

# **ELECTRONIC COMMERCE IN NIGERIA: CONCEPT AND EFFECTIVE IMPLEMENTATION**

by

**Ikemelu, C. R.**

**Computer Science Department.  
Nwafor Orizu College of Education Nsugbe.**

## **Abstract**

*As we are in the Technological age, virtually every sector is now witnessing the vehicle of computerization in Nigeria. The business sector is not left over. In the recent times any successful business is the outcome of proper management of information. The Nigerian companies must react quickly to the consumer needs, brings the product and services to the market at the greater conditions. To meet their demand and target, many organization in Nigeria begin to adopt or develop the Technology, which is electronic commerce (e-commerce). Electronic commerce is a process of carrying our commercial activities such as bill payment, initiating order and invoicing with the use of computer connected to the internet for commercial activities, it is vital that Nigeria should take absolute and effective implementation of this e-commerce for future development. This paper initially look at the description of internet and meaning, origin of the internet and brief description of how one can connect to the internet, topological description and the pre-requisite for effective implementation of e-commerce in Nigeria.*

## **Introduction**

E-commerce to a layman is when someone offers a product for sale on the website and some else buys the product through a website. It may sound simple, but there are different things that must be considered to make the sale possible over the web. According to the Clinton, W.J (2000) many of these considerations are similar to what the traditional physical store front deals with. When product are advertised for sale on the web, these products must be marketed, sold, paid for and delivered through services of the website via the internet.

Electronic commerce is emerging as one of the most important applications on the internet. It has the potential for revolutionizing the whole structure of retail merchandizing and shopping. Internet commerce is made possible by the combination of the traditional information technology systems that use the World Wide Web

(www) to bring together customers, vendors, suppliers and employees. Internet and e-commerce also referred to as internet ecommerce has brought a change to business procedure. For instance, the individual process in internet commerce depends on the enabling technology and the business concept they support. An example of an area of internet commerce is electronic buying and selling often referred to as shopping.

For the relevance and profitability of an organization in this new age, Information Technology is an enabler. After describing the internet, the World Wide Web (www) and how one can connect to the internet. The e-commerce topological representation in Nigeria and the pre-requisite for effective implementation of e-commerce in Nigeria will be highly emphasized.

### **Definition of Electronic Commerce**

The various definition of electronic commerce are as follows:

Morri, K and Siege, L. (2003) posited that electronic commerce is simply defined as the commercial transaction of services in an electronic format. Electronic Commerce according to Clinton, W.J (2000) is also defined as doing business electronically. It is based on the electronic text, sound and video. It encompasses many diverse activities including electronic trading of goods and services, online delivery of digital content, electronic fund transfers, electronic shares trading, electronic bills of lading, commercial auctions, collaborative design and engineering online sourcing, public procurement, direct consumer marketing and after sales services. It involves both products (consumer goods, specialized medical equipment) and services (information services, financial and legal services). Traditional activities (health care education) and new activities

Electronic commerce refers generally to all forms of transactions, relating to commercial activities, including both organizations and individuals that are based upon the processing and transaction of digitized data, including text, sound and visual images. Electronic commerce is the carrying out of business activities that lead to an exchange of value across telecommunications networks. Electronic commerce even though limited to a number of specified companies and establishment, is now entering a new era where many unspecified persons including general consumers are involved on the network. Again, the contents of e-commerce have come to include not only simple transactions of data concerning placing orders or order acceptance but also to general commercial act such as publicity, advertisements, negotiations, contractions and fund settlements. ([www.ebs.marketwatch.com](http://www.ebs.marketwatch.com))

### **The Internet**

The internet (sometimes called the Net) is currently the most effective means of communication worldwide, enabling the users across the globe to share and exchange information. According to Hahn, Harely and Rick S. (2008) the internet is simply define as the global network of computers, comarising independent micro,

mini and main-frame computers; local area networks and wide area networks that communicate with each other using the transmission.

### **Transmission Control Protocol and Internet Protocol Suite (TCP/IP)**

The internet itself does exist as a discrete entity; it is not like one of the many other computerized database services. The internet is not as you may think, a toll for technical people, do sophisticated things with their computers. It is actually a usable facility for people with any level of computer expertise. We can exchange electronic mail (e-mail), download shared applications, look up NYSC postings, look up JAMB results, look up WAEC results, look up elections results, any of our political opinions get news update, get information one has a specialist interest, or a problem which needs expert advice, the chances are that someone out there who is connected to internet will have a solution.

### **The Origin and Development of Internet**

The original idea for the internet was developed from the computer network called ARPANET. ARPANET (meaning; Advanced Research Projects Agency Network) was a network built under the auspices of the Advance Research Project Agency (ARPA), an organ of the United States Department of Defense in 1969.

The U.S government under the advice of the department of defense, set up ARPA with the aim to create a nationwide computer network that would:

- i. Allow users of a research computer at one university 'talk to' another research computer at another university.
- ii. Continue to function even if a large portion of it were destroyed in a nuclear attack or natural disaster.
- iii. Promote sharing of information between the department of defense, research labs, universities, and contractors; who by that time were using computer systems from different computer manufacturers, running different operating systems, utilizing different network topologies and protocols.

The result of this project funded by the U.S department of defense was the development of ARPANET. An ARPANET began operation 1969 in only four locations, UCLA, University of Santa Barbara, University of Utah, and SRI (Standard Research Institute). 1982 – 1983, APARNET converted from its NCP (Network control protocol) to TCP/IP Protocol Suite. The use of ARPANET was restricted to only ARPA contractors.

In 1986, the National Science Foundation (NSF) extended internet support to all the discipline of the general research community using the NSFNET backbone (a network developed by NSF). Later, NSF offered Inter Connection through its backbone to other regional networks operating as independents networks across the country, and this led to the closure of APRANET in 1990, and the emergency of the current Internet. To distinguish between the local internet (which refers to local

computer network set up found in offices), and the broad, public network usually used to refer to the global network called Internet.

By 1991, three American giant network companies offering TCP/IP Commercial services formed the commercial information interchange (CIX), with the sole aim of interchanging traffic carried on their various networks. With time other commercial network providers joined the exchange and by 1996, CIX had 147 member networks and fees are not changed for using the interchange to the member network. Other network access points formed before 1995, beside CIX include Metropolitan area Exchange, MAE East and MAE West.

Nowadays, users connect to the internet through the internet service providers (ISPs), especially home users who connect using modems, suing PPP or Slip protocols supplied by the ISP. The ISPs are connected by “Wholesalers”, whom we can call network service providers. The network service providers themselves interconnect using internet connection points such as CIX, MAE East and West and other network access points.

### **How one can connect to the internet**

One can connect to the internet through several ways depending on the needs, purse and size of the organization or individual wishing to join the Net. He or she does not have to be a computer expert or a manager of a big corporation to get on-line. All one needs is PC, a telephone line, a modem (Modulation and Demodulation).

Connection to the internet can either be direct or indirect (through a service provider). These ways one can connect to the internet are:

- Direct connection
- Through internet service provider (ISP)
- Through commercial on-line service provider (OSP)

**Direct Connection:** This gives one a permanent and dedicated link to the internet. It involves setting up an internet account using a dedicated computer called gateway. It is quite expensive and generally only available to users in large corporations, ISPs, research institutions, oil companies, academic and government agencies.

**Internet Service Provider (ISP):** In this method, the internet service provider (ISP) are commercially-oriented companies that connect one’s computer and other computer networks owned by individuals and organization to the internet at some cost, payable either monthly, bimonthly or yearly. They allow their users to access the internet using an ordinary telephone line, SLIP (serial line internet protocol ) and PPP (point-to-point protocol).

**Commercial on-line Service Provider (OSP):** Commercial service provider like AOL (American On-line), CompuServe, and Microsoft Network (MSN) offer the Dial-up/terminal connection. They charge the customers on a monthly basis to their

internet gateway. One is connected to their system (commercial service provider), which in turn is connected to the internet.

### **The World Wide Web (www)**

The World Wide Web (www) usually called Web. According to John and Juliy Coan (2012), a web is a global collection of documents, popularly known as web pages, which are stored in the computer connected to the internet. One features of the World Wide Web is that it contains a hyperlink or link which you can click on, that lead you to the web pages. A link is a connection between one page and another, and can either be text or graphics. Links are usually indicated by underlying and colouring them differently from other text on the web page.

The operation of the web is based on hypertext language, the Hypertext Mark-up Language (HTML) can be read by almost computer system and allow users to create links between text, images, video and sound tiles for a client computer to access information stored on a website, it must have a software called browser such as Microsoft internet explorer or mozilla fire fork (two most commonly used web browsers). The duty of the browser is to request from the server the document the user wants and deliver them to the client computer. The web provides a single interface for accessing all the different protocols available in the internet. Internet protocols are set by rules that allow for inter-machine communication on the internet.

### **E-Commerce Topology in Nigeria**

Kenneth Agbasi, C. and Etel (2005) posited that e-commerce topology in Nigeria involve at least two participants, depending on the pair that is involved.

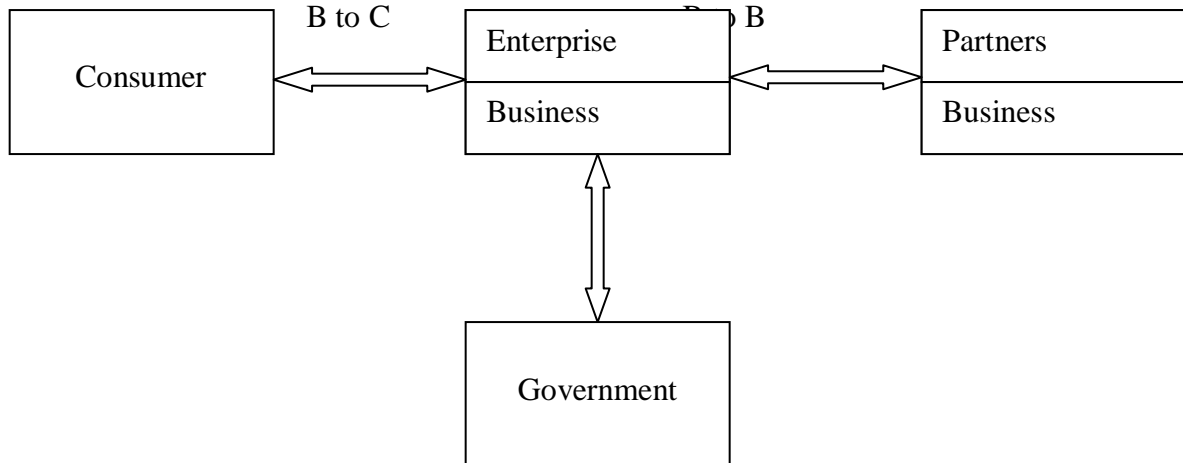
The three main categories that must be involved for effective e-commerce topological implementation in Nigeria are:

- I. Individual
- II. Enterprises and
- III. Government.

Since the existence of e-commerce, it has been between the enterprises and individuals, and is generally known as “business-to-consumer” (B-to-C). This has attracted much attention over last few years and less notice on media. The type of e-commerce, which takes place between enterprises, is known as “business-to-business” (B-to-B). B-to-B, is the area over which tremendous expansion of e-commerce will be experienced in the near future in Nigeria especially in our international trade.

This e-commerce topology could be also be a major source of experience and efficiency for developing countries; like Nigeria. By fully involve effectively in e-commerce transactions, government can enhance their efficiency (for instance in the area of public procurement). Their level of cooperation and mutual respect between the private sector and the public sector also count.

The diagram below shows a systematic illustration of the e-commerce topology.



**Fig A: The E-commerce Topology**

**Pre-requisite for effective Implementation of E-commerce in Nigeria**

The following are vital pre-requisite for proper implementation of E-commerce.

- (a) **Computer Literacy Campaigns:** In as much as the existence of computer is not a new thing in Nigeria now, many people yet do not know how the computer can be of importance to them, the business men and women see the computer as a tool that would enable them cope with complex decisions or operations, which would otherwise be impracticable, they can stand a better chance of making effective use of the computer. Many of the manual operations and procedures in their organizations and establishment need to be automated and computerized for effective and competitive age.
- (b) **Internet and Telecommunication Facilities:** as internet and telecommunication is one of the backbone for effective e-commerce implementation in Nigeria, the internet service provider (ISP) and telecommunication connectivity should be affordable communications facilities. The cost of subscribing to ISPs and the cost of telephone calls need to be minimize. Some countries like South Africa, Ghana etc. have their internet subscriptions and telephone calls to be easily affordable and at cheaper rate.
- (c) **Power Supply:** for Nigeria e-commerce implementation to move forward and effective in this country, power supply must be sacrosanct. The

government and non-governmental organization should pull hands together to enable a steady and effective supply of power.

- (d) Government Participation: Government participation is very vital, the federal government of Nigeria, as the largest single customer of information technology must lead by example and set realistic and achievable standards for itself, which will in turn promote the development standards in the other sector of the economy. By so doing, a clear policy on information technology must be put in place. The federal government of Nigeria shall provide funds for the provision of infrastructure that will serve as a platform for an enabling environment for information technology through the creation of a credit-based economy, i.e the use of credit cards. According to E-business (2003). The federal government should intensify efforts towards the provision of funds for developing the telecommunication facilities in Nigeria. The federal government through the Nigerian Information Technology Development Agency (NITDA), should encourage large business to develop and adopt the best practices for securing computing.

The NITDA should also encourage non-governmental organizations to evolve into a national clearing house of information about security intrusion hacks, vulnerabilities and to offer tools to help detect, isolate and prevent attacks. The clearing house will enable companies, large business, private organizations and individuals to anonymously report incidents without fear of publicizing their vulnerability. The generated data will also provide insight into nationwide cyber security trends and subsequently enhance the development of ways of countering negative trends. The clearing house should also provide the users with following tools.

- Virus control tools that identify and remove existing infection from macro virus, Trojan virus and other virus.
- Automated analysis, distribution and qualification of security patches on network base computer systems.
- Autonomous agent for intrusion detection.
- Vulnerability database
- Audit trails format
- Audit trail reduction
- Vulnerability testing
- Archive software.

The NITDA should consider itself more of a facilitator than implementer. NITDA will be far more useful to itself and Nigeria if it facilitates the development of the human resources and the growth of e-commerce.

### **Non-Governmental Organizations**

The non-governmental organization such as the various Information Communication Technology (ICT) groups, such as the computer professional registration council of Nigeria (CPN), Nigerian computer society (NCS). Nigeria internet group (NIG), Internet Services Providers Association of Nigeria (ISPAN) and the Information Technology Association of Nigeria (ITAN); must take a leaf from the US based business software alliance (BSA). Nigeria ICT specialist at group must collaborate and develop the best practice guide, which will reflect realities and aspirations of Nigerians. The Nigerian ICT specialist and home and diaspora, like Nigerian Information Technology Professionals in America (NITPA) should be industry expertise to conduct government hide vulnerability assessment. Computer forensic studies must also be incorporated in higher institution studies curriculum for effective implementation of this e-commerce in Nigeria.

### **Educational Institutions**

The federal government should encourage the computer science/ICT programmes in Nigerian educational institutions to embark on research activities in the creation of facilities for e-commerce. The educational sector on its part should liaise with the private sector that can finance research into infrastructure problems facing e-commerce in Nigeria.

### **Conclusion**

E-commerce is simply put by many computer users as “trading on the internet”, “internet shopping”, “cyber shopping on the web”, electronic trading” and so on. The e-commerce has not fully encapsulated in Nigeria especially in the area of services such as medical, engineering, agriculture, architectural, bank and even in postal services in which we thought to have achieved. For Nigeria to have effective implementation of e-commerce like other developed countries. They must embark on seriously computer literacy support, internet and telecommunication facilities, steady power supply, government and non-governmental participants and educational empowerment.

The Nigerian environment is endemic with the challenges of adequate infrastructures. The federal government of Nigeria must not and cannot do it alone, all hands must be on deck to make e-commerce reality and effectively in Nigeria.



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