

An overview of e-commerce implementation in developed and developing country; A case study of United State and Nigeria

Lawal Mohammed Ma'aruf & Khadija Abdulkadir

Department Of Mathematicsfaculty Of Sciencesahmadu Bello University. Zaria, +234, Nigeria

Abstract: *Electronic commerce has the potential of improving the efficiency and productivity of any economy. Thus, increase the GDP (Gross Domestic Product) of many countries. However, there has been some doubt about the relevance of e-commerce for developing countries. Currently, there are still a limited number of studies on e-commerce adoption by developing countries. This project is meant to identify factors that could influence proper implementation and adoption of e-commerce in developing countries, particularly Nigeria. Factors affecting the adoption of e-commerce and the condition of Nigeria in relation to e-commerce adoption were also discussed.*

Keywords: *E-commerce, implementation, developed country, developing country.*

I. Introduction

1.1 HISTORY OF E-COMMERCE

Shopping on the internet is certainly a popular past time, an efficient time-saver, and a great way to comparison shop on virtually any kind of item you're interested in. The history of e-commerce as most people think of it has a short but interesting time line. Most people don't realize that e-commerce and its underlying technology have been around for about forty years

The term e-commerce was originally conceived to describe the process of conducting business transactions electronically using technology from the *Electronic Data Interchange* (EDI) and *Electronic Funds Transfer* (EFT). These technologies, which first appeared in the late 1970's, allowed for the exchange of information and the execution of electronic transactions between businesses, typically in the form of electronic purchase orders and invoices. EDI and EFT were the enabling technologies that laid the groundwork for what we now know as e-commerce. The Boston Computer Exchange, a marketplace for used computer equipment started in 1982, was one of the first known examples of e-commerce. Throughout the 1980's, the proliferation of credit cards, ATM machines and telephone banking was the next step in the evolution of electronic commerce. Starting in the early 90's, e-commerce would also include things such as *Enterprise Resource Planning* (ERP), data warehousing and data mining.

It wasn't until 1994 that e-commerce (as we know it today) really began to accelerate with the introduction of security protocols and high speed internet connections such as DSL, allowing for much faster connection speeds and faster online transaction capability. Industry "experts" predicted explosive growth in e-commerce related businesses. In response to these expert opinions, between 1998 and 2000, a substantial number of businesses in Western Europe and the United States built out their first rudimentary e-commerce websites.

The definition of e-commerce began to change in 2000 though, the year of the dot-com collapse when thousands of internet businesses folded. Despite the epic collapse, many of the worlds' most established traditional brick-and-mortar businesses were emboldened with the promise of e-commerce and the prospect of serving a global customer base electronically. The very next year, business to business transactions online became one of the largest forms of e-commerce with over \$700 billion dollars in sales.

1.2 BACKGROUND HISTORY OF THE STUDY

Consumers in e-commerce are faced with a number of risks arising from the general lack of understanding of the operations of the internet. This has been compounded by a number of legal issues which have been largely taken care of in more advanced countries, but which issues are still being grappled with in developing countries such as Nigeria, where internet trading is something fairly new. These issues include the extent to which the communication between the parties is protected (data protection), the formation of a contract on the internet, the legal means of effecting payment in e-commerce, which court will assume jurisdiction in the event of a dispute between parties to an internet contract, and what law or laws will govern the transactions. Is it the law of the seller or that of the buyer or consumer? Other issues relate to cyber crimes that are threatening e-commerce, and also the mode of proving internet-related transactions. An examination of the foregoing issues vis-à-vis the position of the law in developing countries presently is the focus of this project.

1.3 OBJECTIVE OF THE STUDY

The main objective of this study is to enhance the implementation of e-commerce in developing countries, particularly Nigeria. Thus, facilitating international co-operation through trade, creating awareness of e-commerce and its associated benefits, making goods and services available to consumers all over the world irrespective of distance, expansion of the consumer base for manufacturers or producers of goods and services, and a reduction in the costs of service delivery by delivering these electronically.

1.4 JUSTIFICATION OF THE STUDY

Obviously, e-commerce is a vital part of global facilitation policy. Following major initiatives in liberalization in 1991. The need to facilitate international trade through policy and procedural reforms has become the cornerstone of trade and fiscal policies.

Thus, there is need to make a comparative study between these countries in order to provide government and related bodies with adequate information on how to further enhance the implementation of e-commerce in developing countries and also see how far they have been able to implement this fiscal policy with respect to developed countries. Hence the recommendations needed in order to meet up with international standards.

1.5 SIGNIFICANCE OF THE STUDY

The significance of this research project is to facilitate international co-operation through trade, create awareness of e-commerce and its associated benefits, make goods and services available to consumers all over the world irrespective of distance, expands consumer base for manufacturers or producers of goods and services, and also reduce the costs of service delivery by delivering these services electronically.

1.6 SCOPE AND LIMITATION

This study is only interested in the overview of e-commerce implementation between developed and developing Countries. Furthermore, the study is limited to the United States and Nigeria because there is need to compare how electronic commerce is implemented in these two countries.

II. Review of Electronic commerce System

2.1 Introduction

Electronic commerce is a process of buying and selling products, services and information using computer networks and the internet. E-Commerce accelerates global commercial trend by removing the boundaries facing international trade. It benefits from economic advantages such as market expansion, reduction of product source prices, promotion of productivity, reduction of transaction costs and inflation, lowering uncertainty, sharing market information, and aiding in distribution channel efficiency and plays a vital role in an endogenous economic growth. E-Commerce can be a source that improves domestic economic and rapid globalization of production, and development of available technology. Africa and the Middle East suffer from very specific issues that need to be integrated into world agenda and agreements taking place where, the barriers are very well understood and have been researched by many scholars. In the literatures published on e-commerce in developing countries the assumption is that Internet access will enhance e-commerce in these countries, however in most developing countries there are several barriers in expanding e-commerce including basic resources, lack of infrastructure, environmental factors, education and cultural problems. E-commerce can occur within and between three basic participant groups – business, government, and individuals.

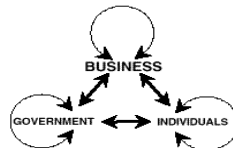


Figure 1: E-commerce participant group

2.2 COMPONENTS OF AN EFFECTIVE E-COMMERCE: Some of the components that you should be looking for (and asking questions about) as you seek a suitable shopping cart to serve your online store include:

SEARCH-ENGINE FRIENDLINESS: You will want your shopping cart solution to provide you with control over your own title tags, meta descriptions and keywords so that you can easily optimize at-will for the search engines. You will also want your solution to automatically generate keyword-rich URLS based on your product and category names and to generate page code that is XHTML 1.0 strict compliant.

PCI COMPLIANT HOSTING AND SECURITY: Because your website will need to accept online payments, you must find a provider who can host your website in a *Payment Card Industry (PCI)* compliant environment. If you don't know anything about PCI Compliance, you will need to understand your role in complying with the DSS (*Data Security Standards*). Currently, the card industry mandates that any merchant, organization or software that processes, stores or disseminates credit card data must be PCI DSS compliant or they risk hefty fines and/or losing the ability to process credit cards altogether thus putting your entire business in jeopardy. Although there is a lot more involved with PCI compliance than just hosting your site in a compliant environment, this is your first step.

UP-SELLING AND CROSS-SELLING FEATURES: Up-selling is offering customers a product that is of greater value than the product they are currently considering or adding options/features to the product they are buying in an attempt to increase their spend. Cross-selling refers to selling items that are complementary to the item they are purchasing. Any suitable shopping cart technology will offer automated features that can accomplish these marketing techniques for you with some simple set-up. Make sure that your shopping cart solution offers these valuable recommendation tools.

PRODUCT REVIEW FEATURE: Product reviews are a very powerful product marketing tool. In fact, research shows that even bad reviews help to sell more product than not showing reviews for a product at all. You will want an e-commerce solution that lets you enable customers to post reviews of the products that you sell. You can always review the posts before you choose to display them or choose to display reviews automatically on the website.

FLEXIBLE PRICING MANAGEMENT: You will want to find a shopping cart that offers flexible pricing features and allows you to set-up multiple pricing options to accommodate things like promotional pricing for any product, customer, order, or time frame, wholesale or retail pricing (or both) displayed to your customers via the same catalog interface and which allows you to set-up affiliate pricing, accepts coupon codes, allows for quantity-based pricing and has tax-exempt support.

ROBUST CATALOG MANAGEMENT: Identify a solution that allows you to get your store started quickly by offering a bulk import/export of your catalog. You will find that this feature will support you throughout the life-cycle of your business and not just at start-up. Make sure that the solution also offers product cloning to simplify catalog additions, automatic resizing of your product images and has some strong inventory management capabilities such as letting you set minimum quantities and identify backordered items.

SOLID ANALYTICS AND REPORTING: Look for a solution that integrates with Google Analytics to demonstrate real-time site and search ranking data and that offers a variety of other product performance reporting capabilities, which you will need to accurately monitor your business. Be sure that you can export and save these reports.

INTEGRATED SHIPPING: You will want your shopping cart solution to integrate with the major shipping providers such as USPS, UPS and Fedex and you will want the ability to markup shipping rate-quotes by a percentage or by a flat amount so that you have the option to charge transparent handling fees.

PRODUCT FEED SUPPORT: You will want your shopping cart solution to have a product feed feature that will allow you to easily create a feed of your products that you can then upload to shopping comparison sites (a.k.a shopping engine) such as Shopzilla, Shopping.com, Google Product Search, etc. and that will allow you to create multiple product feeds for each comparison engine.

GIFT CERTIFICATE/WISHLIST FEATURES: Gift Certificate and Wishlist are two website features that play a major role in holiday sales conversions (according to a Demandware study). 64% of those surveyed said gift certificates equaled 25% of their online purchases and half of those surveyed said they shopped using someone else's wishlist. So, be sure to utilize these features on your site and do not consider an ecommerce solution that does not boast a robust online gift certificate and wishlist feature-set.

2.3.0FEATURES OF E-COMMERCE

Nowadays E-Commerce is a global word. Although it is omnipresent but we never realize its importance primarily because it is known by different names. People do site promotion, SEO, affiliate marketing, and many other things but the goal is same i.e. to get clients and sell the products or services of the company. 'E' is just a medium to transact online. The following are some peculiar features of e-commerce which makes it considerably appreciable.

UBIQUITY: In traditional commerce, a marketplace is a physical place we visit in order to transact. For example, television and radio are typically directed to motivating the customer to go someplace to make a purchase. E-commerce is ubiquitous, meaning that it is available just about everywhere at all times. It liberates the market from being restricted to a physical space and makes it possible to shop from your desktop. The result is called a market space. From consumer point of view, ubiquity reduces transaction costs - the cost of participating in a market. To transact, it is no longer necessary that you spend time and money traveling to a market. At a broader level, the ubiquity of e-commerce lowers the cognitive energy required to complete a task.

GLOBAL REACH: E-commerce technology permits commercial transactions to cross cultural and national boundaries far more conveniently and effectively as compared to traditional commerce. As a result, the potential market size for e-commerce merchants is roughly equal to the size of world's online population.

UNIVERSAL STANDARDS: One strikingly unusual feature of e-commerce technologies is the technical standards of the Internet and therefore the technical standards for conducting e-commerce are universal standards, that is, they are shared by all the nations around the world.

INTERACTIVITY: Unlike any of the commercial technologies of the twentieth century, with the possible exception of the telephone, e-commerce technologies are interactive, meaning they allow for two-way communication between merchants and consumer.

INFORMATION DENSITY AND RICHNESS: The Internet vastly increases information density. It is the total amount and quality of information available to all market participants, consumers and merchants. E-commerce technologies reduce information collection, storage, communication and processing costs. At the same time, these technologies increase greatly the accuracy and timeliness of information, making information more useful and important than ever. As a result, information becomes plentiful, cheaper and of higher quality. Information richness refers to the complexity and content of a message.

PERSONALIZATION: E-commerce technologies permit personalization. Merchants can target their marketing messages to specific individuals by adjusting the message to a person's name, interests and past purchases. The technology also permits customization. Merchants can change the product or service based on user's preferences or prior behavior.

2.4 IMPORTANCE OF E-COMMERCE

Electronic commerce, or e-commerce, which literally means business trading through the Internet, has been around the globe since mid 90s. However, until the recent few years, e-commerce is getting more and more attention from entrepreneur and consumers, both local and international. One of the main reasons is due to the highly successful operations of some well known names on the Internet, such as eBay, Yahoo and Dell. The sales revenue these companies show in their annual reports are without doubt, one of the biggest factors why e-commerce is important in the commercial market nowadays.

E-commerce proved its importance based on the fact where time is essence. In the commercial markets, time plays an important role to both the business and consumers. From the business perspective, with less time spent during each transaction, more transaction can be achieved on the same day. As for the consumer, they will save up more time during their transaction. Because of this, e-commerce steps in and replaced the traditional commerce method where a single transaction can cost both parties a lot of valuable time. With just a few clicks in minutes, a transaction or an order can be placed and completed via the internet with ease. For instance, a banking transaction can be completed through the Internet within a few minutes compared to the traditional banking method which may take up to hours. This fact obviously proves that e-commerce is beneficial to both business and consumer wise, as payment and documentations can be completed with greater efficiency.

From the business viewpoint, e-commerce is much more cost effective compared to traditional commerce method. This is due to the fact where through e-commerce, the cost for the middleperson to sell their products can be saved and diverted to another aspect of their business. One example is the giant computer enterprise, Dell, which practice such a method by running most of their business through internet without involving any third parties. Aside from that, marketing for e-commerce can achieve a better customer to cost ratio as putting an advertisement on the internet is comparably much cheaper than putting up a roadside banner or filming a television commercial. For e-commerce, the total overheads needed to run the business is significantly much less compared to the traditional commerce method. The reason due to that is where most of the cost can be reduced in e-commerce. For example, in running an e-commerce business, only a head office is needed rather than a head office with a few branches to run the business. In addition to that, most of the cost for staff, maintenance, communications and office rental can be substitute by a single cost, web hosting for the e-commerce business.

To both the consumers and business, connectivity plays an important part as it is the key factor determining the whole business. From the business point of view, e-commerce provides better connectivity for its potential customer as their respective website can be accessed virtually from anywhere through Internet. This way, more potential customers can get in touch with the company's business and thus, eliminating the limits of geographical location. From the customer standpoint, e-commerce is much more convenient as they can browse through a whole directories of catalogues without any hassle, compare prices between products, buying from another country and on top of that, they can do it while at home or at work, without any necessity to move a single inch from their chair. Besides that, for both consumers and business, e-commerce proves to be more convenient as online trading has less red tape compared to traditional commerce method. In global market sense, the appearance of e-commerce as a pioneer has opened up various windows of opportunities for a variety of other companies and investors. For instance, due to the booming of e-commerce, more and more resources are being directed into electronic securities, internet facilities, business plans and new technologies. In result of this phenomenon, a variety of new markets have emerged from e-commerce itself giving a boost to the global market.

2.5 BENEFITS OF E-COMMERCE

The impact of e-commerce to businesses can be huge. E-commerce can transform the way products and services are created, sold and delivered to the customer. It can also change the way in which a company works with its partners. Some benefits of e-commerce are as follows.

IMPROVED PRODUCTIVITY: Using e-commerce, the time required to create, transfer and process a business transaction between trading partners is significantly reduced. Furthermore, human errors and other problems like duplications of records are largely eliminated with the reduction of data-entry and re-entry in the process. This improvement in speed and accuracy, plus the easier access to document and information, will result in increase in productivity.

COST SAVINGS: According to a 1999 report by Giga information Group, conducting business online will save companies around the world an estimated USD1.25 trillion by 2002. This compares to total savings of USD 17.6 billion in 1998-The cost savings stem from efficient communication, quicker turnaround time and closer access to markets.

BETTER CUSTOMER SERVICE: With e-commerce, there is better and more efficient communication with customers. In addition, customers can also enjoy the convenience of shopping at any hour, anywhere in the world.

CONVENIENCE: E-commerce is very convenient to the consumers since the sites operates 24 hours a day 7 days a week, thus, allowing transaction to be done at any time.

REDUCED ERRORS: The automated process tends to produce fewer errors than the traditional process since it is done electronically.

UNLIMITED SHELF SPACE: E-commerce companies can display/shelve an unlimited number of goods from which the consumers can choose whatever they want.

INCREASED GLOBAL PRESENCE: E-commerce companies can be accessed by people from all over the world, that is, one can purchase from wherever he/she is.

2.6 ADOPTION AND IMPLEMENTATION OF ELECTRONIC COMMERCE

It is argued that diffusion of innovation theory is relevant to the study of e-commerce, and that e-commerce has unique features suggesting that e-commerce needs its own specific study. E-commerce has technical component similar to other IT innovations, but e-commerce also has inter organizational elements which distinguish it from other types of innovations.

According to Rogers (1983), diffusion is the process during which an innovation is communicated through certain channels over time among members of a social system. However, prior to that, the decision has to be made on whether or not the organization should adopt a new innovation or practice for the business. Rogers distinguishes diffusion from adoption by stating that adoption is a decision to make full use of an innovation as the best course of action, whereas rejection is a decision not to adopt an available innovation (Rogers, 1983:21). In this study, e-commerce adoption is therefore defined as the decision to make use of e-commerce to conduct business or transaction with its trading partners and e-commerce implementation is taking the necessary actions to facilitate and execute e-commerce into the business practice or process. These definitions make it clear that e-commerce implementation involves the use of computer and telecommunications technologies to improve business processes. In many organizations, however, implementing e-commerce requires management and staff to deal with quite new technologies, applications and processes. A whole range of technological, management and business issues arise during the implementation and need to be addressed. For an effective e-commerce implementation, some steps need to follow.



Figure 2: Steps to effective e-commerce implementation

2.7 FACTORS THAT CONTRIBUTES TO E-COMMERCE IMPLEMENTATION SUCCESS

From the many variables that might be considered as indicators for success of an Internet-based e-commerce, satisfaction has been chosen in this study. In the IS literature, satisfaction is one of the variables most often used as a success indicator (Crum, *et al.*, 1996; Delone and McLean, 1992; Alavi and Joachimsthaler, 1992; Seddon and Kiew, 1994; Thong and Yap, 1996; Wierenga and Ophuis, 1997). Being one of the popular constructs of IS implementation success, satisfaction has been found to correlate with usage (Baroudi, *et al.*, 1996; Gelderman, 1995; Wierenga and Ophuis, 1997; Zinkhan *et al.*, 1987). Other scholars have even suggested that low satisfaction causes discontinuity in the usage of information technology (Evans, 1976; Thong and Yap, 1996). Hence, satisfaction is employed as a construct of e-commerce implementation success in this study.

E-commerce offers huge potential to SMEs, including potential strategic benefits such as possibilities of creating new industries, developing new content and chances to find or create employment.

However, companies and the private sector in Africa have not been active initiators of e-commerce. For example, a survey in Ghana (part of a Ghana SCAN-ICT study) revealed that about 65 per cent of ICT companies do not have a presence on the Internet and

84 per cent reported that they were not involved in e-commerce.

In Morocco, according to the Ministry of Industry, Trade and Telecommunications, the proportion of businesses that use the Internet grew from 20 per cent to 42 per cent in 1999 but only 8 per cent of businesses in all sectors currently use the Internet or placing orders online. A similar study on Mozambique shows that e-commerce and e-business do not formally exist in Mozambique. The major obstacles include lack of suitable legal framework and security instruments, inadequate banking systems, poorly developed telecommunications infrastructure, especially beyond urban areas, and high rates of illiteracy. Twenty companies out of 66 surveyed have websites and this low proportion by world standards was considered a barrier for e-commerce and e-business development.

2.8 E-COMMERCE IN DEVELOPED COUNTRIES

E-commerce is rapidly growing in developed countries, given the availability of e-commerce infrastructure. Internet usage in developed countries has seriously grown compared to developing countries. There is growing awareness in of the benefits and opportunities offered by e-commerce amongst developed countries. Ecommerce activity in developed countries has steadily grown as a result of vast improvements in telecommunication services.

Despite early experiments which were quite transformative, the development of ecommerce in the United States has been evolutionary rather than revolutionary, and its impacts have changed in degree of usage rather than in kind. Many key e-commerce technologies and business processes were developed in the United States within the Silicon Valley model.

However, it is only one dimension of e-commerce diffusion in the U.S. A much larger share of e-commerce activity is characterized by a pattern of “adaptive integration,” in which existing firms incorporate the new technologies and business models offered by the Internet to extend or revamp their existing strategies, operations, and supply and distribution channels. Increasingly, e-commerce is just part of the broader evolution of commerce.

Slow to the Internet initially, Germany has become a fast follower in adopting Internet based e-commerce innovations. Though extensive use of established technologies such as EDI and EFT may have delayed adoption, Germany has since caught up on most measures of use.

German firms choose applications carefully based on their proven track records of success in other countries. Two salient factors driving adoption of e-commerce in Germany are the international orientation of its economy and the dynamism of its small and medium-sized enterprises (SMEs).

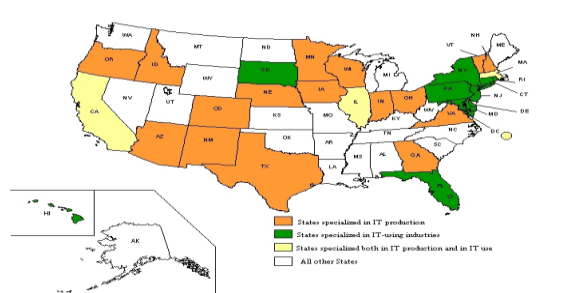


Figure 3: I.T Production and Use in the United State 2000-

HOW E-COMMERCE AFFECT BUSINESSES IN DEVELOPED COUNTRIES: In recent years, e-commerce has emerged as the fastest growing sector of the U.S. marketplace. Despite the contraction in the high-tech industry during the recent recession, firms have continued to enter and expand their presence in e-commerce, and consumers have increased the number of purchases made online. E-commerce currently represents a very small share of overall commerce, but it is expected to continue to expand rapidly in coming years. As e-commerce grows, so will its impact on the overall economy. The primary route by which e-commerce will affect the economy at large is through its impact on productivity and inflation. Business and consumers that use e-commerce benefit from a reduction in costs in term of the time and effort required to reach for goods and services and to complete transactions. This reduction in costs results in higher productivity. An even larger increase in economy – wide productivity levels may result from productivity gains by firms not engaged in e-commerce as they respond to this new source of competition.

Continued expansion of e-commerce may also lead to downward pressure on inflation through greater competition, cost savings, and changes in price-setting behavior of sellers. It was examined that economic factors that have contributed to the rapid growth of e-commerce and assesses how the future growth of e-commerce may affect the overall economy. That concluded e-commerce continues to grow rapidly, it could lead to an increase in productivity growth and downward inflationary pressures that persist for several years.

2.9 E-COMMERCE IN DEVELOPING COUNTRIES

The adoption of business-to-business e-commerce in developing countries differs greatly from developed countries. Developing countries often lack the necessary financial, legal, and physical infrastructures for the development of e-

commerce. In addition, developing countries often have different cultures and business philosophies, which limit the applicability and transferability of the e-commerce models designed by Western countries.

Internet usage in Nigeria is still relatively low compared to developed countries and ecommerce is still in an elementary stage, notwithstanding there is growing awareness in of the benefits and opportunities offered by ecommerce amongst Nigerians (Bamodu, 2005).

Ecommerce activity in Nigeria is steadily growing as a result of vast improvements in telecommunication services. The Telecommunications Industry has experienced exponential growth in the last four years with about 20 million telephone lines connected to date (Ndukwe, 2006). Alongside this growth, there has been an increase in the number of private telephone operators offering fixed wireless service with data transfer capabilities leading to an increasing number of people with internet access at home in the major cities and in some rural areas. Moreover, with the reduction in tariffs and further cuts expected, telecommunications service will become more affordable and essential to many Nigerians.

The recent advances in the telecoms market, and the explosion in the number of subscribers, demonstrate the potential market for information communication technology services generally in Nigeria (Ndukwe, 2006). Given Nigeria's sizable population it is a potentially lucrative market for electronic commerce services.

According to the Economist Intelligence Unit (EIU, 2006), the stock of personal computers (PCs) per 1,000 persons grew from 10.66 in 2004 to 11.09 in 2005. The greatest obstacle to the growth of e-commerce is low PC penetration. However affordable Asian technologies and falling microchip prices have fuelled a market in cloned as well as branded PCs. Electronic banking is one area of ecommerce that has proven successful in Nigeria (EIU, 2006). Nigerian banks are increasingly seeking to provide general banking facilities online. Internet banking is slowly and steadily gaining ground, banks have set up websites which publish corporate information and allow customers to carry out some form of transaction – limited in most cases. Despite the growing focus on internet banking not all banks are moving at the same pace, some still have only informational websites. Given that the banks exist in the same operational environments, some other factors other than the often cited country context must be responsible for the difference in attitude to electronic commerce among banks.

The initial advances that have been made in electronic banking is a step in the right direction and could be a motivator in the adoption of ecommerce services amongst Nigerians (EIU, 2006).

REASONS FOR SLOW DEVELOPMENT OF E-COMMERCE IN DEVELOPING COUNTRIES: One key reason for the slow development of e-commerce in developing countries is that there is not an overall policy framework covering aspects such as technical, economic and political. Policy considerations when creating an enabling environment include:

Encryption and Decryption techniques provide authentication, authorization, confidentiality and integrity to services, increasing the security of ecommerce transactions. They are necessary, for instance, for processing credit card information.

Digital signatures and electronic contracts are relevant, for instance in cases of dispute between trading partners in an e-commerce transaction.

Certification authorities secure electronic transactions and act as trusted third parties to verify information about parties. African certification authorities must take part in the international framework for supporting ways to link certification mechanisms and the mutual recognition of different certification authorities.

Consumer protection: In an electronic market place it is not easy for consumers to identify and localize suppliers so it is necessary to promote protection mechanisms.

Electronic payments: Online payment using credit cards is a missing component of the African business environment, which is often cash-based. Electronic payments will involve central banks and other trade and financial institutions.

Copyright and intellectual property rights: Legislation on copyright and intellectual property rights on the Internet is still in its infancy, and uncertainty about such legislation contributes to inhibiting business investment.

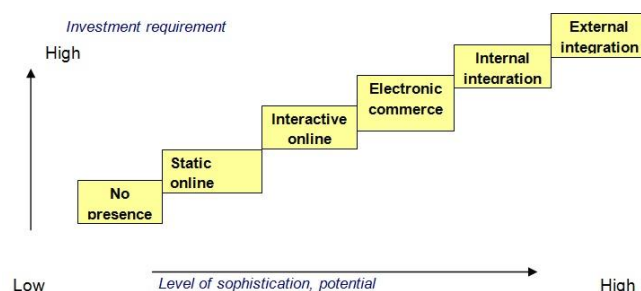


Figure 4: E-commerce stages of growth in

2.10 FACTORS AFFECTING E-COMMERCE IMPLEMENTATION

Some of the factors affecting the adoption of e-commerce in developing countries are:

- Perceived complexity
- Perceived benefits
- Organizational competence
- Perceived compatibility
- Supporting industries e-readiness
- Management support
- Market e-readiness
- IT capability
- Government e-readiness

PERCEIVED COMPLEXITY

Perceived complexity refers to the degree to which an innovation is perceived as difficult to understand and use. New ideas that are simpler to understand are adopted faster than those requiring the adopter to develop new skills and understanding (Rogers, 1995). Akbulut (2002) state that the complexity of a technology has a major effect on the adoption decision, while Chwelos et al. (2002) state that complexity is a strong inhibitor of intent to adopt innovation.

PERCEIVED BENEFITS

Perceived benefits refer to the extent of managements recognition of the relative advantage of adopting e-commerce to the organization. A perceived benefit is an important factor in adoption of new innovations (Iacovou et al., 1995; Rogers, 1995). Rogers (1995) defined Relative advantage as the extent to which an innovation is perceived as better than the idea it supersedes or its nearest alternative. Relative advantage can be measured in financial terms; however, social status, comfort, and satisfaction are important factors as well. The amount of objective advantage of an innovation has a great effect, what affects adoption of an innovation is whether the innovation is viewed as advantageous. The greater the perceived relative advantage of an innovation, the more rapid its rate of adoption will be (Rogers, 1995).

ORGANIZATIONAL COMPETENCY

The availability of employees with competency for producing new ideas is important for e-commerce adoption (Mohr, 1969). Organizational competency refers to the availability of employees with adequate experience and exposure to information and communication technology and other skills (such as business strategy) that are needed to adequately staff e-commerce projects (Molla & Licker, 2005).

PERCEIVED COMPATIBILITY

Perceived compatibility refers to the degree to which an innovation is perceived as being consistent with existing needs, values, past experiences, and technological infrastructure of potential adopters (Rogers, 1995 & Rogers 1983). An innovation might be perceived as technically or financially superior in accomplishing a given task, but it may not be adopted, if a potential adopter views it as irrelevant to its needs (Rogers, 1995).

SUPPORTING INDUSTRIES E-READINESS

Supporting Industries e-readiness refers to “the assessment of presence, development, service level and cost structure of support-giving institutions such as telecommunications, financial, trust enablers and the IT industry, whose activities might affect the e-commerce initiative of businesses in developing countries” (Molla & Licker, 2005). Existence of adequate IT infrastructure is a necessary condition for the take-off of and development of e-commerce (Palacios, 2003); since organizations would rather concentrate on their core competencies, it is vital that there are other organizations whose main activity is provision of IT infrastructure and services.

MANAGEMENT SUPPORT

Top management support has been identified as crucial in the acquisition and diffusion of innovation (Orlikowski, 1993). Top management consists of individuals with power and authority to make strategic decisions; thus they can develop a clear-cut e-commerce vision and strategy while at the same time sending signals to different parts of the organization about the importance of e-commerce. Given the limited nature of organizational resources and the many competing projects, top management support ensures that an e-commerce innovation project will get the required resources and capabilities.

MARKET E-READINESS

Market e-readiness refers to “the assessment that an organization’s business partners such as customers and suppliers allow an electronic conduct of business” (Molla & Licker, 2005). for ecommerce to thrive sellers and buyers have to be willing to exchange goods and services for money online (Turban, 2004). Thus, an organization considering adoption may first examine the willingness of its existing customers and suppliers to do business online or the likelihood of generating new business online.

I.T CAPABILITY

IT capability refers to the level of IT resources and personnel IT knowledge of an organization (Akbulut, 2002). Access to adequate equipment in the organization is a major determinant of the adoption of new technologies (Newcomer and Caudle, 1991). Cohen & Levinthal (1990) state that an organization’s ability to appreciate an innovation, to assimilate it, and apply it to new ways is largely a result of the firms preexisting knowledge in areas relating to the intended innovation.

GOVERNMENT E-READINESS

Government e-readiness refers to “the organizations’ assessment of the preparation of the nation state and its contributions to promote, support, facilitate and regulate ecommerce and its various requirements” (Molla & Licker, 2005). The government has a strong role in promoting and spreading the benefits of electronic commerce (Bandyo-padhay, 2002). Governments can provide an enabling environment in which ecommerce can realize its full potential. They can help address the problems and challenges of awareness, infrastructure develops, local content creation depending on languages used and cultures prevailing in the local environment (Kamel, 2006).

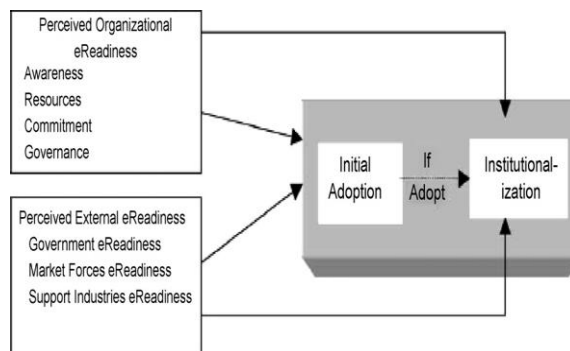


Figure 5: Factors affecting e-commerce implementation

III. E-Commerce Implementation In United States

When the United States sneezes, an economists' proverb says, the rest of the world catches a cold. The first ingredient of a nation's economic system is its natural resources. The United States is rich in mineral resources and fertile farm soil, and it is blessed with a moderate climate. The second ingredient is labor, which converts natural resources into goods. The number of available workers and, more importantly, their productivity help determine the health of an economy. Labor-force quality continues to be an important issue. Today, Americans consider "human capital" a key to success in numerous modern, high-technology industries. As a result, government leaders and business officials increasingly stress the importance of education and training to develop workers with the kind of nimble minds and adaptable skills needed in new industries such as computers and telecommunications.

The United States is said to have a mixed economy because privately owned businesses and government both play important roles. The American free enterprise system emphasizes private ownership. Private businesses produce most goods and services, and almost two-thirds of the nation's total economic output goes to individuals for personal use (the remaining one-third is bought by government and business). The consumer role is so great, in fact, that the nation is sometimes characterized as having a "consumer economy."

This emphasis on private ownership arises, in part, from American beliefs about personal freedom. From the time the nation was created, Americans have feared excessive government power, and they have sought to limit government's authority over individuals -- including its role in the economic realm. In addition, Americans generally believe that an economy characterized by private ownership is likely to operate more efficiently than one with substantial government ownership. The United States accounts for about 80 per cent of the global total of electronic commerce. While its share will probably decrease, it does not face some of the constraints that confront Europe and Asia, such as high cost and the lack of sufficient bandwidth and the slow pace of planned liberalization of the telecommunications sector.



Figure 6: E-commerce growth rate in United State between 1999 & - commerce has emerged as the fastest growing sector of the U.S. marketplace. Despite the contraction in the high-tech industry during the

recent recession, firms have continued to enter and expand their presence in e-commerce, and consumers have increased the number of purchases made online. E-commerce currently represents a very small share of overall commerce, but it is expected to continue to expand rapidly in coming years. As e-commerce grows, so will its impact on the overall economy. The primary route by which e-commerce will affect the economy at large is through its impact on productivity and inflation. Business and consumers that use e-commerce benefit from a reduction in costs in terms of the time and effort required to reach for goods and services and to complete transactions. This reduction in costs results in higher productivity. An even larger increase in economy – wide productivity levels may result from productivity gains by firms not engaged in e-commerce as they respond to this new source of competition.

Continued expansion of e-commerce may also lead to downward pressure on inflation through greater competition, cost savings, and changes in price-setting behavior of sellers. It was examined that economic factors that have contributed to the rapid growth of e-commerce and assesses how the future growth of e-commerce may affect the overall economy. That concluded e-commerce continues to grow rapidly, it could lead to an increase in productivity growth and downward inflationary pressures that persist for several years.

WHAT CONTRIBUTED TO EFFECTIVE E-COMMERCE IN UNITED STATES: In the United States, some electronic commerce activities are regulated by the *Federal Trade Commission* (FTC). These activities include the use of commercial e-mails, online advertising and consumer privacy. The CAN-SPAM Act of 2003 establishes national standards for direct marketing over e-mail. The Federal Trade Commission Act regulates all forms of advertising, including online advertising, and states that advertising must be truthful and non-deceptive. Using its authority under Section 5 of the FTC Act, which prohibits unfair or deceptive practices, the FTC has brought a number of cases to enforce the promises in corporate privacy statements, including promises about the security of consumers' personal information. As result, any corporate privacy policy related to e-commerce activity may be subject to enforcement by the FTC.

E-COMMERCE IMPLEMENTATION IN NIGERIA: The economy of Nigeria is a middle income, mixed economy emerging market with well-developed financial, legal, communications, transport, and entertainment sectors. It is ranked 31st in the world in terms of GDP (PPP) as of 2009, and its emergent, though currently underperforming manufacturing sector is the second-largest on the continent, producing a large proportion of goods and services for the West African region.

Previously hindered by years of mismanagement, economic reforms of the past decade have put Nigeria back on track towards achieving its full economic potential. Nigerian GDP at purchasing power parity more than doubled from \$170.7 billion in 2005 to \$374.3 billion in 2010, although estimates of the size of the informal sector (which is not included in official figures) put the actual numbers closer to \$520 billion. Correspondingly, the GDP per capita doubled from \$1200 per person in 2005 to an estimated \$2,500 per person in 2009 (again, with the inclusion of the informal sector, it is estimated that GDP per capita hovers around \$3,500 per person). It is the largest economy in the West Africa Region, 3rd largest economy in Africa (behind South Africa and Egypt), and on track to becoming one of the top 30 economies in the world in the early part of 2011.

In the past few years, Nigerian banks and the financial services industry in general, have embraced e-banking/e-money made possible by advancements in information-based technology. I do not think they have a choice, anyway. In the competitive environment of this twenty-first century, technology is "how to beat the other guys." Indeed, technological innovation presents banks with an opportunity to gain a competitive advantage through cost-effective delivery system and to use these systems to generate fee income.

NIGERIAN EXPERIENCE IN E-COMMERCE: Currently, the concept of e-payment/e-money in Nigeria is card-based and involves in the main, only prepaid cards. The CBN welcomes, and has indeed been very supportive of the introduction and usage of such e-money products in the country, as this could, in principle, improve efficiency in payment operations. The introduction of such e-payment products in Nigeria commenced in 1996 when the CBN granted Allstates Trust Bank approval to introduce a closed system electronic purse called ESCA. This was followed in February 1997, with the introduction of a similar product called "Paycard", by Diamond Bank. The card based e-money products assumed an open platform with the authorisation in February 1998, of Smartcard Nigeria Pie, a company floated by a consortium of 19 banks to produce and manage cards issued by the member banks. Another consortium of more than 20 banks under the auspices of Gemcard Nigeria Limited obtained CBN approval in November 1999 to introduce the "Smartpay" scheme. The number of participating banks in each of the two schemes had since risen to over 35 as at July 2002.

The CBN has additionally granted approval to a number of banks to introduce international money transfer products, telephone banking and on-line banking via the Internet, though on a limited scale. Mention must also be made of the deployment of automatic teller machines (ATM) by a few banks to facilitate cards usage and further enhance their service delivery. We are also quite aware that virtually all Banks in Nigeria now has a website. Indeed, a number of these sites has capability that supports and actually pen-nits the conduct of e-banking, a subset of e-commerce. We anticipate that very soon, many more banks will enhance their website capability to support online transaction processing and electronic bill paying services.

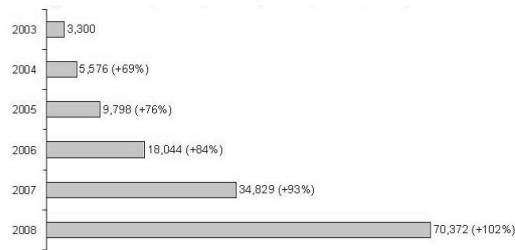


Figure 7: E-commerce growth rate in Nigeria between 2003-2008

OBSTACLES FACING E-COMMERCE IMPLEMENTATION IN NIGERIA: Some of the obstacles facing Nigerian e-commerce and which has contributed to the growth of e-commerce in the United States are:

- the high cost of equipment, integration and connectivity;
- the lack of awareness of what electronic commerce is;
- the lack of legal framework conducive to e-commerce;
- the lack of skilled personnel;
- the uncertainty of the bank regulations

HIGH COST OF EQUIPMENT

Nigerians lag far behind developed country markets in the availability of the technical pre-requisites for conducting electronic commerce. The gaps in the two main requirements for Internet that are telephone and computer availability highlight the difference. For instance, 65 per cent of households in the world have no telephone, whereas 90 per cent of households in high-income countries have a telephone (ILO, 2000).

The personal computer ratio per 100 inhabitants is 18% for high-income countries, 2.3% for medium-income nations and just 0.1% for low-income countries to which ECOWAS member states belong (ILO, 2000). In the United States, at least one out of three persons uses the Internet, compared to only one in every 10,000 in developing countries. Teledensity (main lines per 100 inhabitants) is 48% for developed countries, 10% for middle income and 1.5% for the least developed countries (LDCs) among which the vast majority of ECOWAS nations.

Furthermore, in West African countries telecommunications services are often unreliable, high cost or both. There are also enormous differences in access to telecommunications both between and within countries. For instance, while in West Africa a considerable proportion and sometimes the majority of the population lives in rural areas, over 80 per cent of the main telephone lines are located in urban areas.

AWARENESS ABOUT E-COMMERCE

As far as user awareness is concerned, the successful experience in other parts of the world may help in formulating policies to foster electronic commerce. In this regard, trade associations and chambers of commerce, together with governments, can be good vehicles to promote the use of electronic commerce through awareness campaigns including the organization of “information days”, multimedia demonstrations and the production of information brochure aimed at the general public (Wilson, 1998).

LEGAL AND REGULATORY FRAMEWORK

Another critical issue that West African states need to address is how to make their legal framework conducive to e-commerce transactions. This is important because the creation and adoption of a responsive policy and regulatory framework would stimulate the rapid development of e-commerce in the region, with attendant benefits for the economies and citizens of ECOWAS. It would also have the advantage of clarifying rules and removing some of the barriers set by existing laws that are now rendered anachronistic by modern technological developments. Finally, it would help settle the issues of thrust and abuses in electronic transactions.

The absence of legacy e-commerce legislations at the individual member state level provides an opportunity for ECOWAS and WAEMU to jump-start the process by creating model of e-commerce legislation that can be implemented without the extensive harmonization efforts that would be required if legislation existed in one or more member countries. The sub-regional policy and legislation would also have the advantage of being cost-effective as a single undertaking to be extended and adapted to individual nations. This would also permit efficient capacity building both at the RECs and national levels, to ensure that there is the requisite knowledge among the parties responsible for policy making, legislation and implementation.

HUMAN RESOURCE

Electronic commerce is progressively changing the way businesses are done. The world have moved from an industrial economy where machines dominated productivity, to an information-based economy where intellectual content is the dominant source of value added and which knows no geographic boundaries. In this new environment, education and continuous learning will be essential not only for managers and workers but for all. As industry, commerce, and services are transformed by technology, many skills need to be improved or acquired.

If Nigerians are to benefit from this new technological and economic boom that the growth of e-Commerce represents, they will need to have the most important component in place, the human resource. Today's knowledge revolution largely depends on human capital. Some developing countries and some sections of most developing countries in

Nigeria have this in abundance and opportunities of the new economy could provide them with excellent results (ILO, 2000). On the other hand, there are many countries mainly in Africa that are far behind in this area and therefore need very proactive policies and investment in education (especially technical) to realize the potential. After all to be e-literate, citizens first need to be literate.

As e-Commerce develops and the more advanced stages of commercial exchange (contracting, payment reconciliation and auditing) are carried out electronically, more specific skills are going to be required. Even for surfing the Internet for a product or service, basic familiarity with the computer and knowledge of the Internet is needed. Moreover, extensive language knowledge may be an additional requirement if foreign Internet sites are to be browsed. From website design, to electronic credit management and software and hardware maintenance, all require skills that may not be so easily available in several West African countries. Capacity building in the field of information technology, in the knowledge of the existence of a regional and global market for such skills, is therefore crucial. The development of electronic commerce puts a premium on the development of education and training policies, to ensure that training institutions' curricula meet with the needs of industry.

The training needs should firstly focus on activities in the area of human resource development for electronic commerce, in particular through the training of trainers. Three main targets could be focused upon initially, namely:

- Policy makers and negotiators;
- Small and medium-sized enterprise managers and trade practitioners;
- Technicians and workers, including specialists in electronic data interchange and the Internet. However building the human resource goes far beyond training. It is a continuous learning process. For West Africa, the process should begin with sensitization as well as web design and development of commercial applications. Governments should take the initiative to then pass it on to the private sector. Here the state could pursue its efforts in building partnerships with civil society in order to offer proper training tools in the area of electronic commerce. Similarly international organizations such as UNECA, UNDP, WTO also have a responsibility to assist countries in this crucial area of advocacy and human resource development for this new technology¹. Several of these organizations are in fact working towards this and therefore collaboration and common programmes with countries would be beneficial for the sub-region as a whole.

FINANCIAL FRAMEWORK

In order to encourage e-Commerce development as a support to regional integration in West Africa, banking procedures within the sub-region need also to be aligned and made compatible with digital trade transactions, so that consumers and buyers can easily make purchases locally through the Internet. The higher the development of electronic connections within the region, the higher will be the purchases from within. Along these changes, e-commerce would also require a financial and banking framework that allows for electronic payments and transfers. This would include requirements for certification of documents, electronic signatures, confidentiality and privacy. Therefore West African countries will need to put in place an electronic network (between financial institutions) in addition to the legal framework to allow for such transactions. Banking laws and regulations thus need to be adjusted to the new formats and requirements.

IV. Summary, Conclusion, And Recommendation

3.1 SUMMARY

Electronic commerce has the potential to improve efficiency and productivity in many areas and, therefore, has received significant attention in many countries. However, there has been some doubt about the relevance of e-commerce for developing countries. Currently, there are still a limited number of studies on e-commerce implementation by developing countries. To address the gap in the literature, this study has assessed the implementation of e-commerce in the United States, as an example of a developed country and also Nigeria, as an example of a developing country. Some factors affecting the adoption and implementation of e-commerce and the condition of Nigeria in relation to e-commerce implementation are discussed in this project.

3.2 RECOMMENDATION

The provided recommendations of this research regarding the comparative study of e-commerce implementation in order to ensure e-commerce success in developing countries is to:

- Address high cost of equipment, integration and connectivity;
- create awareness of what electronic commerce is;
- create a legal framework conducive to e-commerce;
- provide skilled personnel;
- address financial and bank regulatory issues.

V. CONCLUSION

Based on the study conducted, its obvious, that e-commerce is indeed relevant to Nigeria, despite the current limitations with the existing infrastructure and other issues related to the economical and socio-cultural conditions. E-commerce will change the mode of doing business, thus offer excellent opportunities for growth in developing nations, particularly in Nigeria.

References

- [1] Aida O.M.; Assefa B. and Sizo M. “ E-commerce Challenges in Africa: Issues, Constraints, Opportunities”.(2003)
- [2] Aitken, I. “Value-driven I.T management: Commercializing the IT function,” (2003)Alev M.E.; Vincent F. Y. and William L. M. “E-commerce in Developing Countries: Issues and Influences.” University of San Francisco. Press (2002)
- [3] Angehm, A. “Designing mature internet business strategies”: the ICDT model. European management Journal, vol. 15(4), pp.361-369. (1997).
- [4] Ann, L.F. “The impact of Electronic Commerce on Business-Level Strategies”, Journal of Electronic Commerce Research, University of Nebraska – Omaha. Vol. 1, No. 1, pp. 13. (2000)
- [5] Buhrmann, A.. “E-bussiness in the year of the gap”. Bussiness Vol.2.0:pp. 48-59, (2002)
- [6] Concord, M.A.” Trends in Electronic Procurement and Electronic Commerce and Their Impact on Small Business”, by Innovation & Information Consultants, Inc. (2004).
- [7] Imala, O.I. “Electronic Commerce and Telecommunications in Nigeria: Bank regulator perspective.”
- [8] Lavin, A. “Factors Affecting Ecommerce Adoption in Nigerian Banks.”
- [9] Udo, G.J. “Factors Affecting E-commerce Website Effectiveness”, The Journal of Computer Information Systems.