

CONVERGENCE IN TELECOMMUNICATIONS: OPPORTUNITIES AND CHALLENGES IN THE NIGERIAN REGULATORY SECTOR

Nnalue Michael Onyechi Esq.

Abstract

The historical development of telecommunications and computers in the recent past has witnessed a tremendous gestation and proliferation of technologies as a result of convergence on information and communications technologies (ICT). A key phrase in the review of legislation and policy that affect broadcasting remains that of technological convergence. In Nigeria, for example, integration work started in the mid 2006 as it was no longer fashionable to deliver only voice telephony services to consumers. In addressing the technical aspect of convergence, the Nigerian Communications Commission (NCC) adopted this regime under a unified access licensing scheme.¹

Although the integration of various services was very slow due largely to inconsistency in government policies engendered by changes in administration. Nevertheless, a common belief shared by previous and current administrations is that a layer model (horizontal regulation) is the trend for the convergence in communication laws in the future. To achieve this model, the Nigerian government through their representative agencies, accepted that it would require more time and effort to put the horizontal regulation into practice.

For the sake of clarity, it would be necessary to define these terms so as to provide soft landing towards the understanding of these terms. What are convergence and technological convergence in the context of telecommunications?

Convergence has been given various definitions by several scholars. However, one thing that is common among them is the understanding that digitalisation is not so much defined by its physical infrastructure, but by the content or the medium.² Blackman, 1998 defined Convergence as a “trend in the evolution of technology services and industry structures.”³ Convergence was more technically defined by Collins as “the coming together of telecommunications, computing and broadcasting into a single digital bit-stream.”⁴

The wave of technological convergences that swept the shores of ICT industries prompted different responses from various governments. In Nigeria, for example, it came in the form of tsunami as

Nnalue Michael Onyechi Esq., Faculty of Law, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State. E-mail: mikefranky2007@gmail.com, Mobile: 08132722266

¹ Nigerian Communications Commission, “Licensing Framework for Unified Access Service in Nigeria” (2006) available at www.ncc.gov.ng accessed 30 June 2009

² Menon, S. “Policy Initiative Dilemmas On Media Convergence: A Cross National Perspective”. Conference Papers-International Communication Association (2006): 1-35 Communication & Mass Media Complete. Web. 20 Nov. 2011.

³ Blackman, C. (1998). “Convergence between telecommunications and other media: how should regulation adapt?” *Telecommunication Policy*. 22 (3): 163-170.

⁴ Collins, R. (1998). Back to the future: Digital Television and Convergence in the United Kingdom”. *Telecommunication Policy* 22 (4-5) 383-96.

the government was not prepared to face the new regime. However, in dealing with the situation, the government set up relevant regulatory agencies to control the behaviour of major players in the converged technology sector. There is no doubt that the converged technology ushered in some important opportunities as well as challenges within the regulatory sector.

Introduction

The term Convergence is frequently used to describe an assemblage of global information technology (ICT). Technological convergence is the tendency for different technological systems to evolve towards performing similar tasks. The process of convergence starts when hitherto parallel technologies fused together to take over from past technologies and perform the same task but in more sophisticated and advanced manner. Convergence can take different shapes and forms depending on the sector of the society it manifests itself. For example it can occur in the industrial sector as industrial convergence, licensing convergence, economic convergence, functional convergence, technological convergence etc.

Industrial convergence is often referred to as “converging industries”. Borders that were hitherto clearly demarcated are now increasingly closed. Licensing convergence under a unified license is an authorization that allows a single license allocation to provide multi-task services under a single umbrella. A licensee may be able to deliver radio, internet and voice telephony among others.

Economic convergence on the other hand, occurs when hitherto separate industries fuse together to form an oligopoly for the purpose of creating a Significant Market Power (SMP). Functional convergence occurs in a situation where technology delivers more functions and services that were originally assigned to.

Technological convergence is a combination of two or more previously discrete technologies to create a new product and service.⁵ Technological convergence has both technical and functional dimensions. The technical dimension is the ability of any infrastructure to transport any type of data while the functional dimension is the ability of the consumers to integrate in a seamless way the functions of computation, voice telephony, entertainment, internet etc. in a device for the purposes of executing multiple tasks. For the purpose of focusing on the business of the day therefore, this paper will restrict itself to technological convergence. For ease of clarity, it may be necessary to signpost here that the phrases telecommunications convergence and technological convergence are used interchangeably without diluting the import of their meanings.

Historical Development in Media

In the past, various entertainment industries or media were played on specific device. Video, for example, was displayed on a television set through a device known as video player. Music was also played through a tape deck or Compact Disc (CD) player, and video games were played through DVD device and so on. Technological convergence has resulted in devices that not only interact with the media they are primarily designed to handle, but also with a number of other formats. To be more specific, past technologies were designed to handle simple tasks. For example, a television set was principally designed to show images and sounds with the help of signals from analogue station. Radio transmission was specifically configured to transmit voice via different

⁵Deloitte. 2006. *The trillion dollar challenge – Principles of profitable convergence* <http://www.deloitte.com/article/0,1002,cid%253D99700,00.html>.

bandwidths. Newspapers are published in print media and tabloids and require long transportation to deliver contents to their readers/subscribers. Telephone, on the other hand, was designed to receive and transmit voice in form of calls.

In discussing convergence in a more elaborate form, it takes three forms. The first form of convergence is used in terms of technological apparatus. It is the process of integrating most electronic devices into smartphones. In fact, most smartphones today carry features of “traditional” cell phones and also carries functionalities of cameras, computers, GPS, MP3 players, video, TV etc.

The second form of convergence is interpreted in terms of the increase in technological apparatuses and transportation that converges to the internet.

The third form of convergence is called content convergence of media to the internet. This entails a process where more and more media such as radio, television, advertising, newspapers etc. that produce content that includes websites, Voice On Internet Protocol (VOIP), facsimile etc. Essentially, this type of convergence allows the use of a single network to provide multiple communication services that traditionally required separate networks. Telecom service providers such MTN, Globacom, Airtel etc. are examples of companies that deliver packet-switched (voice and internet) services to their subscribers via wireless networks. Sometimes, several types of networks communicate with each other through a consensual standard. Example is the incorporation of streaming AIT or NTA News’ contents automatically to Youtube.

Government’s Response to Convergence in Telecommunication

It is generally accepted that an efficient and competitive telecommunications sector is key to enhancing productivity and growth and economic development. Nevertheless, modern telecommunications networks and services are seen as crucial to the participation in global economy that will galvanise foreign direct investment and overcoming “digital divide”.⁶

For the reasons stated above, and even in the absence of external pressures to undertake reform, quite a number of countries have nonetheless chosen to liberalise their markets and replace it with modern regulatory frameworks. The manner in which these regulatory reforms are captured in various countries legislative instruments are essentially country specific. For example, according to Singh and Raja (2010), a government may choose to “react” to ICT development and convergence through policies and regulatory frameworks it may put in place to steer the market.⁷ It should be noted therefore, that individual policy responses to converged technologies vary from country to country depending on the circumstances of the individual country. There are significantly three types of responses namely:

1. Wait and see approach: It is adopted by government that maintains a free market enterprise. Here the government neither regulates for or against any form of convergence on the ICT.
2. Resistance approach: Where government believes that adopting converged technology may stifle the economic, social and political objectives, it would mount significant resistance.
3. Enabling approach: Where government is of the view that convergence can bring about immense benefits to the economy and the ICT world, it may decide to create an enabling

⁶Ndukwe, E.C. “Furthering The digital Revolution in Nigeria in the Era of Technology Convergence.” Available at <https://www.ncc.gov.ng/archived/speeches/OAU%20SPEECH.pdf>

⁷Singh, R. and Siddhartha, R. S. “*Convergence in Information and Communication Technology: Strategic and Regulatory Considerations*” Washington: The International Bank for Reconstruction and Development / the World Bank

environment that would allow for convergence to emerge. The type of convergence that would engender healthy competition, opening of markets and removing barriers to market entry and exit etc.

A review of the government policies through the NCC shows that Nigeria adopted the third approach (Enabling Approach) to convergence. The purpose of this paper, therefore, is to look at the government's response to the converged technologies in the telecommunications in Nigeria using the enabling Approach. The years between 2010 and 2012 were very critical for Nigeria to deal with convergence phenomenon that was sweeping the shores of telecommunication industries. In fact, it was not until the later part of 2012 that the Federal Government decided to reflect on convergence after the ICT policy was drafted. The essence of the ICT policy was to bring under one umbrella different communications policies from different agencies of the government under a single ministry known as the ministry of communications technology.

In Nigeria, the intentions of the Federal Government in response to the converged technology were clearly spelt out in the National Telecommunications Policy (NTP). The paper recognises that, to stimulate rapid socio-economic growth in the country, the need to make available a reliable and efficient telecommunications system for the purposes of achieving modernisation and expansion of telecommunications networks and services. To achieve that, the NTF decided that it was necessary to set out some short term and medium term objectives in order to meet up with the rapid changing nature of the converged technology.

Short-term Objectives of the NTP

One of the Short-Term objectives of the NTF was to implement network development projects to meet the demands of the International Telecommunication Union (ITU), which recommended moderate teledensity. It was also required to promote a wide range of access for the purposes of advancing communication technologies; to promote healthy competition and meeting with the demands of the consumers and liberalising the communication market; promoting and maintaining healthy competition to meet the demands of the consumers through full liberalization of the market and also to review certain provisions in the telecommunications laws to ensure substantial compliance from the operators under the new regime

Medium-term Objectives of the NTP

One of the important steps taken by the NTP was to provide new regulatory environment that will take into account of the new converged technology and to follow the international best practices in convergence. It is clear that the NTP actually recognizes the role of converged technology for improving interconnection and access to telecommunications services in the country.

The mandate given to the new ministry and its agencies was to publish a mission statement in response to the emergence of convergence technology. It also identified some areas of interest and development for the telecom sector in terms of outsourcing, hardware and software development. More so, other turbulent areas that needed to be legislated upon were also considered. These include cybercrime, privacy and also an enabling law for the converged regulator. The outcome of this policy, as we will see, engendered a measure of jurisdictional conflict among different regulators regarding the installation of masts, sub-marine cables, base stations etc.

The converged regulator was to include the Nigerian Communications Commission (NCC), the Nigerian Broadcasting Commission (NBC) and the Nigerian Information Technology Development Agency (NITDA). The Nigerian Post and Telecommunication (NIPOST) was not initially part of the converged regulator. However, with time NIPOST was simply added because the new ministry of communications technology wanted to create a one-stop regulator to combine all the functions of the four communications agencies that it sees as being within its rightful remit.

A review of the Nigerian National Policy for Information Technology, especially the Chapter Sixteen(16) of the policy, shows the willingness of the government in creating an enabling atmosphere for the enthronement of ICT convergence. To achieve this, it adopted series of strategies such as:

(i): Establishing a coordinated program for the development of a National, State and Local Information Infrastructure Backbone by using emerging technologies, such as satellite including VSAT, fibre-optic networks, high-speed gateways and broad band/multimedia within 39 of 59 National Information Technology Policy the next eighteen months but not later than the fourth quarter of 2002 .

(ii) Providing high-speed connectivity to the global information infrastructure by 2002.

(iv) Removing the barriers to the introduction of new technologies such as Wireless Local Loop (WLL) by the private sector in order to ensure the spread of Telecom services to under-served areas of the country.

(xxvi) Encouraging Internet telephony as well as Voice over Internet Protocol (VoIP), to reduce the cost of telephony and make such services affordable to the populace.

(xix) Giving ISPs approval to develop high-speed gateways with no licensing fees.

(xxix) Establishing a Data Protection Act (DPA) for safeguarding privacy of National computerized records and electronic documents.⁸

Benefits of Technological Convergence

There is no doubt that today convergence has removed all barriers between broadcast networks and telecommunications technologies. In Nigeria for instance, the converged technology has triggered a call for the convergence of the two communications media, the Nigerian Communications Commission and the National Broadcasting Commission (NBC). Initially, Telecom Companies like the MTN and Econet etc. were delivering unbundling services to the end users such as voice calls only. Today, the convergence has provided ICT subscribers with a variety of bundled services where a household subscriber, who hitherto received for voice telephony service only, can now receive triple-play service such as voice, video streaming and data. Technically speaking, it is a

⁸Nigerian Federal Government. *Nigerian National Policy for Information Technology*

Opera: http://www.opera.com/press/releases/2010/11/24_2/

transition from a circuit switched network (single voice transmission) to packet switched network (transmission of data over digital network into packets with a header and a payload)

Economic Benefits of Telecommunications Convergence

The economic benefits derived from telecommunications convergence are enormous. In today's world, it is possible for a subscriber of a mobile telephone service with data packet, to market his products online via Ebay, Google, Youtube, Facebook etc. without travelling far distances to sell them. His handset forms his global village, with the ability to link all his customers worldwide and conduct his business.

In terms of telebanking, it is possible for an individual to wire money from his bank in Nigeria to another bank abroad, through his mobile app for the benefit of his relatives and friends living outside the country. It is common knowledge today that people can easily make investments in different chip companies and banks through their mobile apps, thanks to the convergence in telecommunications.

Converged technology also make a lot of households to save money that would have been expended on transportation. For instance most people prefer to make payments through their mobile apps than going to say, government offices to pay bills or to grocery shops to buy stuffs. Markets are getting larger by the day in Nigeria as a result of the technological convergence. Online markets in Nigeria are growing on daily basis as people now hoist their wares online, and collect their monies through transfers and so on. The recent introduction of E-Payment system by various Nigerian energy companies and online shops is an indication of compliance with demands of the converged technology.⁹The ICT policy on converged technology has also helped in tele-medicine by way of reduction costs and improved efficiency in healthcare delivery. Patient's medical records can conveniently be transmitted via email from one hospital to another specialist hospital for further diagnosis.¹⁰

With the telecommunication convergence and development of the market, the environment is fast changing. The development in technology has led to the integration of customer terminal equipment and access devices coming under one umbrella such as telephone, radio, television and computer in a mobile handset. The advances have made it possible to deliver services like voice, video, text, data, image etc. over a single infrastructure. And finally the substitution of mobile services over fixed service has resulted to voice service market and also authorization to provide bundled services under a single license.

Challenges in the Nigerian Regulatory Sector

While technological convergence gives consumers the convenience of having many devices all in one, saving on both size and cost, convergences usually compromise product quality in order to achieve result. An instant case is where companies introduce new multi-technology formats, the various technologies it is comprised of are usually at a slightly lower standard than on independent devices. Therefore, as the quality is compromised, dedicated devices may become obsolete. Although, some technology does remain specialized, however; digital cameras, for example, often

⁹Adoni, E.E. "Mobile Phone Usage patterns of Library and Information Science Students at Delta State University, Abraka", *Nigerian Electronic Journal of Academic and Special Librarianship*. 7(1).

¹⁰Miller, E.A. *Journal of Telemedicine and Telecare* 7 (1), 1-17, 2001.

remain preferable to phone cameras in terms of image quality and features, especially for professional photographers. More so, it is often clearer to talk via a circuit switched network (land line) than on mobile phone due to distortion in frequencies.

Beyond regulatory convergence, the draft ICT policy however, provided a lost opportunity for addressing the conflicts arising from overlapping jurisdictions with regards to the siting of masts and challenges associated with rights of way. With regards to the siting of masts and base stations, there have been jurisdictional conflicts between the NCC and municipal urban and regional planning agencies on the one hand and between NCC and the National Environmental Standards and Enforcement Regulation Agency (NESREA) on the other hand.¹¹

Given the pre-eminence of base stations and masts to mobile networks that account for over Ninety (90) per cent of the country's tele density, one would have expected that the ICT policy would have provided an enabling environment to either spell out the conditions for erecting masts or build consensus on how problems could be solved. In a celebrated case involving the **A.G. Lagos State vs A.G.F&Ors**¹², leading the majority opinion of the Supreme Court, the Justices Uwaifo and Onu were of the view that urban and regional planning was a residual legislative matter exclusively for states as it was listed neither in the exclusive legislative list nor the concurrent list of the 1999 Constitution (As Amended). They were of the view that urban and regional planning was separate from protecting the environment.

The implication of the above decision of the Supreme Court is monumental and far reaching as it made some states with populated urban centres to create infrastructure regulatory regime with powers to regulate the erection of masts and base stations. More so, In **Registered Trustees of ALTON &Ors vs Lagos State Government &Ors**,¹³ the Supreme Court declared the Lagos State Infrastructure Regulatory Agency Act of 2004 as void as it was found to have exceeded urban and regional planning requirements.

In May 2012, the National Environmental Standards and Regulations Enforcement Agency (NESREA), initiated a drive aimed at attacking network service providers and shutting down masts and base stations deemed to have been erected in contravention of its standards as they did not comply with proposed set back of 10 – 12 meters away from the wall of residential premises, schools and hospitals.¹⁴

Dissenting in his opinion in the case involving the state and federal government conflict over where lies the real power of regulating of masts and base stations, His Lordship Justice Sylvester

¹¹Oketola, D. "Permit row Lagos threatens to dismantle telecom installations" Punch, 19 November 2012, available at <http://www.punchng.com/business/technology/permit-row-lagos-threatens-to-dismantle-telecomsinstallations/> accessed, 28 November 2012. Also see E. Okonji, "FG Bars NESREA from sealing base stations" ThisDay Newspaper, 28 May 2012, available at <http://thisday.thisday-staging.portal.dmflex.net/articles/fg-bars-nesrea-fromsealing-telecoms-masts/116746/> accessed 21 December 2012

¹²AG Lagos v. AG Federation &Ors [2003] 12 NWLR (Pt.833) 1

¹³ALTON &Ors Vs A.G Lagos State &Ors (2007) Unreported case, Suit No. FHC/L/CS/517/06

¹⁴Amaefule, E. "NESREA has shut 52 Telecom base stations- NCC" Punch, 29 July 2012, available at <http://www.punchng.com/business/close-up-on-ict/nesrea-has-shut-down-52-telecom-base-stations-ncc/> accessed 21/12/2012

UmaruOnu stated in the case of **Attorney General of Lagos State v The Attorney General of the Federation and Ors**, that “It is only proper that states which create areas under the Land Use Act and exercise jurisdiction over all persons and lands under their territories and are closer to the people should be allowed to exercise their planning or developmental control functions in their territories so as to ensure that there is no abuse or distortion of their master plans. It is not a matter that should be left with a distant authority like the Federal Government operating from Abuja¹⁵

Conclusion

The above Supreme Court ruling shows that States clearly possess profound knowledge of their respective terrain and plan of their municipalities to know the best places for the siting of masts and base stations. However, inconsistent state rules often create problems between different states on matters such as the correct distance between base stations and residential areas. These inconsistencies often engender difficulties for telecommunications services and facilities providers having to provide a national network while dealing with problems created by the conflicting state rules.

In view of the fact that state regulators are concerned largely with their jurisdiction, their actions could have concomitant effects in other areas as regulated industries try to reassign the cost of excessive regulation of a part of their network by a state.¹⁶To get around over these problems, there is need for a tripartite meeting between the different agencies involved as well as stake holders and network providers to work out an enabling framework and policies that would be embraced by all.

In 2012, a stakeholders meeting was called by the NCC for the purposes of finding a lasting solution to the faceoff between the various interest groups.¹⁷ The meeting was premature both in terms of timing and the parties that attended the meeting. It is argued that any meaningful agreement that would be reached in this sort of meeting must surely integrate all stakeholders, especially the NASREA who has the regulatory power of determining appropriate location and proximity of masts and base stations to buildings.

The enabling Act that provides for NESREA mandates the body pursuant to section 7(a)(b) to enforce compliance with laws, guidelines, policies and standards on environmental matters; and also to coordinate and liaise with stakeholders within and outside Nigeria on matters of environmental standards regulation and enforcement.¹⁸This requirement is in line with the suggestion above for all stakeholders to work out common standards that are applicable in the siting of masts and base stations and would prevent these jurisdictional catfights

As I earlier stated in the abstract, the journey towards achieving appropriate response to the telecommunications convergence has been a tedious one. The level of response accorded to converged technology in Nigeria was one that was rather too slow and sluggish. The government, through its agency NCC, responded so late when compared with the rest of the advanced countries

¹⁵ AG Lagos v. AG Federation &Ors, Op. cit.pp.144-145

¹⁶ Lyons, D. A. “Technology convergence and federalism: who should decide the future of telecommunications” University of Michigan Journal of Law Reform Vol 32 No.2 (2010) pp. 383-434 at 416

¹⁷See “N’Assembly may review NCC, NESREA Acts” The Guardian Nigeria, 22 November 2012, available at http://www.ngrguardiannews.com/index.php?option=com_content&view=article&id=105594:nassembly-mayreview-ncc-nesrea-acts&catid=1:national&Itemid=559 accessed 28 November 2012

¹⁸S.7(a)(b) National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007 .

of the world. While other countries were perfecting on regulatory policies appropriate in dealing with the new technology, Nigeria was busy studying the converged technology and relevant legislation necessary in combating the new regime in communication.

There is need for agreement between the relevant government agencies such as the NCC, NESREA and the different state urban and regional planners to fashion out common standards and regulatory framework for siting base stations and masts so that uniform rules could be applicable in different parts of the country. More so, there is need to memorandum of understanding between the stakeholders and the regulatory body in fashioning out areas of mutual cooperation in order to maximize efficiency in the market and to prevent the possibility of creating a Significant Market Power (SMP) in the converged market.

Recommendation

The most obvious regulatory response to the challenge of technological convergence is to for individual countries to draft primary legislation that is technology neutral, especially the type that covers all electronic communications transmission networks. In a regulatory system that is truly technology-neutral, operators of telecommunications will be at liberty to use the most appropriate and user-friendly technology for service delivery. This will involve putting together a technology-neutral enabling legislative mechanism, the type that will be free from encumbrances of the government. More so, the introduction of a genuine ‘convergent’ regulatory regime will involve a total overhaul of the entire existing regulatory architecture and licensing system. To achieve this, internet, broadcasting, mobile and satellite transmission should be regulated consistently.

This approach if implemented, would avoid the question of which regulatory framework (telecommunications, broadband and information services) and the specific regulatory institution that regulate converged services. Similar approach is contained in South Africa’s 2005 Electronic Communications Act and also in the Malaysia’s 1998 Multimedia Act. Despite the obvious reality of convergence in telecommunications, it is a bit sad that Nigeria has continued to license and regulate converged technologies, networks and services in defiance to the international best practices. There is need to integrate customer terminal equipment or access devices especially in TV sets, personal computer (pc), mobile phones etc. This paper also recommends the need for a single transmission technology device that is capable of offering bundled services such as data, image, text, voice, video over a single infrastructure and finally the replacement or substituting mobile services for fixed service, resulting in a converged voice service market; and general authorization to provide various services under a single license.