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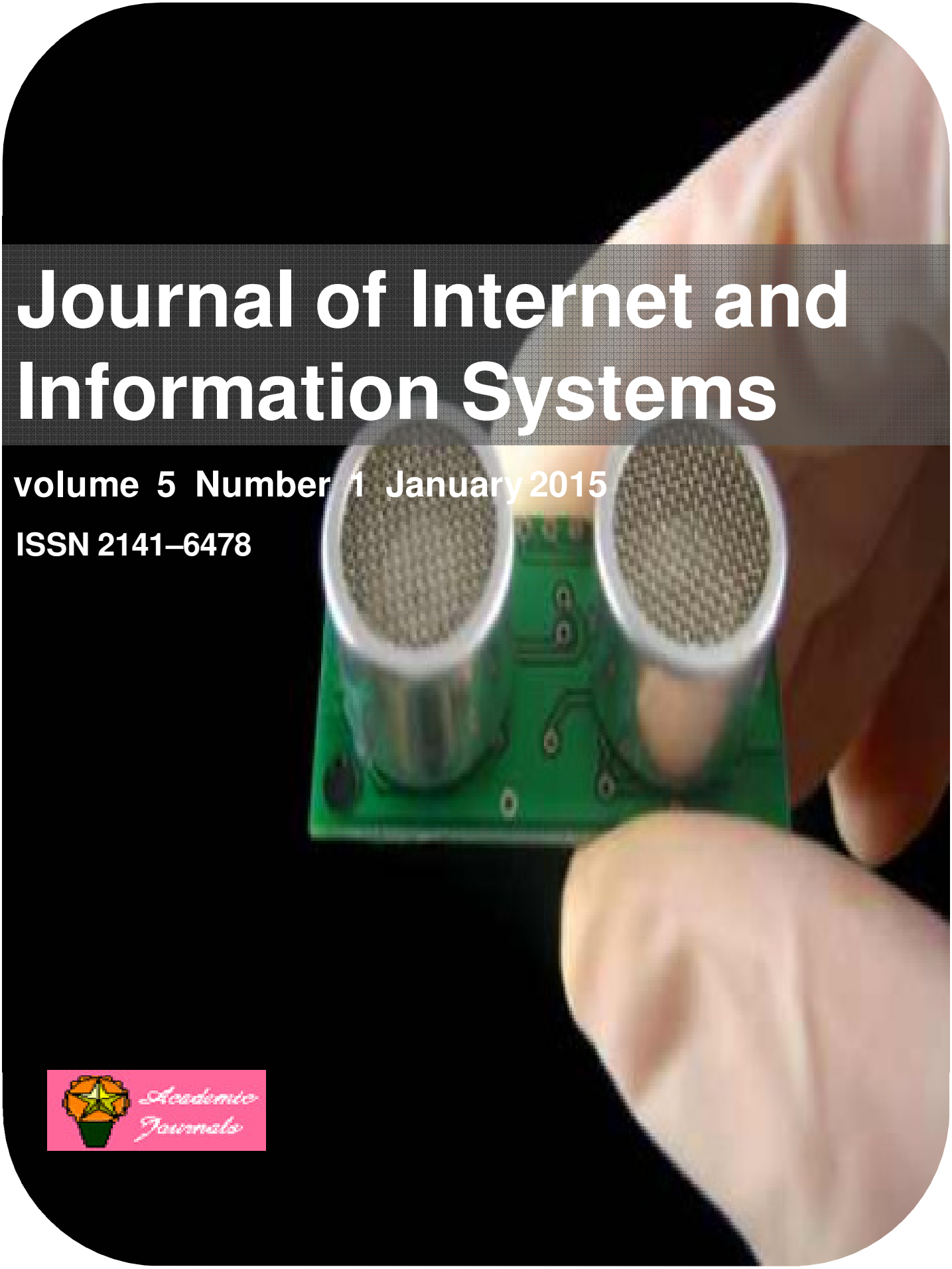

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Full Length Research Paper

Cybercafés operations and its incessant closure in Delta State, Nigeria

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The general purpose of this study is to identify the reasons responsible for closure of cybercafés in Delta State, Nigeria. Questionnaire was designed in line with the objectives of the study and used to gather data for the research. The data gathered were analyzed and presented using charts. The study revealed that there was incessant closure of cybercafés in the two sites (Abraka and Asaba) used for the research; that out of the twelve cybercafés used 6 each had their connectivity using C-band and Ku-band respectively. The closure ranges from three months to three years of establishing the cybercafés. The researchers also identified that challenges faced by the cybercafés that necessitated the closure ranges from high cost of bandwidth, loss of signals due to attenuation and heavy rain fall, inconsistency of electricity power supply, low patronage due to the option of using external modem through network providers such as MTN, GLO, Etisalat among others. The study actually ascertained that cybercafés were closed down in Delta State due to high bandwidth subscription, loss of signals, and inconsistency of electricity power supply among others. Researchers could use this study as a guide to determine the situation in other parts of the world. This study could be considered as the first research on cybercafés closure in Delta State, Nigeria, as there is no similar study in literature except the situation in Lagos and Ghana (Africa).

Key words: Cybercafés, E-Library, virtual library, closure, Delta, Nigeria.

INTRODUCTION

In recent times, the use of the Internet becomes so inevitable that every one wishes to use it to have access to up to date information. Be it as it may, it can be recalled that some years back the role of cybercafés was so prominent that most users of the Internet were mainly through it. At this point in time individual visits cybercafés to gain access to Internet, send mails and obtain resources online. However with the emergence and use of external Modulator and Demodulator (MODEM), where individual connects to the Internet through a network provider such as MTN, GLO, Etisalat among others, the relevance of cybercafés is gradually fading away. This in turn affects the number of cybercafés operators in Delta State as this period of gathering data hence the need to ascertain the closure and determine the reasons for the actions.

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Cybercafé is a general place where people have access to the Internet for a fee. It could have 50 to 100 computers for clients. In an ideal cybercafés, peripheral devices such as printers, scanners, routers among others are used (Ajewole, 2008). In cybercafés centre, computers are interconnected using a switch to internally link them to a router that connects the Internet. In that case, the router is a device that connects Internet Service Provider (ISP) equipment with the in-house server which then distributes the signal to both wired and wireless workstations. Router is the star of a network and the key to the success of the Internet. It routes packets across multiple networks and maintains a list of addresses which helps to link the other networks. Router is so intelligent that it works out the best route for itself to ease network communication. The scanner is used to scan pictures and other documents in case of need while the printer is used to make hardcopy of documents for the cybercafé users as desired. In another dimension, Cybercafé could be described as a virtual market where all kinds of business transactions take place. Adomi et al. (2003) define cybercafés as places where entrepreneurs provide Internet public access services for a fee. It can also be described as places where people of diverse culture and characters meet and engage in Internet surfing and other form of electronic communication. In this era of cybercafés patronage, there was proliferation of cybercafés especially in developing countries because of the need to render services to Internet users. As it were, cybercafé played important role in accessing Information and Communication Technology (ICT) particularly in a region of low infrastructural development (Adomi et al., 2003; Mutula, 2003; Adomi, 2008).

The Internet services received by the cybercafés were rendered by the aid of Internet Service Providers. An Internet service provider (ISP) is an organization that provides services for accessing and usage of the Internet. The services they render equally varies from one subscribers to another in terms of bandwidth required but the major thing about them is that they connect the cybercafés with their equipment to enable the cybercafés have access to the Internet based on subscription. In this process of offering Internet services, the cybercafés connect to the net based on the type of frequencies they demand. There are C-Band and Ku-Band frequencies which are mainly used for Internet connectivity. The purpose of the study therefore is to investigate the clam that cybercafés close down in some areas and to have an empirical report of cybercafés shut down in Delta State, Nigeria.

C and KU band basics

In as much as lack of technical awareness affect and cybercafés services is highly needed, it is equally nice at this point to highlight some basic facts that cybercafés subscribers need to know about electromagnetic spectrum especially about the C and Ku band frequencies which are mainly used for signal transmission in telecommunication. Transmission of signals from satellite is a great electronic function in telecommunication. Satellite is something small or less powerful that orbits around something bigger. It often describes a body in space, such as an artificial satellite that orbits the earth and beams down signals that power devices. Satellites are positioned in the space in order to broadcast signals to the earth surface. A satellite broadcasts a few watts of microwaves signal from the geostationary orbit which is 36,000 km above the earth. In the same way, the transmissions are also broadcast over a wide “foot print” area (SCaT India, 2005). The signals from the satellite in most cases suffer attenuation (loss of signals) due to distance, in the process of this 36,000 km journey from the satellite to the point of reception on the ground. As earlier said, the loss of signal due to attenuation as a result of distance makes the signals to be weak on arrival. However, to boast the signal, a dish antenna is used to collect these weak satellite signals over a large area (the surface of the dish). These signals are in turn gathered or focused by the parabolic curvature of the dish through the aid of the “Feed on” to the focal point. At this level of the focal point, the signals are still of a few microwatts. At this point the satellite signals received are then process by sophisticated electronic equipment, which helps to amplify the signal. In the process of amplification, a “Low Noise Amplifier – LNA” is used to ensure that there is no noise contributed to the amplification. The amplification helps to boast the signal to a reasonable level.

Figure 1 is a picture of China satellite used for scientific researches, geological survey and mapping among others. China Satellite (2004) its 20th recoverable satellite for scientific and technological experiments from the Jiuquan Satellite Launch Center, in northwestern China's deserts, September 27, 2004.

Low noise block converter (LNB)

Barely after the amplification of the C and the KU bands by the Low Noise Amplification (LNA), is the signal process by the satellite which is usually located 10 to 50 m away from the dish antenna. In this situation the C and the Ku band frequencies suffer loss of signals (attenuation) if they were carried via coaxial cable from the LNA to the satellite receiver 50 m away. In the same way, the signals from the satellite to the earth also suffer attenuation but they are focused by the “Feed on” in front of the dish and the LNB which has block converter located within the LNB. The LNB is a combination of the “Low Noise Amplifier + Block converter. The LNB consist of the LNA, mixer, local oscillator and filter (SCaT India, 2005).

Figure 1. China satellite.

Table 1. An overview of S, C, Ku and Ka band frequencies.

Band	Downlink frequency (GHz)	Up-link frequency (GHz)
S band	2.555 to 2.635	5.855 to 5.935
Extended C band (Lower)	3.4 to 3.7	5.725 to 5.925
C band	3.7 to 4.2	5.925 to 6.425
Extended C band (Upper)	4.5 to 4.8	6.425 to 7.075
Ku band	10.7 to 13.25	12.75 to 14.25
Ka band	18.3 to 22.20	27.0 to 31.00

C and KU bands

The fact is that the atmosphere provides a low loss signal path for certain microwave frequencies. In this regard, satellite broadcasters use this fact and provide satellite broadcast at these frequencies. The C and Ku bands are some of the frequencies in the microwave electromagnetic spectrum. Table 1 shows an overview of the bands frequencies. Moreover, the amount of signal that a dish receives from the satellite is directly linked to the frequency. In this respect, in the same size dish the signals receive is larger for higher frequencies than lower frequencies. Technically speaking, this implies that the same dish has a larger “Gain” at higher frequencies. In the same way, a smaller dish could be used at higher frequencies provided the same signal gain (SCaT India, 2005).

The C and the Ku bands are majorly used for transmitting signals to the Internet Service Providers. The C band frequency is more expensive but with cheaper capacity hence customers with large bandwidth demand prefer this technology. However, KU band operates with small antenna (dish) which is less expensive equipment but the capacity price is higher than the C-band. Uplinks the process whereby signals are sent up from the ground to the satellite while Downlink is the process whereby satellite sends signals to the ground. The uplink and the downlink frequencies are not always the same to avoid interference with each other (Figure 2).

C-band

Figure 3 shows C-band satellite dish which has a wider area than the Ku band dish in Figure 4. Some facts about the C-band are in the box beside the dish.

In Nigeria, cybercafés have become an integral part of business, and social environment. They appeared as a result of the introduction of the Internet which gave rise to the widespread use of instant electronic communication among people, irrespective of their location. Cybercafés have added and greatly improved business of the Internet as it becomes so useful for business, education, and entertainment among others. In view of this great development, at a stage, cybercafés came up in every area, be it rural or urban area. In this era of cybercafés business boom, they were set up in order for entrepreneurs to make enough money and to enable their clients access the Internet and the resources in the Internet. In essence, with the exponential increase in the

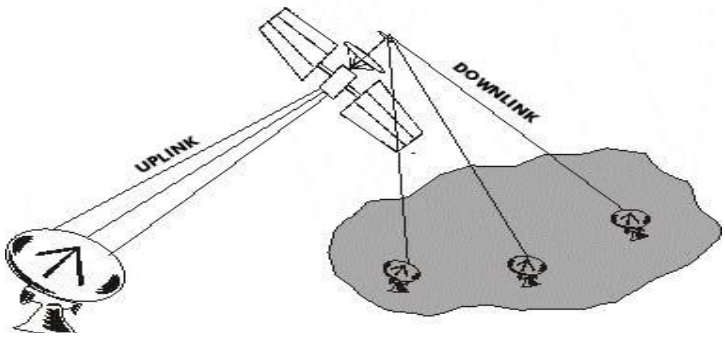

Figure 2. Uplink and downlink.

Uplink	Downlink
5.9 to 6.4 Ghz	3.7 to 4.2 Ghz

The C-Band is less disturb during heavy rain and has cheaper bandwidth. However it needs larger satellite dish of 2.3 m diameter, powerful RF unit. It has more expensive hardware and it has possible interference from other technologies

Figure 3. C-band satellite dish.

Uplink	Downlink
14.1 to 14.5 Ghz	11.7 to 12.2 Ghz

The Ku-Band has no interference from microwave links and other technologies. It operates with smaller dish of 0.9m diameters. It is cheaper and easy to install. It needs less power. It equally has cheaper RF unit. However, the Ku-band is more sensitive to heavy rain fade which implies that at this point, signals are bound to drop due to attenuation but can be managed by appropriate dish size or transmitter power

Figure 4. Ku band satellite dish.

demand for Internet access nationwide in Nigeria, the need for internet cafes to cater for those who cannot afford personal computers and Internet access in their homes and offices becomes inevitable.

However, the advent of network providers such as MTN, GLO, Etisalat, where Modulator and Demodulator (MODEM) as an alternative access to the Internet, makes the cybercafés operators unproductive to make enough money in order to subscribe to high bandwidth. In view of this, many cybercafés begin to close up. This research therefore bent on determining the factors that ravage the cybercafés that necessitated the closure of so many within a short time of establishing such business.

Considering the closure of cybercafés especially in Africa, Ajao (2010) is of the opinion that the advent of mobile phones brought the shutting down of cybercafés, the situation in Ghana that many cafes were no longer functioning. It showed that in Ghana, prior to 2010, a few years ago, in Accra, one could count more than ten Internet cafes between Vodafone (then Ghana Telecom's) Head office around Kwame Nkrumah and busy Internet on ring road central, there were true Internet such as wwwplus mega café, Krofa Internet café, Java Internet café among others. However, the advent of mobile phones, smartphones and USB modems wherein there is easy and reduce cost to Internet connectivity. The demand for the services of cybercafés became needless, as Internet users, now have connectivity through their mobile phones, smart phones and external USB MODEMs.

In a similar development in Nigeria, before the advent of cybercafés, NITEL (Nigeria Telecommunication) and Post Offices were the major means of communication except for few Nigerians particularly the elite, who had telephone. Nevertheless, the arrival of Internet changed all that. That the post office no longer carry mails to destination which pave the way for cybercafés business to spread like a virus to all nocks and crannies of major Nigerian cities. At that point in time, cybercafés became a soothing relief to Nigerians thereby ending the needless delays in mail delivery. Be it as it may, the early years of Internet services, individuals and corporate organizations began to grow in leaps and bounds. However, more than five years after, the situation became difficult to investors

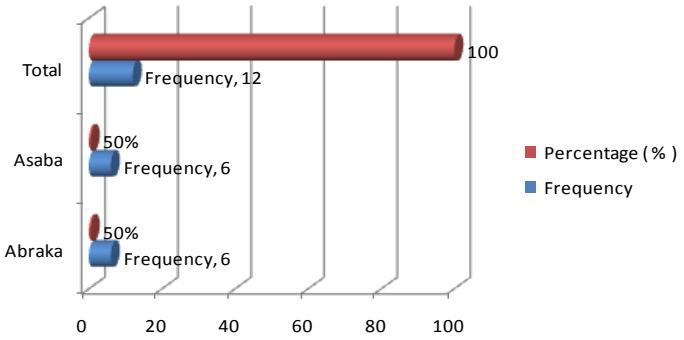

Figure 5. Cybercafés and name of town located.

in the business as a result of dwindling patronage from customers (Gbenga, 2014). This has been a great problem to owners of cybercafés in Nigeria.

The low patronage gradually gives rise to the tendency to fold up which eventually brought about the closure of the some cybercafés that further became incessant such that owners of cybercafés begin to attribute the closure to many factors such as improvement in mobile phone technology that they can now be used to access the Internet while others opinion include worsening electricity power supply wherein many operators of cybercafés then begin to use generator (Gbenga, 2014). More so, some owners of cybercafés opined that hard economic situation in Nigeria was also a contributing factor to the closure of the cybercafés. In essence the study revealed that most cybercafés owners closed at Lagos. He further reported that a tour round Agbado Oke-Odo local government area showed that no fewer than 20 cybercafés operators have closed shop in the last few years. On these bases of incessant closure of cybercafés in Africa (Ghana) and Nigeria (Lagos) the researchers then deemed it imperative to study the situation in Delta State hence considering Cybercafés operations and its incessant closure in Delta State.

Statement of the problem

It is observed with utmost dismay that for quite some time (years 2000 to 2014), established cybercafés have not been rendering services to users in some places in Delta State. This is as a result of closure of some of the cybercafés. This closure becomes so incessant that there is need to investigate what may have been the challenges these cybercafés faced that brought about the closure of their Internet service shops.

Objectives of the study

The general purpose of this study is to determine the reasons why cybercafés close down in Nigeria. Nevertheless, there are specific objectives such as:

1. To identity where the closed down cybercafés were located
2. To ascertain the type of ownership of the closed down cybercafés
3. To identify the types of wireless used by the cybercafés
4. To find out if the cybercafés that closed down have changed ISP at one time or the other
5. To determine the challenges the cybercafés had that led to the closure

METHODOLOGY

The researchers adopted the use of questionnaire guided by the objectives of the study to gather data for this research. A total of twenty closed cybercafés were targeted to be used, but only 12 cybercafés could be identified from the two study sites owing to academic needs, and the inability to locate operators of some cybercafés that had completely closed down. The cybercafés were identified through snowball sampling. The used cafes were at the verge of total closure of the shop as at the time of this study since their connections and equipment were already disconnected. The researchers paid in-person visits to the cybercafés, where the operators were identified and given the questionnaire. All the 12 questionnaires distributed to the cybercafés operators were retrieved immediately, fully completed and used for the research.

FINDING

Presentation

The cybercafés used for this study were located at Abraka and Asaba, Delta state, Nigeria (Figure 5). These cybercafés used were in the main town and not those inside university premises. The twelve cybercafés used started the Internet business with huge amount of money but within a short time they started experiencing some challenges. As shown in Figure 5, six (50%) of the cybercafés were located at Abraka, Delta central senatorial district while the other six (50%) cybercafés used were located at Asaba, Delta North senatorial district. However cybercafés in Delta South senatorial district were not selected and used in this research.

Figure 6 showed that the twelve (12) cybercafés used for the study were mainly owned by sole proprietorship (one man business) and partnership (group ownership) but none is owned by government as at the time of gathering data for this study. Six (50%) of the cybercafés belong to individual while the other six (50%) belongs to group but none belong to the government in the main town of the two locations used.

The study revealed as indicated in Figure 7 that out of the 12 cybercafés surveyed, six (50%) make use of C-Band while the other six (50%) make use of KU-Band frequency. The reasons being that the C-Band has a wider coverage and sensitive to weather changes when there is heavy rain fall. Those that used Ku-band are of the opinion that it cost less to buy the equipment, to

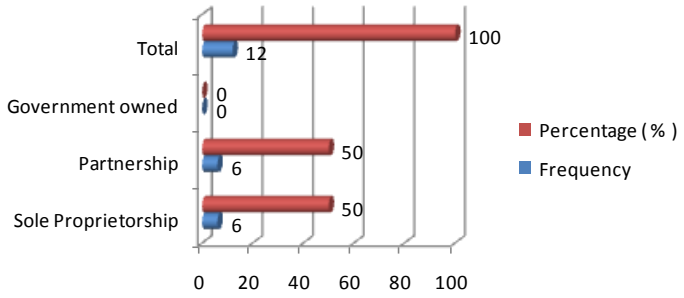

Figure 6. Type of ownership of cybercafé.

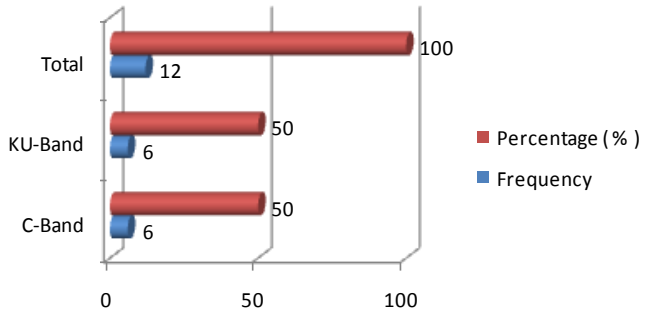

Figure 7. Cybercafés and type of wireless used.

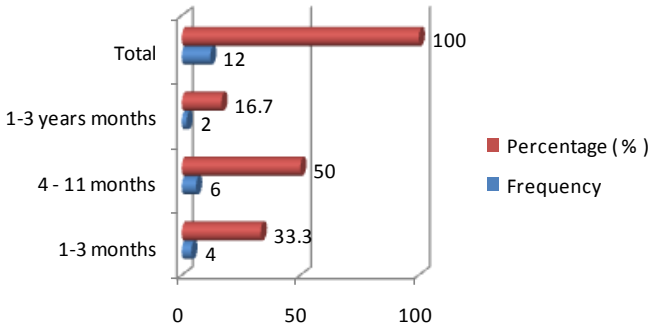

Figure 8. Cybercafés and time duration of connectivity to the current ISP.

install and to connect to the Internet using the Ku-Band frequency.

The study showed that 4 (33.3%) out of the 12 cybercafés used had their connectivity to their current ISP between 1 to 3 months as at the time of the study. 6 (50%) had their current connectivity barely 4 to 11 months while only 2(16.7%) had their connectivity between 1 to three years as indicated in Figure 8.

Figure 9 showed that within the three years (between 1 month and 3 years) 1 (8.3%) cybercafé has changed ISP two times, 2(16.7%) cafes have abandoned one ISP to another three times while 2 (16.7%) have also changed from one ISP to another four times. Nevertheless, 7(58.3%) out of the twelve (12) cybercafés surveyed have not changed from one ISP to another. They remain with one ISP due to efficient service rendering and high signal strength.

The study equally revealed that there were some factors militating against Internet service rendered by the cybercafés located in the two locations as at the time of the study. The study noted as displayed in Figure 10 that none of the cybercafés had personnel problem but the major challenges include high cost of Internet service 33.3%, frequent loss of signals 33.3%. Other problems include frequent electricity blackout 16.7% and low patronage due to lack of search skills of the users.

From all indication as revealed in the study and displayed in Figure 11, the reasons for the closure of the cybercafés in the two towns surveyed are numerous. However, some specific reasons include high cost of services and connectivity, epileptic power supply, frequent loss of signals and low response from the ISP sometime when there is breakdown in connectivity. Other reasons for closure of the cybercafés were the fact that university campuses are in the two towns which make university students that frequently use cybercafés to change their mind to either use university digital centre and the fact that some people used external MODEM to connect Internet to their laptop.

The study revealed that in as much as there were reasons for the closure of the cybercafés so also are ways to improve services rendered by the cybercafés. The Figure 12 above suggested that cybercafés operators should opt for a stand-by generator which helps to augment the electricity supply from Nigerian electricity power distributing source. In this case, 4 (33.33%) cybercafés supported it. In the same development, the study also suggested that cybercafés should operate within the limit of the subscribed bandwidth. 4 (33.3%) of the cybercafés used opined to this suggestion. Similarly, the study discovered that there was need to have good staff-customer relationship. 2 (16.7%) out of the 12 cybercafés used attested to this fact. In the like manner, the research found out that the cybercafés should have virus free systems to reduce unnecessary spending on systems due to virus infection. This can be possible through installation of active antivirus. On this 2 (16.7%) of the cybercafés equally supported this idea.

Summary of finding

1. The study revealed that out of the twelve cybercafés used for the study that closed down within short time of establishing them, 6 cybercafés were located at Abraka while the other 6 were located at Asaba both in Delta State.
2. The research discovered that 6 of the cybercafés were owned by sole proprietorship (individual) while 6 were on partnership bases.

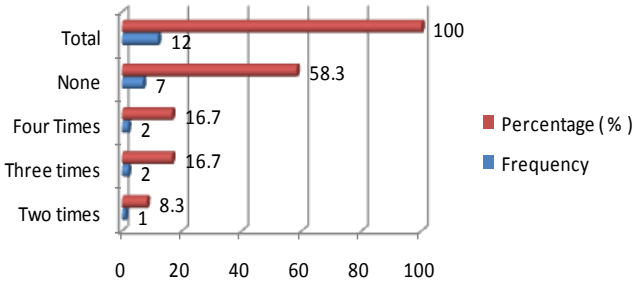

Figure 9. Number of times cybercafés changed ISP.

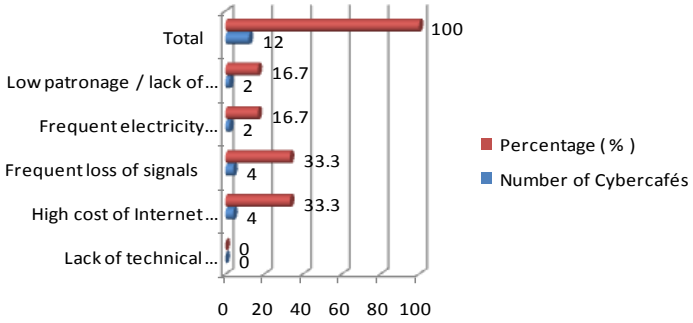

Figure 10. Cybercafés and problems militating against the Internet service business.

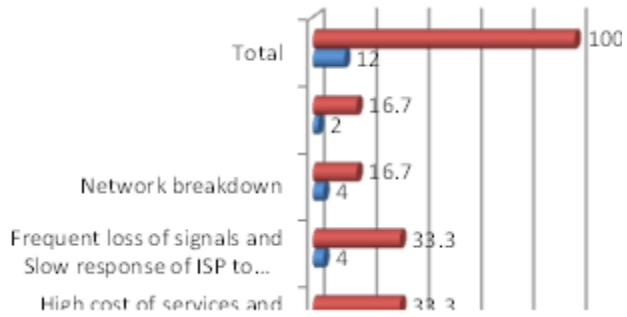

Figure 11. Reasons for closure.

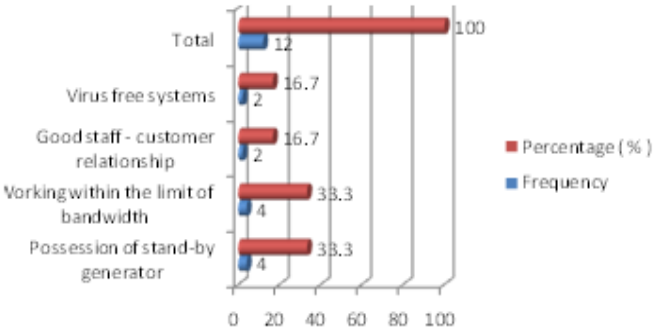

Figure 12. Suggested ways of improving the quality of services rendered to clienteles (users).

3. That out of the 12 cybercafés that closed down, 6 connected to the Internet using C-band while the other 5 cybercafés used Ku-band frequencies.
4. Those that used C-band frequency were of the opinion that it has wider coverage and cheaper rate of bandwidth base on higher bandwidth required while those that used Ku-band were of the view that it cost them less to buy the equipment and to install.
5. It is also found out that the twelve cybercafés closed down within a short period of one month to three years varying from one cybercafés to another as indicated in Figure 9.
6. The study showed as indicated in Figure 7 that one cybercafé changed from one ISP to another two times, 2 cybercafés changed three times. Similarly 2 other cybercafés changed three times while seven did not change their ISP. In essence, five cybercafés changed their ISP.
7. The study revealed also that the major challenges the cybercafés faced were high cost of subscription to Internet and bandwidth provisioning, due to currency exchange rate and that of loss of signals due to heavy rain fall, inconsistency of electricity power supply and low patronage due to the option of using external MODEM and offer of network service by network providers like MTN, GLO, Etisalat among others.

DISCUSSION

As revealed in the study, it becomes clear that as the case was in Ghana where many shut down their shops when mobile phones, smart phones, modems among others came into the market. In the same vein cybercafés closure in Lagos, Nigeria as opined by Gbenga (2014) is the same way it is in Delta State where some cybercafés closed down due to high currency exchange rate for bandwidth subscription, unstable electricity power supply, loss of Internet signals due to attenuation during heavy rain fall, the advent of mobile phones, modems and smart phones through which they have access to the Internet even in the offices, at home and anytime anywhere. As spotted in the study, some of the cybercafés changed from one ISP to another due to challenges they had with ISP and computers among others.

Conclusion

It is a known fact as revealed in the study that cybercafés could close down due to challenges. The research has been able to ascertain that there was incessant closure of cybercafés as the time of data collection October 2014, in Delta State, Nigeria due to challenges confronting them in running the cybercafés as indicated in the findings.

Recommendations

(1) It is therefore nice to recommend that cybercafés

operators should be aware of the benefits and the short comings of frequency bands (C or Ku band), and the bandwidth required before embarking on operation.
(2) Internet Service Provider: That cybercafés operators should use reliable Internet Service Provider (ISP) and ensure they subscribed to bandwidth that commensurate with the need. This is as a result of the fact that bandwidth strength determines the access speed of the Internet receive. The type of band either C-Band or Ku-Band should be well understood considering the features and short comings in line with weather variation by cybercafés operators before they make request. This is to avoid mistake that bring about closure due to use of a band and subscribing to a particular bandwidth.
(3) Bandwidth: In providing bandwidth, the size should be proportional to the number of users (computers).This implies that the bandwidth should be allocated at the server level in such a way that heavy users are charged more than non-heavy users in the same time (hour) usage. Most time cybercafés operator request for low bandwidth but run it on many computers which reduce the browsing speed. In the same vein, some ISP's do not offer the specific needs of the cybercafés in terms of bandwidth. Bandwidth for cyber cafes should be fast, steady and uncompromised. More also issues that arise from the cybercafés operators should be resolved quickly by the ISP. In a similar development, cybercafé owners should be provided with means of monitoring their bandwidth. In this regard the most profitable bandwidth provisioning style for a cyber café is the pay as you go solution so that café owners can save money during its off peak periods and weekend.
(4) Good staff-customer relationship: When staff of the cybercafés is friendly with the users. It increases patronage. In operating a cybercafés there should be good relationship between the operator and the users, they should learn to understand the customers and treat them well.
(5) Power supply: With the erratic nature of electricity supply and the high cost of fuel and diesel in Nigeria, there is no gain saying it that electricity power supply is a major challenge to any cybercafé owner. Power constitutes the largest expenditure in running of café. Going by the recent development in Nigeria where the federal government has decided to privatize the power sector, there is now improvement in electricity power supply due to progress in generating and distributing of electricity power.
(6) Location of the cybercafés: Cyber café should be set up at a location where there is maximum patronage such as secondary schools, higher institutions and study centers environment where there are high flows of students which constitute the highest group of users of the Internet. This will in turn reduce the tendency to close down the cybercafés as more users will be available.

Conflict of Interest

The authors have not declared any conflict of interest.

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