



INFLUENCE OF RADIO BROADCAST AUTOMATION AS A COMPUTER-BASE APPLICATION FOR STUDIO OPERATIONS IN FLO-FM, UMUAHIA, ABIA STATE, NIGERIA

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ABSTRACT: *Broadcast automation allows the use of a set of technologies that helps radio workers to sequence sound recordings ahead of time, thus enabling radio stations to keep broadcasting and transmitting for long hours without human intervention. Relying on the above, objectives were set to determine the radio studio operational uses and application of Flo-FM broadcast automation, using the survey method with the entire staff of the station as population. The positive sampling technique was used to select 30 respondents for the study using the questionnaire as an instrument for data collection. In the end, it found that broadcasting automation was utilized in Flo-FM Umuahia operations. It also found that broadcast automation has removed drudgery, enhanced production and delivery of programs. Findings however revealed that lack of technical know-how, among others, was the challenge of broadcasting automation operation. It was recommended, among others, that efforts should be made to educate media workers on automated studio operations through workshops, symposia, training, etc.*

KEYWORDS: Automation, Broadcast, Flo-FM, Operations and Studio.



INTRODUCTION

Information and Communication Technology (ICT) has revolutionized communication in the 21st century. It has brought major changes to the way people live and communicate, resulting in socio-economic and political advancement of nations across the globe. Lamidi (2014) noted that the sustained prosperity of the western nations and the integration of markets around the globe are both attributable to the astonishing advances in ICT. In the electronic media industry, of which radio is a part, ICT has ignited dramatic, unprecedented changes. ICT has not only helped in facilitating and enhancing the creation, processing, sharing and dissemination of information in radio broadcasting, but has also ensured the immediacy and timeliness of news. "Innovations in communication technology, in addition to driving economic globalization, have also transformed the media world and the spread of information, with important consequences for national as well as global governance" (Ogundeji et al., 2020, p. 244).

Information and communication technology (ICT) is a generic term used to express the convergence of telecommunication, information, broadcast and communication. ICT is seen as a set of activities which facilitates and enhances the processing, transmission and dissemination of information by electronic means. It is often seen as the integration and utilization of computer technologies for the purpose of disseminating information to a target destination or consumer without the constraints of time and space.

ICT plays functional roles and makes tremendous contributions to the day-to-day running of radio broadcasting. Every advancement in communication increases the power to record and convey information. Prior to the arrival of these technologies, radio broadcasting equipment had been mechanical or analogue in nature. This mechanical state of the equipment hindered effective production and dissemination of news and information. Even the transmission of radio broadcast signals was often affected by wave interference, hedges and unclear signals. The reception of signals was largely limited to the carrying capacity of the transmitter.

The advent of computers has put tremendous speed on news gathering, editing and reporting, making the process in radio broadcasting almost instantaneous. This process lays a strong emphasis on accuracy. Swinton (1974) observed that one cannot catch up with an error in an era of satellite circuits and the accompanying high speed. In today's cyberspace and high-tech age, the computer has reduced, if not completely removed, the difficulties associated with the production of media products through electronic systems.

Williams and Sawyer (2003) pointed out that a computer is a programmable, multiuse machine that accepts data (raw facts and figures), manipulates and processes it into diverse pieces of information that we can use, such as summaries, totals or reports. Its purpose is to accelerate problem-solving and increase productivity. While digital computers are relatively recent inventions, analogue devices have existed for thousands of years. The Abacus, sometimes considered to be a computer, was used in medieval China and by the Aztecs of Central America, and earlier, "counting boards" were found in ancient Babylon. Circular slide rules, called "dead-reckoning computers," were used by aircraft pilots well into the 1970s to perform navigational tasks. Charles Babbage, working with Lady Ada Lovelace, in the early nineteenth century, created the Analytical Engine. The modern Ada computer language commemorates their work. Towards the end of the nineteenth century, Herman Hollerith, who founded International Business Machine (IBM), developed the punched cards used in early digital computers.



Turing and the Hungarian-American mathematician, John Von Neumann, are two of the many pioneers of digital broadcasting. Turing designed machines called the bombe and colossus to break the "Enigma" cipher – a secret code used by Germany during World War II. Some of the first generation of electronic computers include the Mark 1, the ENIAC. In the 1980s, with integrated circuits, a new generation of micro-computers was born. By the end of the 1970s, desktop micro computers began appearing in smaller offices and ordinary people's homes. Beginning with the Osborne, the Commodore 64, the Apple, and the IBMPC, micro-computers and their software systems came to dominate the market.

Computers and their software have transformed and revolutionized radio broadcasting. In the past, the production and distribution process in radio stations involved clear, definitive steps and employed manual labour. Today, studies have revealed that the radio broadcast industry not only gathers information using the computer but also has its written stories using computers. This modern technology eliminates the need for compositors to type because reporters have done the key stroking and the story already exists in an electronic form. In addition, many reporters rim their stories through computers that correct spelling and grammatical errors. With the invention of computers and its software, radio broadcasting has rapidly evolved. Radio broadcasting process is changing in nature while it still continues to uphold its primary purpose of educating, entertaining and informing its listeners. The use of computer technology has improved the efficacy of all the processes involved in radio broadcasting. Speech recognition and deflection softwares can convert voice recordings directly to word processed text, and translation programs can then re-write the word processed text into another human language.

Broadcast Automation has made it possible to produce the entire programming line-up of a radio station without relying on tape recorders, except for archival materials or for recording made in the field. The UK Parliament Post (2022) described an automated system as one that has been instructed to automatically perform a set of specific tasks or series of tasks within human-set parameters, adding that this may include basic or repetitive tasks. "Radio automation refers to a set of technologies that help broadcasters sequence sound recordings ahead of time, allowing stations to 'stay on the air' for hours with virtually no human intervention" (Douglas, 2004, p. 280, cited in Stuhl, 2023, p. 4). Digital sound editing can eliminate noise, mix voice and music, and give producers second-by-second precision in the assembling of programs. Musicians can now compose new works at a computer keyboard and create a printed score from the finished version. If turntables and tape recorders were used as the primary source of music from the earliest years of radio broadcasting, with the advent of broadcast automation, it is now this technology that is dominating every device that is employed in a radio station. The hardware of computers has basically replaced the use of CD players for music selection.

To be more efficient in organizing the broadcasts, a system is required that is able to regulate independently (automation) broadcast material and that does not rely totally on the crew or broadcasters in its operation (Maulana, 2019).

It is unarguably becoming a statement of fact that the success of any organization, institution, business or individual venture depends largely on the level of communication effectiveness and efficiency at its disposal. Every business or organization, regardless of its size or purpose, is concerned with processing facts (or data) about its operations in order to provide accurate information to its management. The function could be carried out faster through the use of modern communication channels like internet, television motion picture, etc, which



disseminates information to all nooks and crannies of the populace. These modern communication devices go a long way to alleviate the numerous human efforts being wasted in our previous (unorganized or non- systematic) manner of running our organizations or collecting our information, Mbam (2002).

However, the story is different in the Nigerian broadcast industry. Even in the face of technological advancement in other countries and the application of these new technologies like broadcast automation in the broadcast media, its acquisition and use in Nigeria is rather slow. Many radio broadcast stations are yet to catch up with the trend in modern technologies, particularly broadcast automation, even though this technology has the capacity of creating sophistication in the method of broadcasting and also improving the output and quality of programmes. The Nigerian radio broadcast media cannot afford to stand aloof where others are making progress. Thus, to fight the shackles of backwardness successfully, there is a need to embrace the use of broadcast automation technologies amongst others to improve the quality of programmes and broadcast. The improvement of the broadcast media all over the world is greatly due to the supplication of the right technologies and communication system within their broadcast network (Malcom, 2017).

In view of the foregoing, a problem arises as to how to gauge the influence of broadcast automation on broadcast content, message, delivery, information, reach and quality. Given the startling development of this technology and the expectation that proper application of this technology will improve radio broadcasting in Nigeria, this study will therefore, examine the Influence of Broadcast Automation Software as a Computer-based Application on Radio Studio Operations: A Study of Flo-FM Radio Station, Umuahia, Abia State.

Statement of the Problem

It is disheartening that despite the revolutionary development in media technology and the increasing use of broadcast automation in most parts of the world, many radio stations in Abia State in particular and Nigeria in general are yet to adopt this new innovation and imbibe the realities of modern broadcasting. The success or otherwise of this technology can only be measured in terms of the extent to which it brings improvement on the accuracy, speed, and dissemination of information; it also redefines the concept of broadcasting and takes it to an enviable height. The current operations of the Flo-FM station leaves one with the impression that it still sticks to the analogue system in the face of tremendous unprecedented technological transformation of radio broadcasting across the globe. The use of broadcast automation can only be said to be effective when the media professionals and audience derive optimum benefits from this technology through improved quality of programmes. However, the problem remains as to the degree of utilization of broadcast automation in Flo-FM, which is one of the major radio stations in Umuahia, Abia State.

It is also unclear as to the extent to which broadcast automation, if at all incorporated in the operations of Flo-FM, has enhanced the production and accuracy of news and other kinds of information in the station. Equally imperative is the need to ascertain the constraints, if any, associated with the incorporation and practice of broadcast automation on Flo-FM station. The outcome of this study has the potential to give a glimpse of the degree of adoption and utilization of broadcast automation in broadcast stations in South-East Nigeria in particular, and Nigeria in general.



Objectives of the Study

The objectives of this study were to:

1. Ascertain whether broadcast automation has been incorporated into Flo-FM's studio operations.
2. Determine the studio operational uses and application of broadcast automation in Flo-FM, Umuahia.
3. Determine the extent to which broadcast automation has influenced Flo-FM's radio studio operations.
4. To ascertain the challenges of broadcast automation in Flo-FM's studio operations.

Research Questions

To realize the objectives of this study, the following research questions were posed:

1. Has broadcast automation been incorporated into Flo-FM's studio operations?
2. To what extent does the Flo-FM station apply broadcast automation in its studio operations?
3. To what extent has broadcast automation influenced Flo-FM's studio operations?
4. What are the challenges of broadcast automation in Flo-FM studio?

LITERATURE REVIEW

To provide an academic background to, and empirical support for, this study, literature was reviewed. The review was to further help to give a graphic description of the nature, content and physical attributes of the subject of this study, with a view to arriving at a logical conclusion.

The Evolution of Radio Broadcasting in Nigeria

Radio broadcasting in Nigeria dates back to 1932, in fact, December 1932, when the British Broadcasting Corporation (BBC) started what it called the 'Empire Service,' with Lagos as one of the receiving centres. (Adejumobi, 1974) as cited in Duke (2021).

The broadcasting service distributed radio signals through wires connected to loud speakers with the aim of offering the public subscription relays of BBC programmes. These programmes were distributed through re-diffusion boxes located in homes or public places. The Radio Re-distribution Service (RRS) was formally launched on December 1, 1935 in Lagos, broadcasting to over 500 subscribers who had received their loudspeakers. By 1939, there were over 1,000 RRS subscribers and about 2,000 licensed wireless receivers. The service was extended to Ibadan that same year, resulting in the birth of the first broadcast network in Nigeria. The RRS was extended to Kano, Abeokuta, Ijebu-ode, Port Harcourt, Enugu and Zaria in 1944, and to Calabar and Jos in 1947. By 1949, it had grown astronomically to 9,000



subscribers and 12,000 licensed receivers. In 1935, the radio distribution system changed to Radio Diffusion System. The Turner Bryon committee, whose mandate was to come up with recommendations on setting up radio services with a national identity, recommended the setting up of the National Broadcasting service in 1949. It was founded in 1951 in Lagos State. The National Broadcasting service created autonomous regional stations in Enugu, Kaduna and Ibadan and further created provincial centres in Jos, Maiduguri, Sokoto, Kano and Ilorin. In 1956, through a Bill of the House of Representatives, the Nigerian Broadcasting Corporation was established with the statutory role of providing broadcasting services in Nigeria. The Federal Radio Corporation of Nigeria (FRCN) was established in 1978; the Voice of Nigeria (VON) was established in 1990. With the creation of new states came a further proliferation of the service along state lines. The first private radio station, Ray-power FM, was established in 1994.

Broadcast Automation System

Broadcast automation incorporates the use of broadcast programming technology to automate broadcasting operation. It can run in a "Live assist" mode when there are on-air personnel present in all the control-rooms, or run a facility in the absence of a human operator. Husein (2015) explained that the newsroom automation system depends mainly on how well it integrates with the newsroom computer system of the news station, adding that the fundamental outcome of any new idea on a product or technology is how it integrates into the operational workflow.

Originally, in the US, many broadcast licensing authorities required a licensed board operator to run every station at all times, meaning that every DJ had to pass an examination to obtain a licence to be on air, if their duties also required them to ensure proper operation of the transmitter. This was often the case on overnight and weekend shifts, when there was no broadcast engineer present and all of the time for small stations with only a contract engineer on call. It was also necessary to have an operator on duty at all times in case the Emergency Broadcast System (EBS) was used, as this had to be triggered manually. Gradually, the quality and reliability of electronic equipment improved, regulations were relaxed and no operator had to be present (or even available) while a station was operating, in the U.S. This signaled the movement towards automation to assist and sometimes, take the place of the live disk jockeys (DJs) and radio personalities.

Early Automation Systems versus Modern Systems

Early automation systems were electromechanical systems which used relays. Later systems were computerized only to a point of maintaining a schedule and were limited to radio. Music would be stored on reel-to-reel audio tapes. Sub-audible tones in the tape marked the end of each song. The computer would simply rotate among the tape players until the computer's internal clock matched that of the scheduled event. When a scheduled event would be encountered, the computers would finish the current-playing song and then execute the scheduled block of events. These events were usually advertisements but could also include the station's top-of-hour station identification, news, or a bumper promoting the station or its other shows. At the end of the block, the station among the tapes resumed.

Time announcements were provided by a pair of dedicated Cart players, with the even minutes stored on the other, meaning an announcement would always be ready to play even if the



minute was changing when the announcement was triggered. The system did require attention throughout the day to change reels as they ran out and reload carts, and thus became obsolete when a method was developed to automatically rewind and re-cue the reel tapes when they ran out, extending 'walk-away' time indefinitely.

A different technology appeared in 1980 with the analog recorders made by solidyne, which used a computer-controlled tape positioning system. Four GMS 204 units were controlled from a 6809 microprocessor, with the program stored in a solid state plough-in memory module. This system had a limited programming time of about eight hours.

Modem systems run on a hard disk, where all of the music, jingles, advertisements, voice tracks, and other announcements are stored. For radio software, these disks are usually on a computer, sometimes running their own custom operating systems, but more often running as an applicator *on* the PC operating system. Scheduling was an important advance of these systems, allowing for exact timing. Some systems use GPS satellite receivers to obtain exact atomic time, for perfect synchronization with satellite-delivered programming. Reasonably-accurate timekeeping can also be obtained with the use of internet protocol (IP) like network time protocol (NTP).

Automation systems are also more interactive than ever before with digital audio workstation (DAW) with **console** automation and can even record from a telephone hybrid to play back an edited conversation with a telephone caller. This is part of a system's live-assist mode.

The use of automation software and voice tracks to replace live DJs is a current trend in radio broadcasting done by many internet radio broadcasting stations. A station can even be voice-tracked from another city far away, delivering sound files over the internet.

Radio Automation and Mimetism

Broadcasting therefore is mimetic. It recreates the activities of people in their environment. It also uses the imitative art strategy to recreate, represent and reproduce human actions and activities, like documentaries, which are social commentaries on societal issues. However, the frozen image concept of recordings and storage has achieved permanency for the broadcast medium. The concept captures sound on audiotapes as electromagnetic signals and retains them for a future reference. The process makes it possible to overview information faithfully, after its time of release in the broadcast medium. The frozen image strategy enables the broadcast medium to adopt the permanency approach in the presentation of events, news briefs and highlights are also repeated frequently.

Sometimes, they follow the same approach to enable consumers recall specific experiences, which the broadcast medium wishes to signify. However, the major challenge is that the approach is selective in deciding which program is to be recorded for retrieval and reviews, like news commercials and special interest programs, like sport, documentaries and entertainment.

Broadcasting is a collaborative act and art. It involves the sagacious creativity of the conceptual artists with the efficient rendition of skills, talents and expertise of the interpretative class of artists. The collaboration produces programs which are major products of broadcasting. It takes the producer to conceive and design a program. The presenters as anchors, talents and actors act the screen script, according to the direction of the director. The director also works with the



technical crew to meet the aspirations of the producer and the appreciation of the audience. The collaborative efforts of the various talents produce the team work experience in broadcasting (Ihechu, Afulike & Ndukwe, 2019).

Radio Automation and Broadcasting Art

Broadcasting is a fugitive art. Programmes are fruits of the medium; they have a transient life span lasting only a short period of its exposure time. Immediately the message is released, it expires as exhausted and becomes irretrievable in the physical sense. It denotes that any vacuum in the information processing chain, rendering meaning adulterous, since a lacuna would have been created in the communication format is systematic.

The systematic nature shows that it is a synergic art. It synthesizes definite production elements into a composite experience. For instance, the combination or blending of manual and automation gives a definite meaning, which each on its own may be incapable of achieving.

This entails ordering, selection and organizing of sound in the most appealing manner so as to prevent a perfect mental picture of the issues solved. Therefore, language is conversational.

Also the technology allows the broadcast news to be the most recent among other media. Remember, the ear is only interested in what is new and therefore impatient. Thus, the broadcast media has the ability to bring an event to the audience right from where the event is taking place.

Furthermore, the broadcast message is flexible, especially that of radio. One can listen to the radio while doing other things. The media makes use of sound (in radio) and vision (in television). Therefore, sound effects are part of the media. It presents the reality of events. The programmes are everywhere because they are propagated as radio waves in the electromagnetic spectrum at a speed of 30 million metres per second.

Radio broadcasting fosters the significance of experience and the clarification of meaning. News, for instance, presents human experience as a member of the society (Ihechu, Afulike & Ndukwe, 2019).

Radio Broadcast Automation and Interfacing Via Networks

For ICT tools to be effectively used for radio programme production, the main interconnection technology between systems has to be network-based. This means that all the ICT devices have to be linked to the central processor (a computer) so that transportation of contents which are in file forms will be enabled. In that sense, input devices convert the files to something people can recognize (Haag & Cummings, 2008).

In the IT world, storage means the storage of files. In broadcast programme production, the audio streams are converted to files before recording and may be streamed during playback. ICT storage technology is based on non-linear media and linear data tape technology. The difference cannot be seen by the user from the outside. The difference may become visible in the response times to certain access requests (Ihechu, Mboho & Afulike, 2017). Access times are shortest for Random Access Memory (RAM) but RAM has the highest cost of production while temporary storage uses hard disk. During programme production, the ICT user exchanges the data and converts them to file format based on required capacity, access time and costs.



Theoretical Framework

The Diffusion of Innovation and Technology Determinism Theories were deployed for this study.

The Diffusion of Innovation theory

This theory was proposed by P. Lazarsfeld, B. Berelson and H. Gaudet in 1944. Asemah (2011) noted that the theory traces the process by which a new idea or practice is communicated through certain channels overtime among members of a social system. There are four main elements in the diffusion of innovation process, namely innovation, communication channels, time and social system.

This theory says that for a new innovation to diffuse, there must be an awareness stage, an interest stage, an evaluation stage, a trial and an adoption stage. The proponents were of the view that different types of innovations required different kinds of adoption units.

This implies that the success of any new innovation depends highly on the level of awareness, interest and adoption that is given to that innovation. Therefore, for a new media technology to have influence on the operation of the broadcast media, the professionals must be aware of this technology, and it must interest them to use it. Also, they should be able to evaluate the output and see how effective it is and decide whether to adopt it or not. Asemah (2011) added that one of the implications of the diffusion of innovation theory is that media practitioners are expected to use the language that will be easily understood by the audience whenever they are disseminating new ideas and innovations to the people. This means that they have to consider the target audience. There is equally the need to combine the mass media with interpersonal communication for an effective and hitch-free diffusion. Therefore, the introduction of radio automation as an innovation for media operations and development will encourage radio programme delivery and efficacy.

Technology Determinism Media Theory

This was propounded by Rogers, E. (1986); he noted that the perspective involves using communication to transfer technological innovations from development to their clients so as to create an appetite for change through raising a climate for modernization among members of the public. According to McLuhan (1964), “the medium is the message because it is the medium that shapes and controls the scale and form of human association.” McLuhan sees the media as the extension of man because new technologies lead to new perceptions and attitudes. Therefore, the available media technology determines how information is processed and eventually perceived – the import of technological determinism. Thus, radio broadcast automation is a clear posture of technological determined transmission, information process and dissemination for radio programmes for content consumers.



RESEARCH DESIGN

The research adopted the survey method. The rationale for adopting the survey method is that it helps to elicit responses from the respondents. The population of this study comprised the entire staff of Flo-FM, Umuahia, Abia State. This is because they were in the right position to supply the needed data for this study. The purposive sampling technique was used to select 30 respondents for the study. This survey was conducted using the questionnaire as the instrument for data collection. This questionnaire contained both structured and unstructured questions which were geared towards answering the research questions posed. Thus, the instrument was administered to the respondents physically. It sought to elicit the respondents' views and feelings about the issue under investigation. The copies of the questionnaire were administered personally by the researcher to the respondents. This is because the researcher wanted to ensure that there was no mutilation and that high return rate was achieved. The data generated from the respondents were presented in tables while the simple percentage statistical methods were adopted to analyze such data in line with the objectives of the study. The tables are presented below:

Research Question 1

Has broadcast automation been incorporated into Flo-FM's studio operations?

Table 1: Data Answering Research Question 1

Item	Variable	Frequency	Percent
Whether broadcast automation has been incorporated into Flo-FM's studio operations.	(a) Yes	30	100
	(b) No	-	-
	Total	30	100
The extent to which broadcast automation has been Incorporated into Flo-FM's studio operations.	(a) Fully	27	90
	(b) Partially	2	6.6
	(c) Not sure	1	3.3
	Total	30	100

The above shows that broadcast automation has been incorporated fully in Flo-FM's studio operations. Thirty (30) respondents (100%) agreed that broadcast automation has been incorporated in FLO-FM's studio operation. As to what extent it has been incorporated, 27 respondents (90%) affirmed that broadcast automation had been fully incorporated into studio operations in Flo-FM, two (2) respondents (6.6%) agreed that broadcast automation had been incorporated into the studio's operations, but partially, while one (1) respondent (3.3%) was unsure of the extent to which broadcast automation had been incorporated in the studio's operations.



From this, it is safe to say that broadcast automation has been fully incorporated in Flo-FM's studio operation.

Research Question 2

To what extent does the Flo-FM station apply broadcast automation in its studio operations?

Table 2: Data Answering Research Question 2

Item	Variable	Frequency	Percent
Flo-FM's studio operational uses and applications of broadcast automation	a) Scheduling of music log and the playback of songs according to the log, scheduling of commercial contents, and the playback of sports according to the log, log reconciliation, in-house voice tracking And embedded recorder/editor.	27	90
	(b) Only scheduling of music log and the playback of songs according to the log	2	6.6
	(c) Only scheduling of commercial contents, and the playback of slots according to the log.	1	3.3
	(d) None of the above	-	-
	(e) All of the Above	-	-
	Total		30

The table above shows that twenty-seven (27) respondents (90%) affirmed that Flo-FM, Umuahia, uses broadcast automation in scheduling of music log and the playback of the songs according to the log, scheduling of commercial contents and the playback of sports according to the log, log reconciliation, in-house voice tracking and embedded recorder/editor. Two (2) respondents (6.6%) opined that the station only used broadcast automation for scheduling of music log and the playback of songs according to the log, and one (1) respondent (3.3%) said the station only used broadcast automation for its scheduling of commercial contents and playback of sports according to the log. This points to the fact that broadcast automation is a



part and parcel of the station's operation and is considered very relevant.

Research Question 3

To what extent has broadcast automation influenced Flo-FM's studio operations?

Table 3: Data Answering Research Question 3

Item	Variable	Frequency	Percent
The extent to which broadcast automation has influenced studio operations in the respondents' station.	a) Very small extent	1	3.3
	b) Small extent	-	-
	c) Large extent	13	45.3
	d) Very large extent	16	53.3
	e) No influence at all	-	-
	Total		30
Ways in which broadcast automation has influenced Flo-FM's studio operations.	a) Removes drudgery	-	-
	b) Enhances production and delivery of programmes	6	20
	c) Improves the quality of programmes	6	20
	d) Reduces human involvement	1	3.3
	e) All of the above	17	56.6
	f) None of the above	-	-
	Total		30

The above table shows that broadcast automation has to a very large extent influenced radio studio operations. Thirteen (13) respondents (43.3%) said broadcast automation had to a large extent influenced radio studio operations. Fifteen (15) respondents (53.3%) affirmed that broadcast automation studios had, to a very large extent, influenced studio operations. Only a few respondents (3.3%) said broadcast automation had to a very small extent influenced studio operations.

Six (6) respondents (20%) observed that broadcast automation had helped in enhancing production and delivery of programmes. Six (6) respondents (20%) revealed that broadcast automation had improved the quality of programmes; one (1) respondent (3.3%) opined that broadcast automation had helped reduce human involvement in radio studio operation. Seventeen (17) respondents (56.6%) chose the option "all of the above" which means that broadcast automation has all the above mentioned influence on the radio studio operations.

Research Question 4

What are the challenges of broadcast automation in Flo-FM studio?

**Table 4: Data Answering Research Question 4**

Item	Variable	Frequency	percent
Respondents' views as to whether there are any challenges posed by broadcast automation in studio operations	(a) Yes	28	93.3
	(b) No	2	6.6
	(c) Not sure	-	-
	Total	30	100
Respondents' views as to the challenges posed by Broadcast automation in Studio operations.	(a) Unstable power supply	2	6.6
	(b) High cost of accessories	3	10
	(c) Ignorance/lack of technical know-how	2	6.6
	(d) Lack of access	-	-
	(e) All of the above	21	70
	(f) None of the above	2	6.6
	(g) Any other (specify)	-	-
	Total	30	100

The above table shows that 3 respondents (10%) revealed that the high cost of accessories was a problem encountered by the broadcast station. Two (2) respondents (6.6%) contended that ignorance/lack of technical know-how about broadcast automation on the part of staff was another challenge. Two (2) respondents (6.6%) could not identify any difficulty. Two (2) respondents (6.6%) opined that unstable power supply was a problem. Twenty-one (21), being the overwhelming majority of the respondents (70%), however, identified unstable power supply, high cost of accessories, lack of technical know-how and lack of access as the challenges.



DISCUSSION OF FINDINGS

From the data gathered, presented and analyzed so far, the following findings emerged:

RQ 1:

Has broadcast automation been incorporated into Flo-FM's studio operations?

Responses from respondent in Table 1 above indicate that the broadcast automation had been incorporated into Flo-FM's studio operations. Ninety percent (90%) of the respondents indicated that broadcast automation had been "fully incorporated" into the station's studio operations. This must have improved the operations of the media workers in the station. This result is in tandem with one of the findings of Zangana (2017) that the utilization of new technology in the KNN channel's newsroom has positively and significantly impacted on the newsroom activities and everyday life of journalists in the workplace, particularly when compared with the findings from the non-automation system used in the GK channel.

RQ 2:

To what extent does the Flo-FM station apply broadcast automation in its studio operations?

The data in Table 2 above points to the application and utilization of broadcast automation in Flo-FM station's operations. This is because of the affirmation of 90% of the respondents that Flo-FM, Umuahia, uses broadcast automation in scheduling of music log and the playback of the songs according to the log, scheduling of commercial contents and the playback of sports according to the log, log reconciliation, in-house voice tracking and embedded recorder/editor. The utilization of broadcast automation is therefore not in doubt. However, the study identified some posing challenges such as mechanical state of equipment, wave interference, limited capacity of the transmitter, difficulties associated with computer processing systems, etc.

RQ 3:

To what extent has broadcast automation influenced Flo-FM's studio operations?

The respondents also affirmed that broadcast automation has removed drudgery, enhanced production and delivery of programmes, improved the quality of programmes and reduced human involvement in programme production and dissemination activities. This will undoubtedly enable the station to live up to the expectations of its teeming audience. Vryzas, Tsipas and Dimoulas (2020) emphasized that despite the new possibilities and challenges in the collection, storage and distribution of radio content, the traditional values of radio, concerning mobility, ease-of-access, real-time content, and interactivity have retained the strong relevance and popularity of the medium. These expectations were stimulated and aided by the ICT interconnections enabled by the link through the central processor made up of both the soft and hardwares of computers.

RQ 4:

What are the challenges of broadcast automation in Flo-FM studio?

The respondents opined that unstable power supply is one of the impediments to broadcast automation. They also pointed out that lack of access to automation equipment and software,



largely due to lack of finance, is another challenge to broadcast automation. Ignorance and lack of technical know-how on the part of staff was also pointed out as a constraint to broadcast automation. Inexperience and inability of media personnel to manage equipment and high cost of such equipment and related accessories such as subscriptions, cords, lack of technical know-how, among others, were identified as part of the challenges of broadcast automation operations in Flo-FM, Umuahia.

CONCLUSION

The essence of this study is to ascertain the influence of broadcast automation on radio studio operations. For clarity of purpose, and to achieve focus, Flo-FM Umuahia, Abia State, was used for the research and relevant literature in ICT and broadcasting was reviewed. The result showed, among others, that Flo-FM station has embraced and adopted broadcast automation in running studio operations.

The study also found that most technical personnel still lack in-depth technical know-how in the handling of automation systems. High costs of equipment and unstable power supply are some challenges encountered by the broadcast media in the application of broadcast automation, as revealed by the study.

It is clear that automation systems and software have a great influence on the operation of Flo-FM radio station. This, of course, is made possible by the availability of the new media technologies in the Nigerian broadcast industry. This realization has led to the acceptance and use of some relevant technologies such as computer, internet digital studio and automation software/systems. This implies that the media have fought the shackles of backwardness in the industry.

Owing to the adoption of these technologies, particularly automation systems and software, there has been a significant improvement in the efficiency, production, delivery and quality of broadcast programmes. Being a developing phenomenon, however, the use of broadcast automation systems and software in Nigeria is plagued with some problems, which are not really insurmountable, but require some level of hard work and commitment to overcome.

RECOMMENDATIONS

From the facts emanating from this study, it is clear that broadcasting in itself is technology driven; hence, the future of broadcasting in Nigeria will inevitably be digital. In the light of this, the researcher recommends the following:

- 1) That the government should reduce value added tax on automation systems and software and new media equipment in general to help reduce the overall cost of equipment in order to lessen broadcast stations' financial burdens.
- 2) The new media technologies have the capability to further the scope of broadcasting by broadening their horizon and making Nigerian broadcasting a world contender. This can only be achieved if the broadcast media go out of their way to procure new and better facilities.



- 3) The lack of technical know-how is also a great impediment to the use of broadcast automation systems and software. Efforts should be made to educate necessary media workers who handle studio operations, through the use of workshops, symposia, seminars and training courses.
- 4) The private, state and federal media stations should invest in the procurement of media technologies that are in tune with modern technological advances.

REFERENCES

- Asemah, E.S. (2011). *Selected Mass Media Themes*. Jos: Jos University Press.
- Duke, V.B. (2021). A Historical appraisal of broadcasting in Nigeria. *IMPACT: International Journal of Research in Humanities, Arts and Literature (IMPACT: IJRHAL)*, 9(11), 51-62.
- Guanah, J. S., Agbanu, V. N., & Obi, I. (2020). Artificial intelligence and journalism practice in Nigeria: Perception of journalists in Benin City, Edo State. <https://scholarhub.ui.ac.id/irhs/vol5/iss2/16/>.
- Haag, S & Cummings, M (2008). *Information System Essentials*. 2nd ed. New York. Mc Graw-Hill
- Ihechu, I.P, Afulike D.C. & Ndukwe U.E. (2019) *Foundations of Broadcasting*. Enugu. Litho Publishers.
- Ihechu, I.P, Mboho, M & Afulike D.C. (2017) Attitudinal Disposition of Programme Procedures towards ICT utilization in Broadcast Stations in South-East Nigeria. *Review of Communication and Media Studies* Vol. 1(4): 196-197.
- Ukonu, M.O (2006) *Dynamics of Mass Media Development in Nigeria*. Enugu: RhyceKerex Publishers.
- Katz, E. (1963). *Traditions of Research on Diffusion of Innovations*. American Sociological Review.
- Lamidi, I.K. (2014). A discourse on Nigeria's preparedness for digital broadcasting. *Journal of Communication and Media Research*, 6(2), 83-91.
- Liwhu, B. (2008). Digitization and the Challenges for Nigeria Broadcasting Industry. *Journal of the National broadcasting Commission*, 10,2, pp 24 – 30 April – June 2008.
- Maulana, R. (2019). The automation of radio broadcasts using Rivendell's Open Source Software. *Turkey Journal of Computer Engineering (TJCE)*, 11(1), 1-7.
- Mbam, B.C.E. (2006). Information and Communication Technology (ICT) in Communication profession. In *Interdisciplinary Journal of Communication*. No. 5. Pp. 60 – 68. September, 2006 2. November 2005.
- Nimco, H. (2015). Broadcast automation system: Newsroom production. <https://www.theseus.fi/handle/10024/92773>.
- Nweke, O. (2001). Information Technology and Modern Public Relations Practice: A Critical Analysis. *Enugu, Journal of Public Relations Management*. Vol. 1.No.2. Enugu Campus of UNN.
- Nwodu, L.C. (2004). Technological determinism Theory and Media Practitioners. Perception of Cultural Influence of ICTs on Developing Nations. *Nigeria Journal of Communications*. Pp. 72 -83.
- Ogundeji, B.K., Okioya, S.O., Oyalabu, K., & Kazeem, A.O. (2020). Evaluation of digital



- broadcasting effectiveness between the urban and rural areas in Ondo State, Nigeria. *Nasarawa Journal of Multimedia and Communication Studies*, 2(2), 243-257.
- Okechukwu, W.J. (2006). The Relevance of Communication and Information Technology (CIT) to National Development: The Nigerian Experience. *International Journal of Communication*, 4, 182 – 190.
- Oyedokun, I. (2023). Effects of adopting artificial intelligence presenters in broadcasting on audience perception and gratification of broadcast content <https://www.researchgate.net/publication/>
- Oyero, O.S. (2007). The New Media Technologies: Prospect and Challenges for Development in Africa. In *Ebenezer Soola Conference on Communication: Proceedings*. Ibadan: Nigeria. Pp.334 – 345.
- Stuhl, A.K. (2023). Google Radio Automation and the broadcast plights behind platformization. [sagepub.com/journals-permissions https://doi.org/10.1080/10584609.2023.2244444](https://doi.org/10.1080/10584609.2023.2244444)
- UK Parliament Post (2022). Automation in military operations. <https://post.parliament.uk/research-briefings/post-pn-0681/>
- Ukonu, M.O. (2006). The New Information and Communication Technology and Media Literacy. In *International Journal of Communication*. Nsukka: CSF No 4, 116 – 133, June 2006.
- Vryzas, N.Tsipas, N. & Dimoulas, C. (2020). Web radio automation for audio stream management in the era of big data. <https://www.researchgate.net/publication/354444444>
- Zangana, A. (2017). The Impact of New Technology on the News Production process in the Newsroom. <https://livrepository.liverpool.ac.uk/123456789/>