

## Adopting Artificial Intelligence in Broadcast Media in Nigeria

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### ABSTRACT

The study examined the adoption of artificial intelligence in broadcast media in Nigeria. Artificial intelligence is gradually replacing both human and machine labour. Using a conceptual approach, the study examined the extent of application of artificial intelligence in Nigerian broadcast industry. The study was anchored on the technology-determinism theory which postulates that technology drives efficient message delivery. In the case of artificial intelligence, both hardware and software approaches are essential for efficient integration of AI in broadcast media. The study observed that that the Nigerian broadcast industry is yet to embrace full digital migration. As a result, it has affected the integration of artificial intelligence in broadcasting in Nigeria. Based on the above, it is recommended that the government of Nigeria should expedite actions on full digital migration of broadcast media to meet international best practices. A full digital migration of Nigerian broadcast industry will open different AI options to tap from.

Keywords:Artificial intelligence, Broadcast media, Digitisation, Digital migration, Intelligence.

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### INTRODUCTION

The world of digitisation has revolutionised how man performs different tasks. This is contrary to analog method of executing tasks. One distinct characteristic of artificial intelligence is the attribute of humanised intelligence in machines. It is an advanced stage of computer technology. It is a displacement of machine attributes with human computerised intelligence. It is a branch of computer science that develops programs to stimulate human intelligence in machines. It is an extension of digitisation that brought AI into the realm of possibility. [1], defines artificial intelligence (AI) as the study and engineering of intelligent machines capable of performing the same kinds of functions that characterize human thought. While the nature of intelligence remains elusive, AI

capabilities currently have far-reaching applications in such areas as information processing, computer gaming, national security, electronic commerce, and diagnostic systems [2]. [3], defines artificial intelligence as the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience. UK-RAS [4], defines Artificial Intelligence (AI) refers to the field of science aimed at providing machines with the capacity of performing functions such as logic, reasoning, planning, learning, and perception and extended to include an interleaved set of capacities, including

creativity, emotional knowledge, and self-awareness [5].

AI comprises two concepts: intelligence and artificiality. Intelligence is the ability to learn facts and skills for efficient and effective execution of tasks. It is the capability of making rational thoughts and applying such thoughts to proffer solutions to mental or physical problems [6]. Man is a rational animal that is capable of understanding a stimulus and storing messages for future retrieval [7,8,9]. Human intelligence, therefore is expressed when human behaviour interacts with nature and human environment, such

#### Statement of the Problem

The basis of artificial intelligence is the interaction of machines and execution of tasks as a result of programmed instructions. It is an extension of digitisation; a migration from analog to digital modes. Modern communication equipment are gradually designed to accommodate in-built ability to communicate coded languages. However, efforts by government of Nigeria to digital migration in broadcast media are still ongoing at slow speed. Most media houses still depend on partial digitisation to collect, process and disseminate information. With relative slow approach to media digitisation, the application of artificial intelligence in Nigerian communication industry remains a

that random mutations for greater intelligence get selected naturally [10,11,12]. On the other hand, artificiality refers to synthetic replication of original concept or process. The effort of AI experts is to create a replication of human intelligence by assigning human voices, actions and reasoning abilities to machines. It is an aspect of robotics in which machines are designed to perform human actions. It is also called machine intelligence because; intelligence is demonstrated by machines in contrast to natural intelligence displayed by humans and other animals [13,14].

mirage. This is because; artificial intelligence is beyond media digitisation. It is a holistic application of language instructions and use of robotics in communication. In the advanced economies, AI is evenly employed in communication especially in the areas of installation and functioning of media satellite equipment. The Nigerian media space is largely dependent on many factors such as government policies, technology and manpower for the operation of robotised media equipment. This study, therefore adopts a conceptual approach to the study of artificial intelligence in information collection, processing and dissemination in broadcast industry.

#### Objectives of the Study

The following objectives guided the study:

a. To ascertain the extent of application of artificial intelligence in Nigerian broadcast media.

b. To highlight the advantages of artificial intelligence in Nigerian broadcast media.

c. To identify challenges affecting the application of artificial intelligence in Nigerian broadcast media.

#### Theoretical Framework

The study was anchored on technology-determinism theory. The theory was coined by Thorstein Veblen and holds that technology is a determining factor in communication. It is medium-centred and the

appropriate of technology in use will affect the message(s). As a medium-centred theory, it supports that the effectiveness of message delivery is determined by the appropriateness of technology. [1], observes that some

technologies are intrinsically less 'flexible' than others and thus might be expected to have more determinate effects: large complex hard-wired systems can be contrasted on this dimension with more decentralized, flexible, malleable computer-based technologies. The theory supports advanced industrial civilization. [3], states that that technology shapes the course of human evolution. Innovations appear at a rate that increases geometrically, unhindered by geographical limits or social systems. These innovations tend to transform traditional cultural systems, frequently with unexpected social consequences. Some social critics therefore define technology as both a creative and a destructive process. Studies on adopting artificial intelligence in broadcast media in

Nigeria is premised on the advantages of the adoption of robotised media equipment and processes that will make efficient broadcasting possible. Today's communication has gone beyond analog transmission and media of developed economies are integrating artificial intelligence in carrying out some communication tasks; for example, uplink stations need some aspects of robotics and artificial intelligence. Communication satellites sent to the orbit are directed and manipulated from downlink stations through advanced programming instructions. Although much aspects of artificial intelligence maybe conceptualised from hardware components, the actual intelligence is specified by coded programming language that are executed by technological devices.

#### Review of Related Literature

##### Understanding Intelligence

Man is a ration animal because he possess basic reasoning ability, understanding and freewill. He is specialised specie of animal with a sound retentive memory. One key attribute of man is the possession of intelligence. Basically, intelligence covers a person's abilities on a wide range of tasks, involving vocabulary, numbers, problem solving, concepts and so on. [4], defines intelligence as referring to a general mental capability to reason, solve problems, think abstractly, learn and understand new material, and profit from past experience. Intelligence can be measured by many different kinds of tasks. Intelligence draws on a variety of mental processes, including memory, learning, perception,

decision-making, thinking, and reasoning. [2] refers to intelligence as mental quality that consists of the abilities to learn from experience, adapt to new situations, understand and handle abstract concepts, and use knowledge to manipulate one's environment. Human intelligence and machine intelligence are different. Machine intelligence is programmed instructions for a machine to execute a computer task. It is an aspect of robotics in which machine are equipped with artificial intelligence. Machines possess the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.

##### Artificial Intelligence: An Overview

Artificial intelligence is otherwise known as machine intelligence is a variant of computer technology that replicates human intelligence in machine-coded forms. The Fourth Industrial Revolution is the era of Artificial Intelligence (AI) which is an interface between machine and human

intelligence. Modern smartphones are equipped with a high degree of intelligence that is capable of preempting human responses and executing sophisticated tasks. John McCarthy is credited with the articulation of Artificial Intelligence in 1955. AI holds that certain aspects of

learning and other domains of intelligence are simulated by machine through programming and hardware approach. Artificial intelligence describes the work processes of machines that would require intelligence if performed by humans. Its forms include (a) weak artificial intelligence in which a computer stimulates intelligence by investigating cognitive processes and (b) strong artificial intelligence which permits advanced intellectual, self-learning processes of computers through the use of adequate software/programming and automatic networking with other machines [14].

The application of artificial intelligence has numerous advantages:

- a. Artificial intelligence facilitates the automation and use of robotics to save labour and cost.
- b. It guarantees high degree of reliability in execution of tasks.

#### Artificial Intelligence in Broadcast Media

Broadcast media refer to the airborne transmission of electromagnetic audio signals (radio) or audiovisual signals (television) that are accessible to a wide population through standard and readily available receivers. It entails transmitting electromagnetic signals through airwaves over a wide area as in television or radio [6]. Unlike the print media that use mechanical means of reproduction, broadcast media propagate messages through carrier waves, fibre-optic lines or through cable transmissions [7]. The integration of artificial intelligence in broadcast media often take the shapes of hardware or software approaches. The hardware approach covers all tangible media equipment used in news collection, processing and dissemination. Although these media equipment may not be fully robotised, they are however, digitised to perform high intelligence tasks. Among camera mounting devices, a robotic pedestal is an automated motor-driven studio

- c. It executes complex tasks that are beyond physical and intellectual ability. Its accuracy is greater than that of humans because they maintain stability in performance.
- d. The machine-based intellectual device does not show emotional misbalance, thus it is capable of making reliable decisions.
- e. It reduces or in some cases, eradicates human involvement in execution of tasks. Monotonous work can be done through automations.
- f. It facilitates the inspection of technical facilities even in hard-to-reach areas without putting humans at risk.
- g. In communication, AI provides support services to digital hardware. A broadcast mast is easily mounted and manipulated through advanced robotics

pedestal that is computerised [7]. It is a special camera mounting device that is self-automated that is guided in operation with the aid of sensors. A camera jib arm equipment is a crane-like mount that permits the shooting of far and raised shooting scenes. In cable transmissions, the uplinks masts are installed with the aid of automated and self-guiding cranes. Although some cranes may not be fully robotised, they however, possess some degrees of intelligence in manipulations. Another aspect of artificial intelligence in broadcast media is the software approach. This covers the programming and signal transmission. Technology has revolutionised news programming and production. A news caster in a studio is concerned with making a speedy and clearer delivery of his or her message and to achieve this, a studio is equipped with high-tech media equipment that boost optimum audiovisual signals. Think of a

smartphone with artificial intelligence feature that can preempt human reasoning and make logical conclusions with high precision. Nigerian broadcast industry is yet to embrace full digitisation migration from analog to digital transmissions [11]. This partial digital migration is attributable to factors such as: bureaucracy in policy implementations, poor funding, lack of technical know-how and other intervening variables. The ability of Nigerian broadcast industry to embrace full digital migration puts to question, its readiness to apply the technology of artificial intelligence in broadcasting. Apart from some media equipment that are already built with imbedded artificial intelligence, other equipment are still operated manually. Challenges affecting the application of artificial intelligence in broadcast media. The use of artificial intelligence in communication requires both capital and human efforts at applying advanced computer programming to execute a task. From a hardware perspective, computer programmers look at tangible devices such as robots and from software perspective, programmers create specific applications that run the devices (robots). There is fear of media domination in terms of degree of technology of use between the developed and developing nations. This fear of domination of technology use defines the gap in integration of artificial intelligence in communication. The developed

#### CONCLUSION/RECOMMENDATIONS

The study examined the place of artificial intelligence in broadcasting in Nigeria. It observed that the Nigerian broadcast industry is yet to embrace full digital migration. As a result, it has affected the integration of artificial intelligence in broadcasting in Nigeria. The overall demand for artificial intelligence is premised on the evolving nature of

nations are regarded as media creators while the developing countries represent media consumer nations. The postulation of Diffusion of Innovation Theory of [12] recognised five stages of adoption of technology: innovators, early adopters, early majority, late majority and laggards. In terms of artificial intelligence, the developing nations usually fall under the categories of 'late majority' and 'laggards.' Artificial intelligence is capital-intensive and developing economies may not be able to bear the financial burdens of artificial intelligence and advanced media equipment. The world of computerisation is faced with recurrent issues of depletion of human labour as a result of machines. In the case of artificial intelligence, human intelligence is arguably replaced with machines that combine physical ability with high degree of mental capabilities. In communication as in the military, robots and robotised devices are replacing human labour. Although there is high degree of reliability to what a robot can do, there are occasions when such potential capabilities are put to question. This is clear in cases of malfunctioning of programmed instructions due to cybercrimes like hacking. A robot starts to malfunction when viruses are introduced into the system or its programmed instruction. At this instance, the reliability of a robot is highly low.

communication to meet ever-changing human needs.

Based on the conceptual underpinnings of the study, the following recommendations are proffered:

- a. First, the government of Nigeria should expedite actions on full digital migration of broadcast media to meet international best practices. It

is then, that adopting artificial intelligence will be highly appreciated. Technology is procedural in nature. This is because, science is cumulative in nature. A full digital migration of Nigerian broadcast industry will open different AI options to tap from.

- b. Like in digital migration, funding is central to the integration of artificial intelligence in broadcasting. Robotics requires adequate funding and lack of funding

will cripple the integration of AI in broadcasting in Nigeria.

- c. Developing nations should make efforts at software engineering to contribute to global demands for computer programming. If both hardware and software developments are left for the developed nations, the developed nations will continue to dominate global Artificial Intelligence market and may subtly use such AI devices to undermine the economy of developing nations.

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