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**GLOBAL E-COMMERCE AND AFRICAN**  
**PARTICIPATION: A CRITICAL ASSESSMENT**

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## **1.0 INTRODUCTION: E-COMMERCE EVOLUTION**

Clearly, consumers love to shop on the internet and so they should: leading websites, after early teething problems now provide a superb service. Here, certain sites) such as Amazon) have won some of the highest customer-satisfaction scores ever seen in the retail industry. In fact, websites have had little choice but to raise service levels often for above those of offline retailers. Indeed, competition on the web is fierce and price transparency is the rule. With shopping-comparison services, it is possible to check the price offered by hundreds of merchants with a couple of mouse clicks. Thus, the growth of internet shopping is producing a profound change in consumer behavior. Here, people are not just becoming more confident about buying goods and services online, they are also increasingly equipped at using the internet to decide where and how to spend their money online. In fact, no company can any longer afford to ignore the internet, even if it does not itself sell much or anything at all online. Yet, the spread of fast, broadband internet connections has been a key factor in fuelling the growth of e-commerce as well as having more profound effect on the associated growth of new internet businesses. In other words, for the price of a personal computer, a fast connection and a good website, anyone with enterprenual flair now has the potential to reach customers worldwide. However, the software firms, website designers and service providers that have helped build the internet urgently need to make it a safer place to business. If they can manage to do this, and the spread of broadband can be sustained, then, the potential of e-commerce is bound to be even greater than in the past few years. Indeed, a golden opportunity beckons; and it is the internet's very openness that makes contact between buyers and sellers so easy and potentially so rewarding.

Today, advanced microelectronics-based information and communication technologies (ICTs) are the heart of recent economic transformations in both the industrialized and many developing economies. However, the diffusion of ICTs throughout the developing world has been extremely uneven (both within and between countries). Specifically, African countries risk exclusion from global markets because of the lack of the economic

and social capabilities needed to take advantage of innovations in ICTs, such business-to-business (B2B) electronic commerce. In fact, one of the grand myths of B2B e-commerce is that it offers a “friction-free” environment for transacting business that will lead to a reduction in the role of intermediaries. However, a more sober analysis suggests that (owing to the new costs associated with establishing trust and reducing the risks inherent in this type of activity) new types of intermediaries will be required. Therefore, B2B e-commerce represents an enormous challenge for African country firms, and its impact is likely to be experienced in rather different ways (and perhaps at a different pace. Yet, the intoxicating discourse of revolutionary business models that proliferated during the days of internet fever are giving way to a renewed focus on how best to apply the potential of e-commerce to existing intra and inter-firm operations. In other words, the use of the internet as World Wide Web to co-ordinate production through domestic and cross-border inter-firm networks is likely to have a significant impact on the competitiveness of African Firms.

Thus, it has been asserted that the most fundamental resource in the modern economy is knowledge while the most important process of economic development is learning. E-commerce therefore is an important contributor to the learning process which shapes economic performance. This is because of the fact that it provides improved access to structured business information as well as offering opportunities for innovation when embedded in production process. In general, ICTs and e-commerce are likely to play a pivotal role in the integration and co-ordination of globally dispersed production and distribution systems. That is, e-commerce has the potential to become a necessary (though insufficient) ingredient for competing in global value chains underpinning high-tech information-driven capitalism. Consequently, it has been argued that by making markets these new infomediaries may erode the market power of traditionally dominant commodity chain participants (buyers or sellers). Although, inequalities of access to information have been shown to adversely affect market performance in African countries; the internet, by virtue of its relatively low investment and configuration costs, and interactive global reach, potentially could play a pivotal role in

enabling increasing connectivity and visibility in national, regional and global-scale value chains. Essentially, B2B e-commerce can be taken as any form of commercial transaction or structured information exchange that takes place between firms within industry value chains via an ICT-based, computer-mediated network. Here, B2B e-commerce can be divided into two categories: Open market place-based trade that occurs in public internet-based environments using the TCP/IP protocol suite; and direct trade between business partners that occurs through either public internet-based platforms, proprietary computer networks or both. Again, it can be argued that e-commerce has the potential to substantially reduce co-ordination costs and increase efficiency in inter-firm trade. These efficiency gains can be classified into three broad categories: process improvements ( a substantial reduction in overall transaction costs), direct information improvements (minimizing information search costs, and a reduction in information asymmetries ) and indirect benefits (better information processing as a result of greater transparency and improved connectivity and more efficient “make or buy” decisions as a result of a substantial reduction in transaction costs in inter-firm trade). Again, it is anticipated that international B2B e-commerce will create a “level playing field” in which African countries will be able to compete on equal terms with the highly industrialized countries of the North and that ICTs provide African country firms with the means to leap frog stages of industrial development.

In other words, firms from African countries run the risk of exclusion from global value chains if they cannot establish electronic ties with their major business partners. However, one should not underplay the impact that e-commerce can make on improving the speed, accuracy and cost of transferring data between channel partners and improving visibility in the supply chains, thereby improving order, fulfillment, inventory management, forecasting capability and customer-service.

While the e-commerce optimists regard e-commerce as a revolutionary technology which challenges the pre-existing ways of doing business, of collaborating, and of competing, we may take the view that e-commerce is an evolutionary process as clearly

reflected in Figure I.I. This figure provides a highly stylized structural overview of an evolutionary e-commerce cycle model. Essentially, phase I is largely experimental and exploratory with firms adopting basic e-commerce tools (such as e-mail or website). Here, inter-firm electronic information flows (where it exists) are still mainly centered on more traditional private networking technologies like EDI via direct lines or VAN applications. Phase II marks a shift to integration with firms exploring the intra-organizational potential of e-commerce (to link different aspects of their businesses) from production to sales. In this phase, the objective is to streamline internal processes (to reduce costs, or improve business process productivity). Similarly, phase III sees transforming firms deploying e-commerce for inter-organizational networking and aligning its benefits to strategic planning. In this phase, e-commerce is used to enhance traditional linkages between value chain participants, to build new business partnerships and to restructure existing business models. In the light of this background, the goal of this paper is to assess the dynamics of e-commerce in Africa so that a new light may be shed on the ways in which e-commerce is transforming the organization (and operation) of value chains. In order to develop appropriate policies, decision-makers need to be aware of the implications of the transformative process in question. Although this paper is still in its preliminary stages and is far from exhaustive, it is hoped that it will provide an initial analytical foundation that helps to focus the ongoing policy debates regarding this matter in Africa. The rest of this paper is therefore divided into four sections. Section two examines the status of African (Global) e-commerce as at today. Section three explains the concept of emerging technologies. The Nigeria case study is theme of section four while section five concludes the paper by identifying social networks and policy options.

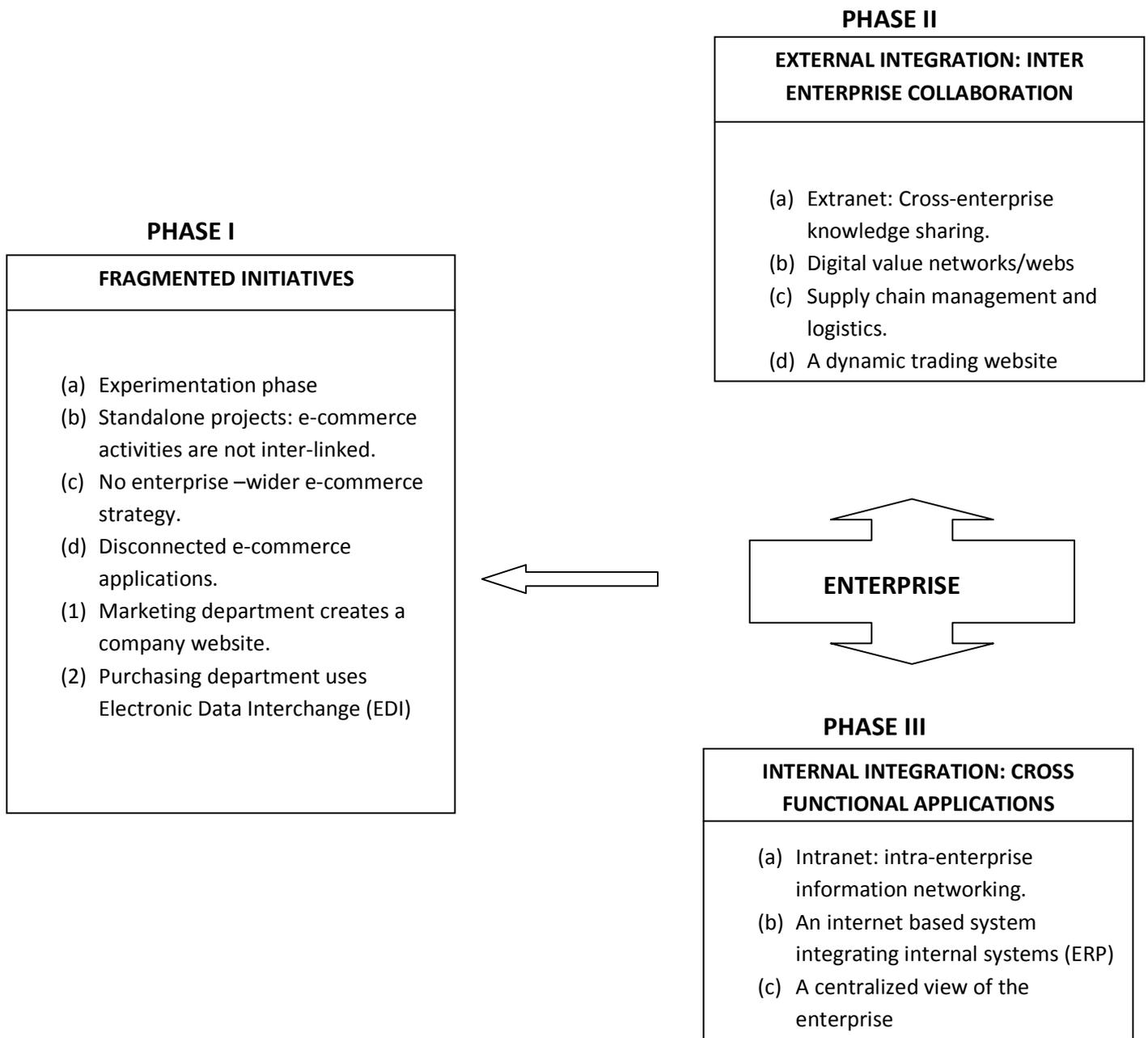


FIGURE 1.1 EVOLUTIONARY CYCLE OF E-COMMERCE

**2.0 AFRICAN (GLOBAL) E-COMMERCE STATUS**

Essentially, e-commerce or e-business is a system by which goods and services are traded using the web, mobile networks or other similar systems. For the more familiar plan of selling to customers, the web has many obvious advantages. For businesses, there are far fewer overheads in selling online and sellers of niche items suddenly have a worldwide base of customers who, through keyword searches, find them. Again, a customer's shopping history allows businesses to tailor the virtual shop front to each individual customer; and an online shop never shuts. In fact, it is a simple matter of entering a product's name into a web search and having access to hundreds of customer reviews before making your purchase. Unfortunately, in Africa, the development of the web has been slow. In a recent report by the World Economic Forum, entitled Networked Readiness Index (which gauges the potential a country has for exploiting information technology) Africa rated poorly. Here, out of the 133 economies, only one African country (TUNISIA) scrapes into the top 40; though other African countries occupy 10 of the bottom 20 places. However, with the broadband market saturated in other parts of the world, private investment (particularly for mobile companies like Vodacom) and new fiber cables linking 45 cities in Africa to the rest of the world, that situation is fairly improving. Indeed, the laying of single submarine cable (SEACOM) may have increased broadband capacity by 1000% and providers reported an increase in data traffic of hundreds of percent within days. Across the board, prices have fallen as usage has increased.

Clearly, information is vital to the efficient running of any economy; and for the reason, e-commerce is more than just about allowing businesses to sell to customers from their web pages. In fact, it has the potential to fundamentally empower African producers and consumers by arming them with knowledge. Equally, it will allow them to operate in the global market place while making quickly decisions the moment the market changes. However, in the last few years, Africa has made great strides toward joining the World Wide Web's fast lane. Specifically, high-speed submarine fiber cables have been laid, linking it to the rest of the world's broadband networks, transforming

capacity for many countries and collapsing costs of connection. Yet, Africa's e-commerce culture is still in its early stages and there exists the opportunity to learn from other region's mistakes and build a new electronic economy on firmer foundations. Thus, some African countries have already begun the first phase of the project and this will implement fast and secure electronic transactions, consumer rights and a liable system of signatures and authentication and ensure data protection and privacy. In this regard, the most successful African country (in compliance with the United Nations Commission on International Trade Law – UNCITRAL) is TUNISIA. In fact, since 2002, this North African country has deregulated the sector (created a national communication agency) and setup a system for electronic signatures and document exchange among other nationwide initiatives; such as the establishment of Techno parks aimed at making IT more accessible and developing a digital culture there. Again, viral marketing (which makes use of social networking sites) has proved remarkably powerful. Basically, it targets individuals with Social Network potential (SNP) and relies on them to spread the advertising. Increasingly therefore, businesses in Africa are learning to make the most of social networking's potential power by creating facebook groups and twitter accounts (all for very little cost). However, e-commerce has yet to penetrate Africa's economies to significant degree; but where it has been embraced, the economy has benefited yet, the barriers to adopting B2B E-commerce in Africa include limited understanding among firms of the opportunities, challenges and risks of e-commerce; uncertainty about returns from e-commerce investments; concerns that the price transparency that B2B e-commerce promotes could lead to a race to the "profitless" bottom; resistance to the idea of sharing inventory and capacity information for fear that it will cost them sales; security concerns, that is fear of sharing information online; incompatible IT infrastructures and the lack of technical standards, for sharing data. Again, firms spend little time developing a strategic view of their business; and they are often preoccupied with survival (that is a vision which is tightly focused on the short-term and on issues such as profit, tax, competition and regulations. Other factors include inertia (management's reluctance to change existing operating structures and

evolutionary path dependencies which focus on the reduction of labor and input costs as competitive advantage rather than pursuing a knowledge and innovation – intensive growth trajectory. Yet, other related barriers include management’s “Laager” mentality which have locked firms into an insular, inwardly oriented way of thinking; lack of adequate IT infrastructures, skills and capabilities as well as the relatively high initial investment costs involved in developing an integrated e-commerce infrastructure. Here, the cost problems are compounded in many cases in that most companies have no assessment methodologies to gauge the costs of e-commerce relative to its performance.

Given the trend over the past decade and a half, it is hardly surprising that the exchange, the Global Trade Board (GBOT) situated in one of Africa’s most stable economies (Mauritius) should be Asian in origin. In other word, Africa can now begin the process of serving the umbilical cord that ties its commodity prices and trade to foreign exchanges. Instead of being on the fringes of the global asset-trading universe, it is now directly connected to the world. In fact, it has been a long time coming but it is here at last and Africa now has its own international commodity and currency derivatives exchange. Without exaggeration, Africa is probably the richest region in the world in terms of commodities (both hard and soft) and it is becoming the centre of attraction for both the East and the West. In many ways, it is a Greenfield and therefore able to adapt to the most advanced technologies. Operationally, after Tokyo closes and before London opens, there is a gap in trading. Thus, Mauritius will not only fill this gap but become the gateway to Africa. Essentially, the African exchange would provide foreign exchange futures that will reduce the cost of transactions while the cost of financing for Africa would grow faster. Consequently, Africa would begin to develop a reliable continental capital market and the commodity price transparency would give African commodity producers (including farmers) far greater influence on the international prices of their products. Subsequently, it is expected that these techno-centric exchanges are wresting control and power from external players and placing it firmly in domestic hands. In other words, futures contracts are mitigating risks and releasing

capital that might otherwise be tied up and are helping fuel economic growth. Indeed, after the GBOT launch, trading proper began on the seven products (gold, silver, dollar, euro, sterling, Mauritian rupees and South African rand). Currently, GBOT had 12 accredited members and after a nine-hour trading session spanning markets across Australia, Asia, Africa and Europe, 418 contracts were traded for a total value of \$10.73m.

Indeed, it is appropriate that Africa's next significant step into the global economic mainstream should be borne on one of the most sophisticated technological platforms in the world. Clearly, the GBOT software can process billions of units of information at the speed of light. It provides its members (brokers and traders) with second-by-second price fluctuations of commodities and currencies on the exchange. This facility allows importers, exporters, banks, funds and private individuals to enter into futures contracts and thus manage price risks and insure against unpredictable currency and interest rate movements. For a continent as dependent on commodity exports and as vulnerable to foreign exchange volatility as Africa, GBOT is a prayer answered or solution provider. Just as the mobile phone liberated Africa from the tyranny of the fixed-line system and unleashed an era of spectacular growth; so the establishment of the techno-centric commodity and currency exchanges can free Africa from its financial and capital restraints, and perhaps usher in another era of accelerated growth (as currency experienced elsewhere in the world). Thus, it is anticipated that GBOT, overtime, could play the role of a single regional exchange, unifying the continent's scattered and generally small capital markets. To date, Africa producers remain largely at the mercy of foreign commodity buyers and have few mechanisms with which to hedge their investments. And Africa is now probably the only region where there are no instruments for producers to mitigate price risks. Consequently, they suffer when prices fall and do not gain when prices rise. Unfortunately, the middle man tends to take the profits but the producer bears the losses. Fortunately, GBOT is only the very beginning of what could be revolutionary trend in Africa. Here, a programme of rolling out warehousing coupled with the futures contracts that a platform such as GBOT offers, would free up

billions of dollars, since warehouse receipts could be traded for cash or used as collateral for loans, and the price risks could be passed on and mitigated on the trading floor. Indeed, a region-wide commodity exchange, strengthened by adequate warehousing and transport infrastructure, could put an end to the continent's periodic food shortages (where surplus in one area is lost while famine rages in another).

In practice, future contracts are usually registered and in time. The exchange guarantees that deals made will be honoured. If a member defaults, the exchange is sufficiently liquid (by accumulating deposits from its members) to cover the payments. Thus, the contracts became tradable instruments in their own right (like shares in the stock market) and specialized dealers took on the risk of price fluctuations and bought and sold the contracts in the hope of making profits when the contracts were liquidated. Similarly, commodity markets work in the same direction. Here, the buyers and sellers iron out the price risks and can make further forward contracts and the brokers by "buying low and selling high or vice versa; hoping their overall profits will outweigh their losses. Operationally, Mauritius-based GBOT provides a similar trading platform to other more conventional exchanges except that all trading is done electronically and the products are derivatives (that is pledges to buy or sell at a future date rather than the physical commodities themselves). Here, you can buy a futures contract and hedge your risks. So you contact a broker and he buys a futures contract for you at 6-8% of today's prices (for six months delivery). If the price goes up, you only pay today's price so you have gained. In the other hand, if the price goes down, you still have the funds which you have originally committed to buy the gold; and your capital is not tied up. Similarly, the broker can trade your contract on a daily basis and if the price goes up, he will make a profit which will be passed on to you minus his small commission. So by hedging intelligently, the price variations can even themselves out and you are protected against rising prices. Again, one may quote future prices based on the current exchange rate but what happens if the euro or the dollar rises or falls? Consequently, you could end up losing a considerable amount since you have fixed the selling price. Thus, by entering into futures contracts, you can hedge against currency risks. This therefore allows you to

plan efficiently and protect you against sudden swings of exchange rates. In other words, it is a form of insurance against future price fluctuations.

Practically, trading on the board is done through brokers who are members. And to become a member, one has to fulfill certain conditions and criteria. Here, members have to place a fix margin for each contract which then rolls on after clearing and settlement. Again, trading can be done through dedicated internet connections irrespective of their geographical locations. Indeed, is believed that over the next 50 years, there will be exchanges as deep and extensive in the East as London, Tokyo and New York as at today. It is therefore believed that this will be African's century and exchanges like GBOT in Mauritius and the planned Bourse Africa in Botswana will unleash the continents capital potential and also give it control over its vast resource riches.

### **3.0 EMERGING TECHNOLOGIES**

Indeed, the telecoms sector has been the undoubted star of African business over the past decade with billions of dollars invested every year around the continent. Thus, mobile telecoms have proved to be such a huge success on the African continent precisely because of the shortcomings of the fixed-line sector. However, telecoms operators across Africa are seeking to expand their range of services in order to both attract new customers and boost their average revenue per user (ARPU) from established customers. While mobile telecoms operators have prospered on the back of the African telecoms revolution, other information and communication technology (ICT) firms have also thrived on opportunities provided by markets across the continent. Although many operators are still rolling out 3G services across Africa, they are already planning for the 4G revolution. This is what is widely regarded as the fourth generation of cellular wireless standards and incorporates mobile ultra-broadband access and multi-carrier transmission. While 3G requires average download speeds of at least 200kbit/seconds, 4G will provide much faster speeds. It is therefore predicted that 4G technologies will provide subscribers with download times up to 10 times faster than on current services, making internet access a more viable proposition for users, particularly with regard to live video streaming. Here, mobile operators hope to generate more income from the provision of gaming services and streamed multimedia entertainment. Again, the emergence of iPhone has provided a visual voice mail, internet access, email, a portable media player and camera phone in a single handset. This has been developed with a virtual keyboard and it will be interesting to see how it fares in competition with models that now offer physical keyboards or even incorporate both options. In fact, the most recent iPhone model is the iPhone 4 which can handle faster download speeds and has a stainless steel edge that serves as its antennae and includes new speaker and microphone units. Again, most of Africa has plentiful solar resources but unreliable and insufficient power supplies and could therefore benefit from self-charging handset. VF247 is a typical solar powered phone that does not even require direct sunlight to recharge within a couple of hours for

the average user. Although many handsets would not respond well in high temperatures, the VF247 is supplied with a high temperature battery. Well stop imagining it and start experiencing it. Essentially, the GLO I undersea cable is now up and running and everything is about to change. This is because of the fact that when you get up-to-the-second information from anywhere in the world at affordable prices, it changes everything. Suddenly e-commerce and e-learning are available at the click of a button. Thus, video-conferencing and tele-medicine are as easy as making a phone call. Therefore, it means established businesses will flourish employment opportunities will open up and new businesses will start to emerge everywhere indeed, there may be nothing more powerful on earth the West African entrepreneurial energy combined with the latest technology in the world. Perhaps, GLO I is the only direct undersea cable from London to Lagos and thirteen other African countries, with a dedicated link to America. Here, all connecting seamlessly into GLO's 10,000 kilometers of fiber-optic backbone through Nigeria (thereby make GLO I as the only completely end-to-end communications network). In fact, this connectivity is seamless and the possibilities are endless as well as catalyst for thousands of other businesses elsewhere.

#### **4.0 NIGERIAN CASE**

Indeed, the rapid growth in the internet penetration and massive investment in broadband unlock Nigeria's competitiveness in the global arena ushering in a new era of limitless opportunities in virtually all sectors of the Nigerian society. At present, majority of the Nigeria banks are offering Quick teller services. This quick teller provides airtime recharge and utility bills payment across all interswitch channels including automated teller machines, ATMs, web portal mobile, point of sales (POS) among others. With this service, Nigerians can also book their airline tickets and make donations to charity organizations without hassles. Furthermore, the service allows Nigerians to pay their DSTV and HiTV subscriptions on the ATM, web or a POS terminal and receive instant reconnection irrespective of whether they have been disconnected previously or not. It also enables direct top-ups or recharge of mobile phones for subscribers on MTN, ZAIN, Glo Etisalat, Starcomms, and Visafone networks. Indeed, with the introduction of Quick teller value-added service platform, corporate organizations now provide round-the-clock payment access to their customers across all channels and still get consolidated reports detailing information on all payment channel used. Given the many advantages of this service, it is equally expected that money transfer services such as bank-to-bank, bank-to-ATM, mobile-to-ATM and internet bank transfers would soon be activated on the Quick teller platform.

Again, the broadband revolution has made video conferencing, across the country and beyond: tele-medicine, distance learning and other customized services such as data centers more easily accessible by Nigerians. Specifically, distance learning has been made easier by enabling the participation of a class of students and lecturers from different parts of the world in real-time. Due to lack of time, people find it difficult to further their education (while still keeping a job), But with internet connection, employees can learn online at their own pace. Again the revolution has boosted governance in such areas such as online insurance, while license issuance and certificates for other government approvals and authorization have improved. In fact, reliable internet connection has broken the barrier between the people and

government as people now fill out government forms online. Similarly, Nigerians now communicate freely with their representatives on social networking sites (such as Facebook) as well as using the social media to express their opinions on national issues. Recently, Nigerian politicians appear to have taken the battle for the people's vote to the internet by using social media network platforms for campaigns. It is therefore, not a surprise that the Nigerian President chose the same social networking platform as the first place to announce his intentions to contest for the 2011 presidential elections. Indeed, while Facebook may have gained ground among Nigerians, there is other social network platforms like Twitter, YouTube, MySpace, LinkedIn, and even indigenous ones like naijapals. Yet, with the broadband revolution, Nigerians are now in a better position to use emerging technologies and resources to build businesses and therefore, keep them more engaged, working productively. Already, many Nigerians are earning their livelihoods as web designers and software developers; while others are self-employed as online trainers and engineers. Again, the broadband revolution would encourage new, local, home-based business start-ups that operate over the internet. Here, local technical jobs would be created and young adults are not forced to leave the community to pursue career opportunities. Similarly, the availability of high speed broadband would attract knowledge workers and businesses that need large bandwidth like call centers and engineering companies thus laying the foundation for increased productivity, stimulating economic development and ultimately reducing the cost of services as a result of the competition.

However, the high internet penetration was made possible by the introduction of Third Generation (3G) services; the use of advanced wireless technologies by Code Division Multiple Access (CDMA) operators and Internet Service Providers (ISP) to connect Nigerians to the internet as well as the commercial roll out of submarine fiber optic cables by private operators. Here, the commencement of 3G services, which essentially allow users to transmit and receive voice, data and picture signals simultaneously on portable mobile phones while in motion, enabled many Nigerians

to access the internet through their mobile devices such as mobile phones and 3G modems. In fact, the 3G licensees (ZAIN, MTN, and Globacom) have since been offering customers choices for efficient and cost effective broadband internet services (known as high speed internet). Generally, the broadband internet allows a user to get faster download of internet materials and even watch videos. On the other hand, CDMA operators such as Multi-Links, Telkom, Zoom Mobile and Stardoms are also offering broadband internet services using advanced technologies such as WIMAX (World Wide Interoperability for Microwave access) which is capable of penetrating remote and inaccessible areas (enabling high speed connectivity). Similarly, EVDO (Evolution Data Optimized) is a wireless mobile broadband standard or system with a channel structure for high speed data communication. However, the commercial deployment of submarine cables (a more robust and reliable infrastructure that has a much faster transmission capacity for voice, data, video and media services) completed the revolution by opening lots of opportunities for individuals and businesses that require large bandwidth to run various operations. And the benefits of the broadband revolution arising from these developments are already being felt in virtually all the sectors such as banking, e-commerce, e-learning and other forms of online transactions. Already, Nigeria's Foreign Direct Investment (FDI) has swollen by a total of \$940 Million (N141.2 billion) following the building of main one submarine cable, at the cost of \$240 million and GLO I submarine infrastructure (\$700M). Yet, the FDI volume would be more by the completion of MTN project. While main one, GLO I, and Nitel's South Atlantic (SAT – 3) are already up and running, MTN Nigeria (West African Cable System) would soon be ready for commercial launch. Indeed, the submarine cable has the capacity to carry heavy voice and data traffic with minimal loss in quality and no interference which are common features associated with other forms of transmission infrastructure (such as satellite, Very Small Aperture Terminal or VSAT, copper, microwave and wireless transmission). Essentially, this high capacity technology is capable of satisfying the yearnings of Nigerians for higher bandwidth and exceptional internet speed at

drastically reduced cost. Specifically, main one cable company's submarine cable runs from Portugal to Lagos (covering 7,200 KMs) provides from day one 1.92 terabytes per second (Tbps). Furthermore, the company would upgrade the speed with additional 40 gigabyte per second (Gbps) in order to get significant improvement beyond the 1.92 terabytes through the life cycle of the cable. On the other hand, GLO I 9,800 KM cable connecting 16 West African Countries with Europe and United States has current capacity of 640 Gbs and ultimate capacity of 2.5Tps. In fact, the facility's current and ultimate capacity is enough to cater for the required broadband capacity of Nigeria (for two decades ahead). Similarly, NITEL SAT – 3 links Portugal and Spain to South Africa with connections to West African countries along its route. NITEL plans to upgrade its capacity from the earlier 2.56 Gbps to 10 Gbps; and explains that there is hardly any operator today that is not using SAT – 3 (which is known to be very effective) and is the main gateway to Nigeria and the outside world.

However, MTN's WACS (yet to be completed) links Europe, West Africa and South, covering a distance of over 14,000 km from United Kingdom, Portugal, Senegal, Ivory Coast, Ghana, Nigeria, Cameroon, Democratic Republic of Congo, Angola, Namibia and South Africa. This facility would be transmitting at over 3.8 Tbps when completed and commissioned. WACS is basically a consortium of 11 operators from nine countries and their facility is expected to lower costs and improve in-country services. Consequently, the broadband revolution which rides on the back of the investments in broadband infrastructure has already raised hopes of a crash in cost of internet services. Emphatically, the commercial deployment of submarine cables would reduce the cost per megabyte by as much as five times and that the cost would further drastically reduce when WACS becomes operational. In other words, it is anticipated that the submarine cable network would do away with VSAT, copper cable and other forms of wireless transmission links that have narrow bandwidth and usher in an era of wider bandwidth and capacity. Notably, the smaller the bandwidth, the slower the rate of transmission of data; and these would translate to

cheaper services for end users especially when the fiber optic cables have intra-city and inter-city links. Yet, it is only retail operators such as Starcomms, MTN, ZAIN, GLO and Multilink could best assess the cost implications of the fiber optic infrastructure on the consumers. However, there is every assurance that the cost will certainly reduce as the company would provide capacity to the operators at cheaper rates.

Perhaps, more importantly, is the fact that the broadband revolution ushers in an era of improved quality of services. With the crash in the cost of internet services comes an explosion in broadband penetration in country where the gap between broadband and voice telephony penetration has been a source of worry to stakeholders. In fact, the current figure of 43.9 million internet users in Nigeria is still considered low compared to the total number of telephone users (about 80 million). Yet, by the time the operators begin to deploy last mile services from these fiber cables, Nigeria would witness more broadband growth that will boost national productivity. In fact, within a space of ten years of deregulation, Nigeria was adjudged the fastest growing telecoms market in Africa, as well as the Africa's largest internet market. The International Telecommunications Union has noted that almost 40 percent of all internet traffic from Africa comes from Nigeria; and that apart from Nigeria being Africa's largest mobile market, it has also become the continent's largest internet market. However, more is expected from the Nigeria's Communication Commission to further improve internet access in the country in the years ahead in view of the recent call by International Telecommunication Union on global leaders to ensure that more than half of all the world's people have access to broadband networks by 2015 and make access to high-speed networks a basic civil right. In other words, Broadband could be seen as the next tipping point as well as the next truly transformational technology. Clearly, it can generate jobs, drive growth and productivity as well as underpinning long-term economic competitiveness. Conclusively, it is the most powerful tool we have at our disposal in our race to meet the Millennium Development Goals (MDGs). Therefore, in order to

ensure that Nigeria's MDG commitments and Vision 20 - 2020 reach their target audience in all the 774 Local Government Areas, it would require a substantial completion of fixed broadband infrastructure that gives optimum connectivity within the country and to the global internet. That is, every Nigerian is expected to enjoy broadband for the purpose of creating a livelihood and business opportunities offered by the service.

## **5.0 CONCLUSION: SOCIAL NETWORK AND POLICY OPTIONS**

Essentially, the internet is the meeting square of the global village as well as the place where millions globally through virtual interfaces interact, share ideas, find knowledge and pursue interest. Here, innovations are being powered through the internet as the greatest collaboration of people is cross-stitched. social networking sites therefore provides the biggest influence in our everyday lives and humans want better creative collaboration to effectively network minds for greater possibilities. Thus, Face book, MySpace, Twitter, LinkedIn, Hi5, Badoo, Bebo, Ning, etc are some of the media in the world that are generating billions of contents which are shared by millions of visitors. Perhaps, Facebook is the most popular site in the world with about 350 million users. It uses open source software that searches a database of connected friends to generate streams of up to date information. Thus, this software has allowed facebook to add millions of users to its database and ensure strict compliance to privacy. Creatively, facebook allows private software developers to develop over 500,000 applications that enable people to send a hug, blow a kiss and even play games. This network also creates virtual groups known as Causes that promote charitable work. Here, users can chat, share pictures and provide ability to update status. Again, stars develop fan pages and groups for mutual interest can also be created to achieve set objectives. Twitter represents the fastest growing social networking and micro blogging site. It is basically an online community that allows people to post a 140 character message known as tweets. In fact, twitter (of about 58 million members) is now the latest interface to provide up-to-date news on events and it's widely used by media companies such as CNN, BBC, etc. unlike Facebook which requires a friend request to be accepted to share information, Twitter allows users to sign up and follow latest feeds about people and corporate establishments. Although twitter does not allow sharing of real photos or exchange of videos, it uses the power of text to convey news and updates. Here, you follow people to know their latest news feeds and later notified about someone to follow your updates. As the biggest threat to Google, twitter up-to-date news can be searched through people and media companies posts. However, profiles of facebook

and Twitter can be connected (which allows updates on twitter to be shown on facebook profile pages). In contrast, LINKDIN represent a growing site of professional people committed to their career and industry opportunities. This site only allows connection for people you know and is currently used by companies to head hunt or recruit top talents. Essentially, it is used to find jobs, people and business opportunities and a user can request for recommendation for his job. Again, the purpose of this service is to allow registered users to maintain a list called CONNECTIONS. Here, users can invite anyone to become a connection while linked does not easily allow random strangers to connect to the user as well as preventing spamming. Yet, companies and individuals can search their database for prospective jobs and employee at a paid cost. However, privacy is a serious issue as most social networking hides their privacy settings and the online community is not ready to read the legal documents. Yet, one should be very careful about what information placed on social networking sites as you never know who may use it.

Consequently, the implementation and adoption of e-commerce processes constitute a formidable challenge for technology policy. That is, technological competitiveness of firms inevitably depends on national systems of innovation which in turn depends on government policy. In other words, government can assist companies by putting in place a set of complementary institutions which encourage IT and knowledge diffusion (especially through the support of education, training and information infrastructure. Thus, government has a role to play in supporting new forms of market facilitation, designing and implementing effective national ICT strategies; promoting stakeholder dialogues and constructing ICT infrastructures appropriate to local conditions and building capabilities and skills for producing and using ICTs. Particularly, the state is expected to play a leading role in the modernization and extension of the national information infrastructure. The state should also take a leading role in providing advice on matters like technology choice; identify and disseminate information on best practice; provide a critical assessment of the available e-commerce technologies and approaches; develop meaningful

industry benchmarks, set in motion programmes aimed at raising appreciation of the strategic impact of e-commerce; and invest in training and skills development. Again, the magnitude of the e-commerce challenge is such that there is a need for various public-private and multi-partnerships, alliances and consortia. However, e-commerce is not an end in itself, nor does it offer a quick technological fix. Yet, e-commerce provides African firms with new opportunities and challenges. African government should therefore be careful not to overestimate the ease of implementing B2B e-commerce by substantially underestimating the complexity and time of the required organizational changes.

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