

APPLICATION OF TELECOMMUNICATION AND COMPUTER IN PROVISION OF SECURITY IN POST COVID-19 ERA IN NIGERIA

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Abstract

Post covid-19 era in Nigeria is a period to embark on security measures for ameliorating the ill effects of covid-19 pandemic which stand as insecurity in the nation. Provision of security in post covid-19 era in Nigeria can be done by applying electronics. The discussion in the paper is that the use of electronics such as telecommunication and computer can be utilized in provision of security to the people of Nigeria in the post covid-19 era characterized with free movement in the nation. Issues the paper addressed were understanding of telecommunication and computer, security as a means for development, and provision of security in post covid-19 era using telecommunications and computer. It was pointed out that integration of telecommunication and computer resulted to emergence of Information Technology of which its prominent aspect is the Internet; and it has security value. The paper explained that telecommunication and computer is valuable in provision of security in post covid-19 era in Nigeria for they can be applied in communication, income generation and education. Certain recommendations were made in the paper. The paper concluded that electronics is a prominent aspect of science and technology in this 21st century; and telecommunication and computer as aspect of electronics can be utilized to wipe out the ugly effects of the pandemic so as to ensure national security, especially human security.

Key Words: electronics, telecommunication, computer, security, post covid-19, Nigeria

Introduction

Developing nations in the world, including Nigeria, dream of a developed economy. For actualization of developed economy there should be security. Security is concerned with good and healthy state of the body and mind. An issue that affects security in a nation is pandemic for it is concerned with massive ill-health. Pandemic era is a period of public health concern for it is characterized with robbing of great number of human population of good health through massive spread of disease. Good health is

a great wealth essential for development in human society for it is needed for effective operations in various human endeavours. Examples of pandemic that can lead to denial of good health among human population are coronavirus (known as covid-19), flu and ebola. Covid-19 made nations in the world, which includes Nigeria, afraid in 2020 and then embarked on lock down that restricted people's movement.

The movement restriction made a great number of Nigerians suffer socially and economically. After some months the lock down was lifted in Nigeria and people began to move about. This period where by movement is not restricted in Nigeria based on the pandemic can be regarded as post covid-19 era.

In the post covid-19 era, security aimed at achieving social and economic recovery can be fostered in Nigeria using science and technology. Nwoye, Chukwuebuka-Nwosu, Nwokeabia and Adinu (2017) pointed out that science aids in national development and so one of the means required in achieving sustainable national development in Nigeria is having high standard in science education for production of high quality science-based graduates needed for national development. Technology is a great path for man to survive and enjoy his environment (Amechi & Nwosu, 2017). The use of science and technology for the security includes application of electronics. Prominent aspects of electronics are telecommunication and computer; and they pertain to electricity. Integration of telecommunication and computer brought about the existence of information technology.

The focus of the paper is that telecommunication and computer can be applied to ensure security for the social and economic wellbeing of Nigerian populace in post covid-19 era. Issues discussed in the paper are: understanding of telecommunication and computer; security as a means for development; provision of security in post covid-19 era using telecommunication and computer. The paper also contains some recommendations and ended with a conclusion.

Understanding of Telecommunication and Computer

Telecommunication and computer are integral part of science and technology concerned with electricity. Nnabuenyi and Nzekwe (2019) acknowledged that electricity is among the products of science and technology utilized for the comfort of human society. Science is a field of study and human endeavour concerned with objective and empirical understanding of natural phenomenon and it focuses on structures, actions, reactions and interactions as it concerns living and non-living matters of which man is aware of (Nwosu, 2016). Science is a pivot on which technology rest upon. Aigbe and Omidih (2016) define technology as the: (1) the knowledge used to change various resources into many goods and services used by a society; (2) application of scientific principles to produce products needed by a particular society. On the other hand, electricity pertains to charge either in static or dynamic (motion) state; however, charge in motion called current electricity

is the familiar one. Nwoye and Nwosu (2018) noted that current electricity appears to be more popular in this technological age and it is concerned with properties and effects of electrical charges in motion. In this 21st century, current electricity has a strong bearing with electronics.

Electronics is concerned with electricity in relation to its passage through semiconductor materials or valves (Ezeilo, Chijioke & Nzekwe, 2013). Pitt cited in Ezeilo, Chijioke and Nzekwe, (2013) explained that electronics is "the study, design, construction and application of devices whose operations are based on the conduction of electricity in vacuum (vacua), or gases or semiconductors. Modern electronics is principally concerned with semiconductor devices; vacuum and gas filled devices are becoming obsolete apart from a few specialized uses". The electrical charges involved in electronics are electrons, ions or holes. Modern electronics is usually concerned with electrons and holes as seen in the use of semiconductor, which is the material often used nowadays. A semiconductor is a material that has an electrical conductivity or electrical resistivity value between that of a conductor and an insulator. Examples of semiconductor are silicon, germanium, gallium arsenide, and cadmium sulphide. Semiconductor materials can be termed solid-state material. The most popular semiconductor is silicon and it is the one mostly used in making solid-state (semi-conductor) devices such as diodes, transistors and integrated circuits. Semiconductor devices are greatly used in electronic technology as non-moving solid devices, in place of thermionic valves and mechanical components such as relays, in building of electronic systems (Amechi, Chukwulobe & Nwosu, 2016). Examples of electronic systems are computer, telephone, television, radio, video machine, audio amplifier, projectors, photocopier and calculator. Electronics makes it possible the emergence of telecommunication.

Telecommunication is an electronic-based communication that allows dissemination of information over long distance using electromagnetic wave. Devices usually used in telecommunication are radio receiver, television and telephone. Another telecommunication device used in modern communication is satellite. The satellite is an artificial body that is projected from the earth with aim of receiving and transmitting voice, radio and television signals. Advantage of telecommunication is that a great number of people are communicated at the same time despite the distance involved in transmission and receiving of information. Nwosu and Chukwuebuka-Nwosu cited in Nwosu (2013) asserted that the advantage in the use of telecommunication is that it covers a large audience because it addresses the problems of time and space by breaking physical barriers of distance

Another prominent product associated with electronics is computer. Amechi and Nwosu (2017) pointed out that computer system is an electronic device, consisting of a hardware (electrical circuitry) and software (set of logical instructions called programme), that reduces stress and difficulty in works by accepting input data, and uses the programme installed in it to processes the data with high speed and accuracy to generate an output (result). Computer is a device that uses an intellectual map called programme to make decision, process word, publish, create graphics, choose, copy, move, compare, perform other non-arithmetic on the many alphabetic, numeric and other symbols in the desired way (Johnwakolo, cited in Nwosu, 2013). Nwosu (2013) pointed out that computer system, as a vital electronic device with technological value, has certain characteristics: provision of accurate results, possession of high operational speed (saving of time in operations), high memory capacity for storage of data and information, flexibility in modification of data and information, maintenance of reliability in its operation, ability to handle complex tasks, performance of neat job, wide utilization in human endeavor (i.e. versatility in application). Sadiq, Nnebe and Momodu cited in Amechi and Nwosu (2017) asserted that computer is useful in human endeavour for it is a machine used for fast generation, calculation as well as storage of information.

Electronics has made it possible the existence of Information Technology (IT). IT is used interchangeably with ICT (Information and Communication Technology), even though strictly analyzed, IT is a sub-set of ICT. Information Technology is an electronic system that emerges as a result of integration of computer and telecommunication technology. IT deals with generation, processing, storage, transmission and reception of information using electronic devices. A prominent product of information technology is the Internet. Internet stands for "International Network" and it is the greatest computer network such that people can communicate with one another from any part of the globe any time irrespective of distance. Internet has transformed the human world into "global village" where people can easily communicate with one another in multi-media, electronically, from any point in the globe and the technology affects socio-economic activities (Inyiama, cited in Amechi, Chukwulobe & Nwosu, 2016). A crucial issue that can aid development of socio-economic activities in Nigeria is security.

Security as a Means for Development

A major desire and struggle in human society is manifestation of development in human endeavours and national affairs. Development is evidenced when there is good standard of living. A fertile ground for development is presence of security. Without adequate security in a nation, it is very difficult for the nation to achieve sustainable development (Nwosu, Amechi, Chukwulobe & Chijioko, 2014). So, for Nigeria as a nation to match towards development in post covid-19 era, presence of security must be felt.

Security in a nation is concerned with avoidance or absence of various crimes, risks and dangers that threatens the wellbeing of individuals or groups in the nation. Nwosu, Amechi, Chukwulobe and Chijioko (2014) noted that national security is a situation whereby inhuman acts and social vices such as murder, robbery, kidnapping, stealing, prostitution and others are prevented or avoided for decent, pleasant and comfortable living in a nation. National security can be defined as the ability of states to ward off all forms of threat to survival and sustenance of a state and its people as well as the ability of a state to protect its legitimate interests with all measures including war (Afaor, Nevkar & Ajula, 2013). Kayode cited in Afaor, Nevkar and Ajula, (2013) explained that national security consists of state security and human security. State security is considered in terms of level of protection of state in largely military sense; it prides itself with preservation of the territorial integrity and sovereignty. Human security is a non-state dimension of national security and it argues for the improvement in the lives of citizens in terms of freedom, education, health care, environmental protection, infrastructure and other amenities.

Security makes it possible the wellbeing of the body and mind such that there is adequate living standard of people in terms of provision of essentials of good living: food, health, shelter, clothing, education, employment, communication, transportation and others. In terms of having a healthy mind, it can be said that security has a bearing with peace. Ezeife (2020) acknowledged that peace is associated with security; and peace is a state of having a stable and healthy mind free from discomfort and disturbance. The author maintained that peace is also a situation whereby there is no violence or fight in human society; and peace denotes absence of conflict.

To achieve security, a strong focus in science and technology is of great value. In this modern era, aspects of science and technology needed to achieve security for development in post covid-19 era are telecommunication and computer.

Provision of Security in Post Covid-19 Era Using Telecommunications and Computer

Post Covid-19 era in Nigeria connotes that there was covid-19 era in the nation. During the covid-19 era in Nigeria, there was restriction of movement as a result of lockdown ordered by the government. The movement restriction negatively affected social and economic wellbeing of most Nigerians for there was: reduction in social activities (like visitations, marriage ceremonies, parties and funerals) because embarking on journey was difficult and public gathering was prohibited; decrease in religious programmes and activities as well as tremendous reduction in population at religious venues; food starvation and financial hardship because a great number of people were not able to embark on their jobs meant for income generation; immoral and illegal acts (such as sexual immorality, stealing and duping) due to laziness and idleness; stop to formal education activities for there was close down of academic institutions. The restriction of movement was later removed in Nigeria and so the nation launched in an era that can be termed post covid-19 era, even though the pandemic is currently a global issue. In the post covid-19 era, there is great need for Nigeria to embark on security aimed at ameliorating the social and economic sufferings associated with covid-19. Telecommunication and computer can be useful in the provision of security by being employed for communication, income generation and education.

Provision of security for development demands effective communication. The essence of communication is to provide information. Information is a source of knowledge and power; without information, operations and activities in human society will be impossible (Amechi, Chukwulobe & Nwosu, 2016). Radio and television are telecommunication devices that can be used in post covid-19 era to communicate and provide information to wide audience on issues and events that are useful for national security. Telephone is also a vital electronic-based communication device for transmission and reception of information that pertains to security. Idogho cited in Nwosu, Amechi, Chukwulobe and Chijioke (2014) asserted that the introduction of mobile phones has increased the spread of information from one person/business to another with a net result of increased productivity. With regards to communication for security information, computer-based monitoring system can be built to indicate the presence of a criminal, an illegal person or intruder who intends to tamper with life and property. In the post covid-19 era, Internet can serve as a fast, economic and convenient means of modern communication from any part of the globe using

facility such as electronic mail (e-mail). Other uses of Internet in communication are its use in facsimile, electronic bulletin board, data base record, files transfer and online phone (Nwosu, 2013).

Telecommunication and computer, as aspect of electronics, can be utilized for income generation in the post covid-19 era. Income is generated by engaging in a job that makes one be a worker through paid-employment as in government and private job or self-employment as in entrepreneurship. Engaging in a job has security value for job helps people generate income to alleviate poverty, and enjoy pleasant and healthy living, as well as avoid idleness that leads to indecent and illegal activities injurious to human and societal development. There are various electronic-based jobs - such as being an operator of electronic-based system, computer programmer, electronic engineer or technologist or technician, teacher/lecturer in classes for electronics, consultant in electronic-based activities, vendor of electronic products, or manager in electronic-based organization - that can generate income for survival and help in avoidance of idleness that can lead to social vices (Nnabuenyi & Nzekwe, 2019). Nzekwe (2016) averred that security can be ensured by using electronic technology to provide people with job opportunities such as lecturing/teaching, design and construction, maintenance and repair, marketing, and management having bearing with electronic devices and systems. Electronic media like television, radio and Internet can be used to obtain news and information that gears towards income generation needed for poverty alleviation (Nwosu, Amechi, Chukwulobe & Chijioke, 2014).

Education helps to bring knowledge and enlightenment for elimination of ignorance, which makes people become insecure. Thus, acquisition of education is a vital resource for human and national development for it can equip people with potentials and attributes that aid in experiencing of security. With the use of telecommunication and computer, it is possible to obtain education useful for security in the post covid-19 era. Television, radio and computer are among electronic media that are playing a significant role in education and electronic media can be used to maximum advantage to improve instructions in classroom (Ukachukwu, cited in Ezeilo, Chijioke & Nzekwe, 2013). Telecommunication has educative value because large number of people can get informed and be knowledgeable through educative programmes broadcasted from television and radio. Also, phone can be used to transmit information and knowledge to someone through the use of voice or text messaging. Some phone makes it possible to obtain educative information through social media like Facebook, Telegram, WhatsApp, Twitter, and others. Computer can be used for education purpose by using it for processing/typesetting and storing

educative information. Educative information stored in a disk (CD-ROM) can be slotted into the computer for acquisition of Knowledge. Computer can bring about the use of education software like Computer Assisted Learning (CAL) or Computer Aided Instruction (CAI) which helps students learn with ease for the software can guide a student and enable the student learn course material at a convenient pace and do personal learning evaluation. With reference to engineering students, Amechi and Nwosu (2017) noted that computer, as an educational device, can be used for electronic learning through the use of education software like Computer Assisted Learning (CAL) or Computer Aided Instruction (CAI), which enable students revise any course material (subject matter) as often as possible for total mastery. Information technology has made electronic learning (e-learning) possible as can be seen with the use of the Internet to obtain educative information. E-learning fosters acquisition of knowledge and skills without physical contact with a tutor, thereby making it possible to acquire education at any time and space. Nwosu (2013) acknowledged that educative information and knowledge useful for human and national development can be obtained by browsing the Internet; and the use of the Internet brings about e-learning that facilitates and enhances distance education for it enables acquisition of knowledge and skills by learners/students and researchers without face to face contact with a teacher/instructor. Internet provides multimedia that enables one understand subject matter easily (Nnabuenyi & Nzekwe, 2019).

Recommendations

Based on the value of telecommunication and computer in provision of security in Nigeria, the followings are recommended:

- Students concerned with the study of electronics need to be diligent in the study and concentrate more on education acquisition than mere academic certificate acquisition.
- Teachers/lecturers and people involved in imparting education on electronics should be serious and dedicated to duty.
- Government, education managers, organizations and individuals should give technical and financial support needed for education and human development in electronics.
- Electric power providers (such as EEDC) should ensure constant provision of electricity for energizing of telecommunication devices and computer.

- Nigerian populace should maintain good moral and avoid any abuse in the use of telecommunication and computer so as to promote their technological value.

Conclusion

The pandemic called covid-19 brought various hardships and disturbances in the life of people of Nigeria. Such a situation can be termed a state of insecurity in the nation. As a result, serious concern and move should be made to wipe out the ugly effects of the pandemic by seeking for means of experiencing national security, especially human security. In this era of post covid-19, security can be provided using science and technology.

A prominent aspect of science and technology in this 21st century is electronics. Electronics mostly pertains to the use of telecommunication and computer; and integration of telecommunication and computer give rise to Information Technology that has brought about the use of the Internet. In this post covid-19 era, telecommunication and computer can serve as electronic means for provision of security by being applied in the area of communication, income generation and education. Based on the relevance of electronics in provision of security for development, serious efforts should be made in enhancing activities that pertains to the use of telecommunication and computer among the Nigerian populace for security purpose.

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