Internet Penetration and Diffusion in Orlu Zone of Imo State, Nigeria: Prospects and Bottlenecks

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Abstract: The internet is arguably one of the most significant technologiccal advancement of the 20th century. Despite this breakthrough internet has remained an elusive tool to some rural dwellers creating a divide not only in forms of access but in availability. This study x-rays the level of Internet penetration in Orlu area of Imo state, its level of access and bottlenecks. The study is based on primary data. The questionnaire was designed in 3 sections. The section A of the questionnaire tried to find out social and economic status of individuals that do internet browsing. The section B also tried to find out the problems associated with internet browsing. While section C tried to find out how often people use internet services and whether they do it or other people do it for them. We produced and distributed 300 copies of questionnaire out of which 250 were returned. It was observed that some people do Internet browsing despite its challenges while others due to incessant power outages, low internet bandwidth, scarcity of Cyber cafe and high cost of browsing participate minimally. It is recommended that government should help the rural areas in having access, utilisation of internet services. A way of reducing cost of internet facility for rural dwellers to enable them meet up with the demand of information, thereby bridging the digial divide is also advocated.

Key words: Internet, penetration, prospects, bottlenecks, users of internet, Nigeria

INTRODUCTION

There is considerable evidence to support the notion that the penetration and diffusion of Information and Communication Technologies (ICTs) in concert with appropriate economic, intellectual property protection and infrastructure improvement policies contribute to the acceleration of economic growth (Nath and Murthy, 2003). Internet has been adjudged as the major driving force of this information and communication technologies growth because of its benefits to learning, teaching and research. It can equally be attributed to its wide range of applications both at home, office and business. International Telecommunication Union (ITU) report of December, 2009 states that Nigeria's internet penetration is about 24 million with a population of about 150 million people (NPC, 2006) estimate and Gross National Income per capita of $1, 160 (World Bank, 2008).

Nigeria has been reported to have had its first Internet Protocol (IP) connection in 1996 and since then there has been considerable internet connection and usage growth in relation to population growth in the nation. The internet usage and population growth in Nigeria starting from year 2000 through 2009 is as shown in Table 1.

Table 1: Internet usage and population growth

Years	Users	Population	Percentage
2000	200,000	142,895,600	0.1
2006	5,000,000	159,404,137	3.1
2009	23,982,200	149,229,090	16.1

This assures that in the nearer future the number of users will increase at a higher rate than the rate of population growth and thereby increasing the percentage level of access by the citizens. This study therefore is desirous of knowing the major driving force in the increase of users of the internet in Nigeria that is to say what are the major benefits or prospects of the use of Internet to its users in Nigeria. If there are possible prospects to its users, there could equally be possible bottlenecks that will prevent certain level of citizens from having access to the Internet in Nigeria.

The purpose of this study is therefore to ascertain through conscious efforts driven by academic quest and guided by research principles the following issues:

- To ascertain how far reaching the internet has turned out to be in Orlu zone
- To find out problems/hitches associated with browsing
- To suggest strategies that will enable the people to start using Internet effectively

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Table 2: Available bundle internet packages

Packages	MTN	GLO	ZAIN	ETISALAT
24 h for 30 days	3 GB data N10,000	5 GB data N10,000	3 GB data N10,000	3 GB data N10,000
	-	1.5 GB data N5,000	1 GB data N5,000	500 MB data N3,000
	-	-	100 MB data N1,000	100 MB data N1,000
All-night for 3o days	3 GB data N2,500	-	-	-
24 h only	50 MB data N500	150 MB data N500	50 MB data N500	-
Pay as you use	15 kobo per kb	15 kobo per kb	15 kobo per kb	15 kobo per kb

(www.possicon.com, 2010)

Internet penetration in Nigeria: Ever since the release of the first graphical web browser in 1993 (Wunnava and Leiter, 2008), the internet has experienced exponential growth. Today, the internet has become an incredibly valuable informational resource, housing over 13 billion websites. Since 2000, the number of users has nearly tripled with current estimates of worldwide internet users hitting 2.5 billion record. It is on record that the first Internet Protocol (IP) connection in Nigeria was first recorded in 1996 and since then the number of Internet users has reached 43 million people in 2009 contributing about 40% of entire Internet traffic in Africa making Nigeria the current largest Internet market in Africa and sixth in the world (ibid, p1).

Table 2 will convince one that the faster growth of internet penetration is a result of the introduction of mobile telecom in Nigeria for which growth has been very massive from 266, 461 in 2001 lines when it was first introduced to 74, 511, 614 in January 2010 and teledensity currently stands at 54% creating room for more growth.

Functions necessary for Internet penetration: Internet penetration as an innovation is a macro process concerned with the spread of the innovation from its source to the public and the global diffusion of the Internet has been adduced to be a function of economic, political, cultural and geographical factors (Dholakia and Dholakia, 2003). In addition, they added that the business models vis-a-vis the cost to access the internet as well as the social factor also influence the diffusion of the Internet. Without a closer look of these functions, it will definitely be inadequate to study the possible prospects and bottlenecks hampering the diffusion of this innovation in Nigeria. Economic because internet is an innovation and cannot thrive without financial investment as the income level of users determines their level of adoption of technology. Socially, Rogers (1983) is of the view that the degree of compatibility of the Internet and its various uses with the values and norms of a social system influences its diffusion patterns in that social system. There is a great need of political power for Internet to thrive because internet cannot penetrate in a nation without enabling policy structure that is favourable to its usage. Culturally, internet's asynchronous nature

and impersonal style of communications tend to make it incompatible with the cultures of some societies. For instance in Japan personal correspondence is normally handwritten to show respect and courtesy. Geographically, the nation's topography is a factor for consideration in terms of Internet penetration is in some areas as Internet infrastructures are subject to attack by natural disasters such as thunder storm and so on.

State of internet penetration in Nigeria: The Internet has become an important tool for business growth, social activities and research in Nigeria (Achimugu *et al.*, 2009). While there are reliable evidence of Internet penetration in several areas like education, business, homes, offices and social activities in Nigeria. Internet/cyber cafes have become the major outlet for internet facilities access in major cities in Nigeria especially where there are evidence of educational institutions and in big commercial/business centres/activities. While majority of Internet access is provided by these cyber cafes, universities and other research centres equally provide this access both for their staff as internet service and public in the form of extranet for profit making.

Lanre Ajayi of Nigeria internet group posits that there is appreciable level of internet penetration in Nigeria. Using Mosaic Group Internet Diffusion Framework, he presented the geographical dispersion, sectoral absorption, connectivity infrastructure, organisational infrastructure, sophistication of use and pervasiveness (Ibid, p2) of Internet penetration in Nigeria. In his presentation, he showed that Nigeria's Internet Points of Presence are now available in major cities like Lagos, Abuja, Kaduna, Port Harcourt, Bauchi, Kano and Ibadan with services provided mainly through Dial Up while NIPOST is providing email services in 13 states as Cyber cafe's keep springing up on daily basis in major cities. He collaborates the evidence shown above that there are appreciable degrees of utilisation on Internet in various sectors of the economy such as education, business, health care and public sectors with many of them having their web sites where such projects like NUNet, POLYnet, TEACHnet and Healthnet.

He concluded by saying that the policy environment necessary for internet penetration in Nigeria is getting better as NITEL the only backbone provider is becoming

more cooperative as its has started issuing E1 line for Internet Service Providers with increasing Internet use awareness.

Prospects of Internet penetration in Nigeria: The impact of the Internet is no longer confined to the communications and information industry. It has become a pervasive mass technology with a much wider scope of influence, affecting virtually all sectors of society (Nzeako, 1999) these include:

National development: Internet is a catalyst for national development, it provides a medium for exchange of technical and scientific ideas (Ahiakwo, 2002). Internet facilities provide the necessary platform for the sharing of information on the development experiences in one country to be used in other countries. Basically, both knowledge and exchange of ideas drive the world technology and economy.

Banking: The expansion being experienced in the Banking industry in Nigeria is necessitated by the ease by which money transfer between banks are made. Bankers now easily transfer money for their customers from one city to another and even from one country to another in just a click of the mouse thereby reducing the risk experienced by their customers in carrying physical cash while travelling or doing buying and selling. Through features like extranet, two parties can conclude their business transaction without necessarily seeing or knowing themselves physically as banks take care of their money transactions.

Health: With the advent of electronic medicine, services of a medical expert can be contracted through the internet. Also with the availability of wealth of information on the Internet medical practitioners are kept in constant touch with the latest development in medicine. Usually, before discoveries in any discipline are published for public consumption, they are flashed on the Internet for comments from experts in that field. This makes those who are connected to the Internet to be more current in events than their counterparts who are not connected.

Job creation: The low cost of communications and accessibility of the global networks means that it is as easy for an individual to reach one person as it is to reach 10 million. This offers great possibilities for creating new jobs in the emerging information-based economy. It also offers the possibility to manage the existing job market more efficiently. Recently, job seekers sign up for job vacancies alert on the internet and search job advert daily on the internet.

Trade and commerce: The ability to acquire store and transmit information has become the most powerful new currency of economic exchange throughout the world. Marketing, public relations, shopping, market research, sales and support could all now be conducted on the internet. E-commerce provides opportunities for people to trade and do business with any part of the world through the internet and local electronic networks.

Education and research: Research is greatly enhanced when there is enough relevant information. With internet, researchers and scientists are able to download up-to-date research results from around the world. Such information is obtained very quickly and at minimal cost. Schoolteachers are able to co-ordinate projects with classrooms all over the globe. Students are able to do research from their home computers. The latest encyclopedias are on-line. Internet offers the best library services known as virtual libraries.

Finding people: Directory services are available to search the phone books of many countries by which method people may be found. There is an online service that looks people up by names and addresses. These services are of immense importance in emergencies.

Love: Singles advertisements and match making sites are available for users. People really find romance on the internet.

Organizing events: Conference and trade-show organizers use the internet to disseminate information, call for papers and handle registration on the web. Paper and shipping costs are drastically reduced in this way.

Bottlenecks of internet penetration in Nigeria: Internet doesn't come cheap in Nigeria. One of the reasons for this is the costs involved in using satellitesdue toa lack of cable infrastructure. The existing SAT-3/WASC/SAFE cable that links south and west African countries to Europe and Asia no longer has sufficient capacity. Most internet traffic in Nigeria therefore, needs to be routed by satellite via North America and Europe.

High-speed broadband requires fibre optic cables. The situation should however, improve as there are a number of projects underway to connect African

countries with the rest of the world through undersea cables. The NEPAD ICT Broadband Infrastructure network, backed by the African Union will include an undersea cable and a terrestrial network to service landlocked African countries. The World Bank also wants to establish a Regional Communications Infrastructure Network (RCIP). It is estimated that by bringing in optical fibre cables, the cost of internet in Nigeria can be brought down by two thirds.

The emergence of fibre optic has proven that internet facilities can be made available at a lower price than satellite, so prices can still be lowered to meet up with the competitive demand but this is only if there can be enhanced local content to take advantage of the fibre networks within the country.

The general high cost of doing business in Nigeria can also be blamed for exuberant internet fees. Nigeria has a massive shortage of electricity supply and service providers rely heavily on diesel-powered generators. This adds an extra layer of costs for which consumers have to carry the burden.

There is an overall dissatisfaction amongst Nigerians with the standard of internet available. One of the major gripes is with the speed of services. Most internet access here is in the form of dial-up. The packaged based services running on CDMA1x, EV-Do or UMTS/HSPA are often classified as broadband but are far from proper broadband.

MATERIALS AND METHODS

This study is based on primary data. The questionnaire was designed in 3 sections. The section A of the questionnaire tried to find out social and economic status of individuals that do internet browsing. The section B also tried to find out the problems associated with internet browsing. While section C tried to find out how often people use internet services and whether they do it or other people do it for them. We produced and distributed 300 copies of questionnaire out of which 250 were returned.

The study area was divided into 3 zones: namely the Ideato zone, Orlu zone (main), Isu-Njaba zone. Out of 100 copies sent to Ideato zone, 80 were returned, in Orlu zone (main), all the 100 copies of the questionnaire were returned. While in Isu-Njaba zone, 70 copies were returned of 100 copies sent. In each zone, a community is picked randomly for sampling. In Ideato zone, Obodo-Ukwu was chosen in Orlu zone, Ogberuru community while in Isu-Njaba area, Nkume was chosen. Descriptive statistics analysis of the data were used in this study.

RESULTS AND DISCUSSION

A qualitative assessment of number of people that use internet services was carried out in this section. Table 3 shows that in Ideato zone, forty (40) people claimed to be using internet services themselves. Those that do not use internet services are 21 in number while those being aided by other people to browse are 19 in number.

In Orlu zone (main), 52 people said the use internet themselves, 28 people do not while 20 people said other peole do help them to browse. Isu-Njaba zone, 43 people do the browsing themselves while 18 people do not and 9 people claimed that other people help them do the internet browsing. Quantitatively speaking, 54% of the people from the entire study area use internet themselves, 26.8% of the people said they do not use internet while 19.2% claimed that other people help them do the browsing.

Problems associated with browsing: Everybody replied yes when asked whether they have problems in browsing internet due to service providers.

Table 4 tried to find out how the people do their Internet browsing, 23.6% of the questionnaire agreed that they browse almost on a daily basis, 34.4% said they browse weekly, 22.8% browse monthly while 19.2% said that they do internet services when it is absolutely necessary. In trying to find out why the people do not go to the internet services providers for internet service as they should 100 people claimed that it is because of slow pace of internet access, 72% claimed it is as a result of power failures while 30 people said they do not have money for it and 48 people said it is a distance problem.

Observation has shown that internet service is speedily penetrating the rural areas in Orlu zone (Imo state) in general as can be seen in 54% that use internet themselves while 19.2% people of the population ask people to assist them use internet. It can easily

Table 3: Use of internet

Zone	No. of people that use internet themselves	Those that do not use	Those people that people help use internet	Total
Ideato	40	21.0	19.0	80
2	52	28.0	20.0	100
3	43	18.0	9.0	70
Total	135	67.0	48.0	250
Percentage	54	26.8	19.2	100

Table 4: How often do you browse?

Zones	Daily	Weekly	Monthly	When necessary	Total
1	20.0	25.0	15.0	20.0	80
2	22.0	30.0	30.0	18.0	100
3	17.0	31.0	12.0	10.0	70
Total	59.0	86.0	57.0	48.0	250
Percentage	23.6	34.4	22.8	19.2	100

Table 5: Why people do not go to cyber cafe as often as they should

Reasons	People
Slow pace of internet service	100
Power problem	72
Lack of money	30
Distance of the place	48
Total	250

be deduced that why internet is not penetrating the way it ought to is credited mainly from problems associated with browsing which is due to either power problem, slow pace of browsing, lack of money and often the distance of the cyber cafe for those that do not have their own computer. This goes to show that these hindrances are contributing bottlenecks to the free flow of internet uses in the study area. Also when we observed that 34.4% which is the highest do internet services weekly and 23.6% daily, it goes to show that most of the work the people especially computer literate people do are in soft copy. This shows that softcopy works are replacing hard copy ones. Therefore, internet is gradually penetrating this area inspite of the hindrances earlier observed (Table 5).

People have observed that e-culture is faster, less time consuming. Inspite of these hindrances like electricity problem, slow pace of internet service and so on. People still embrace e-culture for most of their daily work.

CONCLUSION

This study has examined the relevance of internet penetration and diffusion in rural areas of Orlu zone of Imo State, Nigeria. Emphasis is placed on prospects and bottlenecks that persistently deprived the free flow of internet usage in the rural areas. Both social and economic status of individuals that do internet browsing were pit into consideration during the course of the study. The problems associated with internet browsing and the availability of internet services were considered. Other factors considered was the number of rural people that use internet themselves, those that do not and those that use other people to help them use the internet. How often rural dwellers browse the internet was not left out. The findings revealed that power problem rank first in the cadre of bottlenecks encountered while browsing the internet, closely followed by distance of cyber cafe from dwelling places.

RECOMMENDATIONS

It is recommended that government finds a way of subsidizing the cost of Internet services especially to the rural dwellers as a way of encouraging their participation in the information superhighway so as to reduce the rate of the digital divide experienced in the rural areas. The need for a stable power supply cannot be over-empahised as it ranked highest in the bottlenecks experienced in the use of internet by rural dwellers. If internet services cost is highly subsidized, rural poor can afford to have one in their homes, thereby discouraging the rate at which they visit the cyber cafes, encourage learning the technique of broswing and thereby increasing participations which likely will lead to increase in income and social status of the rural dwellers. Information is power, most current information these days flow through the internet and terefore, rural dwellers needs to be part of this information production and dissemination so as to experience the knowledge economy of modern world.

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