

The Challenges of Digitization of Broadcasting in Nigeria

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Abstract

Digitization is the current trend in broadcasting, both in Nigeria and the world over. The International Telecommunication Union, ITU, set 2015 for the entire broadcasting stations in the world to go digital. Nigeria set 2012 for broadcast stations in the country to be digitized. This work aimed at x-raying the challenges of switching from analogue to digital technology. In the process, the benefits of digitization were outlined and afterwards weighed against the challenges of actualization of the digitization. Consequently, suggestions were made to avert, or reduce the impact of the discovered challenges. It was concluded that a careful implementation of the established policies in relation to the suggested remedies, will make the digitization process a success in Nigeria.

Key Words: challenges, digitization, broadcasting, analogue, digital, switchover, transition.

1. Introduction

The Nigerian broadcasting industry is currently undergoing a quiet revolution. It is all about the ongoing transition from analogue to digital technology. Digitization is a technological innovation that will change the scope of radio and television broadcasting in this country and beyond. In line with the transition process, the International Telecommunication Union, ITU, in the Regional Radiocommunications Conference, RRC '06, held in 2006, set a deadline for a total switchover of all broadcast channels from analogue to digital. The body set June 17, 2015 for all UHF channels to have gone digital. It also set the digitization of all VHF channels for 2020 (Aihe 2008).

In response to that deadline, Nigeria has set June 17, 2012 as its switchover date. This date is three years earlier than the ITU's deadline (Ocholi, 2009). Some concerns say Nigeria is on the fast and right track while some others (Oshodin 2009 p.1) see "Nigeria's digital broadcast migration a mirage" if certain measures are not taken by government and stakeholders. The date has further been shifted to December 2012.

Obviously, digital broadcasting has many advantages over the analogue. Programme presentation would be well improved by the time analogue is over. These are true in terms of clarity and quality of signals and spectrum efficiency. Ocholi (2009, p.2) argues that: *Since technology has opened a world of possibilities for broadcasting, a huge spectrum will be available for radio and television broadcast in the country. As a result, more frequencies or wavelengths will be available for television stations in the country. It will also afford the industry opportunities for interactive broadcasting as the television sets would now do much more than receive signals.*

In fact, "digital television signals in particular are clearer and stronger in their audio and video output" (p.1). It is worthy of note that television sets would perform the tasks of computers and telephone handsets, under digital technology. This implies that, TV sets would be able to provide access to the internet. It would also be able to store data from received audio and visual signals. In essence, the ephemeral nature of the broadcast media would have been reduced, if not eradicated. The broadcast media would begin to have catalogue value. On the side of broadcasters, digital broadcasting equipment will enable the simultaneous transmission of a minimum of four programmes and four channels from the same station that used to transmit only one programme or channel in the analogue transmission. Moreover, according to Ocholi (2009, p.3) "digital television offers variety of added services such as multimedia, banking, home shopping and faster rates of data transmission (casting)."

Having noted these, it has been observed that the Nigerian Ministry of information and communications, through its agency, National Broadcasting Commission, NBC, look confident on successfully transiting from analogue to digital by the end of 2012. But a question needs to be looked at: Are Nigerians complying with the demands of this new technology? A careful look at the unfolding events suggests that both broadcasters and consumers do not have the basic information required to achieve the feat.

This submission is based on the fact that most of the television and radio sets used today are not digital-compliant. It, therefore, means that those sets would have to be replaced with digital compliant ones. However, for the consumer, there

will be a second option or acquiring a digital analogue converter known as Set Top Box. Also, all the analogue production and transmitting equipment will become obsolete at the end of the digitalization process.

Regardless of the above positions, Nigerian broadcasting industry must go digital with other countries. Even if the 2012 peg is not realized, the country must not be left behind when the whole world must have switched over to digital system in 2015. It would amount to Nigeria being turned to a dumping ground for obsolete analogue equipment. It was based on the above premise that Ocholi (2009) says: *The NBC spokesperson said: "The truth of the matter is that television and radio stations do not have a choice. Nobody has a choice. If we do not migrate from analogue to digital, we will end up being in the dark. It is in everybody's interest to migrate"... if Nigeria does not want to be left behind, it has to follow the rest of the world. (p.4)*

Considering the circumstances under review, Nigeria is faced with a lot of challenges ranging from infrastructure to manpower; and ranging also, from financial implication to sensitization issues. These are not all. Since it has become mandatory that the nation's broadcast media must transit from analogue to digital system with other counties; and since there is already a set deadline for transition, the stage is set to unravel the challenges of the digitalization process. Coming out with a comprehensive knowledge of envisaged setbacks to the process will engender the proffering of remedial measures for a successful transition before 2015, if not 2012.

1.1. Objectives

The objectives of this work are:

1. This work set out to identify the factors challenging the transition from analogue to digital broadcasting in Nigeria.
2. It is also aimed at making suggestions to overcome the identified challenges

2. Conceptual Framework

The word, digital, denotes "a process or device that operates by processing information that is supplied and stored in the form of a series of binary digits" Robinson (2004: p.373). Corroborating, Okpanachi (2008, p.4) says: *Digital radio is the pure digital transmission medium that improves the sound quality of radio broadcasts, virtually eliminating static, hiss, pops and fades and offers data display capabilities on receivers and opens up opportunity for multicasting: Broadcasting multiple high-quality channels on each frequency.*

In the same vein, digitization of video signals according to Baran (2010, p.227) "reduces their sizes; therefore, more information can be carried over phone wires and stored." Corroborating, Hanson (2005, p.241) states: *Just as sound recording has moved to digital formats with CDs and MP3 files, so is television in the process of going from analogue technology of Farnsworth and Zworykin to the computerized digital technology. There are two distinct digital formats. High-definition television (HDTV) is a wide screen format and features an ultra clear high resolution picture with superior sound... The other digital format is standard digital television, TV, which will make it possible to broadcast up to six channels on the same frequency space that now carries only one channel.*

The above submissions represent the attributes of the digital concepts. They also form opinion for the advantageous need of the process of digitization. That is to say, that the digital technology is paramount in today's broadcasting. That is why Dominick (2009, p.233) says "the traditional broadcast television industry is in a state of change". Also Dominick (2009, p.157) states: "Hoping to capitalize on the public's increasing awareness of high-definition television (HDTV) the radio industry is introducing HD radio, a digital service that generally improves the signal quality of terrestrial radio stations." HD radio has the ability to enhance FM station to produce sound as good as CD. It can also make AM station sounds as good as current FM station. And the signals are static free. The notion here is that digital signals in broadcasting are superb, that they can be compressed to make one single radio station to broadcast more than one programme at a time.

Talking about Television, digital television (DTV) offers many advantages. The pictures are clearer with better sound quality. It also enhances the "rectangle-ness" of the screen (16:9 aspect ratios) unlike the traditional TV which is square (4:3 aspect ratios). Furthermore, the possibility of transmitting on a super-resolution hi-def TV is enhanced by digitization of TV signals. As a footnote to the power of digital technology, Rodman (2006, p.236) submits: *Audience fragmentation has encouraged the development of digital radio which can increase format selections... In traditional analogue radio, an electronic waveform represents the sound on a carrier wave. Such a waveform carries static and easily corrupted. In digital radio, transmitted sounds are assigned numbers (digits) that take up less air space than analogue waves... Digital signals can also result in crisp, clear signal.*

Observers have it that the difference between traditional analogue broadcasting and digital broadcasting resembles the

disparity existing between AM and FM signal qualities. These outstanding qualities of digital broadcasting prompted the world through its regulator, the ITU, to make moves towards digitizing all broadcast outfits in the world. A pact was reached; and Nigerian was, and still is, part of the deal to digitize.

Having noted the intricacies of digital technology as it relates to broadcasting, a brief incursion into the historical background of the process will suffice here. According to Mishkind (2009, p.2), experiments on High Definition Television started in the late 1940s but the first digital broadcasts were transmitted in November 1, 1998. The transmission saw about 42 TV stations around the United States air live digital signals of the launch of the space shuttle discovery (Hanson 2005, p. 242; Encarta 2008, p.1). This motivation led to other directives. As Mishkind (2009, p.4) puts it: *In its desire to generate more money by auctioning spectrum space, Congress directed the FCC to move all television to digital transmissions, effective February 17, 2009. Stores were forbidden to sell TVs without an ATSC tuner in it after July 2005... The date was later moved to June 12, 2009.*

As it stands now, the United States has fully transited to digital broadcasting. "Digital Audio Broadcasting (DAB) first started to be developed in Germany" in 1981 (Wiki 2010, p. 2). But the BBC started broadcasting digital radio in 1995 making it the first organization to build a digital network in the UK. The digital trend is being observed by many countries because none wants to be left behind. The bid to transit from analogue to digital necessitated the different deadlines chosen by different countries. According to Ocholi (2009, p.1), "Nigeria officially started the digitization of its broadcast industry in December 2007, following President Yar'Adua's approval" However, the digitization programme commenced in Abuja on June 3, 2008 in response to a meeting of stakeholders in the industry. In order to enhance the achievement of the target, the Presidential Action Committee (PAC) on the transition from analogue to digital broadcasting was set up on October 13, 2008 (Udeorah; 2009, p.7). It was this committee that set June 17, 2002 as switchover date in Nigeria. In this regard, most of the broadcasting stations in the country started making efforts to meet the deadline. It is worthy of note that many countries responded to the 2015/2020 deadlines fixed by International Telecommunication Union, ITU, (Aihe; 2008, p.2.). For emphasis, the switchover deadlines of selected countries are shown in table 1. It is believed that after all the countries must have observed their individual deadlines, the broadcasting audience would start enjoying quality signals. They would also have the options of multiple channels from a particular station.

3. The Gains of Digital Broadcasting

Generally, digital broadcasting has enormous benefits it can render to both the audience and broadcasters. These benefits could be in the direction of programme content, media convergence, quality signals and multiple channels. Nevertheless, Udeorah (2009, p.7) submits that the PAC "deliberated and determined the benefits of digitization". Different sectors of the society shall benefit in different ways. Below are the advantages of digitization.

3.1. National interest

When the transition is fully completed, the spectrum will be freed up. Thus, the spectrum can be applied to other services. This is in line with Mishkind (2009: p.4) submission that American Congress had a "desire to generate more money by auctioning spectrum space." The implication is that "a huge spectrum will be available for radio and television stations in Nigeria" (Ocholi; 2009, p. 1). This is because, digital transmission enhances "limited spectrum use" (Uzor; 2008, p.2). However, Baran (2010, p. 227) argues that "if broadcasters opt to devote their entire spectrum space, as technologically required, to the transmission of high definition images, they will lose audience share to cable, the internet and DBS, all of which offer multiple channels of programming and data."

In the light of the benefits regarding national interest, Ekeh (2009, p.1) notes that "Nigeria is ahead of most African countries in the march towards 2012 switchover date as well as in the state of the industry."

3.2. Viewers' Interest

Digital broadcasting will afford the viewers "more programming choice arising from efficient spectrum utilization" (Udeorah, 2009, p. 7). Digital broadcasting "plays a vital role in information dissemination due to its high receptivity, vast coverage and efficiency" (Bunshak; 2006, p. 9). The viewers are going to receive clearer pictures because digital broadcasting "promises television pictures that are as clear and crisp as a Cineplex feature" (Rodman; 2006, p. 268). There will be optimum utilization because the viewers will be able to receive multiple channels from one station. The variety will, therefore, enhance the gratification efficiency of broadcasting. More so, digital broadcasting enhances media convergence which affords the audience to use TV in conjunction with telephone, computer and other information and communication technologies. Duke (2001, p.1) sums up the above submissions thus: *The technological possibilities of digital television are immense. It could provide the broadcast of theater quality sound and picture via cable, antenna or satellite; multicasting which enables the transmission of multiple programmes within one digital signal; and signals for data communications that*

could potentially bring to TV the capabilities of web pages and interactive compact discs .

3.3. Broadcasters' Interest

the broadcasters are going to enjoy an era of cost effectiveness with digital broadcasting. This is because; a station can carry up to four channels on the same frequency. Also digital programme productions are flexible and faster than the analogue. Again, stations may generally rely on syndicated programmes because the digitalization process encourages equal opportunities that result in healthy competition. Consequently, this will "delineate content, multiplexing and transmission" (Uzor; 2008 p. 2). However, the amount of money spent on salaries and maintenance and infrastructure will reduce because digital technology does not go with bulky equipment. And few people are required for the manipulation of such equipment. It was on this basis that Dokpesi, (2008, p. 2-3) supports the cost effectiveness of digital broadcasting. He states: "In the master control where we used to have about 12 people working, it's only one person doing that now. In programme injection, you only need two, now as a result of new (digital) technology." Corroborating, Okpanachi (2008, p. 4) says "doing so, they can realize ways to make more money. Digital radio gives more business opportunities for radio stations."

3.4. Content Providers' Interest

The content providers do not only have increased avenue for "legitimate exploitation of works and avenue for airing programmes, but increased demand for all genres of programmes to fill the additional programming demands in the increased available channels" (Udeorah; 2009, p. 7). As the existing broadcast stations start increasing the number of channels resulting from the digitization process, the demand for programme will increase. Consequently, the content providers will be well engaged in the bid to satisfy the numerous stations that will be yearning for programmes. This will create competition which will result to quality content provision. At the end, the content providers will maximize profit.

3.5. Regulator's Interest

The regulator, in this case, NBC, will be acquiring increased revenue that will be accruing from additional licences. On the long run, specialized areas of broadcasting will be encouraged, thereby addressing areas of that were hitherto neglected by commercial broadcasters.

3.6. Other Interests

In considering all the gains of digital broadcasting as highlighted above, one should not lose sight of other benefits as they relate to the media and the society. In this wise, the media convergence will create a good avenue for advertisers. Many channels will be available for them to market their products and have wider reach to consumers. This is in line with Ekeh (2009, p. 2) assertion that: "The migration of television from the traditional television set to the mobile device will portend a whole new world of opportunity to advertisers wishing to reach customers and prospects and to the entire advertising industry itself."

In addition to this, digital broadcasting will enhance the full propagation of local content being emphasised by NBC. Also, the clamour for community broadcasting will have reduced setbacks because with the multiple channel approach, some of the channels of a station could be community oriented. In fact, the benefits of digitization are not limited to the ones presented here; they are numerous.

4. The Challenges of Digitization in Nigeria

Despite the benefits associated with digital broadcasting, there are several factors that pose challenges to the process. It is time to look at the chief challenges that form the crux of this discourse.

4.1. Deadline

The main challenge, according to Ekeh (2009, p. 2), of digital broadcasting lies with the actual migration from analogue to digital. Although, other challenges rest on this one, the issue of meeting the set 2012 deadline is something to worry about. This position is dependent on the fact that the politico-economic circumstances in Nigeria tend to tilt to a level the citizens are not confident about some of the policies. There are no available stringent measures put in place to make sure all broadcast stations comply (Ibulubo 2008, p. 1). Considering the slow approach to issues and projects in Nigeria like reinvigorating the power sector, infrastructural development, offering political solutions, reversing the brain drain syndrome, etc; one would wonder why the country chose a date, three years earlier than the ITU's mark. It is on record that NigComSat-1, the Nigeria Communication Satellite, launched into space in May 2007 was shut down in 2008. Since then, nothing has been done about the project that cost the country 340 million dollar (BBC 2008, p. 1). In the face of all these, the deadline factor, however, embodies some other challenges.

4.2. Technical and Financial Challenges

The switchover from analogue to digital broadcasting requires huge investment on the equipment and gadgets. To acquire this, there must be finance. The technical and financial issues are two-fold: The involvement of the broadcaster and the implication for the audience. The broadcasters need to acquire new digital equipment ranging from production equipment to transmission equipment. In this vein, broadcast organizations like Nigerian Television Authority, NTA, and Federal Radio Corporation of Nigeria, FRCN, will be hit severely. The technological cum infrastructural challenge manifested in USA where "less than 15% of the stations signed off at the June 12, 2009 deadline" (Mishkind; 2009, p.4).

Furthermore, the masses will be seriously affected. The broadcast audience without digital compliant sets will have to acquire them. Considering the low economic standard of most Nigerians; it will be a herculean task for all the audience to comply with the deadline. Take for instance, in 2005, "HDTV sets start at $1,000 and go as high as $16,000" (Hanson '2005, p.241). It is true the prices will go down with time. But the question is: How soon will that be? Even when Set Top Boxes (STBs) are going to be used, they have to be acquired first. STBs are used to connect sets that are not compliant to digital signals. It is on this note that the financial and technical factors are considered big challenges to the digitization process.

4.3. Manpower

As the complex and fragile equipment are coming in, there is need for matching manpower. The task of training and re-training personnel to fit into the digital process pose a challenge to the race. On the other hand, the process will definitely increase the number of stations. Thus, the existing broadcast personnel who may likely fit in may not be enough to fill the spaces and as such, pose an initial challenge. However, some of the existing personnel may be adversely affected too. Those who may not be able to understand the flexibility and, or, cope with the fragility of the new technology may be thrown to the labour market. That will eventually add to the burden of unemployment that has bedevilled the nation in recent times.

4.4. Power Supply

The power sector in the country is nothing to write home about. The country has spent huge sums of money, though not accountably, to revive the power supply to no avail. Consequently, the sound of generators at every corner of a Nigerian street calls for alarm. But the people have to use these generators to at least, "live life". Also, all the companies in the country – petrol stations, telecom, banks, manufacturers, broadcast organizations, etc – rely on standby generators to carry on their businesses. In the long run, it impacts on the cost of production or service rendering costs. The charges are later transferred to the consumers. It would be apt to point here, that the epileptic power supply and the invariable dependence on generators pose big challenges to the digitization process. It would create high cost of programme production and presentation.

4.5. Knowledge Gap

Another challenge, though not easily noticed, is the issue of awareness of the audience, government officials and sundry, of the digitization process. Nigeria has a large segment of illiterate population. Most of this population dwell in the rural areas. They do not readily get information concerning the process. Also in the government offices, the awareness is not yet there. These scenarios create a gap between those that are aware of the process and those that are not. In this wise, the digitization process is faced with the challenge of being drawn backwards by people who do not understand the issues and other intricacies of the programme.

5. Remedies

Through the challenges of the digitization process in Nigeria are not limited to the ones discussed above, it would be pertinent to proffer some remedial measures to overcome them, or even prevent other covert ones. Firstly, there should be a framework that world separate broadcast content providers from the content distributers. To do this, a new licensing structure that will be of two regimes – one each for the providers and the distributers – is advised. When this is done, it will lead to efficient digital broadcasting in the face of competitiveness.

Secondly, sensitization of government policy makers, stakeholders and officials will contribute positively to the process. The audience also needs awareness campaigns to reduce the incomprehensibility of information regarding digitization. They should be made to understand the nitty-gritty of the entire process so as to become partakers, and not observers. Furthermore, convergence of broadcasting with other related technologies is also advised. For instance, the recent convergence between MTN and DSTV extends the potential of the transmission of signals. In addition, the government should promulgate laws that will enhance delivery (like mandating the assemblage of the digital equipment in Nigeria to help bring the presence of the manufacturers) for affordability.

On the side of the consumers, government should help subsidize the cost of acquiring new sets or the Set Top Boxes to create greater accessibility. The position of Ibulubo (2008, p. 2) corroborates the above submissions, thus: "Stakeholders would discuss how to implement digital mode of broadcast, best sensitization methods to employ as well as adopt a policy draft that would serve as a guide to the activities in the digital era".

6. Conclusion

The International Telecommunication Union, set 2015 as date broadcasting will become entirely digitized. Following that deadline, Nigeria, through its broadcast regulators, NBC, set June 2012 as the nation's switchover date. This development caused the raising of several issues, both locally and internationally.

Many benefits have been identified with digital technology. It has been ascertained that digital TV offers clearer picture and sound. It also enables multiple channel reception. More so, the signals are less prone to distortion. The gains are countless. However, the digitization process is faced with some challenges. The masses are not all aware of what the process is about. The financial burden is too involving both for the broadcasters and the audience. Further, the political climate in Nigeria poses fear on whether the deadline could actually be met. Nevertheless, Nigeria cannot be said to be lagging behind when its deadline is compared to those of even more advanced countries like Australia and the countries of Europe. Therefore, if the policies are religiously followed; if governments come to the aid of the parties involved by way of funding and subsidy, then the road to the digitization shall be smooth. In addition, awareness creation would go step further to enhance the process. Moreover, government should find a lasting solution to the power problem. Digitization and power outage are not compatible. Nigeria as the giant of Africa should emulate the policy implementation approaches of other "dwarfs" of Africa like Ghana. There is a need to move forward, especially digitally.

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Table 1: The switchover deadlines of select countries

Switch Over date	2009	2013	2011	2015	2012	2011	2012	2012	2012	2011	2015	2010
Country	USA	Australia	Canada	China	Hong Kong	Japan	Nigeria	Kenya	Euro	SA	Malaysia	Taiwan

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