Independence as an effective pillar to regulation in the Nigerian telecommunications sector

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ABSTRACT

Regulator independence has been widely acknowledged by a large segment of experts as significant for the growth and development of the telecoms industry. However, the impact of regulatory independence on industry growth has not been prominently analysed from the perspective of developing countries. This study was therefore conceived and designed to determine whether the degree of independence of the Nigerian Communication Commission (NCC) has had any effect on the growth and development of the telecoms industry in Nigeria. The parameters for regulator independence examined include; stability of tenure, relationship between the regulator and the various arms of government, fiscal and organisational autonomy, regulator legitimacy as well as the regulator authority to regulate. While the parameters for growth examined include: access to service, usage of service, geographical spread, and quality of service, competition and pricing. A connection between the degree of regulator independence and industry growth and development was subsequently established.

A descriptive method of analysis was adopted using the TRE technique of assessment and the study confirmed that the NCC is fairly/reasonably independent. Furthermore, evidence from both primary and secondary sources indicated a remarkable but modest growth and development in the Nigeria telecoms industry from 2001 to 2010. The study found that Nigeria's communication sector development was positively affected by the degree of independence of the regulator and government policy choices in the 1990s.

The result of this study may be an indicator of the success of the telecoms market liberalisation programme embarked upon by the Nigerian government.

The telecoms market liberalisation facilitated the entry of many telecoms companies providing various services as a result of which Nigeria attracted considerable foreign investments making the country one of the fastest growing and biggest telecoms market in Africa.

As a consequence of this development, the mobile sector of the telecoms industry has seen triple digit growth rates for five years in a row since competition was introduced. A number of additional players have also entered the market under a new unified licensing regime which is expected to boost the country's underdeveloped Internet and broadband sector. Third generation mobile and wireless broadband services are being rolled out at a rapid pace. All this development is supposedly as a result of the creation of an independent regulator, the Nigeria Communication Commission (NCC).

On the other hand, this study shows that regulatory independence by itself is not a sufficient condition to promote sector growth. This is because, despite the fact that the study found the regulator (NCC) to be fairly and reasonably independent, Nigeria remains at relatively moderate levels of market penetration — around 50% — as reported by Baez and Kechiche (2010, p.5).

DECLARATION

I declare that this research report is my own, unaided work. It is submitted in partial fulfilment of the requirement for the degree of Masters of Management in the field of ICT Policy and Regulations in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other university.

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DEDICATION

I dedicate this work to my family, friends and associates.

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I am grateful to my supervisor Prof. Lishan Adam and Dr. Lucienne Abrahams for their kind support and guidance during this research work. I also acknowledge the contributions of my wife, Halima and children, Abba and Ummi, numerous friends and associates in making this research a success. I wish to express my deep thanks to them for all their understanding and support.

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GLOSSARY OF TERMS

Descriptive Indicators
These are indicators that provide a narrative explanation of a situation without recourse to mathematical formulation and modelling

Primary Data
This refers to data sourced directly from the field through primary sources like interviews and questionnaire.

Regulation
An official rule, law or order clearly indicating how things are to be done

Regulator
A person or an organisation charged with the responsibility of ensuring compliance with regulations

Regulatory Environment
This is the environment where activities requiring regulation takes place. This includes all stakeholders and their activities which are connected to regulations

Regulatory Independence
This refers to a situation where a country has a separate agency responsible for regulating an industry without being under the control of a Ministry.

Regulator Independence
This concerns the degree to which a regulatory agency is free from government interference in the conduct of its activities. The agency would be financially autonomous and has adequate power and authority to regulate industry activities

Research Population
This includes all elements of a group that constitute a whole which a researcher intends to study

Secondary Data
This refers to all data obtained from reviewing academic work, books, journals, newspapers, company reports, research reports, publications, annual financial reports, international organisations reports, government reports and reports from other reliable and accepted sources.

LIST OF ABBREVIATIONS

ALTON: Association of Licensed Telephone Operators of Nigeria

ECTA: European Competitive Telecommunications Association

FGN: Federal Government of Nigeria

FMIC: Federal Ministry of Information and Communication

GSM: Global System of Mobile Telecommunications

ICT: Information Communication Technology

NCC: Nigeria Communications Commission

NITEL: Nigeria Telecommunications Limited

TRE: Telecommunications Regulatory Environment

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CHAPTER ONE

BACKGROUND ON TELECOM REGULATOR INDEPENDENCE AND INDUSTRY GROWTH IN NIGERIA

1.1 INTRODUCTION

The significance of a communication sector regulator and its independence in the development of the telecommunications industry is generally regarded as indisputable according to Thakur, Best & Jones (2006). This, the authors argue, is because telecommunications is an essential infrastructure of the modern information economy and its expansion through private participation requires regulatory arbitration. Furthermore, Wallsten (2001) submits that countries whose citizens lack sufficient access to modern telecommunications networks, find it difficult to be effectively integrated into the global economy. However, to create the necessary environment required for a modern telecommunications industry to thrive the independence of a regulator must be guaranteed. According to the author, this will free regulators from undue influence and interference from government policy-makers in the course of carrying out their essential duty of ensuring fairness, growth and development of the telecoms industry.

In recent years, major advances in Information and Communication Technology (ICT) which resulted in rapid growth of global digital telephony networks; the internet and broadband services have transformed businesses and markets and generated significant wealth and economic growth in many countries. They have also empowered individuals and communities with new ways of doing things, as well as transformed our ways of learning and sharing knowledge according to FCC (1999).

Meanwhile, the ability to harness the benefits of a developed telecommunications sector is considered dependent on the establishment of proper regulation in order to maintain standards and provide guidance to operators and service standards to consumers as well as the entire telecoms market. Proper industry regulation entails the regulator having some measure of independence that will facilitate the conduct of its responsibilities (FCC, 1999; Gutierrez & Berg, 2000; OECD, 2004).

The literature has focused extensively on the justification for the creation of regulator independence as one of the necessary conditions for the successful liberalisation and subsequent development of the telecommunication sector. It is widely and strongly argued that regulator independence creates the enabling environment for the development of the telecommunications sector through reducing investment risks, thereby attracting direct foreign investment in the sector (FCC, 1999; Gutierrez & Berg, 2000; ITU, 2002b).

Moreover, independent regulators are expected to play referee roles while overseeing the transition from monopoly to competition, the transfer of communication from public to private hands and improved investments that eventually increase service access to the general public and which in turn facilitates the development of a nation's economy. In the same vein, it is also accepted that the separation of the regulated from the regulator is significant because it has the benefit of creating a level playing field for competition to thrive thus facilitating greater investment in the industry as a result of the perception of fairness (FCC, 1999; Gutierrez & Berg, 2000; ITU, 2002b).

Studies conducted on the effect of independent regulators on industry development indicate that the establishment of independent regulators positively impacts on industry development in some countries.

These studies show that while some countries have seen significant improvement and expansion of telecoms services, in others the situation is different (FCC, 1999; Gutierrez & Berg, 2000; Wallsten, 2001; ITU, 2002b; OECD, 2004; Thakur, Best & Jones, 2006).

Most previous studies on the significance of telecoms industry regulator independence on industry growth generally focused on the situation in developed countries and investigation into the implication of regulator instruments to industry growth in Africa have been very limited (Thakur, Best & Jones, 2006). This study aims to expand the understanding of the significance of regulator independence on industry growth in developing countries by closely examining the situation in Nigeria.

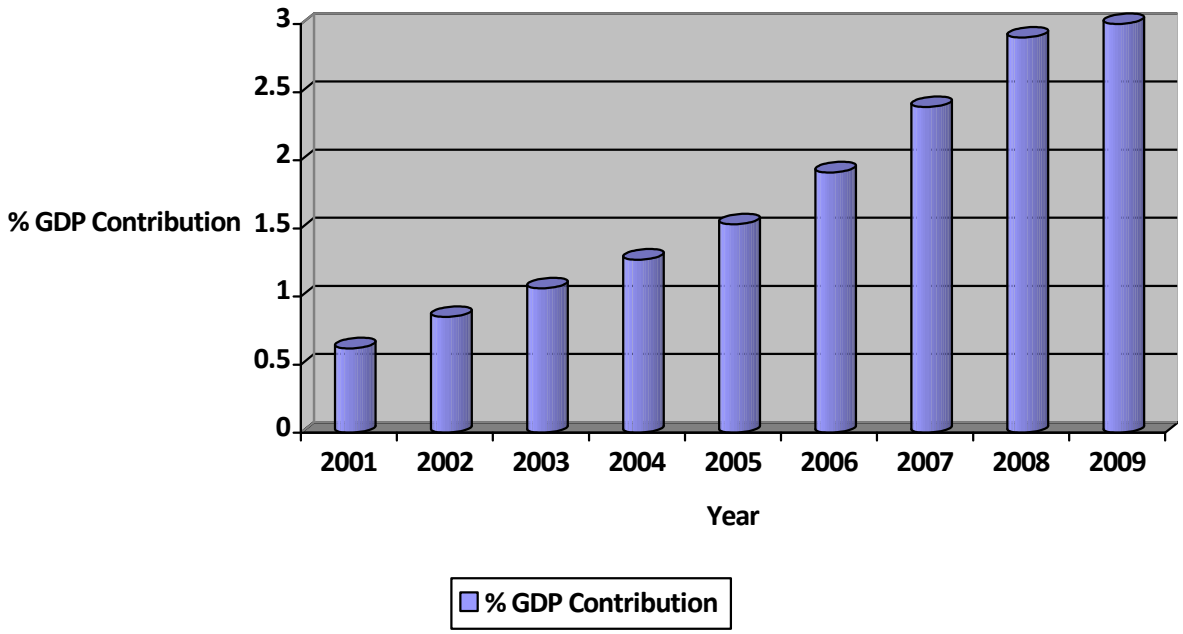
1.2 REGULATOR INDEPENDENCE IN NIGERIA'S TELECOMS INDUSTRY

Nigeria is the most populous nation in Africa, with 154 million people as at December 2009 as reported in the *Africa Statistical Year Book* (AfDB 2010, p.6). The mainstay of the economy is agriculture and oil; which has an estimated GDP (current) of US$207.1bn, GDP per capita income of US$1,370 and an annual GDP growth rate of 6.0% as at 2009 (AfDB 2010, p.6; World Bank 2010, p.4).

Reforms in the telecoms sector in Nigeria have seen a rise in telecoms contribution to GDP up to 3% and an industry growth rate of 20.9%, (NCC 2009, p.3; AfDB 2010, p. 6).

The contribution of the telecoms sector to GDP in Nigeria comes from local inflows of capital, foreign investments, employment generation and infrastructure development. Figure 1 below provides a graphical representation of the percentage of telecommunications industry contribution to GDP from 2001 to 2009 in Nigeria.

Figure 1: GDP contributions from telecoms in Nigeria (2001 - 2009)



Source: NCC (2010a)

As shown in figure 1, the contribution of the Nigeria telecommunications industry to GDP rose steadily from 0.62% in 2001 to 3% in 2009. This growth could be described as fairly modest yet significant. This increasing growth in industry contribution to GDP is often attributed to the reforms that took place in the industry which created the enabling environment for investment and sector growth.

The telecoms industry in Nigeria commenced its reforms in the 1990s. The reforms were driven by a successful liberalisation program and the realisation of the overall potential of the Nigerian telecom market to grow given the large population of the country. The liberalisation of the telecoms sector was achieved through various steps which were designed to generate the needed investment that would ultimately translate into growth in the sector and create spill-over growth in the country's economy as a whole.

The Nigeria telecoms industry reform can be generally grouped into two phases. The first phase was undertaken between 1992 and 2000 while the second phase took place from 2000 to 2008. The first phase of the reform commenced with the enactment of the Nigerian Communication Commission (NCC) Act of 1992. The Act established an independent regulator and allowed the entrance of new operators in the sector such as Starcomms Limited, Intercellular Nigeria Limited and Multilinks - Telkom. These new entrants were given licences to operate in specific regions of the country and to provide only fixed wireless services, using the CDMA technology. Other operators like MTN Nigeria Communications, Mtel Nigeria Limited, Econet Nigeria Limited and Globacom Limited were subsequently licensed to provide mobile telephonic services. However, Nigeria Telecommunications Limited (NITEL) a government-funded monopoly remained the dominant player in the industry during this stage of the reform, particularly in the fixed line segment.

Notwithstanding the enactment of the NCC Act of 1992, both the newly established regulator (NCC) and the incumbent government telecoms monopoly, (NITEL) remained under the supervision of the then Federal Ministry of Communication. This meant that every aspect of the regulatory function in the telecoms industry had to be approved by the Minister of Communications, thus making the Ministry play the role of the regulator as well as the owner of NITEL. This structure remained in place until 2000 when the NCC Act was first amended. This second amendment to the Nigerian 1992 NCC Act in 2000 (which lead to the significant empowering of the regulator) and the approval and publishing of the National Telecommunication Policy (NTP - 2000), earmarked the beginning of the second phase of the Nigeria telecommunications industry reform. This generated the needed momentum for the growth and development of the telecoms industry in Nigeria.

A further amendment was made to the Act in 2003 giving the regulator (NCC) renewed independence. Accordingly, Chapter 1, section 1 of the NCC Act 2003 stipulates that:

> *The primary object of this Act is to create and provide a regulatory framework for the Nigerian communication industry and all matters related thereto and for that purpose and without detracting from the generality of the foregoing specifically to: Establish a regulatory framework for the Nigerian communication industry and to create an effective, impartial and independent regulatory authority.*

The 2003 amendment to the NCC Act gave the regulator a new vigour and impetus to regulate the industry towards the achievement of the objectives of the enabling Act. The main objectives of establishing an independent regulator in the Nigeria telecoms industry include:

- Firstly, to ensure efficient provision of telecommunications services. This objective was designed to drive the regulator towards making certain that telecommunications services are provided by operators to the public in an efficient manner devoid of unnecessary delays or network problems.
- Secondly, the regulator is expected to ensure good quality of service at reasonable prices. This is where affordability of service provided by existing operators to the general population and good service quality is an important regulatory requirement.
- Thirdly, the regulator is required to encourage the introduction of new telecommunications services. These services are expected to be consistent improvements of existing services and infrastructure through innovation and creativity in line with international standards.
- Fourthly, the regulator is expected to facilitate and promote access to basic telecommunications services.

- Finally, the regulator is required to guarantee the best use of the country's limited resources through cost-effectiveness and continued creation of less costly ways of doing things.

On the basis of the above objectives, the regulator (NCC) took significant steps to address the numerous issues affecting the growth of the Nigeria telecommunications industry. The result of this culminated into the issuance of the first 3 GSM licences in 2001. MTN Nigeria Communications Limited, MTS Communications and Econet Nigeria Limited were the first operators to be issued with licences, thereby opening up the industry to competition and efficiency dividends.

Prior to 2001, teledensity in Nigeria for both fixed and wireless telephony was less than 1%; the present teledensity has grown to a remarkable 60.71% as at October 2010 (NCC 2010a, p.9). However, the data is more likely to reflect the number of SIM cards sold than the actual penetration of mobile phones in Nigeria.

Although there is no apparent direct correlation between regulator independence and the development of the telecommunications sector, regulator risk remains one of the essential factors considered by investors when making investment decisions in the telecommunications industry in Nigeria. This presupposes that higher volume of quality investment flow into the industry is connected with investor perception of lower regulator risk and vice versa. It follows that the volume of investment into the industry is one of the key ingredients that determines the direction of industry growth and development. One of the major concerns of this study among others is to determine whether there is any direct interference by the Nigerian government in the activities of the regulator (NCC) which might have undermined its independence from inception and thus has affected its capacity to provide excellent regulation in the industry.

Whether by extension this might have affected the performance of industry operators, flow of investment into the industry and the overall development and growth of the industry in Nigeria.

The drive for improvement in the regulatory environment of the Nigeria telecoms industry came about as a result of the need to modernise the industry and the emergence of intense competition among industry operators. Other reasons include the proliferation of prepaid plans, low-budget handsets and the rapid expansion of mobile networks to different parts of the country. Additionally, it is also apparent from cursory observation of activities within the Nigerian economy that the expansion of coverage to under-served areas by the smaller CDMA operators may have generated increased competition. This increased competition has helped in bringing down the overall price of communication services, thereby making these services accessible to a great percentage of the Nigerian population

Moreover, it is expected that due to intensity of this competition and constant innovation from service providers, a great number of people will see value in and be in a position to use telecoms services in Nigeria. It could therefore be argued that this situation may have been made possible as a result of the establishment of an independent regulator in Nigeria, the Nigeria Communication Commission (NCC). The determination of the extent of NCC's independence and its effect on the growth and development of the industry is one of the core objectives of this study.

1.2.1 The policy and regulatory environment and structures of the telecoms industry in Nigeria

The Nigerian telecommunication sector is presently guided by the national ICT policy 2001 and the NCC Act 2003. The ICT policy (FGN, 2001) essentially formulated the e-strategies and governance model in

use today in the country. The policy specified a vision of making Nigeria an "IT-capable country in Africa and a key player in the information society, using IT as the engine for sustainable development and global competitiveness" (Mowete, 2007, p.65).

Furthermore, the NCC Act gave the Commission the responsibility of supervising telecommunications services provision, establishing technical standards, ensuring fair play and competitiveness, protecting licencee's and consumers alike, and generally ensuring the efficient growth of telecommunications in the country. The Act further assigns to the NCC, "the management and administration of frequency spectrum for the communications sector". It is also to assist the frequency management council in developing a national frequency plan", among several other functions, including representing the country at proceedings of international organisations and forums on matters of interest to the regulation of communications and related issues (FGN, 2003).

Additionally, there are other provisions of the Act, the most important of which concerns regulator independence and universal access/universal service. The Act specifies the development of a regulatory regime, "which shall provide the widespread availability and usage of network services and applications services throughout Nigeria" particularly for under-served areas, or for un-served groups within the community (Farroukh, 2006, p.21).

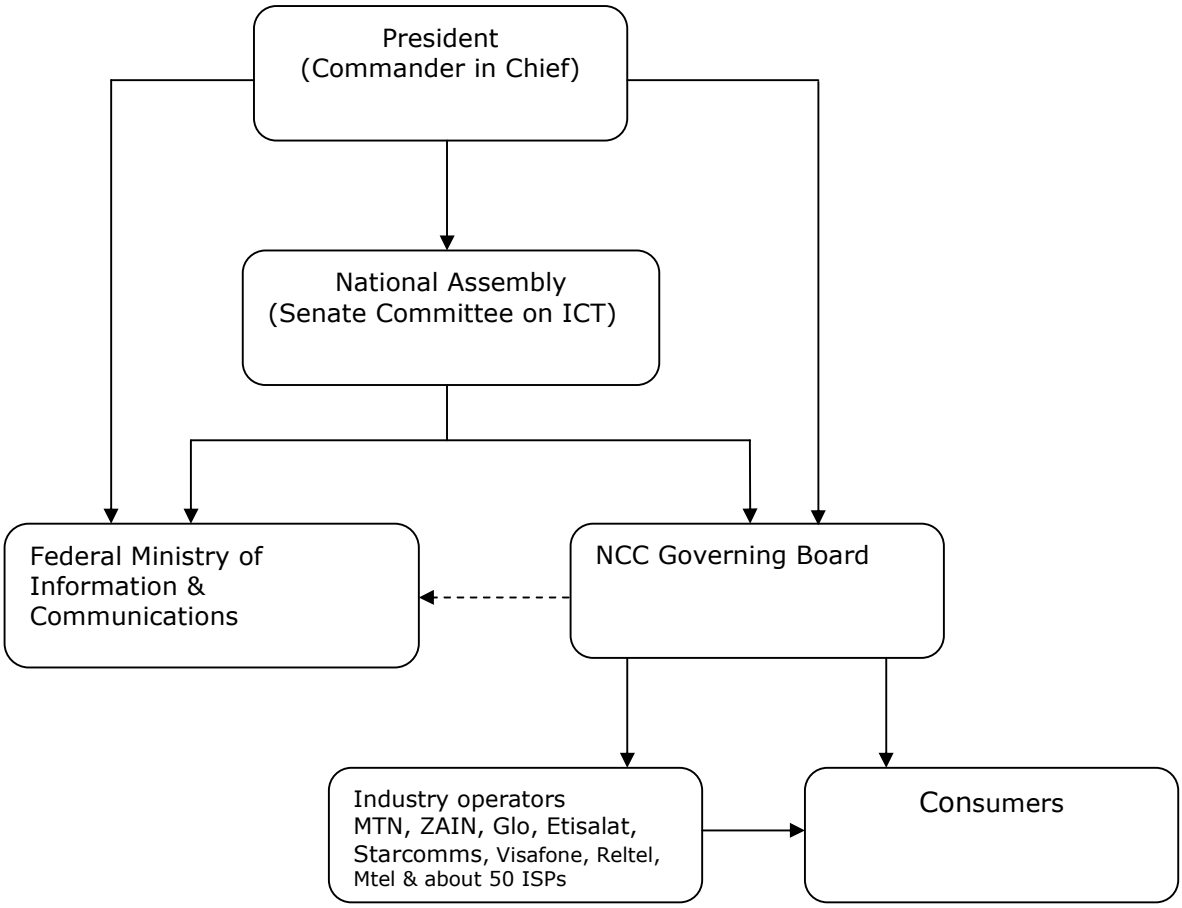
To strengthen the argument in favour of regulator independence in developing the telecoms sector in Nigeria, specific provisions were incorporated in the NCC Act. Chapter 1, section 1 of the NCC Act 2003, specifies that the NCC shall

> … promote the provision of modern, universal, efficient, reliable, affordable and easily accessible communications services and the widest range thereof throughout Nigeria; encourage local and foreign investments in the Nigerian communications industry and the introduction of innovative services and practices in the industry in accordance with international best practices and trends; protect the rights and interest of service providers and consumers within Nigeria.

The governance of the Nigerian ICT industry shows that the regulator is fairly independent, as it falls under the senate committee on ICT. The Ministry of Information and Communications makes policy recommendations to the President who has the final approval power on policy issues while the national assembly approves all legislation relating to the telecoms industry.

Figure 2 below depicts the policy and regulatory structure in the Nigerian telecoms industry.

Figure 2: Policy and regulatory structure in Nigeria



Source: NCC (2010)

The regulator's operations are guided by its governing board which has nine commissioners appointed directly by the President. The appointments are guided by sections 7 & 8 of the Act. However, the Minister of Information and Communications has a supervisory relationship with the Commission in the area of policy. Section 25 of the NCC Act provides for the nature of such a relationship. The Commission regulates all aspects of the operators' business through the issuance of licences, guidelines and regulations. It also has the mandate to protect consumers and define standards for quality of service under section 104 of the Act.

It is evident from this Act that although the regulator is fairly independent, there are areas where it seeks authorisation from the Ministry of Information and Communications, particularly in the area of spectrum management.

1.2.2 The Nigerian telecommunication/ICT market structure

Nigeria is now regarded as one of the fastest growing telecommunications markets in the world. This informs the decisions of major transnational telecoms operators (like MTN, Etisalat, Zain and Globacom) to situate their largest African operations in Nigeria, which has come to be regarded as one of their largest most profitable centres in Africa. Presently the Nigeria telecommunications market is serviced by the following GSM operators, CDMA mobile operators and fixed/fixed wireless operators:

- ***Fixed/Fixed Wireless Operators***
  - NITEL
  - Starcomms Limited
  - Multilinks - Telkom
  - Visafone Limited
  - Reliance Telecoms – (RELTEL)
  - Intercellular Nigeria Limited
  - VGC/MTN
  - MTS 1st Communications
  - 21st Century Technologies
  - Disc Communications
  - WiTel
  - O'Net (Odua Telcom)
  - Rainbownet Limited
  - Monarch Communications
  - XS Broadband
  - Webcom

The percentage of fixed/fixed wireless subscribers to the total subscriber base as at October 2010 is 3% (NCC, 2010a)

- ***GSM Operators***
  - MTN Nigeria Communications
  - Globacom Limited
  - Etisalat International
  - Zain Nigeria Limited
  - M-Tel Limited
  - EMTS Limited

The percentage of GSM subscribers to the total subscriber base as at October 2010 is 85.6% (NCC, 2010a)

- ***CDMA Mobile Operators***
  - Multilinks-Telkom
  - Starcomms Limited
  - Visafone Limited
  - Reliance Telecoms (RELTEL)

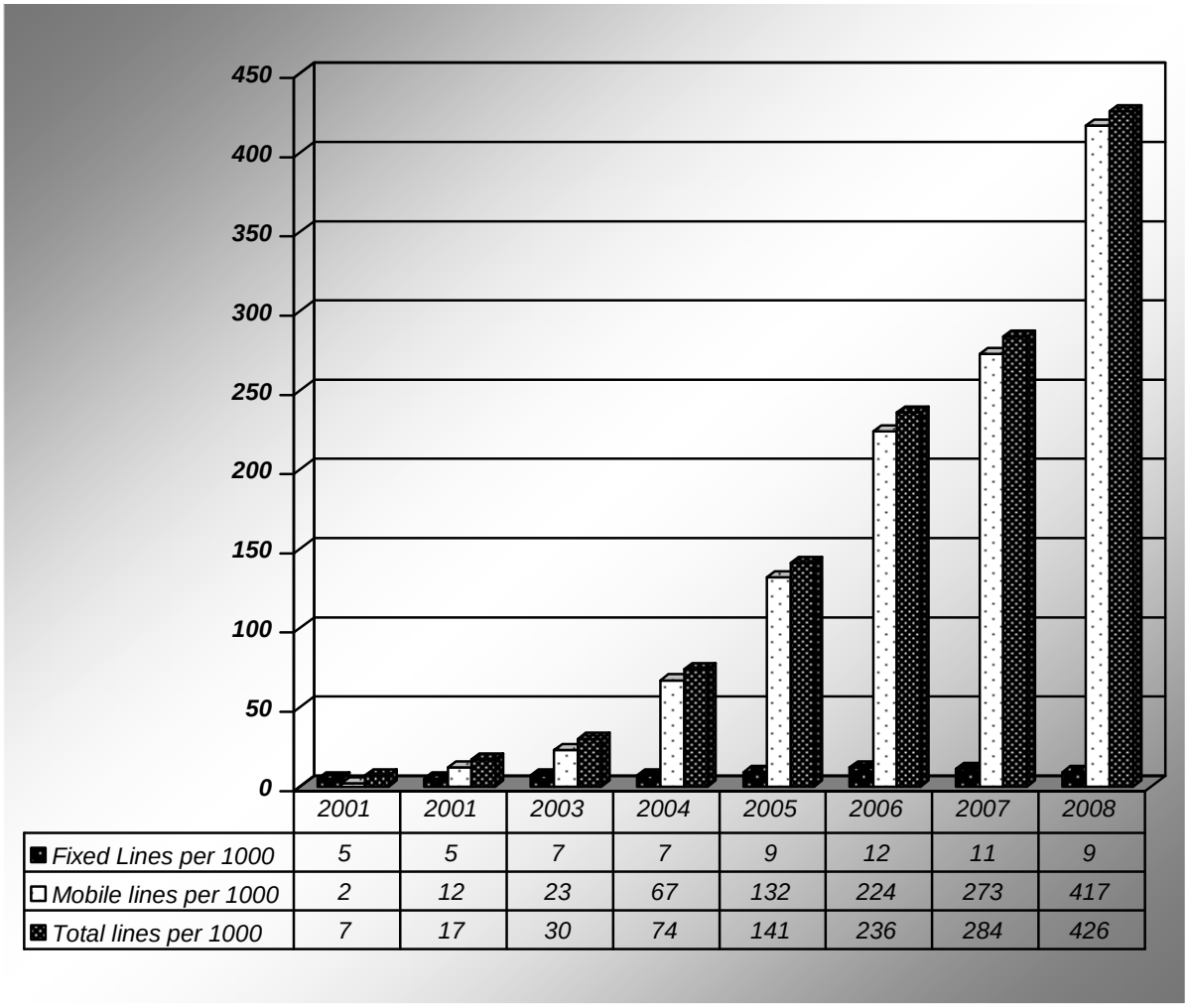
The percentage of CDMA Mobile subscribers to the total subscriber base as at October 2010 is 11.4% (NCC, 2010a).

Generally, the industry has seen a substantial growth over the last decade with a total subscriber base of active lines standing at 85 million generating a growth in teledensity of 60.71% by October 2010. Prior to 2001, teledensity for both fixed and wireless was less than 1%. (NCC, 2010a). This performance indicates a slow and steady progress towards total coverage. It must, however, be carefully noted that the reported active lines of 85 million people did not reflect the multiple SIM card ownership as well as fixed line ownership combined with the SIM card situation prevalent in the country.

This is because in Nigeria an average user of telephone services owns at least two SIM cards operated by different service providers. Additionally, all fixed line owners also hold various SIM cards. This multiple SIM card/fixed ownership situation arose largely as a result of the poor quality of service provision in the industry which forces people to simultaneously use different service providers to avoid being disappointed. Therefore the actual number of people connected to telephone services is considerably lower than the recorded 85 million reported by the NCC. However, this limitation notwithstanding, there has been a remarkable increase in the number of people connected to telephone services in Nigeria from 2001 to date.

Figure 3 below shows the growth of subscriber base from 2001 to 2008.

Figure 3: Growth of Subscriber base in Nigeria (2001 – 2008)



	2001	2001	2003	2004	2005	2006	2007	2008
Fixed Lines per 1000	5	5	7	7	9	12	11	9
Mobile lines per 1000	2	12	23	67	132	224	273	417
Total lines per 1000	7	17	30	74	141	236	284	426

Source: ADB Year Book 2010

Figure 3 above clearly indicates the growth of subscriber base in Nigeria as a result of the reforms that facilitated the emergence of numerous service providers due to the breaking up of government monopoly (NITEL) in the telecoms industry. It The growth in the use of mobile telephone services has been exponential, reaching a peak of 417 lines per 1 000 of the population in 2008. The explosion of the mobile industry in Nigeria has reportedly resulted in a series of positive effects across the economy, ranging from investment in networks to the creation of employment (NCC, 2010).

According to Farroukh (2006) and Mowete (2007) the economic benefits associated with the increase in mobile telephony services in Nigeria extend beyond the investment that network operators allocate to licence fees, taxes and network equipment and include the following factors: firstly, end users spend money on mobile telecoms services and devices which allows the industry to flourish particularly new industries. Secondly, the telecoms operators' spending on marketing, distribution, maintenance, training, support and network enhancements creates important benefits for all involved in the value chain. Thirdly, mobile phone service operators as well as other operators in the telecoms industry create employment, both direct and indirect, and invest in the development of the labour force.

Finally, mobile phone services and other telecoms services within the industry also enable end users to conduct their daily business in a more effective manner, reduce the time and cost of transactions, improve access to markets, commoditise information and generally allow businesses to operate more efficiently.

One way the mobile telephone sector has facilitated the efficient functioning of businesses is through the emergence of mobile banking in Nigeria. Mobile banking has made it possible for banking clients to access and use various banking products and services through the use of their mobile phones without physically visiting a bank branch. As a result, all the banks operating in Nigeria have introduced mobile banking given the NCC (2010a) reported active GSM subscriber base of 77 million (active SIM card holders) which represents a massive 91.1 percent of industry market share. However there is still inadequate infrastructure to cover the country and a huge gap in investments in spite of high returns on investment witnessed in the industry over the last ten 10 years. Consumer protection and quality of service is still a major issue because termination of calls and disruption of services are still prevalent in the system.

1.2.3 The Nigeria telecoms environment and the emerging information society

As the global telecoms market continues to grow at rapid pace, particularly in the area of mobile services with subscriptions surpassing 4.5bn in 2009, the Nigeria telecoms industry has also been witnessing some measure of development. Presently, Nigeria has two national carriers, four mobile telephony services providers, 22 fixed telephony operators, 52 VSAT operators, as well as 36 registered Internet service providers (Baez and Kechiche, 2010).

According to available records, the market leader in the provision of telecommunications services is MTN, which has 41% of the market share, followed by GLOBACOM, whose subscription base stands at about 6.4 million, representing about 26% of the sector's total subscription. ZAIN, an earlier close rival of MTN, has 14% of the market share, and ETISALAT has 10%, whilst the incumbent (NITEL/TRANSCORP) has only 2% of the share; a figure that is significantly less than the total of 5% shared among the Private Telephone Operators (PTOs), who offer fixed wireless services, using the TDMA standard. The finding revealed that private investment in the telecommunications sector, which stood at US $50million in 1999 rose to US $1 200 million in 2001 and was in excess of US $20 billion by the end of 2009 (NCC, 2010a).

It is reasonable to assume that these developments occurred as a result of the various reforms of the sector embarked upon in the country. This assumption becomes more credible on the basis of with the realisation that the first phase of the reform hinged on the fact that Nigeria, being a member of the Commonwealth and a signatory to most multilateral agreements and conventions on ICT, has an obligation to comply with the terms of those agreements and conventions either by adopting and implementing those protocols or by

localising those terms through legislation. This obligation eventually obliged the government to pass the Nigerian Communication Commission Act 1992 which sets the tone for liberalising the sector and provided the enabling environment for the licensing of new players.

Moreover, that piece of legislation opened up the industry to private players from both within the country and internationally. The emergence of these new players introduced massive competition in the industry among the new players and more especially with the incumbent Nigeria Telecommunications Limited (NITEL). As observed amply by Ndukwe (2005) the liberalisation of the telecoms industry in Nigeria led to the entry of foreign firms as independent operators or as joint venture partners with the government-owned monopoly.

In order to speed up the development of the sector, one of the major provisions of the telecommunication industry reform in Nigeria was the establishment of a regulatory agency to oversee the transition from monopoly to competition. This was done through the creation of the National Regulatory Agency (NRA) in 1993 which subsequently transformed into the NCC. At the initial stages of implementation, however, the impact of the reform and that of the regulator remained limited. This is as a result of the dominant control the Ministry exercised over the affairs of the NRA/NCC as well as the monopoly power of NITEL being the incumbent government owned operator. This situation led to a failure to attract much investment into the industry as only small operators with little resources could be licensed during this period. Other problems experienced by the regulator at that time as reported by the NCC (2009) include political interference, structural defects in terms of organisational flexibility and adaptability to the dynamism of the industry, financial dependence on government funding, capacity as well as technical issues.

These are problems globally recognised by experts as a major hindrance to the successful establishment and operation of an independent regulator.

1.2.4 Overview of the importance of regulatory independence in Nigeria

Several experts concur that the essential nature of the telecoms industry necessitates the establishment of regulators to ensure that standards are maintained in line with international service expectations. This appears to be the situation in Nigeria, where the Ministry of Communication and the incumbent (NITEL) increasingly failed to meet the yearnings of the public in terms of access to telephone services. This situation generally led to calls for the establishment of an independent regulator in order to ensure proper monitoring of the industry and to supervise its growth in Nigeria.

The independence of the regulator is seen as necessary for a successful transformation of the telecommunication industry. Therefore, in its bid to reap the expected benefits of having an independent regulator the Nigerian government commenced a full review of the telecommunications industry in 1997 and eventually created and approved a new National Telecoms Policy (NTP) which came into effect from year 2000 according to Ndukwe (2005). The author described the NTP - 2000 as a policy that strengthened the telecom sector liberalisation effort in the country. This is because the policy placed emphasis on the establishment of a single independent regulator thus creating the environment needed for competition to set in and thrive in the industry.

Other motivations for the establishment of an independent regulator in Nigeria include the need to expand the frontiers of service provision and ensure efficient service delivery, as well as guarantee

sustainability. These reasons encouraged the government to liberalise the telecommunication industry further, thereby facilitating the flow of private capital into the industry.

Other factors responsible for breaking up the government's monopoly in this industry could be attributed to the continuous subsidy to the industry which had become unsustainable with other competing demands on the government. There is also the issue of obsolesce and the huge bad debt portfolio of the incumbent service provider (NITEL). Arguments in favour of more reforms within the country and external pressures spurred the government in Nigeria to initiate a full and more holistic reform of the industry commencing in 1997. It also strongly argued that the existence of a good telecommunications system in a well-developed telecommunications industry facilitates employment generation, and makes it easy to conduct business transactions, which in turn expand the economy.

This position is amply supported by Kessides (2004, p.25) who posits that "Widely available and affordable telecommunications and transportation services can foster grassroots entrepreneurship and so are critical to generating employment and advancing economic development". Baez and Kechiche (2010 p. 20) amplified this position when they declared that "Socio-economic development and sustenance of any modern nation is dependent on the adequacy of the nation's telecommunication and information technology infrastructure"

In Nigeria two major government agencies were given the responsibility to facilitate the liberalisation of the telecom industry, the agencies are; Nigeria Communication Commission (NCC) and the Bureau of Public Enterprises (BPE).

The milestone historical development of the telecommunications environment in Nigeria is depicted in the table below.

Table 1.2.4: Milestone Developments in the Nigeria Telecoms Industry (1992 – 2009)

Year	Events/Developments
1992	• Enactment of the Nigeria Communications Commission Act establishing the Nigerian Communications Commission to regulate the telecoms industry • NITEL–state monopoly incumbent – 1 telephone to 440 people
1993	• NCC inaugurated -starts issuing licences for various services including provision of payphone services, community telephone services
2000	• National Telecoms Policy –short & medium term objectives to promote ICT • Auctions for GSM licences
2001	• DML auction –licences granted at US$285 mill each to MTN and Econet; M-Tel/NITEL's licence reserved • GSM services start in August 2001
2002	• Fourth GSM and Second National Carrier licence (SNO) – was granted to Globacom Nigeria Limited at US$200 mill • Long distance carrier licences –NEPSKOM & MTS 1stWireless • Regional Fixed Wireless Access Licences auction –25 companies awarded 50 licences • NITEL's national carrier and international gateway became operative
2003	• Privatisation process of NITEL commences -NITEL & M-Tel separation • Telecommunications Act 2003 was enacted. • NCC Act 1992 Amended
2004	• Three national long-distance operator licences became operative • All operators introduced per-second billing
2005	• Two national long-distance operator licences became operative
2006	• End of DML 'exclusivity' period • Introduction of Unified Licensing Regime, 13 companies were granted licences • 5% of NITEL & M-TEL sold to TRANSCORP
2007	• National carrier licence granted to Prest Cable & Satellite TV Systems • NCC issued 3G UMTS licences to MTN, Zain, Globacom and Alheri Engineering • NCC awarded fixed wireless licences
2008	• Gateway Telecoms Integrated Services national long-distance licence becomes operative • Etisalat launched services
2009	• NCC awarded licences in the 2.3GHz band to four operators

Source: NCC, (2010); Baez & Kechiche - Pyramid Research (2010); and Farroukh - MTN Nigeria (2006)

In concluding this section of the chapter, the degree of regulator independence is determined by assessing the regulator's performance, funding structure, relationship with executive and legislature as well as the appointment, tenure and termination of key management and board members. The regulator needs to earn legitimacy through communications, competence and transparency of decisions to be considered reasonably independent from the government or industry operators.

A careful analysis of the Nigerian situation may show that the degree of independence of the regulator has been improving over the last few years especially following the 2003 NCC Act. As a result any direct interference from the parent ministry of the regulator in Nigeria is perceived as very damaging to the independence of the regulator. This is because intervention in the activities of the regulator by the ministry is seen as more damaging to regulator independence than intervention by the president of the country. Thus it can be concluded that it is very important for the perceived independence to be maintained and not to put the regulatory body under the ministry's total control but to distance it from the ministry as much as possible.

The factors surrounding appointment of key regulator personnel often affect the public's perception regarding the independence of the regulator in Nigeria. It is essential that these appointments are handled carefully without political considerations. It is especially important that the head of the regulating body is appointed for a fixed time period and that dismissal is a difficult thing. It is also necessary for regulator independence that the regulatory body has substantial authority and functional responsibilities in the industry. These include spectrum allocation, granting licences and collecting industry data.

It is important for the regulator to be self-sustaining, by earning its own income through levies and licence fees, rather than depending on funding by the government or donors which may be linked to conditions that could affect its capacity to be a fair arbitrator/umpire in the industry. Finally, any challenge to the regulatory decisions should be through the legal path in a court of law rather than resorting to the usual clannish, ethnic, religious and political loyalist approach to resolving issues prevalent in Nigeria.

Conversely, the careful handling of all the issues surrounding regulator independence is essential to facilitate the industry growth and development in Nigeria.

1.3 PROBLEM STATEMENT

Nigeria joined the league of countries enjoying mobile telecommunication services and having an independent telecom regulator in 2001, as a result of the approval of the National Policy on Telecommunication and the issuance of three (3) GSM licences. In the decade since then, some progress has been recorded in terms of increased teledensity and geographical coverage in infrastructure. In spite of this progress however, the penetration rate is not sufficient as over 69 million people remain without access to both fixed and mobile telephone services in a country with a population of over 154 million people (NCC 2010a, p.9; FGN 2010, p.3).

Moreover, the penetration of broadband technology and internet services has been very slow and inadequate with services available only at major urban centres. Access to these services is limited in the rural areas with only a few people having any access to telephone and internet services. Where services are available the quality is often very poor.

This is a major concern as it is related to the core regulatory objective of geographical spread of infrastructure, and telecommunications access and usage by the Nigerian citizenry. This concern among others formed the basis for the telecoms industry reform in Nigeria in the first instance. Another major concern is in the area of creating an independent regulator for the telecoms industry in Nigeria. The country's effort in establishing an independent regulator in the telecoms industry is in line with the stated aspirations of various Nigerian governments to address this concern and galvanise growth in the industry.

As identified by Thakur, Best and Jones (2007, p.26) "Most governments interested in promoting a vibrant telecoms sector will seek to build a strong and independent regulator to ensure that national development goals are also met". However, achieving the independence of the regulator may be hampered by institutional and political issues as the outcome of the study conducted by Thakur, *et al* (2007, pp. 30-34) indicated.

The central question for this study therefore is to determine whether the establishment of NCC in Nigeria has created the required regulatory independence free from undue influences from government and political interests and whether this independence has facilitated the development of the sector. We also looked at other variables that have impacted on telecommunications sector growth such as technology, business models and government policy choices for opening the sector.

1.4 PURPOSE STATEMENT

This study examines the significance of regulator independence on growth in the telecommunications industry in Nigeria with specific reference to:

1. The form and character of regulatory independence
2. The implications of regulatory interventions on access and geographical spread of telecommunication infrastructure in the country
3. The extent to which the regulator was able to monitor the activities of industry operators particularly in setting interconnection prices, allocation of resources such as spectrum, and monitoring the quality of service and consumer rights.
4. The role of the regulator in accelerating the access and utilisation of the telecoms services in the country.

This study investigates the relationship between access/ usage and independence of a regulator. The main dimensions of the regulatory agenda studied include universal access, interconnection rates, access to resources, competition and fair trading and quality of service. The outcome of this study provides a deeper understanding of regulatory institutions and how they interact with industry players as well as other agents within the economy. It also provided useful insight into the desirability of regulator independence in galvanising growth and development in the Nigerian telecommunications industry.

1.5 RESEARCH OBJECTIVES

The general objective of this research is to define the characteristics of the telecommunications market in Nigeria and assess the importance of independence of the regulator in the growth of the industry. To assess the linkage between regulatory independence and sector performance, this study:

1. Analyses the governance framework in the telecommunications industry in Nigeria and how this has influenced sector performance.

2. Assesses the effect of independence of the regulator in Nigeria on the development of the telecoms market in terms of geographical spread of infrastructure, universal access, interconnection pricing, quality of service and fair trading and competition.

1.6 RESEARCH QUESTION

The main research question

What is the extent of regulator independence in the Nigeria telecoms industry and how has this affected the development and performance of the industry?

Sub questions

1. How has regulator independence affected industry performance with respect to access to telecoms services in Nigeria?
2. What is the effect of regulator independence on industry performance with respect to increased telecoms service usage in Nigeria?
3. To what extent has regulator independence affected telecoms industry performance with respect to pricing in Nigeria?
4. What is the effect of regulator independence on industry performance with respect to competition in Nigeria?
5. In what ways has regulator independence affected industry performance with respect to quality of service and customer satisfaction in Nigeria?

1.7 SCOPE AND LIMITATIONS

This study establishes the significance of the regulator independence and its impact on the performance of the telecommunications industry in Nigeria, specifically addressing issues relating to capital investment,

infrastructure development, access and usage and consumer protection and satisfaction.

In examining the degree of independence of the regulator attention was given to the issue of separation between policy formulation and implementation as well as separation between the regulator and the industry being regulated. Analysis of regulatory independence was drawn from an understanding of the governance framework of the industry, in particular the interactions between various industry actors and stakeholders.

This study further assesses among other things, the implication of the governance framework and provisions of the NCC Act 2003 and other instruments on the performance of the telecoms sector in Nigeria. The study did not compare and contrast Nigeria with other countries. Nor did it assess the performance of the telecommunications against other sectors due to limitation of time, cost, and data availability.

1.8 CHAPTER SCHEME

This dissertation is structured to contain six chapters as follows:

Chapter One: Background on telecom regulator independence and industry growth in Nigeria

This chapter consists of research introduction and background regarding the significance of telecom industry regulator independence in Nigeria, problem statement, purpose statement, research objectives, research questions, scope and limitations of the study as well as chapter scheme.

Chapter Two: Theoretical framework

This chapter surveys existing literature on the significance of regulator independence in the telecommunications industry. The contributions made by pundits and authors, gurus and practitioners in this realm was reviewed and presented. The chapter explores the issues of regulation, regulator independence, the structure and governance for

regulator independence, measuring regulator independence, independence and accountability of the regulator, sustaining independence of the regulator, challenges of the lack of regulator independence, constraints of achieving independence, regulatory function and regulator independence, customer-driven regulation and regulator independence and provided a conclusion.

Chapter Three: Research methodology, data generation and evaluation approach

This chapter deals with the research methodology covering an introduction, perspectives on measuring effectiveness of regulator independence, as well as methods of gathering primary and secondary data, including discussion of a qualitative analysis approach based on the TRE survey technique and structured interviews. The chapter further discussed a number of descriptive indicators for data gathering and analysis, as well as the data analysis technique.

Chapter Four: Data on the degree of telecom regulator independence and industry growth in Nigeria

This deals with the presentation of findings of the research. The result and findings from the interviews conducted with respondents representing the research population will be presented in this chapter. The study population includes policy makers, senior staff of NCC and Federal Ministry of Information and Communications, operators, customers and experts in academia, media practitioners, civil society and politicians.

***Chapter Five*: Analysis and interpretation of research findings on telecom regulator independence in Nigeria**

This chapter provides an analysis of the results/findings presented in chapter four. The results/findings will be used to answer the research questions put forward in chapter one and specifically achieving the research objectives set for the study.

Chapter Six: Summary, conclusion and recommendations

This chapter provides a summary, conclusion and recommendations.

CHAPTER TWO

THEORETICAL FRAMEWORK

2.1 INTRODUCTION

The increasing recognition of the significance of regulator independence in the telecoms industry originates from the continuously expanding global applications of Information and Communication Technology (ICT) which are transforming local, national, regional and international telecommunications systems into network economies and have since become the foundation for modern information societies. These applications are being built upon expanded and upgraded national telecoms networks, turning them into new information infrastructures. The point of entry to participation in these new economies and societies is through local communication networks, which determine the access possibilities and boundaries of opportunity for individuals, organisations and countries.

Moreover, the global telecoms reform process making waves around the world is expectedly directed towards creating an environment that will foster a massive expansion in the coverage and capabilities of these information infrastructure networks. This is usually done with national telecoms regulators as the key implementers of these policies of reform. The various reforms introduce the concept and practice of regulator independence as a veritable means of generating added investment for expansion as well as industry growth and development (Ndukwe, 2005; Mwenda, 2006; Eberhard, 2007; Baez and Kechiche 2010).

This chapter explores the literature and presents informed arguments on issues relating to the effectiveness associated with the establishment of an independent regulator as a necessary ingredient of telecoms industry growth and development.

The chapter examines the issues of regulation, regulator independence, the structure and governance for regulator independence, measuring regulator independence, independence and accountability of the regulator, sustaining independence of the regulator, challenges of the lack of regulator independence, constraints of achieving independence, regulatory function and regulator independence, customer-driven regulation and regulator independence and provided a conclusion.

2.2 REGULATOR INDEPENDENCE

Most literature on regulation, regulator independence and the ICT industry assumes regulator independence provides a good environment that stimulates industry efficiency and enhanced private enterprise. Additionally, it is widely held that the manner in which political and social institutions of a country interact with the regulatory process is generally expected to influence the economic conditions necessary for industry growth and development and by extension foster national growth and development (Melody, 1997; Gutierrez & Berg, 2000; Wallsten, 2001; Baudrier, 2001; Gual, 2003; Gilardi, 2003; Bandaranayake, 2005; Ndukwe, 2005; Thakur, Best & Jones 2006l; Gual & Trillas, 2006; Eberhard, 2007; and Samarajiva, 2008).

Meanwhile, despite the frequent use of the term regulation by many experts and practitioners, there is little scholarly or practice agreement on its acceptable meaning. The International Compliance Association (ICA) according to Mwenda (2006, p.6) defines regulation as "a set of binding rules issued by a private or public body".

The author continues that "regulations are those rules that are applied by all regulators in the fulfilment of their functions". Baldwin et al. (1998, pp.3–4) distinguish three main conceptions in the literature regarding the concept and meaning of regulation.

The first conception sees regulation as the whole range of mechanisms of social control, the second sees regulation as all efforts of state intervention in the economy, and the third conception regards regulation as the creation and application of targeted rules. The first conception is the broadest one as it takes into account all mechanisms of social control, including both intentional and unintentional processes, and both state and non-state activities. In this situation all mechanisms which have the capability to steer individual or collective behaviour can be regarded as regulatory (Baldwin, Scott & Hood, 1998, p.4).

Accordingly Majone (1994, p.78), opined that it is this broad conception of regulation, which includes the whole realm of legislation, governance and social control that defines global literature on the subject matter of regulation. However, the author emphasises that such a broad use of the term is not very beneficial for the study of regulation. "If it is true that reductionism is a necessary condition of scientific progress, it is not surprising that the analysis of regulation as a particular type of policy-making is still in its infancy". The second conception is considered less broad and focuses on the efforts of state actors which are aimed at steering the economy. Although this conception excludes unintentional processes and non-state activities, it still incorporates the whole range of tools which state actors can use to intervene in the economy, among which include rule-making and application, taxation, subsidisation, out sourcing or contracting out, and public ownership (Baldwin *et al*. 1998, p.3; and Noll 1980, pp.4–14).

Therefore regulation not only refers to rules with direct implications for economic behaviour, but also to incentives which aim to influence this behaviour indirectly. The third conception sees regulation as the promulgation and enforcement of an authoritative set of rules and is considered as the leanest conception among the various conceptions.
In this situation, regulation is not seen as an equivalent of state intervention, but as one specific form of it. Particularly, it is regarded as the main alternative to public ownership.

Additionally, Mitnick (1980, p.7), in his contributions for instance, defines regulation as "the public administrative policing of a private activity with respect to a rule prescribed in the public interest". On the other hand Selznick (1985, p.363) defines regulator as a "sustained and focused control exercised by a public agency over activities that are valued by a community." This definition sees the term regulation as excluding taxation, subsidisation and public ownership, but takes in all activities related to the creation of rules, the evaluation and scrutiny of economic behaviour, and the application of sanctions for non-compliance with the rules.

Furthermore, in a number of instances the authority to design regulations and the authority to implement regulations and hand out sanctions for breach of regulations is vested in two or three different bodies. But it is desirable for the sake of efficiency and effective achievement of regulatory objectives to locate the design and implementation and sanction for breach of regulations in a single entity. This single entity must be vested with the necessary authority to carry out its functions without undue political interference. This freedom to operate without interference is referred to as regulator independence and is essential to the regulator's ability to perform its responsibilities in its bid to achieve regulatory objectives (Mwenda, 2006; Eberhard, 2007; Baez and Kechiche 2010).

Generally, the main objectives of regulation in the telecoms industry as identified by Bandaranayake (2005, p.25) include: guaranteeing the best use of the country's limited resources, ensuring good quality of service at reasonable prices, ensuring efficient provision of telecommunications services, promoting universal access to basic telecommunications services and encouraging the introduction of new telecommunications services.

Additionally, Walker (2001, p.17) identified seven objectives/functions of telecoms industry regulation as follows:

- Promotion of competition: This involves setting up guidelines that will focus on removing barriers to entry into the telecoms market, reducing cost of entry into the telecoms market, removing barriers for customers to switch from one operator to another, encouraging investment in infrastructure deployment, transparency of customer information, enhanced quality of service and general customer satisfaction.
- Achieving social objectives: This involves ensuring that everyone gets access to telephone services, enhancement of access, usage and geographical spread of telecoms service as well as the existence of and general access to emergency numbers.
- Dealing with negative network externalities: This relates to ensuring the elimination of radio interference and other connectivity related problems.
- Consumer protection: Consumers expect quality service at reasonable prices. The regulator is expected to ensure that consumers are protected against operators who may want to charge high tariffs for services without providing quality service delivery. The regulator must also create a means by which consumers can express their grievances with respect to poor prices or quality of service.

- Managing scarce or finite resources: This relates to using all sources to generate funding and using such funds judiciously and efficiently. This includes funds deployed towards radio spectrum and numbering activities as well as all other regulatory activities.
- Preventing anti-competitive behaviour: This involves stopping the provision of services below cost and cross subsidisation among operators in order to dominate or attract the largest number of customers. Although, this may be good for consumers it may be have an adverse effect on the business environment.
- Protecting the operators from collapse and failure: This relates to the affairs of the state in ensuring the continuity of operator services and the integrity of their networks against both internal failures and external threats, both natural and man-made.

However, for the regulator to be able to achieve these objectives and have the capability of stimulating industry and national growth, some degree of independence must be given to the regulator. This is because the independence of the authorities responsible for regulation is capable of creating a good environment for industry growth and development as well as national growth and development.

Further to this, it must be clearly noted that the possibility of the existence of an absolutely independent regulatory agency is neither feasible nor required. An absolutely independent regulator may be tempted to set and implement its own agenda without supervision, thus opening the process to all manner of abuse. Independent regulators are expected to be subject to government oversight and a system of checks and balances.

It is in support of the requirement for checks and balances that made Smith (1997) insist on regulators being monitored to deter them from inefficiency and corruption. According to the author checks and balances makes the regulator remain focussed on fulfilling its mandate. Furthermore, these checks and balances will enable the regulator to achieve its objectives effectively and efficiently thereby facilitating industry growth and development and by extension the growth and development of the national economy.

However, regulator independence is very important in attracting foreign investment into the telecom industry. This is because regulator independence gives prospective operators the confidence to enter the industry especially in emerging market economies. This position is amply supported by many experts including Williams (1997), Levy and Spiller (1994), and Galal and Bharat (1995) they all generally agree that the entry of new players into the telecom industry is largely dependent on the perception of impartiality in regulation occasioned by the presence of a good and fairly independent regulatory agency. They further accept that these new industry entrants bring about increased competition with its attendant benefits of innovation, invention, new products and services.

Resistance to regulator independence is gradually disappearing as ministries and other government departments that were previously adamant on retaining the power to regulate and control industry tariff and other regulatory matters are now seeing the benefit of delegating such powers to separate independent entities. These benefits as argued by Smith (1997, p.4) include "improving offers from investors, helping to sustain reforms, and shifting responsibility for unpopular decisions to someone else".

It is evident from the foregoing discussions that regulator independence is crucial to the growth and development of the telecoms industry in particular and other essential sectors like the utility service industries. The freedom of regulators from political interference while performing their regulatory responsibilities enhances the quality of their decisions. It gives the regulator the courage to take hard and difficult decisions without leaning towards any political ideology. However, the success of a regulator in conducting its affairs partly depends on the structure and governance for regulatory independence in any given country.

2.3 THE STRUCTURE AND GOVERNANCE FOR REGULATOR INDEPENDENCE

The structure of regulatory independence has become clearer and more globally prominent over the years as a result of the entry of many profit-driven players in the telecoms industry. This entry necessitated the establishment of regulators to ensure that standards are maintained and investments continue to flow into the industry unabated.

Consequently, Shirley (2000), Noll (2000), Levy and Spiller (1996) all believe that industry expansion and development partly depends on the credibility and independence of the regulator. Conversely, as the industry continues to grow and technology continues to advance, government controlled regulations begin to suffer due to the increasing complexity of monitoring the industry by government departments or ministries. As observed by Melody (1997 p.34) "the failure of regulation is linked to strong influence of government in the affairs of the regulator".

This led to calls for the establishment of independent regulators in order to ensure proper monitoring of the industry and to supervise its growth. The independence of the regulator is seen as necessary for a successful transformation of the telecommunication industry. As Melody stressed further "... a high degree of independence is justified by a comparable degree of accountability. Telecoms competition is still limited to major industry players and being played primarily in the arena of politics and bureaucracy. Only strong independent regulation can move it into the market place where it can help achieve the goals of telecoms reform". The concept of independence was further emphasised by Melody to the effect that "in principle, it is not different from a delegation of specific responsibility, authority and accountability for the performance of specific activities in organisations".

Over the years, multilateral institutions and researchers alike have argued that "one potential way to alleviate the time inconsistency problem in infrastructure policy, which has been explored recently both in developing and developed countries, is the establishment of an independent regulator for the relevant infrastructure industry" (Trillas and Montoya, p.18, 2008).

Accordingly, Samarajiva (2002) argues for the separation of regulatory functions from political pressure. Bandaranayake (2005) supports this view by insisting that the insulation of regulators from political interference is a necessary pre-condition for the success of such a regulator. While Adepetun (2011) agrees with this view within the context of the Nigerian situation and contended that the degree of a regulator's independence generally facilitates its capacity to maintain policy and regulatory stability that will enhance industry growth. Therefore, creating a good and conducive regulatory environment is critical toward achieving success.

One of the major reasons of government's presence in the telecommunications industry is to ensure that most citizens have access to telephone services at affordable costs. Additionally, due to the importance of telecommunications to economic activities, governments desire to control the industry in order to have a handle on the entire economy.

However, industry complexities and present day realities make it impossible for governments to continue in the industry as monopolies. Thus liberalisation and privatisation ensued. In the view of Fink, Matoo and Rathidran (2005, p.18), liberalisation and privatisation of government-owned monopolies is beneficial. The authors argue that "both privatisation and competition lead to significant improvement in performance but a comprehensive reform program involving both policies and the support of an independent regulation produce the largest gains". This therefore presupposes that industry liberalisation through the introduction of competition is desirable for efficiency to be achieved in the industry. There is also a strong argument that effective industry monitoring and control needs to be established and strengthened for good results to be guaranteed. This is feasible through creating regulators that have some degree of independence and freedom to operate without political interference. Smith (2000) further observed that a regulator has two important functions: firstly, to address issues related to market failure and secondly to create the enabling environment for unhindered flow of investment into the industry.

Meanwhile, the experiences and results of various countries with respect to the effect of regulator independence differ. This may have informed Dassler (2005, p.60) postulation that "embedding regulation into state hierarchy and market environment allows for a better understanding as to why regulator output differs across countries and sectors".

The argument for independence of the regulator and the degree of independence required for effective performance has been reported in the World Trade Organisation (WTO) report of (1999, p.32) which suggests that a regulator is considered independent when the regulator is free from direct or indirect influence of any telecom service provider in a country. Impartiality and adherence to standards in the best interest of public interest is considered as a necessary indicator of regulator independence. This will pave way for healthy competition in the industry beneficial to the public.

The benefits of regulator independence as a driver of industry transformation and growth was further explained by Wallsten (1999, p.35) who confirmed that "Privatization combined with an independent regulator is positively correlated with telecoms performance measures". Additionally, Wallsten (2007, p.7) stressed that "there is some evidence indicating that most successful liberalisation of the industry was achieved through the establishment of an independent regulator".

Furthermore, Baudrier (2001, p.16) argues that "Regulators are usually thought of as part of the economic institutions of capitalism on the one hand, the ultimate test of their efficacy lies in the impact they have on performance. On the other hand, with the rise of corporatisation and privatisations, the liberalization of various market segments, and the change in the nature of services offered, the need for a regulator as an independent referee becomes a necessity."

The International Telecommunications Union (ITU) (2000a, p.44) also supports this view by emphasising that regulator independence facilitates industry competitiveness which drives industry expansion, growth and development.

Moreover, a study conducted by Trillas and Montoya (2008, p.31) agreed that regulatory independence does permit growth. They argue that ".....regulator independence is associated with higher network penetration in Latin American and Caribbean telecommunications markets, but the magnitude and statistical significance of this impact are probably low and difficult to assess".

Given the realisation that regulator independence is significant to industry growth. This brings to the fore the question as to what level degree of independence the regulator requires to operate optimally. Complete independence may not be desirable due to the adverse consequences it may have on regulator performance and industry growth. This therefore necessitates having some measure of control over the activities of the regulator. Then the essential issue shifts to the measurement of regulator independence, how is the degree of regulator independence determined and what elements are vital in determining regulator independence?

2.4 MEASURING REGULATOR INDEPENDENCE

While there is a consensus on the independence of the regulator by many scholars and industry practitioners, it remains difficult to measure this independence of the regulator. This difficulty is accentuated by the realisation that absolute regulator independence may not be attainable or determinable. Wallsten, *et al* (2004, p.25) amply captured this position and opined that "....but characterising a regulating agency as either independent or not independent is unrealistic.

No government agency is (or probably should be) completely independent, and can more or less be independent across wide range of issues".

In accordance, Melody (1997, p.42) opined that: "The term 'independence', as used in the context of telecoms reform is often misunderstood. It does not imply independence from government policy, or usurping the power to make policy, but rather independence to implement policy without undue interference from politicians or industry lobbyists". Conversely, Wallsten, *et al* (2004, p.26) stressed that "rather than ask whether a regulator is independent, we instead ask many objective questions that can help determine how independent a regulator is in different areas".

Numerous authors have adopted different proxies to measure regulator independence to suit their particular circumstances. For instance, Gilardi (2003) developed a range of dimensions to measure regulator independence by examining the credibility of the regulator. The author sees credibility as an important indicator of independence and constructed an independence index containing various indicators that will explain credibility as a cursor to regulator independence. These indicators include; the status of management, the status of board members, financial independence, the relationship with the executive and legislature. The author randomly assigned weights between 0 and 1 to identifiers where 0 represents no independence while 1 represents absolute independence. The weights are then aggregated to arrive at a final measure that will indicate regulatory independence or otherwise.

Gual (2003) for his part designed two independence indices based on the following items; the duration and term of office of management and board members, the level of financial independence of the regulator, the appointment and termination of management and board members, the level of responsibility of the regulator in terms of policy issues, the reporting relationship between the regulator and the legislature as well as the executive arms of government. Pedersen and Sorensen (2004, p.9) developed independence indicators to measure regulatory independence based on the following dimensions;

independence in taking decisions, independence from government, independence of stakeholders, and regulator autonomy.

The work of Gheventer (2003) created an independence index based on the following measures: decision making autonomy, budgetary independence, stability of leadership, designation process, technical abilities, capability of enforcement and political interference. While Wu (2004, p.35) on the other hand, developed a framework designed to evaluate an agency's independence that can be applied to the situation of telecommunications regulators. These factors include:

- Stability of leadership: This concerns the manner in which the leadership of the regulatory organisation is selected and removed. It also concerns the tenure of office of key management staff, the control and authority to make appointments, the duration of appointment and the dismissal process of all personnel responsible for key decision-making/taking.
- Scope of its authority: This relates to those activities that constitute the functions of the regulator and the degree to which these functions are exclusively within the domain of the regulator authority.
- Financial independence: This addresses the issue of how the regulator is funded; whether the regulator is fully funded by the executive arm of government or whether the regulator has the authority to raise funds from other independent sources, and whether the regulatory agency can financially sustain itself without recourse to public funds.
- Ownership of incumbent: This refers to the level of privatisation of the incumbent operator and the level of the state's financial interest in it.
- Movement of staff from industry to regulator: This concerns the mobility of labour from regulator to operator. Personnel may be

less influenced by external interests if there is less mobility between the regulator and private industry. However, some will argue that flexibility in mobility of labour between the regulator and the operators may aid deeper understanding of each other's operations.

- Representation of consumer concerns: The degree to which the regulator can and does represent the interests of consumers.
- Ethical guidelines: This concerns the kind of guidelines existing internally in the regulator's realm of activities that deal with ethical issues which arise in the course of normal operations.

Finally, Cukierman, Webb and Neyapti, (1992) approached the measurement of regulator independence through three dimensions as follows; real independence measured by the tenure of office of management and board members, formal independence measured by the relationship between the regulator and the various arms of government and relationship with the parent ministry.

Generally, it can be deduced from the measurement techniques designed by various authors that measuring regulator independence is popularly based on performance, financial independence, relationship with executive and legislature as well as the appointment, tenure and termination of key management and board members. The table below summarises the contributions of some of the authors towards measuring regulator independence.

Table 2.4 Authors contribution towards measuring regulator independence

Author	**Measures/Indices/dimensions**
Cukierman er. al (1992)	Tenure of office of management and board members, relationship with various arms of government.
Gilardi (2003)	Regulator's head status, board members' status, relationship with government and parliament as well as financial and organisational autonomy.

Gual (2003)	Regulator responsibility over some policies, financial budget independence, mandate duration and reporting relationships
Gheventer (2003)	Budget autonomy, nomination process, technical background, political interference and enforcement.
Pedersen & Sorensen (2004)	Government independence, stakeholders independence, decision-making independence and organisational autonomy
Wu (2004)	Stability of leadership, financial independence, scope of authority, ownership of incumbent, movement of staff, representation of consumer concern and ethical guidelines.

However, a number of limitations have been observed relating to the above metrics for determining the degree of a regulator's independence. For instance, according to Hanretty and Koop (2009, p.10) "a regulator may possess a limited number of powers but exercise them independently; or it may possess a wide range of powers and exercise them with no independence". This means that if the indices determining independence include the extent of powers over interconnection issues in the telecoms industry then a researcher is no longer testing the impact of independence on interconnection rates, but rather investigating the impact of having an independent regulator with adequate powers which are relevant for the control of connection rates.

Another limitation of these measures relates to the legal features enshrined in some of the measurement indices. Since many of the legal features used in the indices of independence determination are considered essential, they are often addressed in the legislation which establishes the regulatory agency.

Occasionally, however, certain points are not addressed in the legislation. This is very often the case with provisions on dismissal, reappointment, and term length. The absence of such provisions affects the capacity or possibility of getting important information about the degree of regulator independence. Hence, it may be that legislation which lack provisions on term length is very often legislation

which guarantees a low degree of regulator independence in that area as well as in other areas.

Typically, however, the absence of such provisions is not included separately in indices of independence, but is rather included alongside other items in an assumed rank order. For example: Gilardi's index has an item about incompatibility between membership of the regulator's board and other government office. If the legislation does not specify an incompatibility between board membership and other government office, it is scored the same as legislation which states that board membership and government office are compatible. These, however, are not the same.

It may be the case that, in those countries in which politicians are disposed to grant higher degree of independence to regulatory agencies, it is simply assumed that no holder of government office would take up such a position (Hanretty and Koop, 2009).

Counterfactually, as amply argued by Hanretty and Koop (2009) had the law addressed this particular issue, it would have specified the incompatibility. It is possible to object that there are strong subject-specific reasons for assuming that any action not addressed by legislation is permitted. After all, in a concrete situation in which the independence of the regulator is threatened by a given action by politicians, and where that action is not prohibited nor expressly permitted by the relevant legislation, the regulator would hardly be able to defend itself by saying that the relevant legislation would have prohibited the action had it addressed it. Yet the treatment of legislative gaps is not consistent across items.

For instance, Cukierman and Webb's index of regulator independence equates an absence of provisions regarding dismissal with a prohibition of dismissal, whilst Gilardi's and Elgie and McMenamin's indices equate

absence of provisions regarding dismissal with the permissibility of dismissal (therefore, they arbitrarily assign it a score between completely discretionary dismissal (which would at least be consistent), and dismissal only for reasons unrelated to policy). Thus, although there is some presumption that the absence of provisions regarding certain actions should be associated with lower degree of regulator independence, this assumption should be tested instead of being built into the index (Hanretty and Koop, 2009).

Additionally, the assumed order of response categories is another source of conflict and is a limitation to the existing methods of measuring the degree of regulator independence. This is because for many items used as a measurement index, the order of response categories makes intuitive sense for provisions on term length, that is, if they are for the most part ordered in terms of their duration, a natural quantity. Yet the majority of items do not follow a strongly justified ordering. Many response categories, for example, are ordered in terms of distance from the executive. Thus, regulators which take all of their funding from the executive are scored less than regulators which take only some of their funding from the executive. For many items, this ordering makes sense in terms of its contribution in the determination of the degree of regulator independence. For some items, however, this ordering requires justification.

In the case of provisions on appointment, appointment by the legislature is taken to signify a higher degree of independence than appointment by the executive. However, if we are interested in independence from politics and not from court, why is independence from legislators any different to independence from cabinet ministers, particularly in the modal case where a cabinet enjoys a majority in the legislature? (Hanretty and Koop, 2009).

Moreover, the involvement of the legislature may in certain respects damage the regulator's independence. The appointment systems where multiple board members are appointed by parliament by cumulative voting may allow each faction within the parliament to appoint at its own ideal member, resulting in extremely partisan boards. As Smithey and Ishiyama (2000) rightfully argue that to circumvent this difficulty will require including or considering all the number of actors involved in the appointment process, which at least has a rationale in veto players theory, but which again requires further elaboration. This raises the question of whether the legislature could count as one actor or many and also the question on how the relative strengths of these actors should be assessed and quantified. These remarks are speculative, but do suggest that the ordering of response categories, particularly in the field of appointments, must either be strongly justified or tested (Hanretty and Koop, 2009).

The arbitrary weighting of items/nodes is also another source of concern in the measurement of the degree of regulator independence using the existing measurement indices. This is due to the fact that most of the indices presented and discussed arbitrary assign weights to index items or nodes composed of index items. This is most obvious in the Cukierman-Webb index of regulator independence, where top-level nodes are assigned weights ranging from 0.05 to 0.20, where these weights were considered to be the "most plausible" by the authors.

Only slightly less arbitrary is the decision of Elgie and McMenamin and Gilardi to assign index nodes equal weights, justified by Gilardi (2002, p.880) on the basis that equal weighting is the only defensible weighting given ignorance about the relevant contribution of index items/nodes. Indeed, going by the available information in the literature it is possible to assume that no index of independence has assigned weights to items on the basis of a reasoned assessment of

the items' relative contribution to independence (Hanretty and Koop, 2009).

Those measures which are closest to such a weighted index are those measures which are based on the principal components of the agency item matrix (Gual and Trillas, 2004; Edwards and Waverman, 2006), which implicitly assigns greatest weight to those items which load most on to the eigenvectors (Banaian, *et al*., 1998). This method of weighting, however, treats category response scores as interval level data, which could be incorrect as argued by Hanretty and Koop, (2009).

Another subject of discussion in the measurement of the degree of regulator independence is the area of assumed interval level of item responses. This is true for items with multiple responses, where response scores have typically been equally distributed along the interval [0,1]. So, for an item dealing with reappointment provisions, the three possible responses (re-appointment not permitted, re-appointment permitted once, re-appointment permitted more than once) are scored 1, 0.5, and 0 respectively. Yet there seems to be no good reasons for assuming that permitting re-appointing once only should be equidistant from permitting re-appointing more than once or prohibiting re-appointment altogether. Indeed, there are good reasons to assume that these items are not equally spaced. Permitting re-appointment is assumed to damage independence insofar as principals can use the threat of non-reappointment to coerce their agents.
But the value of re-appointment to existing agents may be reduced if they have already served two terms (they may wish to retire or move to another position). Consequently, the assumed damage to independence between permitting re-appointment once and permitting re-appointment multiple times may be less, and the distance between permitting re-appointing multiple times and permitting re-appointment once should be less than the distance between permitting re-

appointment once and not permitting re-appointment (Hanretty and Koop, 2009).

In an attempt to reduce the effect of the outlined limitations on the measurement of the degree of regulator independence, the majority of the authors believe that the best solution would be for researchers dealing with aggregate indices to employ a subset of the measures typically used until now. That is, items relating to the appointing body for agency chief executives and agency boards should be removed. Items relating to the competences or powers of regulators should also be removed from indices of independence; otherwise researchers should admit that these indices are not measuring statutory independence but more likely measuring some domain-specific mixture of statutory independence and adequacy of instruments relative to some goal. Additionally, when coding regulators, researchers should not assume that the absence of provisions regarding some action signifies its permissibility. Rather, the absence of provisions should be treated as missing data (Hanretty and Koop, 2009).

It is evident from the various measures and their limitations that quantifying regulator independence is a very difficult task due to the subjective nature of "independence" itself. This notwithstanding, it is important to collect, quantify and analyse data based on insights from qualitative interviews directed toward determining the degree of regulator independence.

Although regulator independence is important, it is also essential that a regulator is held accountable for its responsibilities in order to avoid abuse. Besides determining the degree of a regulator's independence, it is vital to examine the level of control exercised by the government on behalf of the public. This is because regulator independence without accountability may adversely affect the effective and efficient achievement of regulatory objectives.

2.5 INDEPENDENCE AND ACCOUNTABILITY OF THE REGULATOR

Effective regulation that supports sustainable investment requires some independence from political influences, especially on a day-to-day or decision-by-decision basis. The regulatory body must be an impartial, transparent, objective and non-partisan enforcer of government-determined policies by means set out in controlling statutes of the regulator, free of transitory political influences. The regulator should also be independent from the industry that supplies ICT services (Cukierman, et. al, 1992).

Furthermore, well performing regulators should have other qualities apart from being independent. These qualities include being transparent, accountable and predictable. Moreover, the regulator should be clearly separated from other regulators and the supervising ministry. For a regulator to be effective its independence must be balanced with accountability. This is to deter the regulator from being inefficient or corrupt. The public are entitled to information regarding the activities of the regulator and should have a means of seeking redress in the event of the regulator acting incompetently or arbitrarily. There is a strong need to create measures that will ensure the attainment of a balance between regulator independence and accountability. Trillas and Montoya (2008, p.10) identified some of these measures to include;

1. Regulator performance review by independent auditors or the legislature
2. Making sure that the decisions taken by the regulator are subject to review by the court of law.
3. Making publications available to the public with respect to various laws and statutes relating to the regulator. The publications need to identify the regulators goals, rights, duties, obligations and responsibilities.

4. Publication of annual report by the regulator on its activities
5. Asking the regulator to publish its major decisions
6. Creating procedures and rules for the appointment and removal of regulator officials. Especially removal of officials found to be incompetent, corrupt or in cases of misconduct.
7. Interested parties should be allowed to make representations on issues being reviewed by the regulator which affects them or others (Trillas and & Montoya, 2008, p.10).

Furthermore, regulator's accountability should be appropriately in tandem with regulator independence. However, striking the proper balance between independence and accountability could be extremely if not notoriously difficult. To overcome this difficulty the following measures have been adopted and proposed by a growing number of experts in the literature, including but not limited to Mwenda (2006, p.60); Eberhard, (2007, p.45); Baez and Kechiche (2010, p.8). These authors argue that the following measures are necessary in establishing accountability of an independent regulator:

- The pursuit of transparency through the publication of major decisions taken by the regulator: This is to ensure that the regulator operates openly in a transparent manner.
- Avoidance of conflicting interests: This relates to ensuring that conflict of interest does not exist among executive officers of the regulator where they may have a stake in some operators whom they are meant to regulate.
- Providing effective arrangements for appealing the regulator's decisions: In situations where the aggrieved operators are not satisfied a means of making an appeal an obtaining justice should be available. This is to prevent regulators from having absolute authority or rather abusing their authority to regulate the industry.

- Regulator's budget review and control by the legislature: This will provide a means of checking regulator financial excesses when they occur. Moreover absolute control over funding by the regulator may have negative consequences in terms of preventing influences of the operators in the decisions taken by the regulator that affect such operators.
- Review of regulator's activities by public organisations (watchdogs) and external auditors: This is a very good means of ensuring that the regulator remains accountable. Professional external auditors without any interest in the industry except on arm's length relationship with other industry operators
- Permitting the regulator's removal from office in cases of proven misconduct or incapacity: Conducting the affairs of the regulator in a disciplined manner without undue political interference.

Clearly, an analysis of regulatory independence must pay particular attention to the accountability of the institutions. Measurement of accountability such as public availability of regulatory decisions, and budget is essential for understanding regulatory independence. The issue of regulator independence and accountability raises further questions on the sustenance of regulator independence. A high degree of control from the parent ministry of the regulator may gradually erode the independence of the regulator or limit such independence to the extent that it hampers the effective and efficient performance of regulatory functions. Other issues of regulator independence sustainability relate to the controversy over whether a single national regulator or separate type of regulator is the most appropriate for independence sustenance.

2.6 SUSTAINING INDEPENDENCE OF THE REGULATOR

There is a raging debate among authors over whether more independence is achieved by having a single national regulator that

deals with regulation or by having separate regulators that deal with each industry. Anders, Samarajiva & Melody (2003) argue that the main threat for the political independence of the telecommunications regulator come from the line ministry who act as the supervisory regulator, policy maker and also as an operator. In some instances multi-sector regulation is in place in some countries where the regulator is under the control of more than one ministry.

This makes it difficult for a single ministry to interfere with the affairs of the regulator. A multi-sector regulator also provides advantages such as sharing of knowledge across industries and sharing of valuable human resources for regulation which are scarce in developing countries.

The most significant disadvantage a multi-sector regulator may encounter is that the pace of reform and liberalisation may vary significantly in different sectors (TTR-ITU, 2002). Also there is a high risk in the case of a failure of a multi-sector regulator because the failure of the single regulator will affect all the industries controlled by that regulator.

To sustain regulator independence, it is imperative to maintain professionalism through ensuring that professional qualifications are made mandatory for the staff of the regulator. It is equally important that the following are ensured: independent budget and employee recruitment activities, public reporting of government communications to and from the regulator, public accountability and the appointment of several commissioners with fixed tenured terms rather than a single term. This will create and sustain a desirable degree of independence from government total control and influence (Melody, 1997).

According to TTR-ITU (2002), the key to actually achieving and maintaining independence is legitimacy; that is, the acceptance of the existence and the power of an entity by those who can affect it or are

affected by it. Because legitimacy is won and perpetuated through communicative processes it is critical that the regulator maintain constant public awareness of their activity. True independence requires the regulator to act and be seen to act in the public interest. Results must not only be achieved but they must be seen to be achieved as well.

The human capital in the regulatory body is of utmost importance to sustain its credibility and independence. Having competent people in the regulatory body ensures that legally and technically correct decisions are made in implementing the policies. The categories of skills needed in a regulatory body include engineering, law, economics, accounting/finance and management (Melody, 2003).

It is also important that the hiring and firing of the staff in the regulatory body be kept within the body (Cowhey and Klimenco, 2001). Providing adequate compensation is a necessary basis for attracting and retaining expertise. However the gap between the salary structures of public and private sector could be a major obstacle towards using compensation as a basis for attracting and retaining good staff by the regulator. Consequently, this may affect the capability of a regulator to sustain its independence based of the quality of their human capital. The regulator could as a result use training as an attractive opportunity for employees to grow and develop, which would motivate staff to remain in service for longer periods thus enhancing its capacity to sustain its independence (TTR-ITU, 2002).

The leader of the regulatory authority should also have sufficient authority and autonomy if the regulatory body is to function independently. Independence derives from things such as whether the leader can be removed easily by the executive, whether the leader has a fixed term in office and if that term is long enough. If the leader

cannot be removed no matter what decision is made and the term in office is fixed or for life, then that person can make independent decisions not bending to political pressure (Wu, 2004). However, this sort of absolute independence in appointment and tenure of the regulator's leader is often open to abuse: such a leader may easily become a dictator.

The authority of the regulator is another important criterion where the regulator's independence is indicated. It is also a significant source of sustenance of regulator independence. For instance, where the regulator has the authority to grant licences for cellular operators in places where frequency is a scarce resource it implies independence of the regulator as Wu (2004) argues. However the author has shown in his study that a lot of regulators do not have this authority but they are given the authority to issue licences in the fixed line market where there is no issue of scarce resources.

In this case the regulator is considered operationally or partially independent. The authority of a partially independent regulator in this circumstance could be withdrawn, thereby affecting the capacity of the regulator to sustain its independence. Min (2000) is of the opinion that the ministry rather than the regulator should have the authority to grant licences to mobile operators because the limited spectrum is considered a national asset that should be allocated at the highest level. This argument suggests taking away one of the key functions a regulator performs in the telecoms industry, and by so doing undermining the regulator's independence.

The source of funding is one more key determinant of regulator independence and its sustainability. Best practice is to earn the funding through its own operations, otherwise the funding organisation (usually the government) could influence the decisions of the regulator during the budget process (Wu, 2004). Imposing a requirement that all

communication between the regulator and the government be documented also improves the capacity to sustain the independence of the regulator by making it difficult for the government to issue orders which are politically motivated (Cowhey and Klimenco, 2001).

While creating one regulator per industry may expedite the decision process, having a board of regulators depersonalises the regulatory process (Cowhey and Klimenco, 2001). On the other hand, a board of regulators may have difficulty in sustaining its independence due to the associated complexities in the regulation of several industries by the same regulator. Reporting is another area that has impact on independence, as this affects the accountability requirement of a regulator.

It is evident from the foregoing that sustaining the independence of a regulator be very difficult given the penchant of government to intervene politically when things are not working according to plan or often in order to shore up the dwindling popularity of the government. These political interventions create complexities and bring to the fore the various challenges of the lack of regulator independence and the effect of such a situation on the growth and development of the industry.

2.7 CHALLENGES OF THE LACK OF REGULATOR INDEPENDENCE

The challenges facing regulator independence are enormous, often leading to non-performance or failure in achieving regulatory objectives and the general policy aims of greater connectivity, penetration and utilisation. This was clearly enunciated by Wallsten (2002), who found a negative correlation between the independence of the regulator and the number of mainlines and mainlines per capita.

This means that more independent regulation has resulted in less penetration of fixed line telephony.

Conversely, Wallsten (2002) puts forward two ideas that may explain his finding. First, the variable 'independence' was measured as a direct question from the regulator if it was independent.
This could have resulted in a situation where the regulator could have been biased to answer *yes*, because it depicts a fairer regulatory environment as advocated by World Bank, WTO, etc. Therefore the variable could have been plainly wrong and misleading. The second situation Wallsten (2002) refers to is that too much independence from political influence can be harmful because ideally the consumer preferences are represented through the political system, at least in a democracy.

Therefore a fully independent regulator (from the government) may not be advocating what is best for people of the country. Rather the regulator could be strongly influenced by the private sector operators for their own benefit and can operate closely with the regulator carefully controlling the flow of information (Samarajiva and Dokedeniya, 2005). Such a situation is rampant in Nigeria where a former managing director of the privatised incumbent (NITEL) was appointed as the head of the regulating body and decisions clearly favouring the incumbent were taken.

No matter how independent the regulator is, it is still a government agency. The regulator has to act with close co-operation with the policy maker to implement the policies of the government effectively (Min, 2000). Therefore it is best to grant the correct degree of independence the regulator will require to effectively and efficiently carry on its functions. This should be done while taking into cognisance the country's social and political environment. However, achieving a

correct degree of regulator independence is often mired by several constraints.

2.8 CONSTRAINTS OF ACHIEVING REGULATOR INDEPENDENCE

Since telecommunication service provision is a driver for economic growth it is high on government's agenda, although it is also a politically sensitive issue. Because of the sensitivity of the industry various governments like to keep close supervision of industry regulators.

Governments in many countries may also continue to hold significant shares in incumbent operators. This relationship between the government and the incumbent increases the chances of the government taking various measures to protect the incumbent's market share through the regulator (Melody, 1997). Some governments do this to maximise returns when the incumbent is subsequently privatised. The action of government with respect to the incumbent is a formidable constraint towards achieving a reasonable degree of regulator independence.

Another constraint to regulator independence concerns the activities of industry operators, including the incumbent who will try their best to influence the regulator to make policies in their favour. These operators may often resort to kickbacks to bribe the regulators. This is especially possible in developing countries, particularly in Nigeria where corruption is very high.

Generally, attaining the most effective degree of regulator independence is difficult because of the complex objectives of regulation which can be categorised into three main aims: to protect consumers from abuse by firms with substantial market power; to

protect investors and investments from poor government decisions, thereby promoting efficiency in economic activities.

While there is growing recognition by some segments of the literature that competition can reduce the needs for regulation in the telecoms industry, most experts believe that competition in the telecoms industry needs regulation. This is because the industry contains some areas of monopoly where the benefits of regulation potentially outweigh the costs (Cowhey and Klimenco, 2001).

Regulating the telecoms industry becomes complicated if these three related considerations are put into perspective. Firstly, prices for telecoms services could be usually political in the sense that the lower the prices of telecoms services the more possibility of an elected representative being re-elected on the strength of facilitating the existence of lower prices. This first scenario is only applicable is situations of a government monopoly in the industry.

However, the introduction of competition in the industry which heralded the arrival of many private sector operators into the industry has made it unlikely for price control to rest solely and exclusively on the shoulders of the government or the operators (Cowhey and Klimenco, 2001). Secondly, the authors further argue that credibility and proper rules must be established and strictly adhered to for investors to have any measure of confidence to take any serious investment decisions in a telecom industry. Therefore an independent regulator will be faced with difficult decisions for the betterment of the industry. Finally, the authors conclude that the regulator will have to pursue the goal of flexibility due to the dynamic nature of the telecom industry and the goals of economic efficiency in addition to other regulatory objectives for the industry to thrive through foreign or local investments.

All these are a source of concern with respect to the independence of a regulator. This is because it creates the opportunity for consistent government intervention in the affairs of the regulator which undermines regulator independence by obstructing the effective and efficient performance of its regulatory functions. This then brings to fore the question as to what constitutes regulatory functions and regulator independence.

2.9 REGULATORY FUNCTIONS AND REGULATOR INDEPENDENCE

Several authors agree that anti competitive practices are very common in an industry like the telecoms where there has been an initial monopoly and competition is subsequently introduced. This is mainly because it is very easy for a dominant player to take advantage of its dominant position at the expense of other operators.

One regulatory practice used to mitigate this problem is to use asymmetric regulation where a burden and certain obligations are imposed upon the dominant carrier (Min, 2000). The promotion of competition is considered significant in removing the disadvantages suffered by new operators in such industry. High licence fees and high interconnection fees can constitute a formidable barrier to entry for new comers to the industry. Furthermore, the customers can be encouraged to choose any operator they like by such practices such as number portability. Number portability means that the customer can subscribe to any operator while keeping the same number without having to change the number.

Moreover, ensuring that everyone has access to telephone services can be a difficult goal to achieve especially in rural areas. The provision of services to rural areas can be very capital intensive because of the low density. Secondly the revenue generated can be low because the rural communities who are normally poorer will not originate calls as

frequently as more affluent customers. It was discovered that the cost of terminating a call in a rural area is many times higher than terminating it in a city (Samarajiva, 2002a).

While the provision of services to rural areas can be achieved through cross subsidisation, this may be anti-competitive since other operators cannot match the prices achieved through cross-subsidisation by an incumbent government telecoms company. To solve a problem of this nature, the regulator can either remove price ceilings in the specific area so that the prices reveal the true cost of provision of service, or make use of government subsidies on a tender basis. Regulating the prices can be achieved in two different ways: price cap regulation and rate of return regulation.

Price cap regulation involves setting a maximum price so that the operators set their own prices equal or lower that this maximum. Rate of return regulation uses cost of operations or service provision plus a reasonable margin of profit to determine prices. The price cap is usually reviewed periodically and the operators can improve their productivity and efficiency to increase their profit margins.
Rate of return regulation means the regulator sets a percentage perceived as fair in the industry as the rate of return for the operators. The operators have to adjust the prices so that the rate of return does not exceed the stipulated amount (Samarajiva, 2002a).

Even though managing the radio spectrum is regarded as part of the regulator's responsibilities, Min (2000) argues that spectrum allocation is a policy issue normally decided at higher levels, and the regulator should only retain the function of allocating the licence based on the chosen spectrum. Allocating numbers to operators is also considered an important regulatory function. Also the regulator has the responsibility to monitor the service quality provided by the operator.

This includes collection of data such as call completion ratios and fault repair times (Min, 2000).

The regulator is apparently assigned the enormous responsibilities of ensuring fairness among operators as well as protecting the consumer from exploitation by industry operators. It is therefore vital that a regulator has a reasonable degree of independence to perform it functions and create a consumer driven industry.

2.10 CONSUMER-DRIVEN REGULATION AND REGULATOR INDEPENDENCE

Consumers of telecoms products and services have many wants and desires that they expect to be satisfied. It is in this vein that Walker (2001, p.54) defines the purpose of telecoms industry regulations as "to achieve those desirable and justified outcomes for consumers and the community as a whole that do not arise naturally from the market". Accordingly, Smith (2000) posits that there are two main objectives to telecoms industry regulation which included addressing all issues relating to failure of the market in the telecom service delivery and the objective of creating the enabling environment that will generate a good of flow of investments. In addition to this Walker (2001) argues that the three most critical needs for telecoms industry regulation are to protect customers, to ensure fair competition and to promote competition. For the telecoms industry regulator to have the capability of achieving these customer satisfaction objectives, a degree of regulator independence is necessary.

Furthermore, as expressed by Thakur, *et al* (2006, p.30), "Having an independent regulator can also lead to increased confidence both among consumers and investors". This implies indirect measurement of the perception of market players could provide a proxy to regulatory independence. A number of authors have constructed various variables/indicators that measure customer satisfaction with service

delivery. Accordingly, Bandaranayake (2005, p.21) identified some of these variables to include:

1. Quality of service (QoS) given by the change in subscriber base, turnaround time, ease of interconnectivity, operational flexibility as well as speed of service.
2. The quality of operator personnel indicating and their technical capabilities to resolve problems quickly.
3. Customer services
4. Prices of interconnectivity
5. Complaint resolution
6. Consumer protection laws (Bandaranayake, 2005 p. 21).

The various sections presented above discussed several issues surrounding regulator independence in general. The subsequent section of this chapter examines the issue of regulator independence in the telecoms industry of Nigeria.

2.11 CONCLUSION

The chapter surveyed various literature connected to the significance of regulator independence in telecoms sector growth and development. The chapter explored the issues of regulation, regulator independence, regulator independence and accountability, measurement and sustenance of regulator independence, challenges and constraints to regulator independence, structure and governance for regulator independence, consumer-driven regulation and regulator independence, regulatory functions and regulator independence, as well as regulator independence in the Nigeria telecoms industry.

The surveyed literature clearly established the significance of regulator independence as a necessary condition for the growth and development of industry including the telecoms sector. However, absolute independence or lack of independence is considered harmful to the industry. Therefore, the achievement of regulator objectives and

the growth and development of the industry are directly and indirectly associated with the degree of regulator independence in carrying out its regulatory responsibilities. This is also found to be reasonably the case with respect to the telecoms industry situation in Nigeria. This review therefore informed the best methodology to carry out the study

CHAPTER THREE
RESEARCH METHODOLOGY, DATA GENERATION AND EVALUATION APPROACH

3.1 INTRODUCTION

This study examines the degree of regulator independence and the effect of such independence on access, usage, pricing, competition, quality of telecoms services and consumer satisfaction in Nigeria, using a qualitative measure of the perception of stakeholders in the industry. The methodology employed for this study focuses on establishing the impact of regulator independence in the growth and development of the Nigerian telecommunications industry. The study used data obtained from primary and secondary sources. Qualitative approach was deployed in classifying, codifying, evaluating and interpreting the information obtained.

3.2 MEASURING EFFECTIVENESS OF INDEPENDENCE

Discussions of desirable institutional arrangements for effective regulation of utility industries are now numerous and include: Brown, Stern, Tenebaum and Gencer (2006), Melody (1997), Smith (2000), Green (1999), Estache (2003), Kerf et al. (2001), Mustafa (2002), Smith and Wellenius (1999), Stern (1997), and Stern and Holder (1999).

The most frequent variable examined is *regulatory independence* which is often simply characterised by a proxy variable – such as whether a country has a separate regulatory agency not directly under the control of the ministry. For example, Wallsten (2002, p.112) uses a proxy to determine whether a country has established a separate regulatory authority and observes that this variable is "better

characterized as indicating a country's propensity to undertake regulatory reforms rather than the effect of a separate regulator *per se*". Wallsten relies on subjective responses by regulatory authorities to the question of whether they considered themselves "independent from political power." Other studies that make use of a proxy variable include Gutierrez and Berg (2000), Fink, *et al*. (2002) and Bauer (2005).

However, there have also been subsequent design and deployment of wider measures of regulatory quality and independence by many more authors. Gutierrez (2003a, b) constructs a regulatory framework index that is composed of an equally weighted sum of the presence of six institutional elements that are perceived to have a bearing on good regulatory governance. The elements are; separation between the incumbent operator and regulatory activities, independence from government, accountability measured by the existence of mechanisms to resolve disputes between regulators and operators, clarity of the regulator's roles and objectives as well as transparency and participation in the regulatory process especially in determining whether the creation of the regulatory body is backed by legislation rather than by executive decree.

On their part, Gual and Trillas (2006) constructed a more detailed index of regulatory features bearing specifically on regulatory independence from government. While focusing on the determinants of policy reforms (rather than the outcomes of regulatory reform) their work provides a useful example of measuring the multi-dimensional nature of the reform process in telecommunications. They focus on entry barriers (including the degree to which market opening or deregulation policies are asymmetric, or biased in favour or against entrants) in addition to the degree of independence (*vis-à-vis* their governments) of regulatory authorities. They present new indices, both for entry barriers and for independence.

Edwards and Waverman (2006) for their part use a composite regulatory performance indicator. The various efforts of experts notwithstanding, it should be noted that it may be difficult to precisely measure the degree of independence of a regulator on the basis of the existing methodology and proxies alone. This is because these proxies are predominantly formal thus excluding the effect of informal activities that may have a bearing on a regulators independence or otherwise. The table below shows a summary of the measurement indices designed by various authors as shown in the literature.

Table 3.2: Telecommunications Industry Regulatory Independence Indices

Author	Variables	Methodology
Cukierman et al (1992)	• Nomination rules • Final objectives • Decision-making process • Policy formulation • Limitation	• Weight each variable ad hoc • Simple and weighted averages as indicators
Gual (2003)	• Agency responsibility over some policies • Financial budget independence • Mandate duration • Reporting relationships	Simple weighted averages of results
Gilardi (2003)	• Agency head status • Board members status • Relationship with government and parliament • Financial and organisational autonomy	Each indicator is analysed ranging from 0 and 1 followed by a simple average aggregation
Gutierrez (2003a, b)	• Separation of regulator and incumbent • Independence from government • Accountability • Clarity of roles • Transparency	
Gheventer (2003)	• Budget autonomy • Nomination process • Technical background • Political interference • Enforcement	Simple average of the variables ranging between 0 and 1
Pedersen & Sorensen (2004)	• Government independence • Stakeholders independence • Decision-making independence	Simple average of the four dimensions,

	• Organisational autonomy	ranging between 0 and 1
Wu (2004)	• Stability of leadership • Financial independence • Scope of authority • Ownership of incumbent • Movement of staff • Representation of consumer concern • Ethical guidelines	Simple weighted averages
Gual and Trillas (2006)	• Entry barrier indicators - Entry conditions - Number of operators - Spectrum allocation - Number portability - Carrier selection - Loop unbundling • Independence indicators - Technical competence - Financial independence - Reporting relationships - Appointment, tenure and dismissal of top executives and board members - Incumbents ownership structure - Length of operations	Simple weighted average

3.3 QUALITATIVE ANALYSIS BASED ON TELECOMS REGULATORY ENVIRONMENT (TRE)

The qualitative analysis for this study will be partly drawn from the Telecommunications Regulatory Environment (TRE) survey method. This method generates and measures industry stakeholder's perception of the regulatory environment in a country.

It uses the Likert Scale of measurement along several dimensions where weights are assigned to responses based on strength of respondent's convictions. Further evaluation and generalisations are made that subsequently provide an explanation with respect to a phenomena or a given situation.

The justification for using this survey for this study is based on the fact that the TRE survey technique has universal appeal and acceptability as a method for evaluating regulatory performance. As explained by Samarajiva *et. al* (2007, p.23) the TRE survey technique is designed to be used in different regulatory environments. It can be adopted and modified to accommodate different characteristics without losing its potency as a survey instrument. The technique is also designed to allow for benchmarking of countries over time. TRE scores can be used to measure positive or negative regulatory environment in different countries.

Furthermore, the TRE survey technique permits performance assessment of telecom sector regulatory laws. This can be done by allocating scores that will represent various performance levels. The TRE scores are designed in such a way that low values represent poor performance, medium values represent satisfactory performance and high values represent performance improvement. In the event of low scores improvement in regulatory performance will be desirable. The TRE technique is also useful in assessing a country's regulatory risk by prospective investors. This technique is especially useful in identifying country regulatory risk for international investors with interests in the telecom industry of numerous countries. The TRE survey technique was created to measure the effects of regulatory activities on investments by Samarajiva and Dokeniya (2005).

This survey technique measures the regulatory environment of the telecoms industry using five indicators (allocation of scarce resources, market entry, universal service obligation, interconnection, and

regulation of anti-competitive practices). A further dimension for tariff regulation was later included. In keeping with the changing nature of the telecoms sector, new dimensions and new sectors are being constantly added. Due to the nature of the TRE survey technique questions are designed carefully because the ideal respondents to this survey method are mostly senior managers, including CEOs of operators, board members, and top managers. TRE uses very short questions to determine the perceptions of key players because too many questions could tire out the respondents thus creating possible problems of reliability and credibility of responses elicited.

A Likert scale method with values ranging from 1 to 5 usually employed in the TRE survey technique. This facilitates making analysis of the data generated whilst still retaining the capability to obtain qualitative information. This reason, along with the flexibility and practicality of application of the TRE survey method, provided the impetus for its selection as the main survey method for this study over other methodologies.

For instance, in contrast, the European Competitive Telecommunications Association (ECTA) regulatory scorecard method developed to assess similar situations, has several shortcomings that make it inadequate for deployment in this study. This is because despite the ECTA's regulatory scorecard being quite comprehensive in its coverage, it only benchmarks the telecoms regulatory framework in 22 European countries. The framework is constructed to suit only European countries and in essence it cannot be implemented outside the EU.

The ECTA scorecard is a questionnaire designed to cover the following areas: the total institutional environment, major enablers for market entry and network roll out, National Regulatory Authorities (NRA) regulatory processes, application of regulation by the NRA and regulatory and market outcomes. The ECTA questionnaire and

methodology are generally compiled following consultations with NRAs, ECTA members and the European Regulators Group (ERG) and also take account of the requirements and recommendations contained in the EU regulatory framework, the World Trade Organisation (WTO) reference paper on telecommunications, and European Commission and ERG Guidelines. The key variables used for the ECTA survey include but are not limited to the followings items presented in the table below:

Table 3.3: The European Competitive Telecommunications Association (ECTA) survey variables

Variables	Regulator – General Functions	Dispute Settlement Body	General Market Access conditions	Key Access products
Indicators	Speed of process	Speed of process	Access obligations	Narrow band voice
	Transparency	Due process	Non discrimination and price squeeze	Voice
	Powers and sanctions	Effectiveness of sanctions and scale of resources	Price control	Business
	Scale of resources	Effectiveness of appeal procedure	Cost accounting separation	Broadband
	Effectiveness of appeal procedure	-	Rights of way and facility sharing	-
	Independence	-	Numbering	-
	Market analysis procedure and imposition of remedies	-	-	-

Source: ECTA (2009, 2007)

The weight is given to each of these main sections is a reflection of their respective importance in delivering the set objectives. A subsequent comparison of variables and weights will be made to produce a set of results.

The ECTA survey technique is exclusively created to serve the needs of countries located in the European Community (EC). The technique is useful this region because they share common institutional and legal

framework. The ECTA survey technique poses questions specific to the EC regulatory environment. This makes the adoption of the ECTA survey technique difficult if not impossible by countries outside the EC. This shortcoming of the ECTA technique has been subject of criticism especially with regards to the method employed in the assignment of weights used in assessing the regulatory environment (Samarajiva, *et al*. (2009), (2007); Weeks and Williamson (2006); Edwards and Waverman (2006).

Further criticisms of the ECTA survey technique came from Weeks and Williamson (2006) who see the method as not being clear on the difference between effective regulation and increased regulation especially when competitive market conditions are involved. Therefore, for the purpose of this research emphasis shall be placed on universal service obligations, accessibility, quality of service and interconnectivity. The TRE method of assessment was employed for evaluation of responses to be generated from data collected through primary sources. The following variables were considered in sector performance in relation to regulator independence in Nigeria:

1. Governance of the regulator with regards to the stability of the staff, leadership, scope of authority of board members, appointments, financial independence and remuneration. This is inspired by Brown *et al* (2006) where he clearly pointed out that evaluation of both governance and substance is important.
2. Regulator performance with respect to universal access interconnectivity, incentive pricing, fair competition, QoS, consumer protection and access to resources such as numbering and spectrum.

The above were measured against the performance of the sector including the penetration of fixed, mobile, internet and broadband services over the last decade.

3.4 STRUCTURED INTERVIEWS

The method of data collection employed was a structured interview. This is in line with Huysamen (1993, p.26) and Baxter and Jack (2008) who suggest that interviews should be used when a researcher attempts to elicit opinions. Babbie (2004, p.273) also suggested that interviews should be used as the primary source of data collection for qualitative research methodologies, as they generally produce fewer incomplete answers. The interview schedule adopted for this study contains a mix of questions that are predominantly open-ended questions with exhaustive response categories as well as a few mutually exclusive closed-ended questions. This approach is expected to ensure greater uniformity of the responses received and also allows for easier data analysis in line with the Babbie (2004, p.25) suggestion. The interview is also structured on the basis of Creswell's (2003, p.188) suggestion that qualitative researchers should use the following identified interview components and interview questions:

- A heading.
- Opening statements
- Probes to follow key questions.
- Transition messages for the interviewer.
- Space for recording the interviewer's comments.
- Space for recording reflective notes.

A pilot survey was conducted to pre-test the interview questions. This is in line with established practice in the literature, as Babbie (2004, p.256) succinctly stated that "no matter how carefully researchers design a data collection instrument such as interview questions, there

is always the possibility of error". In order to protect against such errors, a pilot survey was conducted to pre-test the interview questions for any errors and incoherence. The survey was tested on a randomly selected sample that is considered representative of the research population. As Babbie (2004, p.256) suggested that it is necessary to choose a representative sample to conduct the pilot survey. The main output of the pilot survey from the test subjects provided information about the order and grouping of the questions needed to be improved to enable better readability and flow of the questions.

3.5 PRIMARY DATA

Primary data in this study was obtained through conduct of interviews. Respondents from the regulator, the operators, government policy makers, educational institutions and customers were identified and interviewed. Interviews were conducted in order to elicit the opinion of experts, high-ranking officials of the regulator and policy makers in order to determine the effect of regulator independence on the growth and development of the telecommunications industry in Nigeria.

3.6 SECONDARY DATA

Data was also obtained from secondary sources consisting of magazines, company reports, books, journal, publications, government bulletins, news items, academic work and written reports from credible sources including the website of NITEL, NCC, CBN, statistical bureau, operators, ITU, WTO, the World Bank and IMF. Data about sector performance were also available from RIA sector performance reviews and the Nigerian Communication Commission. These sources were used for a content analysis where arguments of various experts on the significance of regulator independence on the growth and development of the telecommunications industry will be harnessed.

Websites were also surveyed to provide information with respect to the growth of the telecommunications industry in Nigeria. The financial report that appears on the NCC website was reviewed to view funding capacity and relationship with the government. This is an important determinant of independence.

3.7 DESCRIPTIVE INDICATORS

This study used two sets of descriptive indicators in order to assess the regulatory independence and sector performance.

3.7.1 Regulator independence indicators

Regulator independence is considered significant in order for the regulator to achieve its objectives. As argued by Baudrier (2001, p.34) regulatory independence will "ensure that the regulatory role will be carried out effectively, free from the short-term interests of agents". The determination of regulator independence is the first step before examining the effect of the independence or otherwise on the telecoms industry development in Nigeria. Based on the analysis of several variables that are used elsewhere, the following variables have been identified to provide a meaningful tool of determining regulator independence in Nigeria.

3.7.1.1 Relationship between policy making and regulation

The separation of the policy making function and the regulating function is necessary to ensure effectiveness in performance and the achievement of the desired objectives of the policy. As indicated in the literature, there is a need to have written policy guidelines to steer the policy executor in the right direction.

The policy maker, which is often the government, has to indicate to the regulator the policy direction, and if this is done through written

policy guidelines the process becomes transparent and legitimate to other stake-holders. The existence of written guidelines by the policy makers makes the independence of the regulator clear in the opinion of experts. This is also a good indicator of regulatory independence.

3.7.1.2 Appointment and tenure of board members

The process of appointment and tenure of board members of the regulator is a necessary indicator of stability and freedom to exercise responsibility without undue influence.

3.7.1.3 Appointment and tenure of executive officers of the regulator

Stability of leadership positions is crucial in conveying to industry operators a sense of purpose and seriousness on the part of regulators. This also means that regulators are protected from undue political pressures and meddling. A clear indicator of regulator independence is the process of appointment and removal of regulatory agency leadership, tenure in office and the existence and duration of fixed term of office.

3.7.1.4 Funding

This is where issues relating to government subventions against internally generated funds of the regulator were examined in order to ascertain the level of autonomy/independence of the regulatory agency. The autonomy/independence of a regulatory organisation strengthens its authority. A regulatory body is regarded as independent when it has control over its source of resources.

As rightly argued by Pedersen and Sorensen (2004, p.9), "An organisation has more autonomy when it controls its resources. Thus, a stable source of resources, as a fee charged to the regulated industry

and the authority to control assignment; promotion and salary policies, are considered to be important resources." Moreover, experts agree that the independence of a regulatory agency is negatively affected when the regulator is financed by any other form than through its own operations. i.e. through licences and levies.

It is particularly problematic if the regulator is financed by the government as it can impose conditions for the allocation of sufficient budget. If the regulator does not have enough funds to sustain its operations it can neither be effective nor independent, as it will be driven by the need to ensure its financial viability. International donors make use of this fact if it finances the regulator fully or partially. External financing by donors is also considered bad for the independence of regulatory agencies, for instance funding obtained from international funding institutions like the IMF or the World Bank.

Although these organisations have always advocated for the independence of regulators, they often meddle in the affairs of the funded regulators. Thus it is not surprising that experts consider the independence of regulators to be negatively affected by such financing. The reasons could be the funding organisations may be imposing conditions along with the funding that could be harmful to the regulator. It is common for these donor agencies to impose conditions which are ill-suited to local situations in each country. It is on the basis of the above that funding source is therefore selected as a core indicator of regulator independence or otherwise in this study.

3.7.1.5 Decision-making process

Consistent meddling into the affairs of the regulatory agency by the government is a clear indicator of lack of independence to effectively carry out regulatory activities. The possibility of aggrieved parties appealing to the President or minister in the decision-making process of the regulatory agency may diminish their independence as the regulatory authority. This situation may have a negative effect on the activities of the agency and that the regulatory body has a low level of independence.

3.7.1.6 Content and provision of legislation

Expert opinion of the content and provision of the legislation establishing the regulator, creating independence and guiding operations will provide a good source of understanding of the legal ramifications of the activities of the regulator. This is an important indicator of regulator independence or otherwise.

3.7.1.7 Performance of the Regulatory Agency

The performance of the regulatory agency in executing its functions of operator licensing, spectrum allocation and numbering are important measures of regulator independence. Furthermore, the regulatory agency's performance in ensuring smooth interconnectivity between operator services, universal services access, low budget pricing, competition and quality of service are significant indicators of regulator independence.

3.7.1.8 Regulatory staff expertise

Reputation and knowledge of industry on the part of regulatory staff creates credibility and legitimacy for decision-taking. The technical

ability of regulatory staff clearly indicates capacity to handle complexities of industry regulation.

3.7.2 Telecommunications Sector Development Indicators

The following are indicators that were selected to provide an insight into the extent of the telecommunications industry growth and development.

3.7.2.1 Access and usage of services

The ability for operators to interconnect and use the services of the incumbent operator is one of the key indicators of sector performance. The regulator needs to ensure quality interconnection among operator. The regulator also needs to ensure reasonable rates for interconnection, Unbundling of interconnection, interconnection offered without delay, sharing of incoming and outgoing IDD revenue, payment for cost of interconnection links and switch interface and payment for cost of technical disruption of interconnection. These are important determinants of industry efficiency and effectiveness in service delivery.

3.7.2.2 Number of operators

These are companies operating in the industry who come in different sizes from the big service providers to small re-charge card sellers. These operators expect impartiality on the part of the regulator especially in terms of regulating competition and protection of their investments. In turn operators are expected to provide excellent services to the consumer at affordable rates without unnecessary delays. The number of operators in the Nigeria telecoms industry will provide an indication of the industry's level of development and growth within a stipulated time frame.

3.7.2.3 Performance of operators

The performance of operators in terms of infrastructural development by geographical spread, quality of service, interconnectivity fluidity, user friendly service, pricing and efficient customer service are considered very significant in the determination of industry development.

3.7.2.4 Number of secondary service providers

An examination of the number of secondary service providers including Value Added Network (VAN) indicates the extent of expansion in the industry as well as the level of growth and development.

3.7.2.5 Employment generation

Telecoms operators also contribute to the Nigerian economy by directly and indirectly creating jobs to provide and distribute their services. There are several groups of jobs, which can be divided into two subgroups that gravitate around telecoms services in Nigeria. The top category of indirect employment encompasses equipment sales, infrastructure deployment, advertising, marketing and public relations as well as security — workers involved in the protection of base stations. There are also mobile service resellers, recharge card distributors, retailers, phone booth operators as well as street vendors. The so-called mini call centres consist of simply one or a few mobile phones and airtime bought in bulk from the operator.

Call centre operators allow other people to use the phone for a fee and quite often will take a message, also for a fee. The number of such jobs created within a stipulated period provides a good measure of industry growth and development.

3.7.2.6 New entrants into the industry

Licence conditions, exclusivity issues as well as all other conditions necessary for obtaining licences to gain entry into the market should be made known in clear terns to intending operators. The ease of entry and exit in the market is a good indicator of industry development and is given by the progressive increase in number of new entrants over time.

The selection of these variables is in line with previous research conducted by Samarajiva, *et al* (2007), Gual and Trillas (2006), Wu (2004) Bandaranayake (2005), Gilardi (2003), and Gual (2003) where similar variables were employed and evaluated using TRE and other techniques. The justification for selecting these variables is located in the nature of the telecoms industry in Nigeria and the circumstances surrounding the independence of the regular in the country.

The selected variables are measurable and placed at the centre of the core issue of regulatory independence and industry performance. However, as explained by Genoud (2003a, p.44) it may be difficult to precisely determine the effect of regulator independence on industry performance despite volumes of empirical study done in this area. But over the years several studies have shown that there are numerous advantages accruing to industries whose regulators are adjudged independence on the basis of some of the selected parameters employed in this study.

3.8 RESEARCH POPULATION

The research population is the Nigeria telecommunications industry. Specifically, interviews were conducted (using pre-determined questions) to the followings groups.

3.8.1 The regulator – The Nigeria Communication Commission (NCC)

The regulator is the Nigeria Communication Commission (NCC): An examination of the activities of the regulator was conducted to ascertain its degree of independence and how that independence has impacted on industry development. Top management staff and board members were selected and interviewed and the resulting information derived from this activity was presented and analysed in this study.

3.8.2. Industry operators

Industry operators consist of primary, secondary and tertiary players engaged in the provision of telecoms services in Nigeria. A representative sample was drawn using a stratified random sampling technique. This is where the operators will be categorised by type of operations and size.

3.8.3. Government policy makers – The Federal Ministry of Information and Communications (FMIC)

The government is interested in ensuring that laws are created and implemented for the general good of the citizens. The government is responsible for the creating the enabling environment necessary for the development of the country.

For the purpose of this study, key staff members of the Federal Ministry of Information and Communications in Nigeria were interviewed.

3.8.4 Academic institutions (University of Abuja) and telecommunication journalist

Erudite academic experts in telecommunications as well as seasoned telecoms industry journalists provide a good source of knowledge of activities in the industry for comparison with information obtained from other sources. Interviews were held with journalists and academics which provided a rich base of materials for analysis.

3.8.5 Customers

The telecommunications products and services presently available to consumers in Nigeria are varied and their tastes, needs and expectations are equally wide-ranging. Consumers total over 85

million as at October 2010 according to figures obtained from NCC (2010). These consumers/customers are distributed across the vast geographical area of the country, and have increasingly become more aware of the usefulness and potentials of ICT products and services.

Conceptually, the consumer includes holders of high political office, the shakers and movers of the country, youths, artisans, entrepreneurs, businessmen and women, the rank and file of the military, fishermen in the Niger-Delta as well as other parts of the country, the Fulani herdsmen/cattlemen across the northern part of the country, and the rural women who sell crayfish at local markets and so on. A purposive sampling was used to select consumers who participated in the study.

3.9 DATA GATHERING, ANALYSIS AND EVALUATION TECHNIQUE

Data gathering from the primary source was done using structured interviews. Respondents for this research were key stakeholders that are relevant to the communication industry in Nigeria including heads of regulation of the Nigeria Communications Commission, MTN, Globacom Plc, NITEL, Zain, Starcomms, Reltel, Etisalat, Visafon and Linkserve as well as experts from the university community. The interviews were geared towards finding out whether respondents feel that the Nigeria Communication Commission is actually exercising its mandate independently and whether the perceived NCC's independence or otherwise has an effect on the growth and development of the telecoms industry in Nigeria.

Further issues to be explored include the kind of effect the independence of NCC or otherwise may have in the industry. The selection of the survey sample among the various stakeholders in the Nigerian telecoms industry was done using the stratified purposive sampling technique in order to give all elements of the population an

equal chance of selection whilst making sure that samples from critical stakeholders like the NCC were not omitted in the selection. This follows and is in line with Creswell (2003, p.185) and Flyvbjerg (2006, p.222) findings that "purposefully selected sites or individuals" would be able to best help the researcher understand the research problem and research question. For this reason, the sample interviewed is considered representative of the entire research population. The selected sample from the population was purposely targeted as the sample elements are best able to contribute to understanding the research question.

Information derived from interviews were recorded, classified, analysed and compared against secondary data on sector performance. Respondents' majority views on questions raised formed the basis for drawing conclusions and generating findings. The findings obtained from this data source were then compared with information obtained from secondary sources. The secondary source yielded information with respect to growth and development of the industry as well as independence of the regulator. Data were obtained to cover a 10-year period from 2001 to 2010. The analysis was on the basis of assigned weights of 0 – 1 to identified proxies representing the key indicators selected for this study.

Subsequently an aggregation was made to determine the degree of independence of the regulator, the extent of industry growth and development and the influence of the regulator independence on this growth.

CHAPTER FOUR

DATA ON THE DEGREE OF TELECOM REGULATOR INDEPENDENCE AND INDUSTRY GROWTH IN NIGERIA

4.1 INTRODUCTION

This chapter deals with presentation of result and findings from the interviews conducted with respondents representing the research population. The research population is categorised into two broad groups. The first group includes policy makers, senior staff of NCC and Federal Ministry of Information and Communications. This group represent stakeholders that are directly responsible for carrying out regulatory activities. The second broad group is comprised of operators, customers and experts in academia, media practitioners, civil society and politicians. This second group represent stakeholders that are directly affected by regulatory activities (operators, suppliers, customers, associations, investors) and those who observe the industry for other objectives (equity firms, media, academics, civil society)

A total of 100 persons were interviewed for the study. The 100 persons were selected as the sample representing the various stakeholders that made up the research population. The interview was organised around a cluster of questions that elicited responses on the three major themes of the study as follows;

- The degree of telecom regulator independence
- The level of telecom industry growth and development
- The influence of the degree of regulator independence on the level of industry growth and development

The responses were generated through a combination of open and closed ended questions. The close ended questions elicited responses through a series of choice options which have allocated weights of between 0 to 1, the options with 0 weights represent an extreme negative situation while options with 1 weights represent an extreme positive situation. The weights ranging between 0 to 1 represents movement from a negative to a positive situation.

4.2 DETERMINING THE DEGREE OF NIGERIA COMMUNICATIONS COMMISSION'S (NCC) INDEPENDENCE

This section covers respondents from the first broad category of respondents comprising the staff of the regulator (NCC) and staff of the Federal Ministry of Information and Communications. Various questions were put forward to 30 respondents in this category based on some identified parameters and indicators. Responses were collated, classified and weights duly allocated and cumulated to arrive at an average majority view point.

The criteria for allocation of weights were derived from a combination of sources including the works of Samarajiva (2008), Gual and Trillas (2006), Bandaranayake (2005), Gilardi (2003), Gual (2003) and Baudrier (2001). The responses received in this section were on the basis of questions designed around the following key parameters and indicators;

Stability indicator - Regulator (NCC) leadership/management and commissioners/board members: Respondents were asked questions with respect to the above mentioned critical NCC personnel in terms of the following parameters;

- Regulator leadership/managements terms of office
- Appointment of regulators leadership: Who appoints the regulator's head?

- Dismissal of regulator's leadership: Who can dismiss of the regulator's head?
- Second jobs for regulator's leadership: This is to establish conflict of interest or otherwise.
- Tenure of office of the regulator's leadership
- Regulator (NCC) board members/commissioners terms of office
- Appointment of regulator's board members/commissioners: Who appoints the regulator's board members/commissioners?
- Removal of regulator's board members/commissioners: Who can remove the regulator's board members/commissioners?
- Second jobs for regulator's board members/commissioners: This is to establish conflict of interest or otherwise
- Tenure of office of the regulator's board members/commissioners

Regulator (NCC) relationships with government indicator:

This indicator is made up of responses regarding the relationship between the regulator with executive, legislative and judiciary arms of government. Respondents were asked questions with a view to determining the following;

- Whether the regulator's independence formally stated in the enabling laws establishing the regulator?
- Formal obligations of the regulator to the government
- Formal obligations of the regulator to the legislature
- Who other than the court of law can overturn the decision of the regulator where it has exclusive competency?

Control indicator: Respondents were asked questions regarding the regulator's (NCC) fiscal and organisational autonomy. The objective is to generate sufficient information with respect to the following;

- Regulator funding – Who controls the regulator's budget?
- Regulator funding – What is the source of the regulator's budget?

- Internal organisation – Who decides on the regulator's internal organisation?
- Internal organisation – Who is responsible for the regulator's personnel policy?
- Organisation autonomy – Who is responsible for specific regulatory functions?
- Organisation autonomy – Competencies of the regulator

Authority indicator: This indicator is designed around questions regarding the regulator's (NCC) authority to regulate. Responses received centred on the following areas;

- Regulator's power to regulate on prices and quality of service
- Regulator has power to grant new licences to operators
- Regulator has power to assign spectrum to operators
- Regulator's power to regulate on anti competitive behaviour
- Adequacy of legal powers to ensure compliance and punitive action

Outcome: The table below indicate the result of all data collected on the basis of above indicators and parameters.

Table 4.2: The Degree of NCC's Independence

Indicators	*Max. Weight*	*No. of Respondents*	*Allocated Weight of Responses*	*Remark*
Stability	1.0	30	0.6	Fairly stable
Relationships with government	1.0	30	0.5	Fairly independent
Fiscal and organisational autonomy	1.0	30	0.6	Fairly Independent
Regulatory control	1.0	30	0.7	In control of operations.
Authority to regulate	1.0	30	0.8	High authority to regulate
Outcome			3.2/5 = 0.64	Fairly Independent

Source: Interview Extract (2010/2011) *Note:* A weight of 0.00 signifies total regulator dependence and 1.00 indicates complete regulator independence. Values between extremes indicate the degree of regulator independence.

Overall regulator independence: The table above shows that NCC's degree of independence is weighted as 0.64, being an average score generated from collated responses of majority of the respondent. This qualifies NCC to be described as fairly independent.

4.3 DETERMINATION OF TELECOMS INDUSTRY GROWTH AND DEVELOPMENT IN NIGERIA

This section will consider responses from the second broad category of respondents comprising operators, customers and experts in academia, media practitioners, civil society and politicians. Various questions were put to 70 respondents based on identified parameters and indicators. Responses were collated, classified and weights duly allocated and cumulated to arrive at an average majority view point.

The criteria for allocation of weight were derived from a combination of sources including the works of Samarajiva (2008), Gual and Trillas (2006), Bandaranayake (2005), Gilardi (2003), Gual (2003) and Baudrier (2001). The responses received in this section were on the basis of questions designed around the following key parameters and indicators;

Ease of market entry indicator: Respondents were asked questions with a view to determining the following;

- How easy is the market entry?
- Number of firms able to enter the market
- New investments into the industry
- Perception of transparency in industry regulation
- Perception of effectiveness of industry regulation

Service quality, pricing, access and usage indicator: Responses were elicited from the survey respondents in order to determine the following;

- Effectiveness of tariff regulation
- Tariff trend for the past ten years
- Improvement in quality of service offered by operators and the regulatory agency for the past 10 years
- Availability and access to scarce spectrum and numbers
- Enforcement of anti-competitive regulation
- Progress towards universal service access
- Availability and tele-density of telephones in rural communities
- Increased telephone access in under-served areas

Number of operators, secondary service providers and employment generation indicator: Questions around this indicator centred on the following areas of interest;

- The growth of number of operators or otherwise
- The growth of secondary service providers or otherwise
- The growth in employment generation or otherwise

Interconnectivity, service delivery, infrastructural development, geographical spread and customer satisfaction indicator: Questions in this area centred on the following;

- The quality of interconnection among operators
- Improvement in the quality of service supplied to consumers including higher number of call completions and reduction in call drop-outs
- Improvement in the quality of service supplied to consumers including reduction in waiting lists, accuracy of consumer service information, reduction in fault handling times, and customer complaints
- The reliability of systems and components through compliance with minimum availability criteria set by the NCC commission
- The difference in actual performance of Nigerian operators when benchmarked against other countries, with regard to technical and operational standards
- Steady reduction in the number of rural communities without access to telephone

- The availability and access to telephone services in all local government areas throughout Nigeria

Outcome: The table below indicate the result of data all collected on the basis of above indicators and parameters.

Table 4.3: Telecoms Industry Growth and Development in Nigeria

Indicators	Maximum Weight	Number of Respondents	Allocated Weight of Responses	Remark
Ease of market entry	1.0	70	0.5	Medium difficulty
Service quality, pricing, access and usage	1.0	70	0.6	Improving
Number of operators, secondary service providers and employment generation	1.0	70	0.9	Growing
Interconnectivity, service delivery, infrastructural development, geographical spread and customer satisfaction	1.0	70	0.6	Improving
Outcome			2.6/4 = 0.65	Steady growth

Source: Interview Extract (2010/2011) *Note:* A weight of 0.00 signifies industry stagnation and 1.00 indicates a large industry growth. Values between extremes indicate the degree of industry growth and development

Result: The table above indicate that the telecoms industry growth and development in Nigeria is adjudged by the majority of respondents to be experiencing a steady rise with huge of opportunity for improvement. The weight of 0.65 was arrived at after collating and averaging all the responses. This weight indicate an above average industry growth and development.

4.4 THE EFFECT OF REGULATOR INDEPENDENCE ON TELECOMS INDUSTRY PERFORMANCE IN NIGERIA

This section cover responses from all stakeholders in all identified respondents categories for interview in this study including the NCC, FMIC, operators, media, civil society and academia among others. Various questions were put to 100 respondents based on identified parameters and indicators. Responses were collated, classified and weights duly allocated and cumulated to arrive at an average majority view point.

The criteria for allocation of weight were derived from a combination of sources including the works of Samarajiva (2008), Gual and Trillas (2006), Bandaranayake (2005), Gilardi (2003), Gual (2003) and Baudrier (2001). The responses received in this section were on the basis of questions designed around the key parameters and indicators that will show the effect of regulator independence and industry performance. The following questions were put forward to the respondents in order to elicit their response that will clearly indicate their perceptions on key issues surrounding the influence of the degree of regulator independence on the telecom industry growth and development/performance in Nigeria. The questions are as follows;

- Do you consider the regulator NCC independent?
- Has the independence of the regulator (NCC) affected the development and performance of the telecommunications industry in Nigeria?
- What is the effect of regulator independence on industry performance with respect to access to telecoms services?
- What is the effect of regulator independence on industry performance with respect to increased telecoms service usage?
- What is the effect of regulator independence on industry performance with respect to pricing?
- What is the effect of regulator independence on industry performance with respect to quality of service?

- What is the effect of regulator independence on industry performance with respect to competition?

Outcome: The table below indicate the result of data collected on the basis of above the questions seeking to determine the influence of the degree of regulator independence on industry performance.

Table 4.4: The Effect of Regulator Independence on Telecoms Industry Performance in Nigeria

Indicators	*Maximum Weight*	*Number of Respondents*	*Allocated Weight of Responses*	*Remark*
Degree of regulator independence	1.0	100	0.86	Significant degree of independence
Effect of regulator independence on industry growth	1.0	100	0.86	Significant
Regulator independence and telephony service access	1.0	100	0.80	Significant
Regulator independence and telephony service usage	1.0	100	0.80	Significant
Regulator independence and telephony service pricing	1.0	100	0.60	Fairly significant
Regulator independence and telephony service quality	1.0	100	0.70	Significant
Regulator independence and telephony service competition	1.0	100	0.85	Highly significant
Outcome			5.47/7 = 0.78	Regulator reasonably independent /significant effect of independence on industry growth and development

Source: Interview Extract (2010/2011) *Note:* A weight of 0.00 signifies no impact on growth and 1.00 indicates a large impact on growth. Values

between extremes indicate the degree of impact on industry growth and development.

***Result**:* The table above shows that majority of respondents perceive the effect of regulator independence on telecoms industry growth as significant and sees the regulator (NCC) as reasonably independent.

4.5 SUMMARY OF RESULTS

This section will provide a summary of the various parts to produce an overall result. The table below presents the summary of results obtained from previous sections of this chapter.

Table 4.5: Summary of results

Indicators	*Maximum Weight*	*Number of Respondents*	*Allocated Weight of Responses*	*Remark*
Degree of regulator independence	1.0	30	0.64	Fairly Independent
Telecoms industry growth and development	1.0	70	0.65	Growing
Effect of regulator independence on industry growth and development	1.0	100	0.78	Significant
Outcome				

Source: Interview extract (2010/2011) *Note*: A weight of 0.00 signifies no impact on growth and 1.00 indicates a large impact on growth. Values between extremes indicate the degree of impact on industry growth and development.

The criterion for allocation of weight is based on the criteria adopted in allocating weight to responses received in previous sections of this chapter.

This part is generally concerned with reporting the result obtained from sections 4.2, 4.3 and 4.4 all in line with previous research by Bandaranayake (2005), Gual and Trillas (2006), Gual (2003).

Final outcome: The outcome of various responses received from the 100 respondents interviewed for this study is as follows:

1. Degree of regulator (NCC) independence – Fairly/reasonably independent
2. Telecoms industry growth and development - Growing
3. Effect of regulator independence on industry growth and development – Significant

The evidence therefore indicates that a regulator which scores above average degree of independence is also perceived to be above average with regards to enhancing sector performance and industry growth. The next chapter provides a detailed analysis of the results.

CHAPTER FIVE

ANALYSIS AND INTERPRETATION OF RESEARCH FINDINGS ON TELECOM REGULATOR INDEPENDENCE IN NIGERIA

5.1 INTRODUCTION

This chapter provides an analysis of the results/findings presented in the previous chapter. The findings of this study will be used to answer the research questions put forward whilst specifically attaining the research objectives of the study.

The Nigerian telecommunication sector has undergone a wave of market liberalisation since the year 2000, resulting in the numerous attempts to sell and privatise the Nigerian national carrier (NITEL); the emergence of a second national operator (GLOBACOM); the issuance of licences to new operators in the GSM space, as well as other sundry incumbent telecommunications operators. Penetration and growth have been reasonable in terms of increased subscriber base, increased investments in both human and physical capital, employment generation and sound contribution to the domestic economy.

Competition in the industry has been intense among both major and smaller operators who are focusing on defending their market position, lowering their cost, growing their subscriber base as well as maximising revenues. These competing operators predominantly adopt price competition and service differentiation as their strategies to attract a larger market share.

The Nigerian telecoms industry is presently dominated by mobile telephone service operators whose major source of market share is through the provision of prepaid service.

The Nigerian telecoms consumer is known to be highly price sensitive, hence the strong drive for operators to compete on pricing. However, once price is exhausted as a competitive tool, operators increasingly turn to services and promotions as a major approach for differentiation. This is already beginning to happen given the array of technology based products being introduced into the telecoms market in Nigeria.

To ensure that this trend is sustained, it is imperative that a clearly designed policy must be adopted. This will further strengthen the gains already made and enhance the growth and development of the industry. One of the ways of identifying areas for improvement and measures to be adopted to ensure further industry growth and development is through the increasing independence of NCC in regulating the industry (Baez and Kechiche, 2010).

However, evidence from this study shows that although NCC scores above the average, more still needs to be done to improve its independence and legitimacy to improve sector performance.

5.2 ANALYSIS OF FINDINGS FROM DATA OBTAINED FROM PRIMARY SOURCES

A total of 100 respondents were interviewed and their distribution is as follow:

Table 5.2: Distribution of Respondents

Indicators	**Number of Respondents**
Degree of regulator independence	30
Telecoms industry growth and development	70
Effect of regulator independence on industry growth and development	100

Total	100

In examining the issue of degree of regulator independence 30 respondents from NCC and Federal Ministry of Information and Communication were interviewed in the following key independence indicators:

1. *Stability of tenure*: The result indicates that NCC is considered fairly stable with respect to appointment, tenure and dismissal of executive management and commissioners/board members. This stability makes it possible to describe the organisation as reasonably independent, despite the fact that commissioners/board members as well as executive management are appointed by the executive arm of government with approval of the legislature. All other appointments and dismissals are internally handled and controlled by the regulator. Basically, the stability of leadership is a good measure of a regulator's degree of independence and protection from political influences in carrying out the organisations responsibilities.
2. *Regulator relationship with government and the national assembly*: NCC is also adjudged as fairly independent on the basis of its relationship with the executive and legislative arm of government. This is because the regulator's budget is normally submitted to the legislature for approval. Supervisory responsibility is vested with the Federal Ministry of Information and Communication in Nigeria.
3. *Regulator fiscal and organisational autonomy:* NCC was found to be fairly independent but still rely on the government for funding of its operations. Although the organisation raises funds from licences and other sources, these are not sufficient to prevent NCC from accepting government funding. However, NCC is fully in control of its organisational operations, including personnel, licensing and all other functional activities.

4. *NCC's regulatory control:* The respondents agree that NCC has considerable control over its activities and operations. This is a good indicator of the degree of independence.
5. *NCC's authority to regulate:* The NCC is believed to have a high degree of authority to regulate the telecoms industry in Nigeria.

Finding: NCC's degree of independence is weighted as 0.64, being an average generated from collated responses of majority of the respondents. This qualifies NCC to be described as fairly/reasonably independent. In examining issues relating to telecoms industry growth and development in Nigeria, various questions were put forward to 70 respondents and the following outcome emerged:

1. *Ease of market entry*: Entry into the Nigeria telecoms market is considered to have a medium level difficulty. This difficulty is categorised as medium level because the majority of the respondents agree that there is growth in the number of industry operators and investments into the industry. However, they all concur that market entry is fairly difficult while industry regulation is largely seen as reactive and often ineffective. Additionally, industry regulation is also not considered transparent by many respondents.

   In contrast a recent survey conducted by the NCC on transparency and regulatory effectiveness of NCC reveals that about a third (33.7%, 35.6% and 39.0%) of respondents who are made up of the individual telecoms service consumers, corporate telecoms service consumers and service agents respectively interviewed adjudged NCC as being fair in enforcing high quality service by service providers, as well as access to market entry and exit.
   The overall picture obtained from the outcome of the survey is that the NCC is seen to be transparent by a slight majority of

consumers surveyed. This is given that 58.7% of individual consumers, 62.6% of corporate consumers and 60.1% of service agents consider the NCC transparent in its activities as regards quality control and ease of market entry activities.

2. *Service quality, pricing, access and usage:* Improving service quality, pricing, access and usage. The majority of respondents agree that while there has been improvement in all the listed parameters, although there is room for further improvements in line with international service offerings.

   The effectiveness of NCC in quality control is shown to be improving over the years especially on enforcement of regulation that facilitates the delivery of high quality service. This is consistent with the findings of the NCC survey which suggests that the various stakeholders are only fairly satisfied with the performance of NCC. Just a slight majority, (53.7%, 53.4% and 50.8%) of the three categories of respondents (individual consumers, corporate consumers and service agents) respectively were of the opinion that NCC was effective in enforcing high quality service by service providers.

   The findings of the NCC survey also indicate that the NCC performed fairly well as regards ensuring service availability. About a third of the respondents (37.6%, 38.9% and 35.2%) made up of individual consumers, corporate consumers and service agents respectively, were of the opinion that the NCC performed fairly well in ensuring service availability. The low proportion signifies the importance of further work to done by NCC to aid the efforts of operators in penetrating the telecoms market especially in the rural areas of Nigeria.

3. *Number of operators, secondary service providers and employment generation indicator:* There is an increasing number of operators, secondary service providers and employment. Respondents unanimously agree that there is growth in the listed parameters with more space for further growth.

4. *Interconnectivity, service delivery, infrastructural development, geographical spread and customer satisfaction indicator:* The outcome as per this indicator is varied. Many respondents agree that geographical spread of telecoms services is increasing and interconnectivity is also improving. With regards to service delivery and customer satisfaction, most respondents perceive service delivery as poor, customer satisfaction also poor, and infrastructural development as slow.

   Meanwhile, in response to the question on interconnection, the NCC survey findings suggest that the respondents are relatively satisfied with the performance of the NCC. About a third (37.8 %) of the individual consumers, 39.5% of corporate consumers and 38.4% of service agents were of the opinion that the NCC performed fairly well as regards ensuring interconnectivity.

   In addition, another third (38.5%, 42.4% and 35.6%) of the individual consumers, corporate consumers and service agents were of the opinion that the NCC was good in regulating the quality of recharge cards. The NCC survey also asked if the respondents were aware of the NCC's consumer affairs bureau and whether they have lodged complaints. A good number (72.0%, 57.4% and 69.1%) of individual consumers, corporate consumers and service agents respectively, indicated that they were not aware of NCC's Consumer Affairs Bureau, while 74.6%, 64.8% and 76.1% of the individual consumers, corporate consumers and service agents respectively, do not have the

knowledge of the functions of NCC's consumer affairs bureau. Moreover, a considerable number (90.4%, 88.0% and 93.7%) of individual consumers, corporate consumers and service agents respectively, have never lodged complaint with NCC consumer affairs bureau.

On the result of the response rate of NCC's consumer affairs bureau, 34.1%, 40.0%, and 50.0% of the individual consumers and corporate consumers and service agents, who have ever lodged complaint, were of the opinion that the response rate was good. On accessibility of the consumer affairs bureau, the result shows that a considerable number (66.2%, 67.9%, and 75.5%) of individual consumers, corporate consumers and service agents respectively, were of the opinion that the consumer affairs bureau is not accessible.

Among those who have lodged a complaint with the bureau, 59.2% of individual consumers, 80.6% of corporate consumers and 69.2% of service agents were of the opinion that the bureau was not effective. As regards the customer forum (people's parliament), the majority (67.0%) of the corporate consumers and over half (50.2%) of the service agents were aware of the customer forum. On the other hand, over half (54.5%) of the individual consumers were not aware of the customer forum.

On the effectiveness of the forum, the result shows that among those who were aware of the NCC's customer forum, about a third (31.8% and 37.4%) of the individual and corporate consumers were of the opinion that the NCC customer forum was fairly effective, while about two-fifths This is closer to a third (28.6%) of the service agents were of the opinion that the NCC's customer forum was effective.

Most importantly, the result shows that the majority of the individual consumers (85.5%), corporate consumers (83.3%) and service agents (86.8%) indicated that they do not get adequate information from the NCC.

5. *Consumer protection:* Many respondents agree that the NCC has facilitated its treatment of consumers. The regulator has established channels through which grievances could can routed and resolved.

   This is consistent with the views of telecoms customers and operators obtained by NCC in their 2010 survey. The result of the NCC survey on the protection of consumer interests, suggests that the individual and corporate consumers and service agents were fairly satisfied with the performance of NCC. About a third (31.3% and 29.3%) of corporate consumers and service agents respectively were of the opinion that NCC was effective in protecting consumer interests while about the same proportion (29.0%) of individual consumers were of the view that NCC was fairly effective in consumer interests' protection.

   As regards resolving customer complaints, the result suggests that the NCC has not satisfied telecommunications stakeholders. A third of the individual consumers, and service agents (34.9%, and 34.7%) were of the opinion that the NCC performed poorly in resolving customer complaints. Although a third of the corporate consumers (32.9%) adjudged the NCC as being fair in their performance in resolving customer complaints, another third (32.5%) adjudged them to be poor.

   Furthermore, the result shows that sizeable proportions (39.5%, 42.8% and 40.8%) of the individual consumers, corporate consumers and service agents respectively, were of the opinion

that the NCC performed poorly as regards sanctioning of defaulting service providers. Some of the reasons for their response include that the NCC has never, to their knowledge sanctioned any service provider and that it allows the service providers to behave like ultimate monopolies.

6. *Competition:* As regards industry competitive practices, the result shows that two-fifths (39.0%) of the service providers considered NCC effective in ensuring healthy competition among industry operators. In addition, a third (30.5%) of the providers were of the view that NCC's rules for fair pricing were adequate. As regards the NCC's effectiveness in enforcing compliance with the pricing rules, a third (30.5%) were of the opinion that NCC was effective while 28.8% of the providers were of the view that the NCC was ineffective in enforcing compliance with pricing rules.

   Furthermore, 36.8% of the providers were of the opinion that NCC was ineffective in enforcing compliance with quality service in telecommunications industry. The effectiveness of the NCC as an independent regulator and its effectiveness in combating abuse of market power was also examined by the survey.

   In the section of the survey that seeks to examine the NCC's effectiveness in combating abuse of market power by service providers, a third (29.8%, 29.5%, and 30.7%) of the respondents, for individual consumers, corporate consumers and service agents respectively were of the opinion that NCC was ineffective in combating abuse of market power. High tariffs, poor interconnectivity and low response to complaints were the main reasons given by the respondents for their opinions. Although they had similar views, the size of their percentage responses varied across stakeholders.

7. *Rating in concrete areas of quality control*: On their opinion in concrete areas, the result shows that 34.9%, 42.1%, and 42.3% of the respondents, for individual consumers, corporate consumers and service agents respectively, were of the opinion that the NCC was fair in regulating charges. The second largest group were those that considered it ineffective in this area. This constitutes 33.1%, 34.9% and 30.2% of individual consumers, corporate consumers and service agents respectively.

8. *Dispute Resolution:* The result shows that about two-thirds (66.0% and 62.1%) of the individual consumers and service agents respectively were not aware of measures by the NCC to resolve disputes between service providers and consumers. On the other hand, over half (51.5%) of the corporate consumers indicated that they were aware of the measures. Among those who indicated that they were aware of these measures, about a third (33.8%, 36.4 and 35.7%) of individual consumers, corporate consumers and service agents were of the opinion that the measures used by the NCC were fairly effective. In addition, another third (30.8%, 31.5%, and 29.0%) of individual consumers, corporate consumers and service agents respectively were of the opinion that NCC was effective in promoting competition among service providers.

Findings 1: Telecoms industry growth and development in Nigeria is deemed by the majority of respondents to be experiencing a steady growth, with plenty of opportunity for improvement. The weight arrived at through collating and averaging the responses is at 0.65 indicating a fairly reasonable growth above 50% and moving closer to full attainment.

A total of one hundred (100) respondents making up all the respondents selected for this study were interviewed regarding their perceptions on the degree of the NCC's independence as well as the effect of such independence or otherwise on telecoms industry growth and development in Nigeria. The responses yielded the following results:

Degree of regulator independence: Significant
Effect of regulator independence on industry growth: Significant
Regulator independence and telephony service access: Significant
Regulator independence and telephony service usage: Significant
Regulator independence and telephony service pricing: Fairly significant
Regulator independence and telephony service quality: Significant
Regulator independence and telephony service competition: Highly significant

Findings 2: The effect of regulator independence on telecoms industry growth and development is considered by the majority of the respondents in this study as significant and the regulator (NCC) is seen as reasonably independent.

Overall findings: The final outcome being that firstly, the degree of regulator (NCC) independence is found to be fairly/reasonably independent. The Nigeria telecoms industry is found to be steadily growing thus showing a positive growth and development. Finally, the effect of regulator independence on industry growth and development is established as significant.

This result is also consistent with the finding obtained by an NCC survey of telecoms service operators in 2010. The finding of this survey which sought the opinion of telecoms service providers is as follows:

Opinion on licensing: Virtually all the service providers (92.4%) were aware of the licensing requirements of the Nigerian Communications Commission. Over half of them (54.8%) as against 45.2% indicated that the requirements, especially the accompanying documents are not too stringent. In addition, the majority (65.2%) as against (25.8%) of were of the opinion that the procedure for evaluating licence applications was transparent. On rating of the procedure, 83.7% indicated that the procedure was commendable.

Furthermore, about a third (30.0%) of the service providers were of the opinion that the cost was neither fair nor reasonable. Those who said that the cost was not fair were of the opinion that the charge should be reviewed downwards and made affordable because the majority of the population is not happy with the current situation.

Regulatory Effectiveness: The result shows that about a third (32.8%) of the service providers were of the view that the NCC was effective as a regulator. On some specific issues, same proportion (30.2%, 44.4% and 38.7%) of the service providers were of the opinion that the NCC was ineffective in approval of equipment used by operators, overseeing the quality of service provided by operators and in setting terms for interconnection of different networks respectively.

Monitoring: About a third of respondents (30.3%) indicated that NCC never visited to monitor them.

Quality Control: A third (37.3%) of the service providers indicated that the NCC's rules for ensuring quality control by service providers were fair. A third (31.7% and 35.0%) of the service providers also rated their resource capacity as being fair and good respectively to effectively monitor and ensure good quality services.

In addition, (32.2%) adjudged their personnel capacity as being good and fair respectively.

Feedback and Communication: The result shows that the majority (65.6%) of the providers were of the opinion that licensing requirements were well communicated to industry operators.

On overall rating of channels of communication, 39.0% and 33.9% of the service providers rated the channels of communication between communications industry operators and the NCC as being effective and fairly effective respectively.

Industry Competitive Practices: The result shows that about a third (39.0%) of the service providers considered the NCC effective in ensuring healthy competition among industry operators. Also, the result indicates that another third (30.5%) of the providers were of the view that the NCC's rules for fair pricing were adequate.

On the opinion of the providers on NCC effectiveness in enforcing compliance with the pricing rules, about a third (30.5%) were of the opinion that the regulator was effective, while 28.8% considered it ineffective. Furthermore, 36.8% of the providers were of the opinion that the NCC was ineffective in enforcing compliance with quality service in telecommunications industry.

On what can be done to improve performance, the service providers suggested that the NCC should allow new competitors into the market, continue in policies and efforts, employ people to enable them to reach out, improve equipment and physical inspection, improve on services given to consumers, ensure compliance with rules, ensure that there is improvement in interconnectivity, assist more in curbing of illegal operators.

They also suggested that the NCC should double its efforts, grant more licences, put in more effort into ensuring cheaper services, overhaul their administrative and technical set-up, and retrain personnel.

Interpretation of findings and answers to research questions:

Analysis of the findings provides the following answers to the research questions research sub questions outlined in chapter 1 above.

1. Regulator independence is shown to have positively affected the growth of telephony services, thereby increasing service access to a larger population in Nigeria. This tends to confirm the information derived from secondary data showing an increasing growth in the subscriber base of mobile phone service operators.
2. Regulator independence is also shown to have had a positive effect on telecoms service usage in Nigeria. Majority of the respondents in this study perceive the regulator as acting independently as a result of its power to regulate on issues concerning network expansion and service quality.
3. Regulator independence is also perceived as positively influencing telecoms services pricing in Nigeria, although, many respondents strongly uphold the view that service tariffs are high and have not been reducing at the expected rate and speed. Therefore, the respondents insist that more control needs to be put in place to monitor price activity in the industry. However, they agree that regulator independence has a major effect on the performance of industry operators with respect to pricing among other things.
4. Regulator independence was also found to have a highly significant effect on industry competition. This is because the regulator is perceived to be adequately empowered to issue licences to new operators and ensure fairness in dealing with all operators. The perception of fair arbitration by the

regulator has increased the level confidence on the part of investors in the industry given the number of new operators being consistently introduced into the industry and the rapid expansion of telecom infrastructure across the country.

5. Regulator independence was also found to have significant effect on quality of service and customer satisfaction. The respondents perceive the regulator as fair in ensuring that customer are treated well by the operators and that service quality is consistently improved. This is all as a result of the degree of the regulators independence through it power to regulate industry activities.

The responses to the sub questions enabled the researcher to present the following answer to the main research question:

What is the extent of regulator independence in the Nigeria telecoms industry and how has this affected the growth and development of the industry?

The regulator (NCC) is found to be reasonably/fairly independent because of the stability of tenure of its management staff and commissioners, the nature of its relationship with the government, its level of fiscal and organisational autonomy, the extent of its regulatory control as well as the extent of its authority to regulate industry activities. The effect of the regulator's degree of independence on industry performance, growth and development has been found to be significant and have positively affected the industry in the area of ease of market entry by new operators, industry competition, quality of service, pricing, access and usage of services, interconnectivity and infrastructure deployment, secondary service providers and employment generation as well as consumer protection.

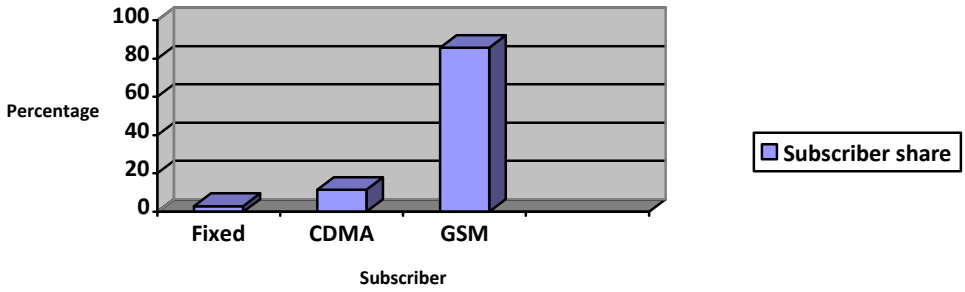
5.3 ANALYSIS OF FINDINGS FROM DATA OBTAINED FROM SECONDARY SOURCES

The secondary sources of data yielded some evidence to corroborate the findings derived from data obtained from primary sources.

Conversely, it is a widely held view that the Nigerian telecommunication industry has great potential for growth given the population of the country running at above 146 million people and the number of people connected on any of the available telecoms networks. Presently, according to the Nigeria Communication Commission (NCC, 2010a) the number of SIM cards sold and fixed network subscribers in Nigeria is 85 million as at October 2010. The actual users of communications service could be lower than that but the progress is remarkable as compared to the teledensity of less than 1% in 2001. However, it is also a clear indication of the industry growth potential.

Additionally, further statistics show that the growth of GSM networks reached 77 million active SIM card lines, with this segment of the industry recording a market share of 91.1 percent. The total connected lines in the telecoms market also peaked at 104,915,200 by October 2010 with mobile GSM networks accounting for 90,124,301; mobile CDMA networks having 12,045,580 and fixed/wireless networks, 2,745,319. This position is graphically presented below.

Figure 4: Subscriber share in Nigeria by October 2010



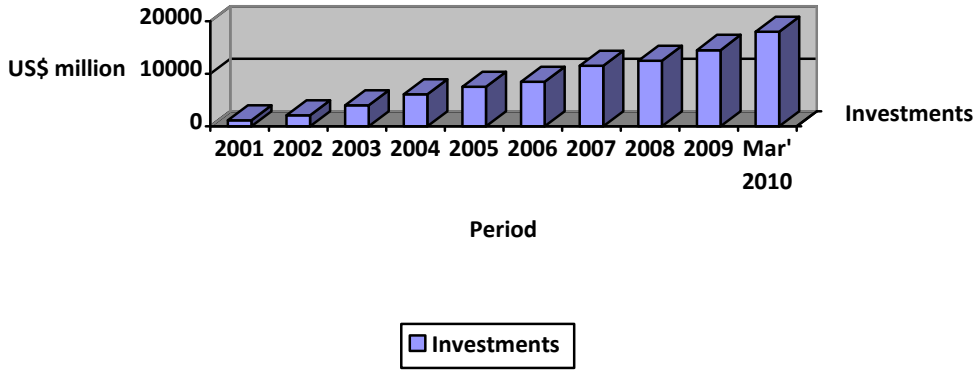
Source: NCC (2010a)

This shows that the GSM has a huge impact on the development and growth of the telecommunications industry. As at 2001 when GSM was introduced in Nigeria the subscriber base was a mere 266,461 as against the latest figure of 90,124,301 according to the Nigeria communications commission (NCC, 2010a).

Furthermore, during the same period to October 2010 the Nigerian telecoms market had a recorded total installed capacity of 157,357,716 subscriber lines spread across the diverse technology platforms in the telecoms market. From this figure, mobile GSM networks have installed 130,875,419 lines; mobile CDMA networks have 17,146,554 while fixed/wireless networks have 9,335,743. This notable installed capacity could only be possible because of the volume of private investments flowing into the industry.

The volume of investment must have facilitated the deployment of this installed capacity. The figure below shows the volume of private investments into the industry from 2001 to March 2010.

Figure 5: Private Investments



Source: NCC (2010a)

The figure above displays the volume of private investments into the telecommunications industry in Nigeria from 2001 to March 2010. The flow of investment into the industry is broken down as indicated in the table below.

Table 5.3a: Private investment flow into the telecoms sector in Nigeria from 2001 to March 2010

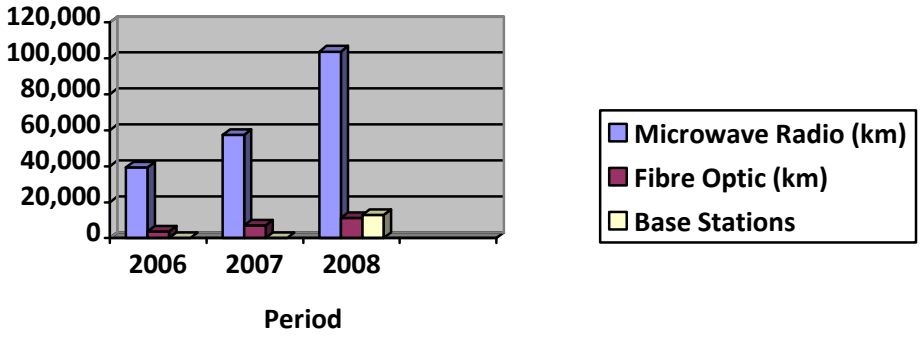
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	March 2010
US$ million	1,200	2,100	4,000	6,080	7,500	8,500	11,500	12,500	14,500	18,000

Source: NCC (2010a)

The table above shows a healthy growth in private investment into the industry from US$1.2bn in 2001 to a respectable US$18bn by March 2010. This investment expanded operator activity and resulted in the deployment of infrastructure to improve quality of service, increase geographical spread and grow service access to rural area.

The figure below is a graphical representation of the spread of infrastructure and operational base stations in Nigeria.

Figure 6: Infrastructure Deployment



Source: NCC (2010)

The deployment of infrastructure as clearly indicated by the figure above shows a significant coverage of 103,632 km of microwave radio. This attests to the increasing spread of infrastructure to achieve the universal access target of both NCC and the operators. Over US $15 billion has been invested by telecommunication operators in the provision of infrastructure and human capital development in Nigeria over the last nine years according to the Association of Licensed Telecoms Operators of Nigeria (ALTON, 2010).

The association opined that increase in competition and high demand for better quality of service by customers has led to the reduction in the number of unconnected people, even as the association insists that the population of citizens in need of telephone lines was declining, leading to the dwindling of the average revenue per subscriber. They further attributed the success of the telecommunications industry in Nigeria to the efforts and investments made by the network operators and service providers of all different sectors within and outside the telecoms industry.

This is in addition to the supervisory role effectively handled by the NCC due to its operational independence from the government, unlike the period before the establishment of the NCC when the government had total and direct control over industry/operator activities through the Federal Ministry of Information and Communication.

Furthermore, the association concluded that the increase in investment and deployment of infrastructure has had a positive effect on the subscriber base of service users given the general growth of subscribers in Nigeria. The table below corroborate this situation through showing the user penetration rate from 2001 to 2009.

Table 5.3b: Telecoms market indicators 2001 – 2009

Year	***2001***	***2002***	***2003***	***2004***	***2005***	***2006***	***2007***	***2008***	***2009***
Subscription penetration of population	0.3%	1.2%	2.4%	7.2%	13.8%	20.9%	28.2%	43.1%	48.7%
User penetration of population	0.3%	1.1%	2.2%	6.5%	12.0%	17.4%	23.3%	34.5%	37.8%

Source: Baez and Kechiche, (2010)

The user penetration of telecoms services according to Baez and Kechiche (2010) grew from a mere 0.3% in 2001 to a respectable 37.8% in 2009. This steady growth is reputedly as a result of competition among service operator umpired by the NCC which created the needed environment for competition to thrive. The NCC was able to do this due to its degree of independence from government control.

This independence gave the NCC the freedom to create intense competition among service providers through facilitating the proliferation of prepaid plans, low-cost handsets and the rapid expansion of mobile networks to different parts of the country (Baez and Kechiche, 2010). From the foregoing, it is apparent that the telecoms industry in Nigeria experienced modest but notable growth and development from 2001 to 2010.

This could be strongly attributed to the degree of regulator independence as evidenced by responses received in interviews conducted during the course of this study. The level of industry growth is deeper than what it was before the creation of the NCC. The various statistics presented above corroborate the findings generated from the data obtained from primary source through interviews of different industry stakeholders.

This is also in line with the findings of various studies on regulator independence and telecoms industry growth and development. Some such studies include Samarajiva (2008), Gual and Trillas (2006), Bandaranayake (2005), Gilardi (2003), Gual (2003), and Baudrier (2001).

In considering the degree of regulator independence different views have been advanced by various authors. However, there seems to be a broad consensus on what constitutes regulator independence. At the centre of this is the authority of the regulator to take decisions without undue interventions from the government or influences from the other industry stakeholders, such as, for instance, decisions with respect to setting up guidelines on industry tariffs, determination and implementation by operators without seeking approval from the government. Additionally no agency or entity other than the court of law has the authority to overturn the regulator's decisions. Moreover, this regulator's freedom to take decisions is divided into three dimensions.

- The first relates to the legal dimension where the regulator's executive management and board members/commissioners are appointed and dismissed in accordance to clearly stipulated legal provisions. In addition to this the regulator should be placed outside the ministry and must be free to appoint and dismiss its regular staff and should be in full control of its human resource management. This is often referred to as an arms length relationship with political authorities.

- The second freedom of the regulator that indicates its degree of independence is its ability to keep an arm's length relationship with regulated operators, private investors, citizens, consumers and all other stakeholders who could significantly influence the

regulator's ability to provide fair and just regulatory supervision in the industry.

- The third freedom is the ability of the regulator to be financially independent through securing additional sources of funding outside government funds. This financial freedom will ensure that the regulator fulfils it functions effectively. This organisational autonomy includes such things as secured funding sources, but also includes an exemption from restrictive civil service salary rules. These attributes are considered necessary to foster the requisite expertise and to underpin those arm's-length relationships required to guarantee the regulator's independence (Eberhard, 2007; Smith, 1997).

Conversely, going by the findings of this study as evidenced by the recorded interview responses generated from the primary source of data, the degree of regulator (NCC) independence in the Nigeria telecoms industry is seen to be at fairly above average levels. The NCC is fully responsible for decisions of all their operations except in the area of funding. The government is responsible for partially funding the NCC with approval from the legislative arm of government.

Another area of control by the government is in the appointment of executive management and commissioners/board members of the NCC. This control is fully enshrined within the enabling law establishing the regulator. This independence is believed to have basically released the regulator to focus on regulatory activities, facilitating competition among operators, licensing more operators and setting up the ground rules for playing in the telecoms market in Nigeria. Therefore, the telecoms industry growth and development in Nigeria could be indirectly attributed to the independence of the regulator.

The NCC decided to open up the Nigerian telecoms market to operators both local and international in competition with the government-funded main fixed line operator (NITEL). This effort and subsequent efforts by the regulator have enhanced access to telecoms service by a large sector of the population. At the moment, Nigeria has overtaken South Africa to become the continent's largest mobile telecoms market with now over 77 million mobile SIM card holders alone.

Astonishingly, market penetration still stands at only around 50% (in early 2010), indicating a huge potential for further growth. However, as reported by the respondents interviewed, usage has recovered and more lines are being taken up and more mobile connections are being made daily. In terms of geographical spread of telecoms services in Nigeria, many respondents agree that more areas have been penetrated, regardless of the fact that many of the service operators' customers are located in urban areas rather than rural areas. Therefore, this makes much of the remaining addressable market in the country to be mostly located in the rural areas.

As reported by the Association of Licensed Telecoms Operators of Nigeria (ALTON, 2010) network rollouts and operations are expensive and make it difficult to cover the rural areas faster as fast as was envisaged. Although a good measure of infrastructure deployment being maintained.

Another area of interest indicating the growth and development of the telecoms industry in Nigeria is pricing and tariff for telecoms services, especially mobile telecoms services. Over the years from 2001 to date there has been a marked decline in prices and tariffs. This may have been as a result of intense competition among service providers as well as the declining cost of purchasing mobile handsets and other accessories. However, the majority of respondents interviewed for this

study expressed concerns over the pricing of telecoms services. They insist that prices and tariffs have not reduced at the rate people expected, thus effectively making mobile telecoms services unaffordable to the poorer people especially those in the rural areas.

Another area of concern as expressed by the respondents is the quality of telecoms service which according to them has been improving but has not yet reached a satisfactory level. The majority of these respondents want the regulator to come up with more guidelines that will further ensure reasonable prices are charged by the operators and improved quality of service for an enhanced customer satisfaction. The respondents concur that the NCC has been able to create competition in the telecoms which facilitated the release of massive investment into the industry. This makes the telecoms industry in Nigeria a goldmine in terms of profitability thus generating industry development very rapidly.

Finally, in terms of employment creation as a measure of industry growth and development, the telecoms industry has been prominent from 2001 to 2010. This is as a result of the introduction of competition into the industry within this period. For instance, the mobile telecoms segment of the industry has created over three million jobs according to Baez and Kechiche (2010) during this period, in both direct and indirect employment. The direct jobs include employment at the regulatory agency as well as operators' personnel.

Indirect jobs are sub-divided into two groups, the first being jobs or companies providing sales and marketing functions, public relations and advertising firms, equipment/infrastructure deployment firms, security and logistics firms. The second sub-division is related to jobs like recharge card sellers, recharge card distributors, call centre operators, mini call centre operators, and street vendors. Furthermore, the growth that has been recorded in the industry has also led to

employment of significant numbers of Nigerians from abroad. These are professionals, who have acquired useful international experience and knowledge, and have been attracted back home.

The findings obtained from analysing primary source data and the corroborative statistics as well as other authoritative views demonstrate that the effect of regulator independence on telecoms industry growth and development is significant in Nigeria. This is also consistent with findings of previous research conducted on the significance of regulator independence on telecoms industry growth and development. Moreover, the majority of experts in the literature go along with this position, for instance Melody (1997), (Ndukwe, 2006) and Cukierman, *et al* (1992).

5.4 FURTHER EVIDENCE: ANALYSIS OF FINDINGS OF NCC 2010 SURVEY ON REGULATORY TRANSPARENCY AND EFFECTIVENESS IN NIGERIA

The NCC 2010 survey on regulatory transparency and effectiveness of the NCC had respondents drawn from three groups namely; individual customers, corporate customers and service agents or operators. According to the survey report NCC (2010b), the respondents of the survey revealed a number of facts as follows;

- The survey shows that the Global System for Mobile (GSM) communications is the most widely used medium of communication in Nigeria. Up to 96% of the individual consumers and 80% of the corporate consumers interviewed in the survey made use of GSM services. This implies that many Nigerians view the NCC's function as primarily linked to the provision of GSM services.
- The survey shows NCC's ratings as noticeably lower in the south and south-eastern geopolitical zones than in the other zones in almost all the categories of respondents. The NCC

would have to examine the resources it has available in these areas to move towards enhancing the delivery of quality service.

- As regards its effectiveness as a regulator, consumers were fairly satisfied with NCC's performance in protecting consumer interests. However, as regards their effectiveness in combating abuse of market power by service providers, about a third (29.8%, 29.5% and 30.7%) of individual consumers, corporate consumers and service agents considered it ineffective.
- The NCC is seen to be transparent in enforcing high quality services by 58.7% of the individual consumers, 62.6% of the corporate consumers and 60.1% of the service agents.
- As a promoter of competition amongst service providers, the survey shows that the NCC is perceived to be doing a good job. A total of 64.6% of individual consumers, 67.2% of corporate consumers and 61.7% of service agents rated the NCC as highly effective, fairly effective or effective in this function. A large percentage of consumers listed the licensing of many service agents as the key determinant of their views.
- In the area of effectiveness in enforcing high quality services, a slight majority (53.7%, 53.4 and 50.8%) of individual consumers, corporate consumers and service agents respectively, considered the NCC effective in these activities.
- The service providers showed considerable approval of the NCC's regulatory activities and its transparency in general. More than half of them (54.8%) felt that the requirements were not too stringent. A majority (65.2%) also thought the procedure for evaluating licences was transparent. However, only 30% of them thought that the cost of licences was fair.
- The NCC was also viewed as effective in its regulatory functions by majority of the service providers. They consider

the NCCs capacity to fulfil its regulatory functions to be well above average in the areas of resources, personnel, technical competence and organisational competence. The areas that were thought to require improvement are the regulation of charges, enforcing sanctions on service providers and the resolving of customer complaints. The NCC was considered better in regulating the quality of recharge cards and in ensuring interconnectivity between networks and ensuring service availability.

- Many consumers interviewed in the NCC survey are of the opinion that call charges, tariffs or costs associated with the GSM mobile phone are excessive. This is irrespective of the oversight responsibilities of the NCC in this regard, thereby questioning NCC's effectiveness in regulating prices.
- On communication and feedback with consumers. Many respondents of the NCC survey admit not being aware of the NCC's Consumer Affairs Bureau, a centre designed to provide customer service to all telecom service customers. About 72% of individuals, 57% of corporate bodies and 69% of service agents were unaware of its existence. The majority of those that were conscious of its presence considered it inaccessible. However, the People's Parliament (another NCC customer interaction medium) by comparison, is much better known and more highly rated. In addition, as indicated by the NCC survey report NCC (2010b) the People's Parliament proved to be a determining factor in the assessment of the NCC's transparency.
- Many respondents listed the interactive, public or broadcasted forums as evident signs of the NCC's transparency. Most importantly in this area, an overwhelming majority of respondents, (85.5% of individual consumers, 83.3% of corporate consumers and 86.8% of

service agents) indicated that they do not get adequate information from the NCC.

The result of the NCC survey highlights areas in which the NCC can improve its performance towards achieving its regulatory objectives. This could include the institutionalisation of customer survey by NCC. This is because surveys provide ample ground for self-evaluation, and should be conducted at least every two years. An alternative is to disaggregate the instrument, identify and single out certain critical areas, and conduct selective surveys in these areas periodically. Moreover, to facilitate the use of surveys as an effective means of improving NCC's performance in the telecommunications sector, the surveys should be reviewed every two years by independent consultants.

The NCC survey reveals that most of the respondents were of the opinion that NCC was poor in communication and resolving customer complaints and sanctioning of defaulting service providers. Most of the respondents explain that they are not aware of NCC's Consumer Affairs Bureau and their functions or measures for resolving customer complaints. Those who know of the existence of the Customer Affairs bureau consider it inaccessible and therefore are of the view that they do not get enough information from NCC. Those who have lodged complaints with the bureau indicated that it was ineffective in handling them.

In order for NCC to improve interactions with its customers, the activities of the Consumer Affairs Bureau need to be re-evaluated and improved. Since it is principally aimed at consumers, the generalised ignorance of its existence shows that it needs to channel its energies, not merely towards sending out information, but towards ensuring that it reaches all the consumers in an amenable form, and that feedback is properly gathered and processed. The key point to note is that if the

consumer is well informed, he/she will be well placed to provide feedback that will be of use to the NCC in its regulatory functions.

Additionally, since NCC's People's parliament has proven very popular amongst consumer's it should be used as a means for communicating industry news and even promoting the plans of NCC. With regards to transparency, the licensing of operators which was viewed so favourably should also be publicised, so that consumers know whenever new licences are issued. The sanctioning of service providers who default on regulations should be made public as this is a clear sign of transparency.

Service quality was a complaint made by some respondents and who insist service quality is a major determinant of their perception of the NCCs effectiveness. However, in the opinion of the respondents, the NCC has generally performed well in some areas. Specifically, individual consumers, corporate consumers and service agents were of the opinion that NCC has been fairly effective in protecting consumer interests, transparent and effective in enforcing high quality service by service providers, fair in regulating charges, ensuring interconnectivity and ensuring service availability and good in ensuring quality of recharge cards, and effective in promoting competition among service providers.

For NCC to move towards greater improvement in achieving its regulatory objectives there is also the need for creation of NCC offices in all the states of Nigeria to facilitate monitoring, follow-up and resolving of consumer's complaints as well as reduction in licence fees and training and retraining of staff, especially technical staff responsible for supervision and monitoring of providers. In addition, improvement in protection of consumer interests especially through facilitation of reduced charges and improved interconnectivity, monitoring to ensure that only licensed providers operate, enforcement

of compliance with rules and improved information dissemination should be emphasised by the NCC.

The findings of the NCC survey clearly support the findings of our study derived from the analysis of data generated from both primary and secondary sources.

5.5 CONCLUSION

The chapter analyses findings generated from both primary and secondary sources and the outcome indicates that NCC is fairly/reasonably independent and this has enhanced its capacity to influence growth and development in the Nigeria telecoms sector from 2001 to 2010. A modest growth has been recorded for the industry over the years and the creation of NCC, and its degree of independence had played a prominent role in the recorded industry growth.

CHAPTER SIX
SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 SUMMARY

The study examined the significance of regulator independence towards the growth and development of the telecoms industry in Nigeria. The central question therefore that the study addressed is the determination of whether the establishment of the Nigeria Communication Commission (NCC) as the sole telecoms industry regulator in Nigeria has created the required regulatory environment free from undue influence from government and political interests that will galvanise growth and development in the industry. The study also focused on addressing the issue of whether the NCC is sufficiently independent and whether this independence or otherwise has facilitated the growth and development of the industry.

Chapter one of this study explored background information and provided an introduction to the telecommunications industry in Nigeria. The chapter contained the problem statement, purpose statement, research objectives, research question, scope and limitations of the study as well as chapter scheme.

Chapter two surveyed and actively engaged existing literature on the significance of regulator independence in the telecommunications industry. The contributions made by various experts, authors, and other stakeholders in the telecommunications industry were reviewed, presented and discussed. The theoretical framework of the study was then formulated and established.

The chapter contained discussions on regulation, regulator Independence, the structure and governance for regulator independence, measuring regulator independence, independence and accountability of the regulator, sustaining independence of the regulator, challenges of the lack of regulator independence, constraints of achieving independence, regulatory function and regulator independence, customer-driven regulation and regulator independence and provided a conclusion.

The third chapter dealt with the research methodology covering an introduction, perspectives on measuring effectiveness of regulator independence, as well as methods of gathering primary and secondary data, including discussion of a qualitative analysis approach based on the TRE survey technique and structured interviews. The chapter further discussed a number of descriptive indicators for data gathering and analysis, as well as the data analysis technique.

Chapter four presented the findings of the research while chapter five dealt with the evaluation of the findings, analysis and interpretation of data derived from primary and secondary sources. This chapter deals with a summary, conclusion and recommendations.

6.2 CONCLUSION

The inability of the Nigerian Telecommunications Limited (NITEL) to meet the telecommunications needs of the Nigerian citizens had prompted the deregulation of the telecommunications sector in Nigeria. This deregulation led to the establishment of the Nigerian Communications Commission (NCC) by government decree No. 75 of 1992 to regulate the telecommunications industry, ensure the provision of adequate, effective and efficient telecommunications services nationwide at an affordable price, and to provide local and international communications service.

The enabling decree provided for the independence of the NCC to regulate without undue political interference. However, it must be noted that regulator independence is a means to an end and not an end in itself. Telecommunication customers in Nigeria just like customers in other parts of the world expect to receive quality service at competitive rates. Regulators are generally charged with the responsibility of ensuring efficient service delivery at reduced cost and making certain that service delivery standards are fully maintained. At the same time the regulator is required to ensure that service providers remain financially solvent in order to attract the desired level of investment necessary for the growth and development of the industry. Effective regulator independence could facilitate the achievement of these objectives while any meddling on the part of the government could undermine efforts geared towards the achievement of the stated objectives of the regulator.

However, in some circumstances the safeguards established to ensure regulator independence may be compromised through inadequate commitment on the part of the regulator or the government. Compromise could also come in the form of political grandstanding and sometimes lack of institutional capacity or as a result of human resource deficiencies. This may culminate in poor and inconsistent regulator decisions. Hence, a regulator without a reasonable degree of independence may end up taking sensitive decisions wrongly. In addition to this, undue political interference could also turn a regulator into an institution that lacks the resources and capacity to make quality, predictable, justifiable, robust, transparent and credible decisions to the detriment of the growth and the development of the industry.

Over the years covered by this study (2001 to 2010), the Nigerian telecommunications industry has experienced significant but modest growth and development following the introduction of the Global System for Mobile Communications services (GSM) in 2001, as a result of the creation of an independent regulator the NCC (NCC, 2010a).

Nigeria, previously regarded as one of Africa's under-served countries in telecoms services has risen through the ranks to attain the enviable position of Africa's largest telecommunications market with cumulative revenue of $12 billion as at December 2009 as reported by the NCC (NCC, 2010a). Investment flow into the industry, especially in the mobile telecoms segment, has seen massive growth. The mobile telecoms segment is reportedly having a positive impact in the telecoms industry in general as well as the national economy at large. The impact is recorded by generating substantial investment in infrastructure. According to the NCC, during the past decade approximately $16 billion has been invested in projects related to mobile telecoms services in Nigeria. Therefore, the nation has thus been effectively integrated into the global telecoms environment (NCC, 2010a).

Again, according to the NCC, prior to full liberalisation of the sector, the number of telephone lines in the country was less than 500 000. Nine years after liberalisation, there are more telephone subscribers, running into millions phone lines. Accordingly, experts generally concur that the liberalisation of a country's telecommunication industry is often associated with increasing economic growth across various sectors.

However, these experts contend that the success of this liberalisation depends on regulatory policies that are conducive to the development of competition. Basically, the implementation of these necessary regulatory policies will have to be supervised by an independent regulator.

The independence of a regulator is expected to provide the enabling capacity to foster competition among operators thereby optimising investments into the industry.

In Nigeria upon the creation of NCC and during the initial stages of liberalisation, the competition in the industry improved from the previous situation of zero competition. This is as a result of the arrival of mobile telecoms operators into the market and the subsequent expansion of their coverage in response to the demands of changing technology. Subsequently, competition became stiff, necessitating the need for effective operator management, reduced pricing regimes, improved quality of service, increased service access, enhanced service usage, improvement in geographical spread among other important benefits of competition.

Before the introduction of GSM in 2001, the structure of the NCC had been largely designed around how to licence operators and bring services to the consumers. However, the focus of the regulator is now changing into how to manage competition between operators in a market providing different services. Effectively managing competition and ensuring delivery of quality services to consumers has consistently become the key factor that underscores NCC's regulatory dispensation. This may be as a result of their increasing degree of independence from undue political influence and is indeed a demonstration of NCC's growing independence and capacity to take decision for the growth and development of the telecoms industry in Nigeria.

However, as this study has shown, the significance of regulator independence in the telecoms industry's growth and development is massive. The NCC scores just above the average with regard to its independence, and so must actively strive to become a more independent regulator able to generate all its funds from sources outside government funding and effectively deliver on its mandate.

6.3 RECOMMENDATIONS

The findings of this study show that the Nigeria telecoms industry has experienced a modest growth and the NCC is found to be fairly/reasonably independent. The recognition of this degree of independence is derived from the observation of the prevailing level of stability in the structure and management of the regulator, its power to independently earn its financial resources from sources outside government funding as well as its unimpeded authority to regulate the industry. However, the regulator is not fully financially independent because substantial portion of its funding comes from the government.

The study further identified a significant influence of the regulator's degree of independence on industry growth and development in the form of increased access and usage of telephone services by the citizens, increased competition in the industry, improved quality of service and pricing. Although the issues of appropriate pricing for mobile phone services, complete coverage of the Nigerian population as well as service quality are not fully sorted. Therefore, in order for the NCC to achieve the regulatory objectives of the telecoms industry in Nigeria more work has to be done. It is in this vein that the following recommendations are made.

1. The NCC should use better ways to communicate their activities in order to enlighten the public and create more transparency in its operations. Most respondent interviewed for this study agree that majority of the public do not know or understand the functions of the NCC and its role in the industry. This shows that the NCC is largely unknown by many citizens of Nigeria, therefore better media coverage by means of advertising, mainly on the radio which has a much wider coverage, is essential for the regulator to establish its presence.

Consumers have to be well-informed on the rights they have to good services and accurate billing and the channels available to them.

2. The licensing of any new service provider should be prominently featured in the print media, as this is a clear manifestation of the NCC's interest in promoting competition amongst service providers and in combating any abuse of market power. This is undoubtedly good press for the NCC.
3. Releasing the regulator (NCC) from excessive control by the ministry. This seeks to take away the excessive political interference often associated with government full control of the regulator.
4. Establishing and following professional criteria for appointment of all NCC personnel. This presupposes the existence of clear appointment guidelines and job expectations during the course of recruitment of NCC personnel and executive management personnel.
5. The appointment of NCC management staff and commissioners should involve both the executive and the legislative branches of the government in the appointment process.
6. Adequate salaries and other remunerations should be paid to NCC personnel, which would also help to reduce concerns about corruption.
7. The NCC should also strive to attain full financial independence through generating more funds from other sources outside government subventions. This full financial independence may have a good effect on the activities of the NCC. Having a reliable source of funding, usually earmarked levies on regulated firms or consumers will considerably reduce the influence of the government on the activities of the regulator
8. Emphasis on professionalism, specialisation, commitment and expertise in the NCC.

9. The NCC has to focus on such areas of concern as the issue of frequency or spectrum allocation and SIM registration as well as the number portability. Other areas needing NCC attention include pricing/tariffs and quality of service
10. The NCC must address the issues of capacity constraint and infrastructure deployment, large market and high demand, frequency allocation problems, connectivity issues and quality of service, and inadequate base stations.
11. The telecoms service providers should also continue to expand their coverage beyond urban areas unto rural areas as most rural areas of the country are still without telecommunications network coverage. Rapid roll-out of network resources such as base stations and switches should result in improved quality of service by improving on their transmission infrastructure across the country. Moreover, fiber optic and microwave transmission lines should be constructed to achieve further efficiency in network transmissions.
12. Further liberalisation of the sector is encouraged. This will facilitate the entrance of more providers, healthy competition and the rendering of quality service.
13. The NCC Consumer Affairs Bureau has to be put within the reach of telecommunications services users. Regional offices have proven to be insufficient. The Commission would do better by having offices in all the states of Nigeria.
14. In relation to service providers, forums specific to certain types of service providers should be organised by geopolitical zones and after sufficient publicity. They will help to improve the communication process between them and the Commission and identify their problems more concretely.
15. The NCC should improve on the protection of consumer's interests. This can be achieved by compelling the providers to standardise and reduce charges, improve on interconnectivity, quality of service and service provision.

16. The NCC should also improve on monitoring and enforcing compliance with rules by providers, especially ISPs, to ensure that they give quality service to their customers. They should equally review the licence charges. This will help reduce the tariff charge to telecommunications consumers.
17. The regulator should ensure that those who did not obtain a licence or permit do not operate. This will help guarantee the quality of service provided as the licensed providers would always work within the dictates of the NCC in order to avert licence revocation.
18. To facilitate the provision of quality service by providers, the NCC should ensure that technical officers that supervise the facilities used by the providers are well trained and retrained to be abreast of recent developments in the industry. It should also be more firm with the providers that default in any of the aspects of service provision as this will serve as a check and thus help guarantee quality service delivery.
19. The federal government of Nigeria should redouble its efforts to solve the massive problem of the provision of social infrastructure such as electricity. The prevalence of erratic power supply in Nigeria is famously known to increase capital costs and operating costs of the telecoms operators in Nigeria.

Addressing the issues outlined above will impact positive on the growth and development of the telecom industry in Nigeria.

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ANNEXURES

Annexure I: Interview Schedule

Introduction

My name is Abbas Fufore of the University of Witwatersrand South Africa. I am a post graduate student of Management ICT – PR conducting a research on the significance of regulator independence in the development of the telecommunications industry in Nigeria.

This interview is designed to elicit responses from various respondents connected with the above topic. The responses to be obtained will be used for research purposes and confidentiality is guaranteed. No names are required.

The purpose of the research is to determine the degree of independence of the Nigeria Communications Commission (NCC) (the regulator) and the impact of such independence on the growth and development of the telecommunications industry in Nigeria. The findings of this research will be beneficial in refocusing attention of all stakeholders in the industry toward a better and much improved telecoms industry and advance knowledge in this realm.

The interview will take approximately 30 minutes and responses will be manually recorded on paper only.

PART A: DETERMINING THE DEGREE OF NCC INDEPENDENCE

This part covers respondents from NCC and Federal Ministry of Information and Communications

Section 1: Stability of NCC's management team and board members

Q1: What is your designation?

Q2: How were you appointed?

Q3: What is your term of office?

Q4: What is your tenure of office?

Q5: How is dismissal done with respect to your office?

Q6: Do you have a second job?

Section 2: Relationship with government and the national assembly

Q1: Do you think NCC's independence is formally stated?

Q2: What are the formal obligations of NCC to the government?

Q3: What are the formal obligations of NCC to the national assembly?

Q4: Who other than the court of law can overturn the decision of the NCC where it has exclusive competency?

Section 3: Fiscal and organisational autonomy

Q1: What are the sources of NCC's budget and what is the composition?

Q2: How is NCC's budget controlled?

Q3: Who decides on NCC's internal organisation?

Q4: Who is in charge of NCC's personnel policy?

Q5: Who is competent for NCC's regulatory functions?

Q6: What are the core competencies of NCC?

Section 4: NCC's regulatory legitimacy

Q1: How many staff does NCC have?

Q2: What is the staff skill mix in terms of qualification and experience?

Q3: What tools does NCC use to communicate with operators?

Q4: What methods/tools does NCC use to reach out to the public?

Section 5: NCC's authority to regulate

Q1: What is NCC's power to regulate on prices and quality of service?

Q2: Does NCC have the exclusive power to grant new licences to operators?

Q3: Does NCC have the exclusive power to assign spectrum to operators?

Q4: Does NCC the exclusive power to regulate on anti competitive behaviour?

Q5: Does NCC have adequate of legal powers to ensure compliance

and punitive action?

PART B: DETERMINATION OF INDUSTRY DEVELOPMENT

This part will consider responses from operators, customers and experts in academia, media practitioners, civil society and politicians.

Section 1: – Ease of market entry

Q1: How easy is the market entry?

Q2*:* Do you think the number of firms able to enter the market has increased over the years?

Q3: Do you think there has been increased investment into the industry?

Q4: How do you perceive transparency in industry regulation?

Q5: How do you perceive effectiveness of industry regulation?

Section 2: Service quality, pricing, access and usage

Q1: How effectively have tariff been regulated?

Q2: What is the tariff trend for the past ten years?

Q3: Has there been any improvement in quality of service offered by operators and the regulatory agency for the past 10 years?

Q4: Do you think access to scarce spectrum and numbers ensured?

Q5: How effectively has the anti-competitive regulation been enforced?

Q6: What is the progress made towards universal access?

Q7: How available are telephones in rural communities?

Q8: Has there been increased telephone access in underserved areas?

Section 3: Number of operators, secondary service providers and employment generation.

Q1: Has the number of operators been increasing?

Q2: Has the number of secondary service providers been increasing?

Q3: Has the industry generated an increase in employment?

Section 4: Interconnectivity, service delivery, infrastructural development, geographical spread and customer satisfaction

Q1: How effective is the interconnection regime?

Q2: Has there been improvement in the quality of service supplied to consumers, including higher number of call completions and reduction in call drop -outs?

Q3: Has there been improvement in the quality of service supplied to consumers including reduction in waiting lists, accuracy of consumer service information, reduction in fault handling times, and customer complaints?

Q4: Has there been improvement in reliability of systems and components through compliance with minimum availability criteria set by the NCC?

Q5: Do you think there is an improvement in actual performance of Nigerian operators when benchmarked against other countries with regard to technical and operational standards?

Q6: Has there been a steady reduction in the number of rural communities without access to telephone?

Q7: Had there been increased availability of telephone access to all local government areas throughout Nigeria?

PART C: EFFECT OF REGULATORY INDEPENDENCE ON INDUSTRY PERFORMANCE

This part will cover responses from all stakeholders identified for interview in this study including NCC, FMIC, operators, media, civil society and academia among others.

General Questions

Q1: Has the independence of the regulator affected the development and performance of the telecommunications industry in Nigeria?

Q2: Do you consider the NCC independent?

Q3: How do you consider the effect of regulator independence on industry performance with respect to increased telecoms service usage?

Q4: What is the effect of regulator independence on industry performance with respect to quality of service?

Q5: What is the effect of regulator independence on industry performance with respect to pricing?

Q6: What is the effect of regulator independence on industry performance with respect to competition?

Q7: What is the effect of regulator independence on industry performance with respect to access to telecoms services?

Closing

Thank you for taking part in this important research designed to determine the impact of regulator independence on telecommunications industry development in Nigeria. Your contributions are highly appreciated and will assist strongly in reaching a conclusion towards finding an answer to the research question for this study.

Annexure II: Regulatory Independence Survey Questionnaire

Introduction

My name is Abbas Fufore of the University of Witwatersrand South Africa. I am a post graduate student of Management ICT – PR conducting a research on the significance of regulator independence in the development of the telecommunications industry in Nigeria.

The questionnaire is designed to elicit responses from various respondents connected the above topic. The responses to be obtained will be used for research purposes and confidentiality is guaranteed. No names are required.

The purpose of the research is to determine the degree of independence of the Nigeria Communications Commission (NCC) (the regulator) and the impact of such independence on the growth and development of the telecommunications industry in Nigeria. The findings of this research will be beneficial in refocusing attention of all stakeholders in the industry toward a better and much improved telecoms industry and advance knowledge in this realm.

The questionnaire will take approximately 5 minutes to complete and responses will be manually recorded on paper only. The following dimensions relating to NCC independence will be assessed:

Stability of NCC's management team and board members

Excellent	( )
Good	( )
Fair	( )
Poor	( )
None	( )

Relationship with government and the national assembly

Excellent	( )
Good	( )
Fair	( )
Poor	( )
None	( )

Fiscal and organisational autonomy

Excellent	( )
Good	( )
Fair	( )
Poor	( )
None	( )

NCC's regulatory legitimacy

Excellent	( )
Good	( )
Fair	( )
Poor	( )
None	( )

NCC's authority to regulate

Excellent	( )
Good	( )
Fair	( )
Poor	( )
None	( )

Closing

Thank you for taking part in this important research designed to determine the impact of regulator independence on telecommunications industry development in Nigeria. Your contributions are highly appreciated and will assist strongly in reaching a conclusion towards finding an answer to the research question for this study.

Annexure III: Telecoms Regulatory Environment Survey Questionnaire

Introduction

My name is Abbas Fufore of the University of Witwatersrand South Africa. I am a post graduate student of Management ICT – PR conducting a research on the significance of regulator independence in the development of the telecommunications industry in Nigeria.

This Questionnaire is designed to elicit responses from various respondents connected the above topic. The responses to be obtained will be used for research purposes and confidentiality is guaranteed. No names are required.

The purpose of the research is to determine the degree of independence of the Nigeria Communications Commission (NCC) (the regulator) and the impact of such independence on the growth and development of the telecommunications industry in Nigeria. The findings of this research will be beneficial in refocusing attention of all stakeholders in the industry toward a better and much improved telecoms industry and advance knowledge in this realm.

The questionnaire will take approximately 5 minutes and responses will be manually recorded on paper only. The following dimensions relating to the growth and development of the telecoms industry in Nigeria will be assessed. Kindly tick the appropriate box to select your answers.

Ease of market entry

Easy	( )
Indifferent	( )
Difficult	( )

Service quality, pricing, access and usage

Excellent	( )
Good	( )
Fair	( )

Poor ( )
None ( )

Number of operators, secondary service providers and employment generation

Excellent ( )
Good ( )
Fair ( )
Poor ( )
None ( )

Interconnectivity, service delivery, infrastructural development, geographical spread and customer satisfaction

Excellent ( )
Good ( )
Fair ( )
Poor ( )
None ( )

The effect of NCC independence on telecoms industry growth and development

Very significant ( )
Significant ( )
Fairly reasonable ( )
Low significance ( )
Insignificant ( )

Closing

Thank you for taking part in this important research designed to determine the impact of regulator independence on telecommunications industry development in Nigeria. Your contributions are highly appreciated and will assist strongly in reaching a conclusion towards finding an answer to the research question for this study.

Annexure IV: Data recording and computation form

Indicators	*Maximum Weight*	*Number of Respondents*	*Allocated Weight of Responses*	*Remark*
Degree of regulator independence ➢ Stability of NCC Management Team and Board Members ➢ Relationship with Government and the National Assembly ➢ Fiscal and Organisational Autonomy ➢ NCC's Regulatory Legitimacy ➢ NCC's Authority to Regulate Total				
Telecoms industry growth and development ➢ Ease of market entry ➢ Service quality, pricing, access and usage ➢ Number of operators, secondary service providers and employment generation ➢ Interconnectivity, service delivery, infrastructural development, geographical spread and customer satisfaction Total				
Effect of regulator independence on industry growth and development				
Outcome				