

FIBER OPTIC NETWORKING IN EDUCATION: A PANACEA FOR NATIONAL DEVELOPMENT IN NIGERIA

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ABSTRACT

This paper tackled the issue of fiber optic network and its implications to education and national development, through improvement of health facilities, creation of job opportunities for many Nigerians in communication and transportation industries and brining about efficiencys in banking network system. Nigeria is blessed with abundant human and environmental resources that could be tapped for national development, but the scattered environmental resources are left untapped and leave majority Nigerians with poverty and underdevelopment. With the current issue of global education of Fiber Optic network system, Nigeria will be able to actualize its vision of development in the year 2020.

Keywords: *Fiber optic, networking, education, national development*

INTRODUCTION

Many people are frustrated at different cafes, in banks, or when they want to communicate with others through Global system for Mobile Communication (GSM) phones. The frustrations come from the delay in opening computer pages to lack of service from the sever network in Banks or too much problems of GSM for Based on these emerging issues, global communication (GLOBALCOM), is one of the tertiary communications industries in Nigeria which decides to embark on a giant capital-intensive project of fiber optic. When Globacom fiber optic project is completed, it will solve a lot of communication problems in Nigeria. This will allow more people and corporate organizations to function efficiently.

Globacom is a global system for mobile communication (GSM) industry. Glo is the trade mark that attracts many people to patronize the product or services of the company. Encarta dictionary (2009) defines fiber optic as the technology of transferring information in communication or computer technology through thin flexible glass or plastic tube. Wikipedia encylopedia (2008) defines fiber optic as an optical fiber designed to guide light along its length. Fiber optics is the overlap of applied science and engineering concerned with the design and application of optical fibers. Optical fibers are widely used in fiber optic communication which permits fibers transmission over longer distances and at higher data rates than other forms of communications. Fibers are used instead of metal wires because signals travel along them with less loss and they are immune to electromagnetic interference. Fiber optics are also used to form sensors and in a variety of other applications.

Light is kept in a "core" of optical fiber by total internal reflection; this causes the fiber to act as a waveguide. Fibers which support many propagation paths or transverse modes are called

Multimode fibers (MMF) fiber which support only simple mode is called Single mode fibers (SMF). Multimode generally have a large diameter core and are use for short-distance communication links or for applications where high power must be transmitted. Single mode fibers are use for must communication links longer than 200 meters.

Therefore fiber optic is a medium of technology associated with the transmission of information as light impulses along a glass or plastic wire or fiber. Fiber optic wire carries much more information than conventional copper wire and is far less subject to telephone companies long distance lines are now fiber optic. Transmission on fiber optic wire requires repeating at distance intervals. The glass fiber requires more protection within an outer cable than copper. Then these reasons and because of the installation of new wiring system which is labour intensive, Communities have fiber optic wires or cables from the phone company's branch office to local consumer is called local loop.

Many academic scholars believe that education is the total experiences one acquires from the day he is born to the day he dies. Education is a continuous process and developed from the human struggle for survival and enlightenment. It may be formal or informal. Education refers to the general social process by which skill needed to function in their cultures. Formal education refers to the process by which teachers instruct students in courses of study within institutions. Learning is seen generally as a process of acquiring knowledge from known to unknown or developing the student ability to perform new behaviors. It is common to think of learning as something that takes place in school, but much of human learning occurs outside the classroom and people continue to learn through out their lives.

National development should be the concern of both the rules and the ruled of Nigerian society. It entails the full

participation of the citizenry in the political, social, economic and technological affairs of their country. It aims at maximizing the goals of quality and quantity (capacity building) which will be measure in areas of equal education, freedom, balanced diet medicine, shelter, cloth water and other amenities of life.

Professor Seer Dudley in Todaro (1992) posed the basic questions about the meaning of development when he asserted that:

"The questions to ask about a country's development are therefore what have been happening to poverty? What has been happening to unemployment? What has been happening to inequality? If all three of these have declined from high levels, than beyond doubt this for the country concerned. If one or third of these central problems have been growing worse especially if all three have, it would be strange to call the result development even if per capital income doubled".
(P. 100)

Todaro (1992) agrees with seer to certain extent, that development is a multi-dimensional process involving changes in structures, attitudes and institutions as well as the accelerate of economic growth, the reduction of inequality and eradication of absolute poverty. Development therefore is a continuous process of deliberate plan effort to wards a nation seeks to improve control over the national environment with the objectives of maximizing the available resources that could be found in order to make life better and easier, through provision and improvement of goods and services both in the urban, semi-urban and rural areas.

There are many satellites that provide information services such satellites include Astrasat Panasat, Emmasat, Nigeriasat & Nigcomsat. The Nigeriasat 1 and Nigcomsat 1 are Nigerian Satellites. The former was lunched on 26th Sept. 2003 in Russia, to provide information on Agriculture, flooding areas where is likely to occur and expose smugglers in the country. While the later was lunched in China 14/May 2007.

If Nigcomsat is commercialized, it will attract other Information Communication Technology (ICT) Companies that will probably replace the three main primary satellites servers in the country which are in Port Harcourt Abuja and Lagos. (Port Harcourt primary server covers the entire eastern Nigeria, Abuja primary servers cover the entire Northern Nigeria and Lagos primary server covers the entire western part of the country.) These primary servers provide secondary server services and data to many consumers in Nigeria, like that of Katsina in the Police compound. This secondary server feeds the tertiary level which is at ward levels.

These satellites provide services to many communication companies particularly the indigenous ones. Globacom is a Nigerian Indigenous Company undergoing an intensive Fibre Optic Network Project throughout the country and beyond. Globacom's executive director marketing communication, Okoh Iyana Charles (2008) stated that fibre optic cable network has already covered the entire Lagos - Abeokuta - Ibadan route, Lagos - Ijebu ode - Ore - Benin and Abuja. Kaduna - Zaria - Kano routes. When completed the first phase, the network will span 10,000km covering all the major cities in Nigeria. Such as Benin -Warri - Port Harcourt, Port Harcourt - Aba Umuahia - Owerri, Owerri - Onitsha Enugu.

Enugu- Oturkpo - Makurdi, Makurdi- Lafia Abuja and Ibadan- Ilorin - Jebba, Mokwa Bida- Minna - Abuja routes. Jameel (2009) Currently there is such a project taking place in Katsina - Kano routes. Many passers by and academic scholars do not know the importance of this Fibre Optic Networking to the people in the country, particularly in the area of education, health, job opportunities, communication and transportation, and banking networking system.

FIBRE OPTIC AND EDUCATION

Information Technology (IT) facilitated many individual student and families in seeking admission and studying online in

some universities like Manchester University, Phoenix University etc. Research also is being carried out by many academic scholars through Cable Television Online. The history of past great leaders and some of the international publications e.g Socrate, Plato classical books like that of Adam Smith (1776) the Wealth of Nation are available in the internet. Also researches on ocean engineering hydro works, marine spices, animals and insect, climate changes and how they affect agricultural production are being carried out through internet and satellite.

FIBRE OPTIC AND HEALTH

Some human anatomy and physiological operations are carried out through the use of cable television. Fibre optic patient is being operated while he is watching television. Drugs are being prescribed by computer machines. Some of the international hospitals operate patient without blood. All the above mentioned machines are using sever transmission through the fibre optic network.

FIBER OPTIC: JOB OPPORTUNITIES, TRANSPORTATION AND COMMUNICATION

As earlier stated development has to do with eradication or reduction of poverty; reducing unemployed is through job creation. The Globacom fibre optic project provided jobs for many Nigerians, ranking from labourers, to medium and managerial levels. This is a move or destination of National development. The current globalization relied on improvement of information technology on marine war heads, Air force and aviation industries relied heavily on service provider industries using fibre optic, and because of clarity of voice. Okoh Iyana in Charles (2008) put it in this way:

"GLO Broad access, the latest subsidiary of Globacom limited installing about 300,000 fixed wireless lines in the next 18 months, supported by its strong deployment of fibre optic infrastructure across the country to---deliver multi-

service end-to-end communication by utilizing the ADSL-2 plus technology which has the pedigree in voice and data carriage. Alcatel recently the first truly global communications solution provider with the most complete end-to-end portfolio of solutions and services in the industry, is the technical partner of this Globacom's latest and audacious project" Okoh Iyana Charles (2008).

FIBRE OPTIC: BANKING NETWORK SYSTEM

The Central Security Clearance System (CSCS) security and exchange commission the Nigerian Stock exchange has relied heavily on different servers from different service providers. Banks operate online system through Automated Teller Machine (ATM) operations, trade alert operation and GSM banking. Fibre Optic will provide services to these financial institutions to end the problems of Network Services, slowdown of servers on opening pages and ATM operations. At moment some organizations both in the private and public sectors are already running on Globacom's infrastructure including Central Bank of Nigeria (CBN). Zenith Bank as well as Oil giant EXXON Mobil Okoh Iyana Charles (2008)

CONCLUSION AND RECOMMENDATIONS

Globacom fibre optic is a modernized macro-backbones (like Nitel) which carry data and information and voice from polar to polar or from one continent to another without any network problem or delay. In case of war or natural disaster of earthquakes that disrupts some of its installations; it will switch off quickly to local macro-backbones like Nitel plc. Fibre optic will be cheaper in operations than iron wire or copper wire. The service provider can give the following services to any company and organizations, such services include:

1. Internet Service

2. Banking Service (data)
3. GSM Services
4. Military data/ information from different military formations Globally
5. Para- military data / files for dictating smugglers, arm rubbers and illegal migrants.

From the foregoing, the study recommended that Nigcomsat 1 a Nigerian Satellite lunched on 14 may 2007 in china should be commercialized. All tertiary education institutions must have internet sever free to all the staff and students. Finally, indigenus communication industries should use fibre optic in operations because it is capital intensive but it is more efficient and reliable.

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