**CHAPTER ONE**

**INTRODUCTION TO E-COMMERCE**

**Electronic Commerce - Electronic commerce**, commonly known as e-commerce, **eCommerce** or **e-comm**, consists of the buying and selling of products or services over electronic systems such as the Internet and other computer networks.

**E-Business** - **Electronic business**, commonly referred to as "eBusiness" or "**e- business**", or an internet business, may be defined as the application of information and communication technologies (ICT) in support of all the activities of business. Commerce constitutes the exchange of products and services between businesses, groups and individuals and can be seen as one of the essential activities of any business. Electronic commerce focuses on the use of ICT to enable the external activities and relationships of the business with individuals, groups and other businesses.

**brick and mortar businesses** are companies that have a physical presence — a physical store — and offer face-to-face consumer experiences. This term is usually used to contrast with a transitory business or an internet-only presence, such as an online shop.

**pure play** is an organization that originated and does business purely through the Internet; they have no physical store (brick and mortar) where customers can shop. Examples of large pure play companies include Amazon.com.

**Click And Mortar** - A type of business model that includes both online and offline operations, which typically include a website and a physical store. A click-and-mortar company can offer customers the benefits of fast, online transactions or traditional, face to face service.

**Internet -** The **Internet** is a global system of interconnecte[d computer networks t](http://en.wikipedia.org/wiki/Computer_network)hat use the standa[rd Internet Protocol Suite (](http://en.wikipedia.org/wiki/Internet_Protocol_Suite)TCP/IP) to serve billions of users worldwide. It is a network of networks that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless and optical networking technologies. The Internet carries a vast range o[f information](http://en.wikipedia.org/wiki/Information) resources and services, such as the inter-linked [hypertext](http://en.wikipedia.org/wiki/Hypertext) documents of the [World Wide Web](http://en.wikipedia.org/wiki/World_Wide_Web) (WWW) and the infrastructure to support [electronic mail.](http://en.wikipedia.org/wiki/Electronic_mail)

**Intranet -** An **intranet** is a private [computer network t](http://en.wikipedia.org/wiki/Computer_network)hat uses [Internet Protocol](http://en.wikipedia.org/wiki/Internet_Protocol) technology to securely share any part of an organization's information or [network operating system](http://en.wikipedia.org/wiki/Network_operating_system) within that organization. The term is used in contrast to internet, a network between organizations, and instead refers to a network within an organization. Sometimes the term refers only to the organization's internal website, but may be a more extensive part of the organization's information technology infrastructure. **Extranet -** An **extranet** is a [computer network](http://en.wikipedia.org/wiki/Computer_network) that allows controlled access from the outside, for specific business or educational purposes. An extranet can be viewed as an extension of a company's [intranet t](http://en.wikipedia.org/wiki/Intranet)hat is extended to users outside the company, usually partners, vendors, and suppliers. It has also been described as a "state of mind" in which the Internet is perceived as a way to do business with a selected set of other companies ([business-to-business,](http://en.wikipedia.org/wiki/Business-to-business) B2B), in isolation from all other Internet users.

**1.2 History of EC**

EC applications were first developed in the early 1970s with innovations such as Electronic funds Transfer (EFT), whereby funds could be routed electronically from one organization to another. However, the use of these applications was limited to corporations, financial institutions, and a few other daring businesses. Then came electronic data interchange (EDI), a technology used to electronically transfer routine documents, which expanded electronic transfers from financial transactions to other types of transaction processing. EDI enlarged the pool of participating companies from financial institutions to manufacturers, retailers, services, and many types of

businesses. Such systems were called interorganisational system (IOS) applications and their strategic value to businesses has been widely recognized. More new EC applications followed, ranging from travel reservation systems to stock trading.

The Internet began life as an experiment by the US. government in 1969, and its initial

users were a largely technical audience of government agencies and academic researchers and scientists. When the Internet became commercialized and users began flocking to participate in the World Wide Web in the early 1990s, the term electronic commerce was coined applications rapidly expanded. A large number of so-called dot- coms, or Internet start-ups, also appeared. One reason for this rapid expansion was the development of new networks, protocols, and EC software. The other reason was the increase in competition and other business pressures.

Since 1995, Internet users have witnessed the development of many innovative applications, ranging from online direct sales to e-learning experiences. Almost every medium- and large-sized organization in the world now has a Web site, and most large U.S. corporations have comprehensive portals through which employees. Employees and business partners, and the public can access corporate information. Many of these sites contain tens of thousand of pages and links. In 1999, the emphasis of EC shifted

from B2B, and in 2001 from B2B to B2E, c-commerce, e-government, e-learning and m- commerce.

**1.3 Classification of E-Business Transactions**

**Business-to-business** (**B2B**) describes commerce transactions between businesses, such as between a manufacturer and a wholesaler, or between a wholesaler and a retailer.

**Business-to-consumer** (**B2C**, sometimes also called **Business-to-Customer**)

describes activities of businesses serving end consumers with products and/or services.

An example of a B2C transaction would be a person buying a pair of shoes from a retailer. The transactions that led to the shoes being available for purchase, that is the purchase of the leather, laces, rubber, etc.

**Business-to-business to consumer (B2B2C)**

E-Commerce model in which a business provides some product or service to a client business that maintains its own customers.

**Consumer-to-business (C2B)**

E-commerce model in which individuals use the internet to sell products or services to organizations or individuals who seek sellers to bid on products or services they need. **Consumer-to-consumer (C2)**

E-commerce model in which consumers sell directly to other consumers.

**Mobile-commerce (M-Commerce)**

E-Commerce transactions and activities conducted in a wireless environment

**1.4 Revenue Models**

A revenue model outlines how the organization or the EC project will generate revenue. The major revenue models are:

 Sales. Companies generate revenue from selling merchandise or services over

their Web sites. A11 example is when Wal-Mart, Amazon.com, or Godiva sells a product online.

 Transaction fees. A company receives 21 commission based on the volume of transactions made. For example, when a homeowner sells a house, he typically

pays a transaction fee to the broker. The higher the value of the sale, the higher the total transaction fee. Alternatively; transaction fees can be levied per transaction. With online stock trades, for example, there is usually at fixed fee per trade, regardless of the volume.

 Subscription fees. Customers pay a fixed amount, usually monthly, to get some type of service. An example would be the access fee for AOL. Thus, ACES primary revenue model is subscription (fixed monthly payments).

 Advertising fees. Companies charge others for allowing them to place a banner on their sites. This is how Google has made its fortune.

 Affiliate fees. Companies receive commissions for referring customers to others

Web sites.

 Other revenue sources. Some companies allow people to play games for a fee or to watch a sports competition in real time for a fee. Another revenue source is licensing fees (eg., datadirect-technologies.com). Licensing fees can be assessed as an annual fee or a per usage fee. Microsoft takes fees from each workstation

that uses Windows NT; for example.

**1.5 Benefits and Limitations of E-commerce**

**The Benefits of EC**

Few innovations in human history encompass as many potential benefits as EC does. The global nature of the technology, low cost, opportunity to reach hundreds of millions of people (projected within 10 years), interactive nature, variety of possibilities, and resourcefulness and rapid growth of the supporting infrastructures (especially the Web) result in many potential benefits to organizations, individuals, and society. These benefits are just starting to materialize, but they will increase significantly as EC expands.

**Benefits to Organizations**

**The benefits to organizations are as follows:**

 Electronic commerce expands the marketplace to national and international markets. With minimal capital outlay, a company can easily and quickly locate more customers, the best suppliers, and the most suitable business partners worldwide. For example, in 1997, Boeing Corporation reported a savings of 20

percent after a request for a proposal to manufacture a subsystem was posted on the Internet. A small vendor in Hungary answered the request and won the electronic bid. Not only was the subsystem cheaper, but it was delivered quickly.

 Electronic commerce decreases the cost of creating, processing, distributing, storing, and retrieving paper-based information. For example, by introducing an electronic procurement system, companies can cut the purchasing administrative costs by as much as 85 percent. Another example is benefit payments. For the U.S. federal government, the cost of issuing a paper check is 430. The cost of electronic payment is 20.

 Ability for creating highly specialized businesses. For example, dog toys which can be purchased only in pet shops or department and discounte stores in the physical world, are sold now in a specialized [www.dogtoys.com](http://www.dogtoys.com) (also see [www.cattoys.com](http://www.cattoys.com)).

 Electronic commerce allows reduced inventories and overhead by facilitating

―pull‖-type supply chain management. In a pull-type system the process starts from customer orders and uses just-in-time manufacturing.

 The pull-type processing enables expensive customization of products and services, which provides competitive advantage to its implementers. A classic

example is Dell Computer Corp., whose case will be described later.

 Electronic commerce reduces the time between the outlay of capital and the receipt of products and services. Electronic commerce initiates business processes reengineering projects. By changing processes, productivity of

salespeople, knowledge workers, and administrators can increase by 100 percent or more.

 Electronic commerce lowers telecommunications cost-the Internet is much cheaper than VANs.

 Other benefits include improved image, improved customer service, newfound business partners, simplified processes, compressed cycle and delivery time,

increased productivity, eliminating paper, expediting access to information, reduced transportation costs, and increased flexibility.

**Benefits to Consumers**

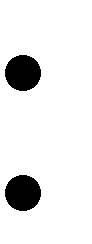
The benefits of EC to consumers are as follows:

 Electronic commerce enables customers to shop or do other transactions 24 hours a day, all year round, from almost any location.

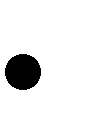
 Electronic commerce provides customers with more choices; they can select Electronic commerce frequently provides customers with less expensive products and services by allowing them to shop in many places and conduct quick

comparisons.

In some cases, especially with digitized products, EC allows quick delivery.



Customers can receive relevant and detailed information in seconds, rather than days or weeks.



Electronic commerce makes it possible to participate in virtual auctions.

 Electronic commerce allows customers to interact with other customers in electronic communities and exchange ideas as well as compare experiences.

 Electronic commerce facilitates competition, which results in substantial discounts.

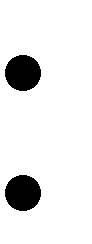
**Benefits to Society**

The benefits of EC to society are as follows:

 Electronic commerce enables more individuals to work at home and to do less traveling for shopping, resulting in less traffic on the roads and lower air pollution.

 Electronic commerce allows some merchandise to be sold at lower prices, so less affluent people can buy more and increase their standard of living.

 Electronic commerce enables people in Third World countries and rural areas to enjoy products and services that otherwise are not available to them.



This includes opportunities to learn professions and earn college degrees.

Electronic commerce facilitates delivery of public services, such as health care, education, and distribution of government social services at a reduced cost and/or improved quality. Health-care services, for example, can reach patients in rural areas.

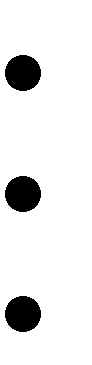
**1.6 The Limitations of EC and Factors Affecting Adoption in Kenya**

The limitations of EC can be grouped into technical and nontechnical categories.

**Technical Limitations of EC**

The technical limitations of EC are as follows:

 There is a lack of system security, reliability, standards, and some communication protocols.



There is insufficient telecommunication bandwidth.

The software development tools are still evolving and changing rapidly.

It is difficult to integrate the Internet and EC software with some existing applications and databases.

 Vendors may need special Web servers and other infrastructures, in addition to the network servers.

 Some EC software might not fit with some hardware, or may be incompatible with some operating systems or other components.

As time passes, these limitations will lessen or be overcome; appropriate planning can minimize their impact.

**NonTechnical Limitations**

Of the many nontechnical limitations that slow the spread of EC, the following are the major ones.

 Cost and justification The cost of developing EC in-house can be very high, and mistakes due to lack of experience may result in delays. There are many opportunities for outsourcing, but where and how to do it is not a simple issue. Furthermore, to justify the system one must deal with some intangible benefits (such as improved customer service and the value of advertisement), which are difficult to quantify.

 Security and privacy These issues are especially important in the B2C area, especially security issues which are perceived to be more serious than they really are when appropriate encryption is used. Privacy measures are constantly improved. Yet, the customers perceive these issues as very important, and, the EC industry has a very long and difficult task of convincing customers that online transactions and privacy are, in fact, very secure.

 Lack of trust and user resistance Customers do not trust an unknown faceless seller (sometimes they do not trust even known ones), paperless transactions, and electronic money. So switching from physical to virtual stores may be difficult.

 Other limiting factors. Lack of touch and feel online. Some customers like to touch items such as clothes and like to know exactly what they are buying.

 Many legal issues are as yet unresolved, and government regulations and standards are not refined enough for many circumstances.

 Electronic commerce, as a discipline, is still evolving and changing rapidly. Many people are looking for a stable area before they enter into it.

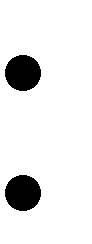
 There are not enough support services. For example, copyright clearance centers for EC transactions do not exist, and high-quality evaluators, or qualified EC tax

experts, are rare.

 In most applications there are not yet enough sellers and buyers for profitable

EC operations.

Electronic commerce could result in a breakdown of human relationships. Accessibility to the Internet is still expensive and/or inconvenient for many potential customers. (With Web TV, cell telephone access, kiosks, and constant media attention, the critical mass will eventually develop.) Despite these limitations, rapid progress in EC is taking place. For example, the number of people in the United States who buy and sell stocks electronically increased from



300,000 at the beginning of 1996 to about 10 million in fall 1999. As experience accumulates and technology improves, the ratio of EC benefits to costs will increase, resulting in a greater rate of EC adoption. The potential benefits may not be convincing enough reasons to start EC activities