but not operating as supermarkets are emerging as competitors". However, the question of how or when these competitors will be dealt with has not been addressed by these studies.

2.6 WHAT IS E-COMMERCE?

E-commerce simply means buying and selling over the Internet. It is about using the Internet for doing business (ACN, 1998). It means using the Internet, or similar electronic means, as a way of doing business, of buying and selling goods and services (ACN, 1998).
It may also be defined as the conduct of financial transactions by electronic means. It often refers to purchases from online stores on the Web, otherwise known as "e-commerce Web sites". They may also be referred to as "virtual stores" or "Cyber stores".

According to Kotler (2000)

> "The term electronic commerce (e-commerce) describes a variety of electronic platforms, such as the sending of purchase orders to suppliers via Electronic Data Interchange (EDI), the use of fax and email to conduct transactions, the use of ATM's ... and smart cards to facilitate payment and obtain digital cash; and the use of the Internet and on-line services. All of these involve doing business in a "marketspace", as compared to a physical "marketplace".

The transactions can occur between different groups. These are:

- Business-to-business
- Business-to-administration (such as businesses making payments or sales to government)
- Consumer-to-administration (such as self-assessed tax returns or welfare payment)
- Business-to-consumer, where businesses make sales to consumers (ACN, 1998).

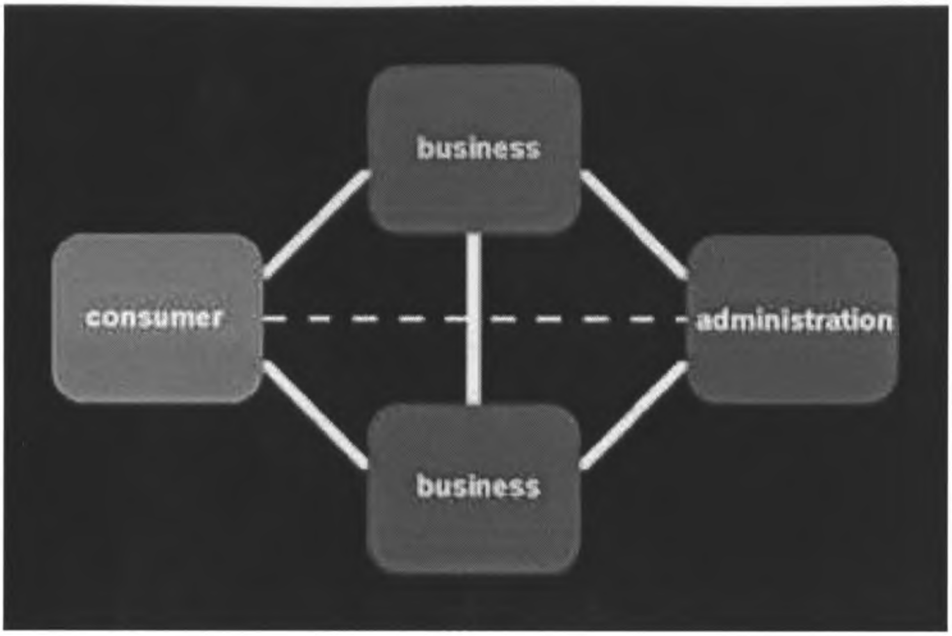


Figure 1 Categories of electronic commerce

The Internet can be likened to a noisy and crowded market place with a myriad of signposts, where every trader is yelling for attention to their wares. These "traders" range from the lowly individual, to business people, to high profile institutions and corporations. A web site represents each of the stalls, and the search process is known as "browsing" or "surfing". When two or more parties in this arrangement are in direct contact with each other, they are said to be "online", and the process of inputting wares into the shopping basket is known as "downloading".

Electronic commerce integrates communications, data management, and security services to allow business applications within different organizations to automatically interchange information. (Internet[3])

- **Communications** services transfer the information from the originator to the recipient.
- **Data management** services define the interchange format of the information.

- **Security** services authenticate the source of information, verify the integrity of the information received by the recipient, prevent disclosure of the information to unauthorized users, and verify that the intended recipient received the information. (Internet[3])

Electronic commerce applies and integrates these infrastructure services to support business and commercial applications including financial transactions such as electronic bidding, ordering and payments, and exchange of digital product specifications and design data. Companies that fail to develop on-line services are likely to lose out in the long term, as more surveys demonstrate the inevitability of continued growth in internet use and on-line purchasing at a very rapid rate for the foreseeable future. (Moss, 2000)

Commerce is usually thought of in a business context to mean an exchange of goods or commodities, especially on a large scale. Goods are not conveyed without being accompanied by a variety of information. A typical commerce activity may include a purchase order and invoice. It may require updating accounting and inventory records, and it may require manipulating and modifying administrative information. Commerce, though, is not limited to business activities; it also applies to social exchanges, such as exchanges of ideas or opinions. Commerce, therefore, can be considered to be an exchange of goods or information in carrying out social or business activities. For some commerce activities, it is the exchange (or conveyance) of information itself that is the end objective. Examples of these types of activities include mail or phone exchanges, and may, or may not be, directly related to a business transaction (Moss, 2000). Thus, information as the object of a commerce activity, or accompanying a commerce activity, has been an integral part of conducting commerce traditionally.

Information is also an integral part of electronic commerce, but electronic and traditional commerce each deal with information differently. Conveying information has traditionally been done through paper exchanges, direct personal contact, or through the phone or postal systems. In electronic commerce, information may be conveyed via a communications network, or other electronic media.

The way information is processed in electronic commerce also differs from the way it has been processed traditionally. Traditionally, information accompanying a business transaction had to be acted upon by the individuals involved in the transaction. In electronic commerce, information processing is automated, reducing or eliminating the need for human intervention and the use of paper. Thus, conducting commerce electronically differs from conducting commerce traditionally in the way information is exchanged and processed. Electronic commerce is, therefore, defined as commerce transacted using automated processing procedures integrated with automated procedures for the interchange of information (Internet[3])

2.7 E-FUNDAMENTALS OF RETAILING

With the opening up of communication around the world, companies can source for their customers from any part of the globe. There is heavy competition in attracting potential customers and converting them from browsers to buyers. The first thing that any company needs to do is to create an excellent and customer-friendly website. Included here would be slick graphics, special discounts and mountains of product information. Product, Place, Price and Promotion - the four P's of marketing are critical signposts in developing marketing strategies. Even then, it ordinarily takes decades for these factors to build a brand name in the marketplace.

Companies marketing on the Web need to focus their energies on seven C's of retailing. The first is **content**. This answers the questions what is offered and is it compelling? Customers are looking for rich up to date information with expert insights (Internet[4]). They want to see lots of products to choose from in an entertaining and visually appealing style. The second issue concerns **communication** (Internet[4]). Consumers want dialogue, especially via email. Companies need to engage themselves in follow up marketing, either by sending the customers e-newsletters or by asking them if they would like to receive more information on related products and services.

Customer care over the Internet can take on various forms. It could be the mode of payment, the delivery or the return options. It should be geared to support all stages of the relationship. Consumers should be offered multiple avenues and opportunities such as email, toll-free numbers and live chat to get their questions (Internet[4]).

Those consumers that are embracing the internet technology have established cyberspace **communities**. Marketers need to figure out how to become a constructive part of these communitiies, either by giving them expert information in a clear and entertaining style or providing them with a chance to react and interact with other visitors to the websites (Internet[4])

Convenience plays a very big role in attracting and retaining browsers and buyers alike. Nobody want to wait for minutes for graphics to download. Rather, consumers want sites that are easy-to-use, easy-to-navigate, logically organized with the ability to make quick transactions (Internet[4])

The sixth important issue is revolves around **connectivity** (Internet[4]). Companies should focus on connecting users to other sites. Shoppers enjoy exploring links to other websites, particularly if they are relevant to their interests.

Lastly, customers want to know that they are appreciated and have a sense of belonging in purchasing from particular sites. After a while, they will expect the company to know their purchase history and thus modify their service appropriately. Those companies that do a good job at tracking their customer's purchases will be the leaders in offering products to better meet and anticipate their needs. (Internet[4]). This is referred to as **customization**.

2.8 BENEFITS OF E-COMMERCE

2.8.1 Global presence

The boundaries of electronic commerce are not defined by geography or national borders, but rather by the coverage of computer networks. Since the most important networks are global in scope, electronic commerce enables even the smallest suppliers to achieve a global presence and to conduct business world-wide. (Internet[5])

2.8.2 Improved competitiveness

Electronic commerce enables suppliers to improve competitiveness by becoming "closer to the customer". As a simple example, many companies are employing electronic commerce technology to offer improved levels of pre-and post-sales support, with increased levels of product information, guidance on product use, and rapid response to customer enquiries. (Internet[5])

2.8.3 Mass customisation

With electronic interaction, customers are able to gather detailed information on the needs of each individual customer and automatically tailor products and services to those individual needs. This results in customised products comparable to those offered by specialised suppliers but at mass market prices (Internet[5])

2.8.4 Shorten or eradicate supply chains

Electronic commerce often allows traditional supply chains to be shortened dramatically. There are many established examples where goods are shipped directly from the manufacturer to the end consumer, by-passing the traditional staging posts of wholesaler's warehouse, retailer's warehouse and retail outlet. The extreme example arises in the case of products and services that can be delivered electronically, when the supply chain can be eradicated entirely. This has massive implications for the entertainment industries (film, video, music, magazines, newspapers), for the information industry, and for companies concerned with the development and distribution of computer software (Internet[5])

2.8.5 Substantial cost savings

One of the major contributions of electronic commerce is a reduction in transaction costs. While the cost of a business transaction that entails human interaction might be measured in dollars, the cost of conducting a similar transaction electronically might be a few cents or less. Hence, any business process involving "routine" interactions between people offers the potential for substantial cost savings, which can in turn be translated into substantial price reductions for customers (Internet[5])

2.8.6 Novel business opportunities

In addition to re-defining the markets for existing products and services, electronic commerce also provides the opportunity for entirely new products and services. Examples include network supply and support services, directory services, contact services (i.e. establishing initial contact between potential customers and potential suppliers), and many kinds of on-line information services (Internet[5])

While these various opportunities and benefits are all distinct, they are to some extent inter-related. For example, improvements in competitiveness and quality of service may in part be derived from mass customisation, while shortening of supply chains may contribute to cost savings and price reductions.

2.9 CHALLENGES OF E-COMMERCE

Electronic Commerce has grown exponentially around the world. However, its full potential is yet to be realized owing to several challenges that are yet to be addressed. One of the leading challenges is globalization. Global networks should make it as easy to do business with a company around the world as with one across the street. The communication medium alone is many times insufficient. Companies in different countries need to be aware of each other's presence plus the products and services that are offered and required. They also need to gain an understanding of the business traditions and conventions of other countries, particularly those that are unwritten. The linguistic and cultural diversity of a global user community needs to be respected and supported. How will companies engaging in e-commerce handle the broad issue of globalization and make global electronic commerce a practical reality? These issues among others will require continued focus to make e-commerce a global phenomenon (Internet[5])

There are also a myriad of contractual and financial issues that are still unresolved. If for instance a company in one country browses the electronic of a company in another country and places an electronic order for goods that will be delivered electronically, at precisely what point is a binding contract established between the companies? What is the legal status of this contract? What body has legal jurisdiction over the contract? Further, given the differences in financial regulations and practices, how is payment made and confirmed? What taxes and customs charges apply to the products and how are these taxes "policed" and collected? (Internet[5]). A lot of these and other questions do not have straightforward answers and e-commerce does not yet have a firm grip on their solutions.

The other pertinent issue is embedded in privacy and security. E-Commerce over open networks demands effective and trusted mechanisms for privacy and security. These mechanisms must provide for confidentiality. They must also enable each party in a transaction to ascertain with certainty the identity of the other party and ensure that the parties to a transaction cannot subsequently deny their participation. Since the recognized privacy and security systems depend upon certification by a trusted third party, global electronic commerce will require the establishment of a global certification system (Internet[5]).

Realising the full potential of E-Commerce requires universal access. Every company and every consumer must be able to access all organizations offering products or services, regardless of geographical location or the specific networks to which these organizations are connected. This in turn demands universal standards for network interconnection and interoperation.

CHAPTER THREE - RESEARCH METHODOLOGY

The research was based on a cross-sectional survey design.

3.1 Population

The population of interest comprised supermarkets in the retailing industry, as listed in the yellow pages of the Kenya Telephone Directory, 2001 Nairobi Edition, as it had the widest selection of supermarkets in Nairobi.

3.2 Data Collection

The information required was primary data, and was collected through a structured questionnaire that was to be completed by either the Managing Director or the General Manager. However, in cases where these individuals were not available, or they delegated the task to someone else, it was normally an individual who was knowledgeable with regard to the nature of the business. The questionnaires combined dichotomous questions with the Likert scale and multiple choice type questions. The questionnaires were hand delivered. The questionnaire had four sections. Section A consisted of questions aimed at obtaining general information about the supermarkets. Section B focused on the key dimensions that were to be used to determine e-commerce awareness while part C looked at the factors that have served as obstacles to the adoption of e-commerce. Finally, section D required the respondent to rank the factors in order of their importance and include any factors that may have been left out.

Follow up on the respondents was done through telephone calls. The questionnaires were then collected upon completion and subsequently analyzed.

3.3 Data Analysis

The data from the research was analyzed in two stages. Firstly, there was the descriptive statistics, which established the mean, and mode of the data. Some of these measures are displayed graphically for a visual effect as to the meaning of the data.

Secondly, there was the need to find out what factors influenced e-commerce adoption. This was done using the factor analysis technique on the SPSS (Statistical Package for Social Sciences) computer program

Factor analysis can be viewed as a class of procedures primarily used for data reduction and summarization. It seeks to resolve a large set of measured variables in terms of relatively few categories. The relationships among sets of variables are thus examined and represented in terms of a few underlying factors. A factor here may be defined as an underlying dimension that explains the correlations among a set of variables (Malhotra, 1996).

The factors so derived may be treated as new variables, (also termed Eigenvalues) and their value is obtained by summing the values of the original variables, which have been grouped together in the factor (Malhotra, 1996). The researcher subjectively determines the consequent naming and meaning of these new variables.

In this research, the principal components analysis approach, where the total variance in the data is considered has been used. It is used to transform a set of interrelated variables into a set of unrelated linear combinations of these variables. It therefore reveals how several measures of a domain can be combined in a single measure, the first component to produce maximum discrimination among objects along a single dimension.

The next step was to determine the number of factors that should be used. Different approaches can be used such as a priori determination and approaches based on scree plot, percentage of variance accounted for, and split-half reliability (Malhotra, 1996). However, the approach used in this research was based on the eigenvalues. An eigenvalue represents the amount of variance associated with the factor. Therefore, only the factors with eigenvalues greater than 1.0 are retained, as factors with a variance of less than 1.0 are no better than a single variable due to standardization (where each variable has a variance of 1.0). This resulted in the selection of eight factors.

The next step involves getting the matrix ready for interpretation. Although the initial (unrotated) factor matrix indicates the relationship between the factors and the individual variables, it rarely results in factors that can be interpreted, because the factors are correlated with many variables. In rotating the factors, each factor will have non-zero (significant) loadings for only some of the variables. Similarly, each variable will have significant loadings with only a few factors, and if possible, one.

While rotation does not affect the communalities and the percentage of total variance explained, the percentage of variance accounted for by each factor does change since it is redistributed by rotation (Malhotra, 1996).

In this research, the varimax procedure was used to rotate the factors since it minimized the number of variables with high loadings on a factor, thereby enhancing the interpretability of the factors. It is an orthogonal rotation since the axes are maintained at right angles.

Finally, the data can be interpreted. Interpretation is facilitated by identifying the variables that have large loading s on the same factor. That factor can then be interpreted in terms of the variables that load high on it. The factor loadings with a large absolute value indicate that the factor and the variable are closely related

CHAPTER FOUR - FINDINGS AND DISCUSSION

4.1 INTRODUCTION

The total population of supermarkets surveyed was to be 102. However, in the process of issuing out questionnaires, it was discovered that some of the supermarkets had closed altogether, others had changed names and yet others had been taken over to become branches in some supermarkets.

However, there was also a large group of respondents who declined to fill the questionnaire for various reasons indicated below :

1. They were too busy
2. They had filled too many questionnaires in the past without any feedback
3. They feared that their competitors would get sensitive information from the University
4. They were unwilling to fill the questionnaire

Finally, there was the third category of non-respondents. These were those who had added the name "supermarket" to their business but were no more than little outlets. Owing to size constraints, these were considered inadequate in the research.

Therefore, there were a total of 22 respondents who were then analyzed to give meaning to the research. These results are discussed in the following sections.

4.2 DESCRIPTIVE STATISTICS

Table 4.1 Title of Interviewees

Title	Frequency	Percent
Manager	8	47.1
Director	6	35.3
Assistant Branch Manager	1	5.9
Accountant	1	5.9
Personnel	1	5.9
Total	17	100

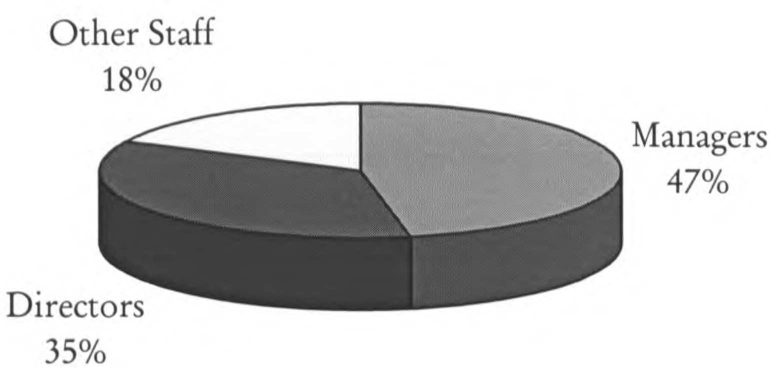
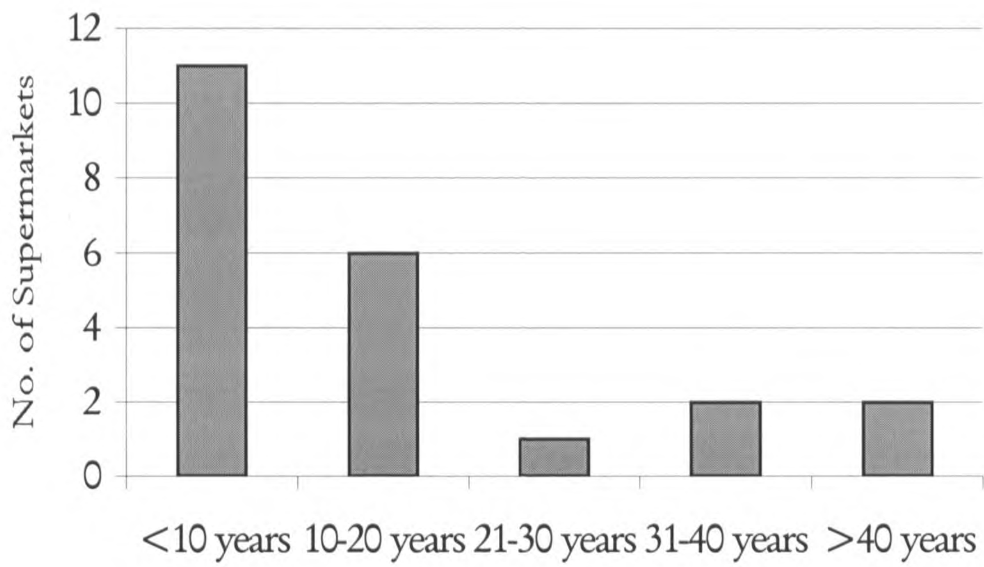


Chart 4.1 : Title of Interviewees

From the table and the chart above, it was found that Managers or Directors who comprised a total of 82% filled the questionnaires. This meant that the questionnaires were filled by people who were knowledgeable about their organizations, rather than junior personnel who accounted for 18% of those who filled out the questionnaires. Five people did not indicate their titles, but in doing the research, it was found that such people were in the senior management category.

Table 4.2 Age of Supermarket

Age	Frequency	Percent
<10 years	11	50
10-20 years	6	27
21-30 years	1	5
31-40 years	2	9
>40 years	2	9
Total	22	100



Graph 4.1 : Age of Supermarkets

Table 4.2 shows that 50% of the supermarkets surveyed were less than 10 years old, while 77% of the total were less than 20 years. This showed that a only a few supermarkets were older than 20 years. From the graph above, it can also be seen that in the last twenty years, the trend has been the establishment of supermarkets.

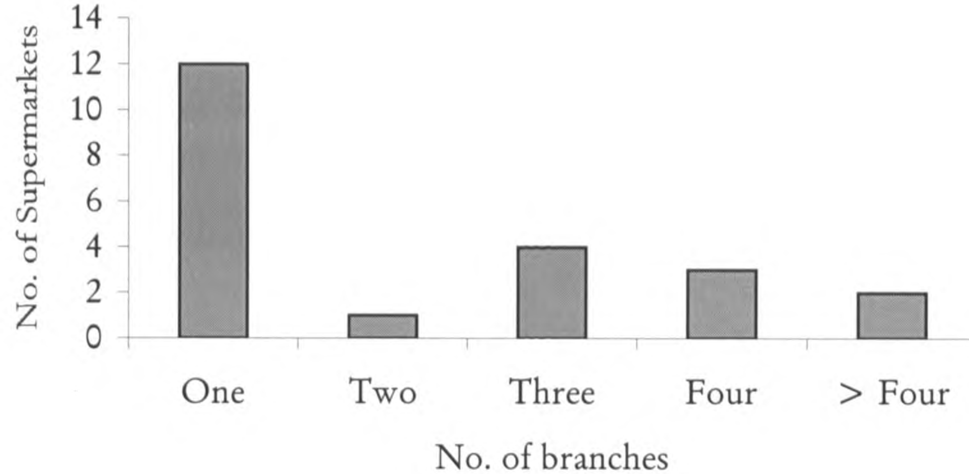
Table 4.3 Ownership of Supermarket

Ownership	Frequency	Percent
Local	20	91
Foreign	1	4.5
Both Local & Foreign	1	4.5

From the ownership data given in Table 4.3 it was noted that 91% of the supermarkets interviewed were locally owned. Foreign-owned supermarkets are not common. This, coupled along with the fact that many are young, means that many locals have recently established supermarkets. One of the reasons could be the layoffs in the working class and poor economy which has caused people to look for alternative forms of income.

Table 4.4 Number of branches

Branches	Frequency	Percent
One	12	54.5
Two	1	4.5
Three	4	18
Four	3	13
More than Four	2	9
Total	22	100



Graph 4.2 : Number of Branches

From the data in Table 4.4, over half (54.5%) of the supermarkets interviewed had only one branch. Less than 10% of the supermarkets had more than four branches. This data is represented graphically in Graph 4.2 above. This again supports the idea that many of them are set up by individuals who are looking for alternative forms of income rather than their primary concern.

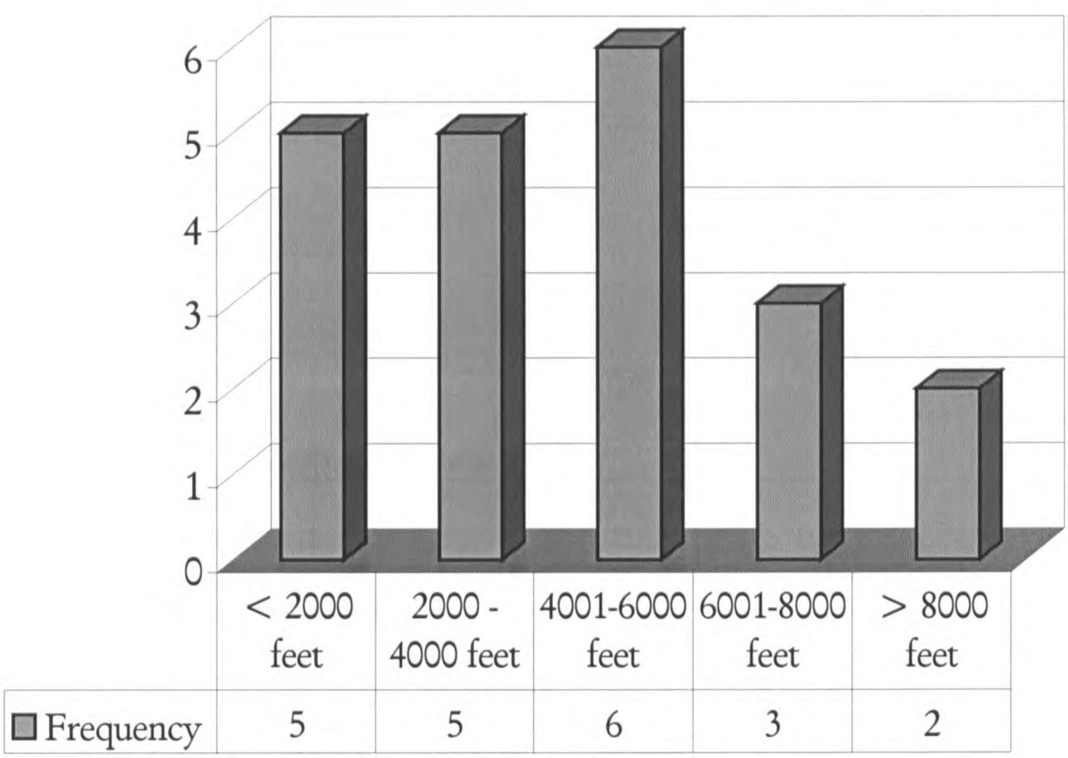
Table 4.5 Number of Check-out counters

Check-out counters	Frequency	Percent
Less than 5	16	72
5-10 counters	5	23
10-15 counters	0	0
More than 15 counters	1	5

The total percentage of supermarkets with less than ten check-out counters was 95%. Only one supermarket representing 5% had more than fifteen such counters. This was an attribute of the capacity to handle a large number of customers at any one time.

Table 4.6 Area of Trading Floor

Area in Square feet	Frequency	Percent
< 2000 feet	5	24
2000 - 4000 feet	5	24
4001-6000 feet	6	28
6001-8000 feet	3	14
More than 8000 feet	2	10
Total	21	100



Graph 4.3 : Area of Trading Floor

From Table 4.6 and Graph 4.3 on the previous page, 76% of the supermarkets had less than 6000 square feet. Only 10% had more than 8000 square feet on the trading floor. Most supermarkets were an average of five thousand square feet.

Table 4.7 Number of employees

Number of Employees	Frequency	Percent
Less than 50	17	77
50-100	4	18
101-250	0	0
More than 250	1	5
Total	22	100

The majority of the supermarkets (77%) have less than fifty employees, and up to 95% had less than one hundred employees.

Table 4.8 Presence of computers

Presence of Computers	Frequency	Percent
Yes	10	45
No	12	55
Total	22	100

Chart 4.2 : Presence of Computers

Less than half (45%) of the supermarkets had computers. Those that don't have use manual systems for their record-keeping.

Table 4.9 Number of computers

Number of Computers	Frequency	Percent
Less than 10	10	91
10 to 25	1	9
Total	11	100

Out of the supermarkets that had computers, 91% of them had less than 10 computers. The computer literacy in supermarkets does not appear to be very well developed from these findings.

Table 4.10 E-Commerce Awareness

	Frequency	Percent
Yes - Have heard	14	64
No - Have not heard	8	36
Total	22	100

To results above address one of the objectives of the research - to find out the awareness level of e-commerce. 64% of the supermarkets interviewed had heard of e-commerce. 36% confessed that they had no idea what e-commerce was. Even with a brief explanation, they still insisted that they had not heard about it. As such, they could not respond to the other parts of the questionnaire as it targeted those who had already heard about e-commerce.

Chart 4.3 : Representation of E-Commerce Awareness

4.3 FACTOR ANALYSIS

The following are the results of the factor analysis done on the data.

Table 4.11 : Variables and Their Meanings

V1	For the longer term, we cannot afford to ignore the Internet
V2	E-commerce is too new for our current analysis
V3	E-commerce requires too many components
V4	There is no need to carry out a pilot phase
V5	We will not reduce our costs with e-commerce
V6	E-commerce is too complex to understand
V7	E-commerce is too costly to implement
V8	E-commerce has no **real** advantages
V9	E-Commerce offers us competitive advantage
V10	E-commerce benefits are too far in the future
V11	With E-Commerce, we will extend to new geographic areas
V12	E-Commerce will greatly improve our supply chain management
V13	E-commerce will improve communication within our business
V14	We will reduce the cost of sales transactions
V15	If there were fewer risks, we would use e-commerce
V16	E-commerce is a secure trading system
V17	Presence of sufficient computers
V18	The computers tend to be slow
V19	The computers are too old
V20	The staff are sufficiently trained
V21	We do not have enough personnel to implement it

V22	The staff demand very high remuneration
V23	The cost of Internet access is too high
V24	We do not have a budget for e-commerce
V25	Our product costs are very high
V26	The management feels that the company doesn't need it
V27	E-Commerce is still too young in Kenya
V28	Acquiring E-Commerce is a complicated process
V29	There is currently insufficient demand to justify E-Commerce
V30	Most customers are still unaware about E-Commerce
V31	The competition in the industry is too stiff
V32	We expect there will be untimely deliveries
V33	Delivery / Courier tariffs are too high
V34	It is likely that there will be order mix-ups
V35	Not enough customers have credit cards
V36	The risk of fraud is too high
V37	The exchange rate is too unstable
V38	There are no secure payment channels
V39	Credit card information can be lost in transit
V40	Hackers can read into our business
V41	Taxes cannot be determined accurately
V42	The legal issue are too complex
V43	Our ISP gives very slow service
V44	Our ISP is often unreliable
V45	We need our ISP to give us training on e-commerce

Table 4.12 : Mean and Standard Deviation of Variables

	Mean	Standard Deviation
V1	1.44	1.01
V2	2.67	1.00
V3	3.11	1.05
V4	4.11	0.93
V5	4.00	1.00
V6	3.56	1.24
V7	3.33	1.12
V8	3.78	0.97
V9	2.11	0.93
V10	3.44	1.01
V11	2.33	1.32
V12	2.44	1.13
V13	2.22	0.83
V14	2.56	0.88
V15	3.33	0.71
V16	3.00	0.71
V17	1.78	0.97
V18	3.44	1.01
V19	4.00	1.00
V20	2.78	1.20
V21	2.89	1.27
V22	2.67	1.22

	Mean	Standard Deviation
V23	2.78	1.20
V24	2.56	1.24
V25	3.22	1.20
V26	2.78	1.30
V27	2.44	1.01
V28	3.22	1.09
V29	3.00	1.12
V30	2.22	0.83
V31	3.00	1.22
V32	3.67	1.00
V33	2.56	1.24
V34	3.78	0.83
V35	3.11	1.36
V36	2.78	0.97
V37	2.22	1.39
V38	3.44	1.01
V39	3.33	1.12
V40	2.22	1.20
V41	3.00	1.12
V42	3.11	1.17
V43	3.00	1.00
V44	2.78	0.97
V45	2.56	1.13

Table 4.13 : Total Variance Explained : Factor Analysis Communality and Eigenvalues

			Initial Eigenvalues		
Variable	Communality	Factor	Total	% of Varianc e	Cumu lative %
V1	1.00	F1	17.76	39.5	39.5
V2	1.00	F2	6.89	15.3	54.8
V3	1.00	F3	5.27	11.7	66.5
V4	1.00	F4	4.99	11.1	77.6
V5	1.00	F5	3.35	7.4	85.0
V6	1.00	F6	2.78	6.2	91.2
V7	1.00	F7	2.45	5.4	96.6
V8	1.00	F8	1.51	3.4	100
V9	1.00				
V10	1.00				
V11	1.00				
V12	1.00				
V13	1.00				
V14	1.00				
V15	1.00				
V16	1.00				
V17	1.00				
V18	1.00				
V19	1.00				
V20	1.00				
V21	1.00				
V22	1.00				
V23	1.00				
V24	1.00				
V25	1.00				
V26	1.00				
V27	1.00				
V28	1.00				
V29	1.00				
V30	1.00				
V31	1.00				
V32	1.00				
V33	1.00				
V34	1.00				
V35	1.00				
V36	1.00				

V37	1.00				
V38	1.00				
V39	1.00				
V40	1.00				
V41	1.00				
V42	1.00				
V43	1.00				
V44	1.00				
V45	1.00				

Communality is the amount of variance a variable shares with all the other variables being considered. From the above table, each of the variables has a communality of unity (1.0).

Further, using the principal components analysis approach, the eigenvalues for the factors are in decreasing order of magnitude moving from Factor 1 to Factor 8. The eigenvalue for a factor indicates the total variance attributed to that factor. The total variance accounted for by all the eight factors is 45.00, which is equal to the number of variables. Factor 1 accounts for a variance of 17.76, which is (17.76/45) or 39.46% of the total variance. Similarly, the second factor accounts for (6.89/45) or 15.3% of the total variance.

In order to determine the number of factors, those that had an eigenvalue of greater than one were selected and they were only eight.

Table 4.14 Final Varimax Rotated Factor Analysis (Factor Loadings)

	F1	F2	F3	F4	F5	F6	F7	F8
V1	-0.369	-0.763	-0.121	-0.031	0.179	-0.463	0.095	-0.097
V2	0.537	0.351	0.416	-0.297	0.392	-0.298	-0.288	0.022
V3	0.02	0.265	0.866	-0.063	0.128	0.309	0.079	-0.246
V4	0.666	0.606	-0.065	-0.139	-0.123	0.251	0.066	0.289
V5	0.543	0.529	0.234	-0.260	0.003	0.041	0.505	0.214
V6	0.808	0.432	0.219	-0.292	0.148	-0.038	-0.053	-0.038
V7	0.548	0.339	0.345	0.563	0.194	0.147	-0.066	0.293
V8	0.801	0.533	0.233	0.057	0.058	0.110	0.008	-0.028
V9	-0.375	-0.689	-0.430	-0.053	-0.187	-0.066	-0.139	-0.372
V10	0.620	0.368	0.333	-0.077	-0.227	-0.164	-0.218	0.488
V11	-0.405	-0.696	-0.370	-0.117	-0.155	-0.015	-0.269	-0.324
V12	-0.039	-0.963	-0.117	-0.062	0.058	-0.049	-0.203	-0.078
V13	0.172	-0.969	-0.049	0.043	0.116	-0.117	-0.004	-0.006
V14	-0.111	-0.896	-0.128	-0.154	0.137	0.278	0.207	-0.081
V15	-0.042	-0.191	0.068	0.006	0.962	0.030	-0.165	0.059
V16	-0.258	-0.152	-0.074	-0.328	0.414	-0.612	-0.447	0.229
V17	-0.276	-0.129	0.034	-0.282	-0.126	-0.187	0.865	-0.164
V18	0.289	0.115	0.055	0.041	0.716	-0.005	0.310	0.538
V19	0.179	-0.330	0.025	0.561	0.329	-0.366	0.251	0.489
V20	-0.701	-0.012	0.239	0.124	-0.197	-0.591	0.193	-0.102
V21	0.598	0.105	-0.085	0.330	-0.332	0.612	0.155	-0.078
V22	0.655	0.078	0.149	0.365	-0.227	0.504	0.320	-0.040

	F1	F2	F3	F4	F5	F6	F7	F8
V23	-0.067	0.704	0.019	0.679	-0.076	0.158	0.039	0.088
V24	0.035	0.407	0.122	0.119	0.210	0.062	-0.033	0.869
V25	0.143	-0.107	0.167	0.863	0.262	-0.053	-0.336	0.110
V26	0.283	0.265	-0.317	-0.181	-0.741	0.059	0.403	0.044
V27	-0.528	0.097	0.099	-0.115	-0.722	0.005	0.400	-0.088
V28	0.098	0.182	-0.122	0.170	-0.265	0.140	0.887	0.193
V29	0.375	0.177	0.830	-0.034	-0.023	-0.171	-0.008	0.328
V30	0.843	-0.366	0.169	-0.257	0.030	0.195	0.094	0.116
V31	0.563	0.264	0.422	-0.049	0.637	0.127	-0.073	-0.079
V32	0.368	0.411	-0.057	-0.430	0.439	0.408	0.019	0.384
V33	0.837	0.132	0.294	-0.219	0.245	0.282	0.078	0.025
V34	0.465	0.469	0.319	-0.300	-0.246	0.213	-0.042	0.514
V35	0.537	0.434	0.023	-0.312	0.088	0.176	-0.478	0.397
V36	0.194	0.567	0.457	-0.387	0.374	0.305	-0.058	0.213
V37	0.811	-0.124	0.456	-0.128	0.281	-0.081	-0.086	-0.095
V38	0.382	0.263	0.736	-0.329	-0.091	0.262	-0.241	-0.002
V39	0.423	0.281	0.758	-0.175	0.073	-0.126	0.318	0.119
V40	0.816	0.039	0.370	-0.094	0.163	0.248	-0.223	0.221
V41	0.212	-0.099	0.816	0.385	0.213	-0.008	-0.180	0.229
V42	0.913	0.032	0.114	0.280	-0.178	0.091	0.056	0.176
V43	-0.251	0.326	-0.062	0.900	0.048	-0.101	-0.054	-0.031
V44	-0.013	-0.061	-0.293	0.891	-0.214	0.140	0.198	-0.109
V45	0.203	0.083	0.177	-0.117	0.179	0.927	-0.111	0.059

Table 4.15 : Statements heavily loading on Factor 1

The legal issues are too complex
E-Commerce is too complex to understand
Many customers are still unaware about E-Commerce
E-Commerce has no real advantages
Delivery tariffs are too high
Hackers can read into our business
The exchange rate is too unstable

The statements heavily loading on Factor 1 are shown in the table above. This factor can be named **Ignorance**. The fact that the issues to be dealt with are "too complex" does not result from the inability but rather the unwillingness to understand. The associated statements point to issues that relate to a general lack of basic knowledge about E-Commerce

Table 4.16 : Statements heavily loading on factor 2

E-Commerce will improve communication within our business
E-Commerce will greatly improve our supply chain management
We will reduce the cost of sales transactions
We cannot afford to ignore the internet

The statements heavily loading on Factor 2 are outlined above. The factor can be named **Competitive Advantage**. In contrast to Factor 1 above, the adoption of e-commerce is influenced by those who realize the benefits it presents. Improved communication, supply chain management and lower costs all point to opportunities that supermarkets can use to create and maintain an edge over their competitors.

Table 4.17 : Statements heavily loading on factor 3

E-Commerce requires too many components
Currently, there is insufficient demand to justify E-Commerce
Taxes cannot be determined accurately
Credit card information can be lost in transit

The statements heavily loading on Factor 3 are shown in the table above. This factor can be named **Business Maturity and Variability**. The framework on which to conduct E-Commerce is not yet well developed. This means that whatever is taking place is still evolving and as such, some variables have not been fully addressed. Taxation and security are two issues that need to be dealt with, and their uncertainty has definitely affected the demand that businesses have for conducting E-Commerce. The way the different components will be handled is not yet clearly laid down. The e-commerce revolution in Kenya is still at its infancy and it will take some time before it can be fully adopted by supermarkets.

Table 4.18 : Statements heavily loading on Factor 4

Our ISP gives very slow service
Our ISP is often unreliable
Our product costs are too high
The cost of internet access is too high

The statements heavily loading on Factor 4 are indicated in the table above. This factor can be referred to as **Costs**. Given the fact that the cost of accessing the internet is too high for most of the supermarkets, the slow service only adds to the cost of using the internet. More time is spent on accessing, searching, and downloading. This coupled with the unreliability of the Internet Service Providers only adds insult to injury. A connection can be discontinued due to a breakdown in the telephone line. This implies that any activity that was incomplete will have to be restarted, taking up extra time and extra cost.

Table 4.19 : Statements heavily loading on Factor 5

If there were fewer risks, we would use E-Commerce
Management feels that the company doesn't need it
E-Commerce is still too young in Kenya

The statements heavily loading on Factor 5 are summarized above. This factor can be named as **Management Attitude.** There is no business without risks and yet risks are not quantifiable. The management in these supermarkets believes that it is not required at the moment. Further, they argue that E-Commerce has only just began and therefore adopting it at this stage would be premature. This factor may also be viewed as a derivative of the first factor - ignorance.

Table 4.20 : Statements heavily loading on Factor 6

We need our ISP to give us training on E-Commerce
We do not have enough personnel to implement it
The staff are sufficiently trained
Staff demand very high remuneration
E-Commerce is a secure trading system

The statements heavily loading on Factor 6 are outlined above. This factor can be referred to as **Personnel**. Supermarkets have realized that there is need to assess their human resource requirements. One of the key issues here is training. Unless the ISP's are able to offer this service, the staff will not move forward in the area of e-commerce. Those who come into the organization having been trained elsewhere inevitably demand higher remuneration. It is therefore upon the supermarkets to train and develop their employees in order that they may in turn embrace the e-commerce revolution.

Table 4.21 : Statement heavily loading on Factor 7

Acquiring E-Commerce is a complicated process
Presence of sufficient computers

The statements heavily loading on Factor 7 are given above. The factor can be named **Infrastructure**. The adoption of e-commerce is influenced by the presence of sufficient computers to cope with the workload in every department. It is not easy to determine the priority of acquisition of these expensive fixed assets. Moreover, once they are purchased , there is the extra issue of networking the supermarket, possibly to other branches as may be required. The software programs to be used also need to be carefully sourced and installed to ensure that the supermarket stays ahead of the competition.

Table 4.22 : Statement heavily loading on Factor 8

We do not have a budget for E-Commerce

The factor heavily loading on Factor 8 is shown in the table above. This factor may be referred to as **Planning**. Supermarkets will adopt E-Commerce only if they have incorporated it into their business plan and strategy.

Table 4.23 : Summary of the Three Most Important Factors to Respondents in Order of Priority

	Factor	% Agreement by Respondents
First Importance	Management Attitude	19%
Second Importance	High Cost	60%
Third Importance	Customer Unawareness	30%
"	Training	30%

As is seen from the preceding table (Table 4.23), 19% of the respondents said that the most important influence in adoption of e-commerce was management attitude. Unless the top leadership got involved, there would be no headway in this development. 60% of the respondents indicated that the cost of setting up e-commerce plus the cost of accessing the Internet was the second most important influencing factor.

The fact that customers are unaware and the need for training were ranked as the third importance by 60% of the respondents, each factor sharing equal proportion (30%).

Other factors that the respondents said should be considered as influences for e-commerce are the fact that there continues to be a monopoly in the telecommunication industry. It ought to be liberalized to increase the competitiveness in the telecoms industry, which will eventually lower the prices and encourage accessing of the Internet.

Another factor was the unpredictability of the economy. There has been a general downturn in the economy and the country did not witness a positive growth rate. Supermarkets have been affected and are not willing to make any significant investments as their future is unknown.

CHAPTER FIVE - SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

This section summarizes the findings of the study in relation to the objectives of the research, the conclusions and limitations of the study, as well as suggestions for further research.

5.1 SUMMARY

The objectives of the study were to establish the level of awareness of e-commerce in supermarkets as well as find out the factors that have influenced its adoption. It was established that sixty four percent (64%) had heard about e-commerce. This was the main measure of awareness that could be analyzed.

In the developed world, the retailing industry and specifically supermarkets have been one of the first industries to adopt e-commerce. The comparatively lower rate of awareness suggests that not enough critical-mass has come across the business tool that is taking shape all over the rest of the world. Internet Service Providers should therefore invest their resources in addressing the needs of this particular segment of the retailing industry. So far, they have been targeting the masses of companies and individuals, but this will not achieve the required level if it is not carefully planned and co-ordinated.

Table 5.1 : Summary of Factors that Influence Adoption of E-Commerce

Factor 1	Ignorance
Factor 2	Competitive Advantage
Factor 3	Business Maturity and Variability
Factor 4	Costs
Factor 5	Management Attitude
Factor 6	Personnel
Factor 7	Infrastracture
Factor 8	Planning

As indicated in Table 5.1 above, the study brought out, the following factors as important in influencing the adoption of e-commerce among supermarkets

1. Ignorance. A lot of supermarkets are still unaware of the existence of the internet to conduct trading. This was also found out through the first objective of the research. A good number of supermarkets do not know how the internet will affect their lives. They have dismissed the concept of e-commerce as being "too complex" and are unwilling to find out how they can use it to gain real business advantages.
2. Competitive Advantage. On the other hand, there is a group of supermarkets who have realized that e-commerce will work for them. They know it will improve their business relationships, which will be an upturn in their efficiency levels. Higher efficiency translates to increased savings and the supermarkets will be able to post better trading results. They cannot therefore afford to ignore the internet as is the vehicle that will enable them achieve their objectives.

3. Business Maturity and Variability. Supermarkets are not yet equipped with the right business and economic framework for conducting e-commerce. One of the reasons is because the e-commerce revolution is still very young in Kenya and certain issues like tax and security have not been addressed fully, which generally affects the level of demand.
4. Costs. These have come up owing to the provision of the internet service, the backbone on which e-commerce rides. With slow and unreliable connectivity to the internet, it becomes expensive both in terms of money and time to base all transactions on the internet. The opportunity cost of the related delays would not make economic sense. On average, the cost too of accessing the internet is higher than in other developed countries, who are competitors in this age of globalization.
5. Management Attitude. It doesn't matter whether all the other factors are right. If the management perceives that it is not yet time to embrace e-commerce, so it shall be. The Kenyan management in supermarkets needs to realize that the world is moving in this direction and change their attitudes in order to beat the competition.
6. Personnel. In any organization, this is probably the most important resource that any company owns. For the supermarket to keep abreast of technological advances, it needs to ensure that those concerned are sufficiently trained and demonstrate the right competencies to handle the new challenges.
7. Infrastructure. The most basic tool for working with e-commerce is the computer. Supermarkets should ensure that they have a sufficient number as their absence will delay any implementation initiatives.

8. Planning. E-Commerce will never just come to being in any supermarket. It needs to be built into the strategic plans of the organization. Nobody will create a budget for something that is not required. Supermarkets therefore need to give greater consideration to embracing this new technology in the shorter-term rather than the longer-term.

Therefore, in arriving at these factors, the second objective of the research, which was to determine the factors that influence the adoption of e-commerce in supermarkets, has been achieved.

5.2 CONCLUSIONS

Overall, the adoption of e-commerce will be influenced by the management. There must be management commitment for it to work out. Looking at the factors that influence the adoption of e-commerce, it can be seen that there is a flow of what is required. Once the management decides that e-commerce is the way to go, they will work at reducing their ignorance and seeking ways to generate competitive advantage. One of these ways will be to train their personnel so that they may embrace the new system. In doing so, even though their costs will initially increase in order to acquire the fixed assets, they will ultimately witness cost savings due to improved communication and supply chain management.

All this will not be possible without participation from the government to provide them with a reliable telephone network. The internet service providers also need to come up with initiatives aimed at sensitizing this industry to learn how e-commerce can work to their advantage. The economic performance of the country has also not worked to favour investments of this kind. A lot of businesses, supermarkets included, are skeptical about its future. Unless there is a positive change, e-commerce adoption will continue to be limited.

5.3 LIMITATIONS

While other studies have looked at e-commerce, this is the first to do so in relation to the supermarket industry in Kenya. One of the limitations of the research was that the level of awareness was measured primarily by the proportion of those who had heard of e-commerce. It is anticipated that in the future, more supermarkets will have heard of e-commerce and the analysis of the awareness will be based on more factors to better capture the awareness level.

Secondly, some of the supermarkets were not clear on the academic nature of the research and were hesitant to fill out the questionnaires. They feared that the information would end up in the hands of their competitors.

5.4 SUGGESTIONS FOR FURTHER RESEARCH

E-Commerce has only just begun to take off in this country. Different sectors have opened their eyes to the wide range of advantages that can be derived from e-commerce. From the findings of this study, further research should therefore be done to find out what influences adoption of e-commerce in these sectors , draw up correlations and hopefully address these issues.

With particular reference to supermarkets, studies should be done to measure the management of change and competitive advantage as these will be key themes for survival, growth and profitability in the marketplace of the future.

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APPENDIX I: INTRODUCTORY LETTER

University of Nairobi

PO Box 30197

Nairobi

March 2001

<Job Title>

<Organization>

<Address>

Dear Respondent,

I am a postgraduate student at the University of Nairobi, pursuing my Masters degree in Business Administration. As part of this degree, I am required to undertake a research project. The title of my research is " An Investigation Into The Factors That Have Influenced The Adoption Of E-Commerce In The Retailing Industry : The Case Of Supermarkets In Nairobi ".

I have prepared a questionnaire to help in my data collection and I am kindly requesting you to take a few minutes to complete it to the best of your ability and knowledge. The questions are straightforward and I am sure you will enjoy answering them.

The information you provide will be treated with strictest confidence and will only be used for the purposes of this study, without mentioning either your name or that of your organization. Of course, a copy of the project will be made available to you on request.

Thanking you for your co-operation.

Yours sincerely,

Mark Musembi
(MBA Student)

Dr. Martin Ogutu
MBA Co-ordinator

APPENDIX II :LIST OF SUPERMARKETS

1. Acacia supermarket
2. Alliance Supermarket
3. Amisi Supermarket
4. Andrews Selection Ltd
5. Armed Forces Canteen Organization
6. Baraniki Investments
7. Betccam Savers Supermarket
8. Broadway Supermarket
9. Builders Supermarket
10. Buru Buru Mini Market
11. Camesh Investments
12. Centaline Suapermarket
13. Chandarana Supermarket
14. City Mattresses Ltd
15. Clean Way Ltd
16. Clear Cut Supermarket
17. Continental Supermarket
18. Corner Supermarket
19. Country Mattresses Ltd
20. Crosby Supermarket
21. Crown Supermarkets
22. Deepak Cash and Carry
23. Discount Supermarket
24. Eagles Supermarket
25. Ebrahim and Company Ltd
26. Esajo Supermarket
27. Fairdeal Shop and Save Ltd
28. Fairlane Supermarkets Ltd
29. Fairrose Supermarket Ltd
30. Fontana Supermarket
31. Gigiri Supermarket
32. Goodfare Stores Ltd
33. Harrys Supermarket
34. Jack and Jill Supermarket Ltd
35. Jawas Supermarket
36. Jessica Supermarket and Wholesale
37. Jeska Supermarket
38. Jopampa Provision Store
39. Joster Mini Market
40. K & A Self Selection Store
41. Kanyaki Supermarket
42. Karen Supermarket
43. Kenton Supermarket
44. Leadway Supermarket
45. Lucky Stop Supermarket
46. Makro Supermarket
47. Market Place Supermarket
48. Mega Market Ltd
49. Mesora Supermarket Ltd
50. Metro Cash and Carry Ltd

51. Midas Touch Supermarket
52. Mulika Mini Market
53. Mumsies Supermarket
54. Mustard Supermarket
55. Muthaiga Mini Market Ltd
56. Nakumatt Holdings
57. New Westlands Stores
58. Nova Supermarkets
59. Nuru Supermarket
60. Nyeri Supermarket
61. Ongata Rongai Supermarket
62. Park and Shop Supermarket
63. Parklands Pricerite
64. Peponi Grocers ltd
65. Portway Stores Ltd
66. Rainbow Self Selection Store
67. Raken Supermarket
68. Ridgeways Supermarket
69. Rikana Supermarkets
70. Rosjam Supermarkets
71. Safeway Hypermarkets
72. Sainsbury Self Service Stores
73. Samga Supermarkets
74. Savemore Supermarkets
75. Schilada Supermarkets
76. Select N Pay Supermarkets
77. Sheela Supermarket
78. Shoppers Paradise
79. South 'C' Supermarket
80. Spring Valley Supermarket
81. Star Supermarkets
82. Starehe Supermarkets
83. Stellar Supermarkets
84. Sterling Supermarkets
85. Stuarts Supermarkets
86. Sunshine Supermarkets
87. Supervalue Ltd
88. Supra Self Selection Stores
89. Trolleys and Baskets
90. Tusker Mattresses
91. Uchumi Supermarkets
92. Ukwala Supermarkets
93. Umoja Mini Market
94. Uncle Jim's Supermarket
95. Uthiru Wayside Supermarket
96. Vantage Supermarket
97. Wamason Supermarket
98. Westlands General Stores
99. Whitestar Supermarket
100. Woodley Grocers
101. Yaya Selections
102. Yetu Supermarket

APPENDIX III : QUESTIONNAIRE

Please answer each of the following questions. Where there is a choice, indicate your answer with a tick ( )

SECTION A

1. Name of Supermarket ______________________

2. Title of Interviewee ______________________

3. Year establishment of Supermarket ____________________

4. Ownership of supermarket
   - i) Local ( )
   - ii) Foreign ( )
   - iii) Local and Foreign ( )

5. Number of branches
   - i) One ( )
   - ii) Two ( )
   - iii) Three ( )
   - iv) Four ( )
   - v) More than four ( )

6. Number of Check out counters
   - i) Less than 5 ( )
   - ii) 5 to 10 ( )
   - iii) 11 to 15 ( )
   - iv) More than 15 ( )

7. Total area of trading floor in square feet.
   - i) Less than 2000 ( )
   - ii) 2001 to 4000 ( )
   - iii) 4001 to 6000 ( )
   - iv) 6001 to 8000 ( )
   - v) More than 8000 ( )

8. How many employees are there in your organization?
   - i) Less than 50 ( )
   - ii) 50 to 100 ( )
   - iii) 100 to 250 ( )
   - iv) More than 250 ( )

9. Of these, what percentage comprises permanent employees?
    i) Less than 10% ( )
    ii) 10 to 25% ( )
    iii) 25 to 50% ( )
    iv) More than 50% ( )

10. Does the supermarket have computers? Yes / No

11. If yes, how many computers does the supermarket have?
    i) Less than 10 ( )
    ii) 10 to 25 ( )
    iii) More than 25 ( )

12. Rank their primary uses as follows : 3 = High, 2 = Medium, 1 = Low
    i) Internet ( )
    ii) Email ( )
    iii) Other ( )

SECTION B

13. Have you ever heard of e-commerce? Yes / No

14. Does your company currently engage in e-commerce? Yes / No

15. If yes, when did it (you) come to learn about e-commerce?
    i) Less than 1 year ago ( )
    ii) 1 to 2 years ago ( )
    iii) More than 2 years ago ( )

In relation to e-commerce, the company is fully aware :

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
16. Of its presence	( )	( )	( )	( )	( )
17. Of its requirements	( )	( )	( )	( )	( )
18. Of its cost	( )	( )	( )	( )	( )
19. Of its benefits	( )	( )	( )	( )	( )
20. Of its risks	( )	( )	( )	( )	( )

21. How did you come to learn about e-commerce
    i) Social circles ( )
    ii) Media channels ( )
    iii) In an Institution ( )
    iv) Other (specify) ____________________

22. In what proportion relative to the industry are your competitors involved in e-commerce?
    i) Less than 25% ( )
    ii) 25 - 50 % ( )
    iii) More than 50% ( )

23. What plans do you have to develop an E-Commerce site?
    i) None ( )
    ii) Already have one ( )
    iii) Less than a year ( )
    iv) After at least one year ( )

24. What has been the trigger for this e-commerce development?
    i) Competitive pressure ( )
    ii) Company strategy ( )
    iii) Supplier demands ( )
    iv) Other (specify) ____________________

25. How do you update yourself with the changes taking place in e-commerce?
    i) Don't update ( )
    ii) Reading magazines ( )
    iii) Seminars / exhibitions ( )
    iv) Visiting other websites ( )
    v) Other (specify) ____________________

26. Do you subscribe to any website, magazine or newsletter to keep informed about e-commerce developments? Yes / No

27. How regularly do you receive these updates?
    i) Weekly ( )
    ii) Monthly ( )
    iii) Every two months ( )
    iv) Every six months ( )

28. What is required before E-Commerce can take place?

i) ______________________

ii) ______________________

iii) ______________________

29. How much would you be willing to spend in Kenya Shillings, to set up e-commerce?

Kshs ______________________

30. What are three main benefits you would derive from using e-commerce?

i) ____

ii) ____

iii) ____

31. In term of perceived risk of conducting e-commerce, it is :

i) Not risky	( )
ii) Somewhat risky	( )
iii) Considerably risky	( )
iv) Extremely risky	( )

Please indicate the extent to which you agree with each of the following statements

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
32. For the longer term, we cannot afford to ignore the Internet	( )	( )	( )	( )	( )
33. E-commerce is too new for our current analysis	( )	( )	( )	( )	( )
34. E-commerce requires Too many components	( )	( )	( )	( )	( )
35. There is no need to carry out a pilot phase	( )	( )	( )	( )	( )
36. We will not reduce our costs with e-commerce	( )	( )	( )	( )	( )
37. E-commerce is too complex to understand	( )	( )	( )	( )	( )

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
38. E-commerce is too costly to implement	( )	( )	( )	( )	( )
39. E-commerce has no **real** advantages	( )	( )	( )	( )	( )
40. E-Commerce offers us competitive advantage	( )	( )	( )	( )	( )
41. E-commerce benefits are too far in the future	( )	( )	( )	( )	( )
42. With E-Commerce, we will extend to new geographic areas	( )	( )	( )	( )	( )
43. E-Commerce will greatly improve our supply chain management	( )	( )	( )	( )	( )
44. E-commerce will improve communication within our business	( )	( )	( )	( )	( )
45. We will reduce the cost of sales transactions	( )	( )	( )	( )	( )
46. If there were fewer risks, we would use e-commerce	( )	( )	( )	( )	( )
47. E-commerce is a secure trading system	( )	( )	( )	( )	( )

SECTION C

To what extent do you agree with the following factors as they serve to influence the adoption of e-commerce in your company?

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
48. Presence of sufficient computers	( )	( )	( )	( )	( )
49. The computers tend to be slow	( )	( )	( )	( )	( )
50. The computers are too old	( )	( )	( )	( )	( )
51. The staff are sufficiently Trained	( )	( )	( )	( )	( )
52. We do not have enough Personnel to implement it	( )	( )	( )	( )	( )
53. The staff demand very high remuneration	( )	( )	( )	( )	( )
54. The cost of Internet access is too high	( )	( )	( )	( )	( )
55. We do not have a budget for e-commerce	( )	( )	( )	( )	( )
56. Our raw material costs Are very high	( )	( )	( )	( )	( )
57. The management feels that the Company doesn't need it	( )	( )	( )	( )	( )
58. E-Commerce is still too young in Kenya	( )	( )	( )	( )	( )

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
59. Acquiring E-Commerce is A complicated process	( )	( )	( )	( )	( )
60. There is currently insufficient demand To justify E-Commerce	( )	( )	( )	( )	( )
61. Most customers are still unaware about E-Commerce	( )	( )	( )	( )	( )
62. The competition in the industry is too stiff	( )	( )	( )	( )	( )
63. We expect there will be Untimely deliveries	( )	( )	( )	( )	( )
64. Delivery / Courier tariffs are too high	( )	( )	( )	( )	( )
65. It is likely that there will be order mix-ups	( )	( )	( )	( )	( )
66. Not enough customers have credit cards	( )	( )	( )	( )	( )
67. The risk of fraud is too high	( )	( )	( )	( )	( )
68. The exchange rate is too unstable	( )	( )	( )	( )	( )
69. There are no secure payment channels	( )	( )	( )	( )	( )
70. Credit card information Can be lost in transit	( )	( )	( )	( )	( )

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
71. Hackers can read into our business	( )	( )	( )	( )	( )
72. Taxes cannot be determined accurately	( )	( )	( )	( )	( )
73. The legal issue are too complex	( )	( )	( )	( )	( )
74. Our ISP gives very slow service	( )	( )	( )	( )	( )
75. Our ISP is often unreliable	( )	( )	( )	( )	( )
76. We need our ISP to give us training on e-commerce	( )	( )	( )	( )	( )

SECTION D

77. Out of the factors above, which bear the most weight in terms of inhibiting adoption

i) First importance ____________________
ii) Second importance ____________________
iii) Third importance ____________________
iv) Fourth importance ____________________
v) Fifth importance ____________________

78. Why are these the most important?

i) ____
ii) ____
iii) ____
iv) ____

79. Which other factors contribute to the non-adoption of e-commerce in your company?

i) ____
ii) ____
iii) ____
iv) ____

80. What should be done to encourage the adoption of e-commerce?

i) ____
ii) ____
iii) ____
iv) ____