

An Evaluation of the Nigerian Telecommunication Industry Competitiveness: Application of Porter's Five Forces Model

Bongo Adi¹

Applying Porter's five forces model of competitiveness to the Nigerian telecommunication industry context, we find that of the five forces in Porter's model, only the power of suppliers appears to have insignificant impact on industry competitiveness. The power of buyers have moderate impact, while the threat of entry, threat of substitutes and rivalry among competitors all have high impacts. The study concludes that there is indeed high competitive pressure in the Nigerian telecommunication industry. The paper concludes by discussing useful regulatory and operational insights that could strengthen competition and efficiency in the industry.

JEL Codes: L51 and L96

Key words: Competitiveness, Efficiency, Growth, Telecommunication, Nigeria, Porter, Five Forces.

1. Introduction

Various studies document the relevance of infrastructure to national development. According to Alleman et al. (2002), there are at least three ways infrastructure investments can trigger economic progress: first, it can reduce the cost of production; second, it can increase revenues; third, it can increase employment through both direct and indirect effects. Telecommunication is one class of infrastructure that is believed to have large pay-offs for economic growth and development. Norton (1992) avers that ICT infrastructure lowers both the fixed costs of acquiring information and the variable costs of participating in markets. Additionally, as ICT infrastructure improves, transaction costs reduce, and output increases for firms in various sectors of the economy (Roller & Waverman, 2001).

Enormous infrastructure challenges persist in Nigeria and other developing countries in a manner that severely penalizes economic growth and productivity, leading to poor quality of life in every ramification. To address the huge infrastructure deficits, sector reforms have been embraced in recent years as a remedial measure, given the observed success of similar initiatives in advanced nations. Two crucial components of these reforms are privatization and competition. The leading argument is that private sector expertise and profit motive will make private sector-run infrastructure industries more efficient than the state's. This is however not likely the case where competition does not follow privatization, especially when there is weak regulatory oversight. As a result, competition became viewed as one of the most essential components of reforms that will deliver the fruits of infrastructure development to developing nations.

¹ Lagos Business School, Pan-Atlantic University, Lagos, Nigeria, Email: badi@lbs.edu.ng

The telecommunication industry is one key area where the level of competition is critical to the overall development of the industry, as well as its contribution to national wellbeing. Kovacs (2013) notes that the variety of service options available to consumers in the telecommunication industry is readily a result of competition-induced innovation. Therefore, efforts at promoting the efficiency of the telecommunication industry should involve an evaluation of the industry's degree of competitiveness.

Michael Porter's five forces model of competitiveness is one widely used technique for analyzing the competitiveness of industries. This model has been largely applied in understanding the competitiveness of industries to enable managers shape strategies that would enable them compete favorably. In this study, however, we use it to evaluate the impact of the five competitive forces on the overall competitiveness of Nigerian telecommunication industry, pointing out plausible regulatory and operational issues that could be helpful in enhancing efficiency and the industry's contribution to national economic growth and development. The study is motivated by the need to highlight the importance of telecommunication industry competitiveness to overall national economic competitiveness.

The rest of the paper is organized as follows. The next section reviews extant work and major development in the global and Nigeria telecommunications industry. Section three discusses Porter's five forces model which offers the framework we employ as methodology of research. Section four analyzes the extent of impact of the five forces in Nigeria's telecommunications industry. Finally, the implications of the findings for both industry players and regulator are discussed in conclusion and recommendation.

2. Literature Review

2.1 Telecommunication Industry Development

Globally, the telecommunication industry has witnessed rapid growth and innovation over the past three decades. The significance of telecommunication to globalization, internationalization and effective coordination of economic activities over very far distances and across national borders is unarguable. The importance of telecommunication today goes well beyond facilitating business activities and interaction to making substantial contribution to the national incomes, as well as engendering many diverse and novel job opportunities.

The revolution in the telecommunication industry that has resulted in today's highly dynamic information age began in the mid-1980s when, due to changing ideology of how best to organize markets, the state monopoly in the telecoms industry was ended in the US, UK and Japan. By the late-1990s, with the agreement of the European Union to fully liberalize its telecoms markets and the similar agreement of the WTO, there was a widespread consensus that the liberalization of telecoms is essential to industry efficiency. Further innovative developments in the 1990s brought about fundamental changes that further transformed the Telecoms Industry into the Info-communications Industry. These influences which came from the Internet include the development of packet-switching, Internet Protocol (IP), and the World Wide Web (Fransman, 2001; ITU, 2004).

According to Fransman (2001), the old telecommunication industry can be categorized into three layers. The first is the equipment layer where the network elements – switches and

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transmission systems – and customer premises equipment are produced. The second layer involves the circuit-switched network, while the third layer is where telecom services – voice, fax and enhanced services such as toll-free services – are rendered. He further notes that due to the perception of telecommunication as a natural monopoly in these early days, the network layer of the telecommunication industry was dominated by a monopoly network operator. In some nations, there was also vertical integration of network operation and equipment production. In some others there is just quasi-vertical integration.

Despite the existence of national monopolies in the telecommunication industry in this era, innovation still grew substantially, though with significant limitations. There are two major non-market incentives that powered innovation in this telecommunication industry structure: the first is the competition that existed between national systems to be the first to introduce the next generation of technologies and services; the second is political incentives and pressures to improve telecoms services for both residential and business users who together constituted the bulk of the population. However, closed innovation system, high entry barriers, few innovators, fragmented knowledge base, medium-powered incentives, and slow and sequential innovation process are part of the major constraints to innovation in this era (Fransman, 1995, 2001).

These limitations to innovation, coupled with changing economic ideology in the most advanced nations, triggered the introduction of liberalization and competition in the telecom industry of advanced nations. The new institutional structure created new entrants in the industry, and new markets for the accumulation of knowledge and competencies. Fransman (2001) however notes that perhaps because the market environment in which the new entrants played were characterized by partial competition, these firms were largely conservative in their competition with the incumbent, merely imitating them while only slightly underpricing them. This did not stand the test of time, as the original new entrants soon became overshadowed by a new breed of entrants whose emergence signaled the birth of the New Telecoms Industry.

The early 1990s was the period of birth of the new telecommunication industry which reigns till this day. This birth was characterized by substantial qualitative change in the telecom industry, which is evident in the rise of a new breed of entrants quickly displacing the original industry new entrants, and further posing unmatched threat on the incumbents (Fransman, 2001). Unlike the original new entrants, the 1990s breed of entrants was far more aggressive in their competition. This was seen both in their activities in the market for corporate control as well as in global telecoms markets (Fransman, 2001). This high level of competition, strong market incentives and specialization are believed to be the central factors that have driven the presently observable innovations in the global telecom industry.

The Nigerian telecommunication industry has somewhat toed the path of development of the global telecommunication industry – from state monopoly to liberalization to weak competition to growing competition and to growing service innovation. The history of the nation's telecommunication industry dates back to 1886 when the first telegraphic submarine cable was laid by the British firm, Cable & Wireless Ltd. From this time up till independence in 1960, Nigeria had 18,724 fixed telephone lines (Okonji, 2013). Then, the telecommunication industry was dominated by the Nigerian Telecommunications Limited (NITEL), a government-owned monopoly operator (Mawoli, 2009). NITEL's services include the provision of Fixed Telephone, Telegraph (gentex), and Payphone etc. Its main objective was to harmonize the coordination

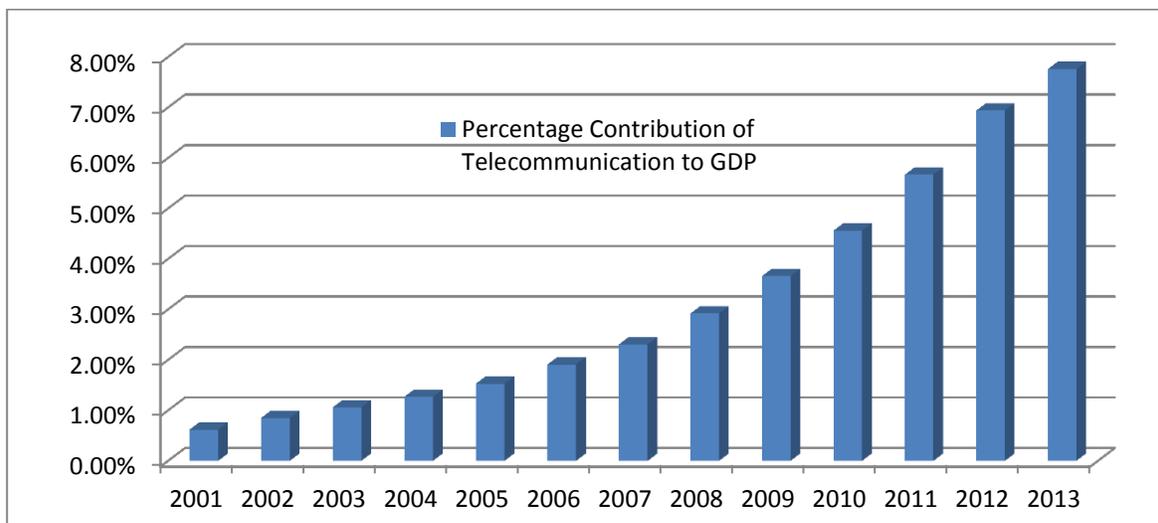
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of the external and internal telecommunications services, rationalize investments in telecommunications development and provide easy access, efficient and affordable services. Ndukwe (2003) notes that between 1987 and 1992, no remarkable improvement was recorded in the performance of NITEL, and consumer demands were largely unmet. This prompted the Federal Government to embark on market oriented reforms by partially liberalizing telecommunication industry.

This Liberalization actually began in 1993, with the establishment of the Nigerian Communications Commission (NCC) as prescribed by Decree 75 of 1992. However, some segments of the market were still restricted to the monopoly of NITEL (Okonji, 2013). This ceased to be the case in 2001 when NITEL came under the regulatory oversight of NCC, and was formally licensed as an operator. Nigeria's return to democracy in 1999 brought full liberalization of the telecommunication industry, and necessitated the strengthening of the power and independence of the industry regulator, NCC. Consequently, a new telecommunication law was enacted in 2003. This law specifically empowers the NCC to make regulations and guidelines for the industry (Mawoli, 2009).

The period from 2000 till date, could be described as the period of Nigeria's telecommunication revolution, given the enormous growth and innovation registered in the industry (see figure 1 below for industry contribution to GDP). The major auctioning of digital mobile licenses in 2001 spurred many activities in the sector: active subscription grew from 400, 000 lines in 2001 to 89.8 million in 2011, resulting in a teledensity of 0.4 and 64.16 per cent in both years respectively (Okonji, 2013).

Figure 1: Contribution of Telecommunication Industry to GDP in Nigeria



Source: Nigerian Communication Commission, 2014.

3. Methodology

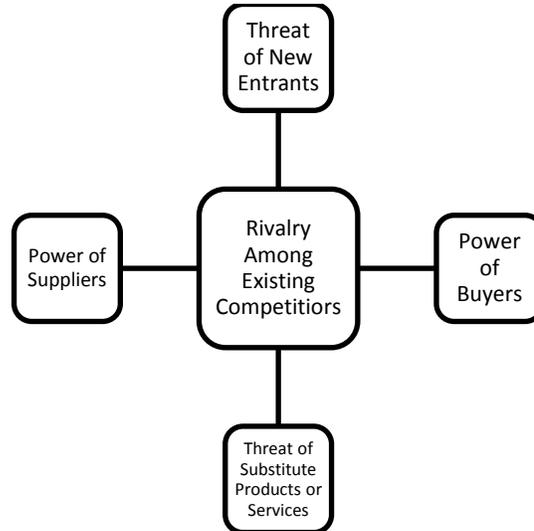
3.1 Porter's Five Forces Model for Telecommunication Industry in Nigeria

The advent of deregulation and economic liberalization in the 20th century, first in the advanced countries and later in the developing countries, saw the telecommunication industry restructured, allowing more role for the private sector, and also making competition one of the key drivers of efficiency in the industry. Generally, the success of telecommunication industry deregulation in early reform countries is believed to be one of the critical triggers of telecommunication deregulation in developing countries, of which Nigeria is one. Today, there is no doubt that Nigeria's telecom industry is very dynamic, unlike it was in the early 21st century. Understanding its competitive position allows both players and regulators to improve efficiency in terms of service delivery, innovation and effective market penetration. Porter's Five Forces Model provides a framework to study the telecommunication industry in Nigeria in terms of the competitive forces that affect the industry.

According to Porter (1979), the essence of strategy formulation is coping with competition. Yet it is easy to view competition too narrowly and too pessimistically. In the fight for market share in an industry, competition is not manifested only in the other players. Rather competition is rooted in its underlying economics, and competitive forces exist that go well beyond the established combatants in the particular industry. Customers, suppliers, potential entrants, and substitute products are all competitors that may be more or less important or active depending on the industry. Therefore, the state of competition in the Nigerian telecommunication industry depends on five crucial forces which are captured in figure 1 below. The collective strength of these forces determines the ultimate profit potential of an industry (Porter, 1979, 2008).

Porter's Five Forces Model is a powerful tool for analyzing a wide variety of industries in any number of locations, given certain modifications to the boundaries of product, services and the impact of key components that determine the overall power of each force (Rajasekar & Al Raei, 2013). Crucial in carrying out the analysis of the industry's competitiveness is to define the boundaries of the industry accurately (Porter, 2008). The boundaries of Nigeria's telecommunication industry consist of two main dimensions: scope of products or services; and geographic scope.

Figure 2: The Five Forces that Shape Industry Competition



In this study, Porter’s Five Forces Model enables us to outline the competitive structure of the telecommunication industry in Nigeria. We follow similar description in Rajasekar& Al Raee (2013) to define the telecommunication industry as comprising businesses that are engaged in providing telecommunication services including 2G, 3G, HSPA mobile telephone communications; fixed wired and wireless telephone; mobile internet; mobile broadband; dial-up internet and fixed wired and wireless internet, including WiMax. On the other hand, Satellite phone communication, satellite internet and Voice over Internet Protocol (VoIP) are not considered as industry rivals, but as constituting threat of substitutes. The boundary for the analysis is located within NCC jurisdiction, that is, those companies that hold NCC’s Class and Individual Licenses – the two categories of telecommunication licenses in Nigeria.

With the above foundation, we now proceed to analyze the strength of the individual competitive forces in the Nigeria telecommunication industry. In so doing, we make extensive use of industry reports, industry statistics made available by the regulator, NCC, as well as accessible interviews with key industry players. Following the analysis, we distill useful strategic outlook for incumbents, new entrants, the regulator, policy makers and other key stakeholders in the Nigerian telecommunication industry.

4. Findings and Discussion

4.1 Threat to Entry in Telecommunication Sector

According to Porter (1979), new entrants to an industry bring new capacity, the desire to gain market share, and often substantial resources. Companies diversifying through acquisition into the industry from other markets often leverage their resource to cause a shake-up. The seriousness of the threat of entry depends on the barriers present and on the reaction from existing competitors that entrants can expect. If the barriers to entry are high, obviously the new entrants will not pose a serious threat. In the telecommunication industry, as well as other industries, the barriers to entry include customer switching cost, capital requirements, unequal access to distribution channels, and restrictive government policy. We analyze the strength of

each of these barriers in the Nigerian telecommunication industry, and also proceed to summarize the analyses in Table 1.

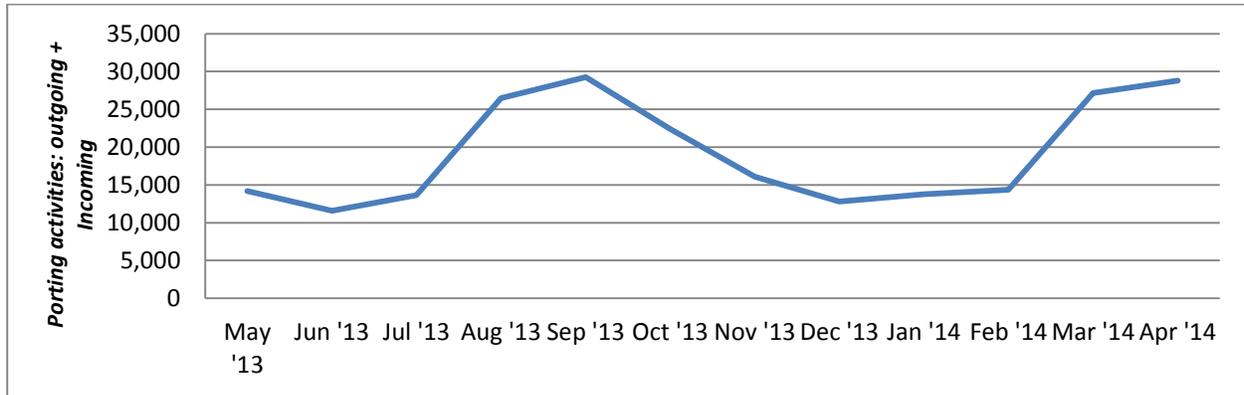
4.1.1 Customer Switching Cost

Switching costs are fixed costs that buyers face when they switch from one supplier to another. In the telecommunication industry, switching costs are mainly determined by the kind of cost buyers have to undertake if they switch from one service provider to another. In the telephone (fixed/mobile) sector, this is mainly determined by regulations that may ensure telephone number portability, moderate fees for transfer and ease of transfer, including swiftness of switching and the overall experience of switching to another provider (Rajasekar & Al Raee, 2013).

Prior to 2011 in Nigeria, mobile number portability was not enabled in the telecommunication industry. This increased the switching cost of customers, as they would have to change their phone number while switching from one service provider to another. The high switching cost on the other hand served to partly reduce the threat of entry in the industry. However, beginning from 2011, the NCC made regulations that enabled mobile number portability in the industry. This allows subscribers to port their numbers from one mobile network to another. NCC believes that Mobile number Portability will increase competition in the Nigerian telecommunication industry, as well as improve quality of Service (Tihamiyu & Mejabi, 2012). It will also make the industry attractive to new entrants, who would then find it easier to become established in the industry. The process of switching from one service provider to another does not involve any financial cost.

Also, contractual agreements are uncommon in the industry, and mobile, fixed and internet users can switch without any costs. These mean that in Nigeria virtually no costs are associated with switching from one telecommunication service provider to another. It is argued, however, that the long time it took for the mobile number portability to be effected in Nigeria made the process unattractive to the consumers, as many people in the market already have multiple mobile numbers from different service providers (Onwuka, 2013). Figure 3 below shows customer switching activities (total switching activities of all the mobile network operators: summation of both outgoing and incoming) in the Nigerian telecom industry. It is clear that in the early part of 2013 there was persistent rise in customer switching activities until September, after which there was persistent decline. Porting activities regained momentum around December, and the trend has remained on the increase.

Figure 3: Total Porting Activities of Mobile Network Operators in Nigeria



Source: Nigerian Communication Commission, 2014.

4.1.2 Capital Requirement

The need for huge up-front financial investments is the biggest barrier to entry in the telecom industry, because the industry is highly capital intensive. Given this high capital requirement in the industry, periods of easy money, i.e., when it is easy to assess money in the capital market, tends to raise the threat of entry in the industry, whereas periods of financial slump lessen the threat of entry, as it will be difficult for potential entrants to secure the finances required to be able to compete in the industry. The fact that Nigeria is a huge market and a major attraction to big players in infrastructure, suggests that the huge capital requirement may not deter potential investors in the industry. This is buttressed by the statement attributed to the Secretary General of the International Telecommunication Union (ITU), DrHamadounToure, encouraging investors to head to Nigeria, claiming that the country's telecom market is haven for technology businesses (Osuagwu, 2013).

4.1.3 Unequal Access to Distribution Channels

Ready availability of distribution channels in an industry is a factor considered by new entrants to any industry. The more limited the wholesale or retail channels, and the more industry players have occupied these channels, the tougher it will be for new entrants to play in the industry. There are different distribution channels in the telecommunication industry: self-owned distribution points; shops not owned by the industry players; and sales points with vending and automated machines. Indeed, these distribution points are of little significance to telecommunications organizations in general, and therefore have no serious impact on the threat to entry in Nigeria. However, if by any means exclusive distribution rights operates at crucial distribution points, then unequal access to these points might constitute a restriction to the threat to new entrants in the industry. Operators in the Nigerian telecom industry do not have exclusive distribution rights. The distribution channels can be used by all players in the industry.

Basically, recharge cards of all mobile networks in Nigeria are sold mainly by retailers and hawkers on the road side. Also, automated machines and internet banking portals are heavily used by the elite class to purchase recharge cards and internet bundles of all mobile network operators. The sale of SIM cards also follow the trend of recharge cards, safe that it is not

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traded online. Given this, it is safe to conclude that there is unrestricted access to distribution channels of telecommunication services in Nigeria, and that unequal access to distribution channels does not constitute a barrier to entry in the industry.

As noted by Rajasekar & Al Raei (2013) the finite amount of “good” radio spectrum is another factor that affects the equality of distribution in the telecommunication industry. An insufficient amount of this spectrum obviously limits access to distribution channels. However, this is not the case in Nigeria, as there is still plenty of radio spectrum space available, and the regulator is still making efforts to get more players active in the industry.

Table 1: Summary of Threat of Entry in the Nigerian Telecommunication Industry

Force	Overall Impact of Force	Sub force	Overall impact of sub force	factor	Condition	Impact of factor on entry
Threat of Entry	High	Customer Switching cost	High threat of entry	Regulation	Favorable for switching	High threat
				Equipment change	Not required	High threat
				Service packaging	Not existing	High threat
		Capital requirements	Moderate threat of entry	Contractual limitations	Not existing	High threat
		Incumbency advantages	Low threat of entry	Network	Incumbent networks	Low threat
				Local knowledge	Yes	Low threat
				Brand Identity	High	Low threat
		Unequal access to distribution channels	High threat of entry	Radio spectrum limitations	None	High threat
				Exclusive distribution rights	None	High threat
		Restrictive Government policy	High threat of entry	Regulatory law	Liberal	High threat
				Practice by NCC and government	Licensing required	High threat

4.1.4 Restrictive Government Policy

The government can limit entry to an industry with controls such as license requirements and limits on access to raw materials. Regulated industries, like the telecommunication industry, are major areas where such restrictions exist. The government can also play a major indirect role by affecting the entry barriers through controls such as safety regulation. While government can impose several restrictive measures that act as barriers to entry in any given industry, this is seldom the case for the telecommunication industry. The existence of the

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International Telecommunications Union (ITU) makes government restriction in the telecommunication limited basically to licensing and other regulations related to safety standards in the industry. Nonetheless, Rajasekar& Al Raee (2013) note that the free market condition recommended by the ITU and implemented through membership of ITU and WTO is often bypassed, and the governments of various countries display these bypasses in various degrees through restrictions and limitations on the telecommunications policy of their country. In Nigeria, the government follows the ITU's and WTO's bindings on liberalization of the market. The telecommunication industry is regulated by NCC and no new entrant can enter the market unless issued a license by the regulator. This arguably tends to keeps the threat of entrance in the industry low.

4.2 The Power of Suppliers

There are ways suppliers can exert bargaining power on participants in any given industry: one clear approach is by raising price; another is by reducing the quality of supplied products. This however depends on how powerful suppliers in the industry are. The more powerful suppliers are in the industry, the more bargaining power they are likely to command, and the more profit they can squeeze out of operators. In the telecom industry in Nigeria, the power of suppliers is affected by two principal factors – the power of the Network Equipment Providers (NEPs), and the power of the workforce, or the suppliers of labor.

Generally, the NEPs are business establishments that provide service such as communication solutions to all kinds of telecommunication service providers. According to Bailey (2007), NEPs have recently undergone a number of significant consolidations through mergers and acquisitions. Notable examples are the joint venture of Nokia and Siemens (Nokia Siemens Networks), the acquisition of Marconi by Ericsson, the merger between Alcatel and Lucent and many numerous acquisitions by Cisco. As earlier noted, the power of these suppliers is not given. It depends on a number of factors, namely, the level of concentration of the NEPs, whether or not they depend heavily on the telecommunication service providers for their revenues, the costs to the telecommunication service providers of switching NEPs and the level of differentiation of products (Rajasekar& Al Raee, 2013).

Furthermore, the power of suppliers of labor is another critical factor that influences the competitiveness in the telecom industry. This factor is affected by the interplay of supply and demand of qualified and experienced telecommunications sector workforce. Also, whether the workforce engages in collective bargaining through unionism is another factor that defines its overall power and degree of influence in the telecommunication industry.

Generally in the globe, the NEPs have been shown to have a less power in the telecommunication industry. Although there has been growth in the industry, which is believed to reflect in the profitability of industry players, some research (see, for instance, Accenture, 2012) have shown that investors do not necessarily trust NEPs to generate returns in line with present results, let alone deliver growth. This reflects the weak position of NEPs in the telecommunications industry globally, and this is believed to be the case in Nigeria. Specifically, the fact that the Nigerian market has recently witnessed a surge in the sale of new telecommunication products, including the services of NEPs, from low cost manufacturers in places like China, suggests high competition amongst the NEPs in the country, which no doubt

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serves to weaken their power over operators in the Nigerian telecommunication industry. The implication is that in general the power of network equipment suppliers in Nigeria is low.

The National Union of Postal and Telecommunication Workers (NUPTW) is the major trade union of telecommunication workers in Nigeria. Since the liberalization of the telecommunication industry, there has not been any case of industrial action or outright demands from the union originating mainly from the telecommunication industry workers. However, there have been various remarks from the union about the poor working conditions of the telecommunication workers in Nigeria. A classic example is the comment of the National President of NUPTW, Mr. Sunday Al-Hassan, when one of the operators in the telecom industry, Airtel, won the award of the Most Innovative Telecoms and Customer Friendly operator in Nigeria in 2012: “workers in the private sector especially in majority of Nigeria’s private telecommunications and courier companies are suffering from absence of any mechanism for the guarantee or protection of their rights, or of organizing themselves, and representation.” Some private companies operating in Nigeria comply with the labor laws in their home countries rather than in Nigeria. The companies deliberately breach the Nigeria’s labor laws as they flagrantly violate labour policies that are neither practiced nor tolerated in their home countries” (Idehen, 2012).

Table 2: Summary of Power of Suppliers in the Nigerian Telecommunication Industry

Force	Overall Impact of Force	Sub force	Overall impact of sub force	factor	Condition	Impact of factor on Suppliers
Power of Suppliers	Low	NEPs Power	Low Power of Suppliers	Concentration of NEPs	High	Low Power
				NEPs Product Switching costs	Low	Low Power
				NEPs product differentiation	Standardized	Low Power
		Labor force Power	Low Power of suppliers	Influence of Labor Union	Low	Low Power
				Qualified Workforce availability	Moderate	Low Power

Deductively, it follows that suppliers of labor in the Nigerian telecommunication industry have weak power in the industry, just as is the case of the NEPs. One more factor contributing to this weak power is the very high labor supply in the Nigerian market which outpaces demand in most industries. Table 2 above summarizes the power and influence of suppliers – NEPs and Labor – in the Nigerian telecommunication industry.

4.3 The Power of Buyers

According to Porter (2008) a number of factors determine the power of buyer groups in any given industry. Basically a buyer group is powerful if it is concentrated or purchases large

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volumes; the products it purchases from the industry are standardized or undifferentiated; the product it purchases from the industry form a component of its product and represents a significant fraction of its cost; it earns low profits, which create great incentive to lower its purchasing costs; the industry's product is unimportant to the quality of the buyers' products or services; the industry's product does not save the buyer money; the buyers pose a credible threat of integrating backward to make the industry's product.

There are basically two classes of buyers in the telecommunication industry: individual and corporate buyers. Both groups have quality of service and price sensitivity as the most influential factors in their decision making. The overall purchasing pattern of the consumers in the industry, their income, and the value they attach to the industry's products determine the degree of their price sensitivity. The ICT Price Basket (IPB) constructed by the International Telecommunication Union (ITU) is one of the useful statistics for measuring buyer power in the telecommunication industry. ICT Price Basket (IPB) is a composite affordability measure based on three sub-baskets – fixed telephone, mobile cellular and fixed broadband Internet services – and computed as a percentage of average Gross National Income (GNI) per capita (ITU, 2011). Lower values of the IPB mean there is higher pressure from the buyers in the industry, leading to more competitive pricing. The obverse also holds true. Estimates of the ITU (2011) show that there is high buyer power in the developed country's telecommunication industries, relative to the developing countries': the developed countries had an IPB value of 2.0 and 1.5 in 2008 and 2010, respectively representing a 23.5% decline, whereas the developing countries had their values as 20.8 and 17.1 in the same periods, representing an 18% decline. A plausible explanation for this is the understanding that more availability of substitutes/differentiated services, as is the case in developed countries, tends to create higher buyer power. Moreover, low availability of information about the variety of products available, as is the case in developing countries, reduces buyer power.

In Nigeria's telecommunication Industry, buyers can now easily switch from one service provider to another without cost, suggesting the availability of substitutes, and seemingly high buyer power. More so, the rival operators in the industry, for instance the mobile network operators, often engage in extensive marketing and promotion programs to ensure that consumers have adequate information on the variety of services and products on offer. This has apparently accorded the buyers in the industry higher power over time, which reflects in the country's IPB: Nigeria had an IPB of 44.1 in 2008; this declined to 27.2 in 2010, a whopping 38.4% decline, quite higher than the average decline rate of the developing countries as a whole, and making Nigeria one of the ten countries with the highest decline in IPB. Although Nigeria's IPB values are higher than the developing Countries' average earlier stated, it does not suggest lower buyer power in Nigeria; it tends to reflect, more, the higher operating cost of telecom industries in the country (see Osuagwu, 2014).

Notwithstanding the stated high buyer pressure in Nigeria's telecom industry, the fact that the operators in the industry, mainly the four mobile network operators (Airtel, Etisalat, Globacom and MTN), do not have very distinct quality of service, suggests limited incentive for buyers to switch supplier in the face of even pricing. This, alongside the earlier considerations, leads to the conclusion that there is moderate buyer power in the Nigerian telecommunication industry. Table 3 below gives a summary of the power of buyers, showing factors impacting competitive structure of the telecommunication industry.

Table 3: Summary of Buyer Power in the Nigerian Telecommunication Industry

Force	Overall Impact of Force	Sub force	Overall impact of sub force	Factor	Condition	Impact of factor on Buyers
Power of Buyers	Moderate	Not applicable	Not applicable	Price sensitivity	Moderate	Moderate Power
				Switching cost	None	High Power
				Product or Service information availability	High	Moderate Power

4.4 Threat of Substitutes

A substitute performs the same function as an industry’s product but through a different means (Porter, 2008). Three key substitutes are of interest in this study: foreign-managed Voice over Internet Protocol (VoIP) services, Satellite internet and Satellite phones. Analyzing the threat of substitutes requires a look at the price-performance trade-off between the substitute and the industry’s product (Rajasekar& Al Raee, 2013). Porter (2008) highlighted the plight of conventional international phone services providers following the introduction of inexpensive internet-based phone services such as Skype, Viber and Nimbuzz, etc.

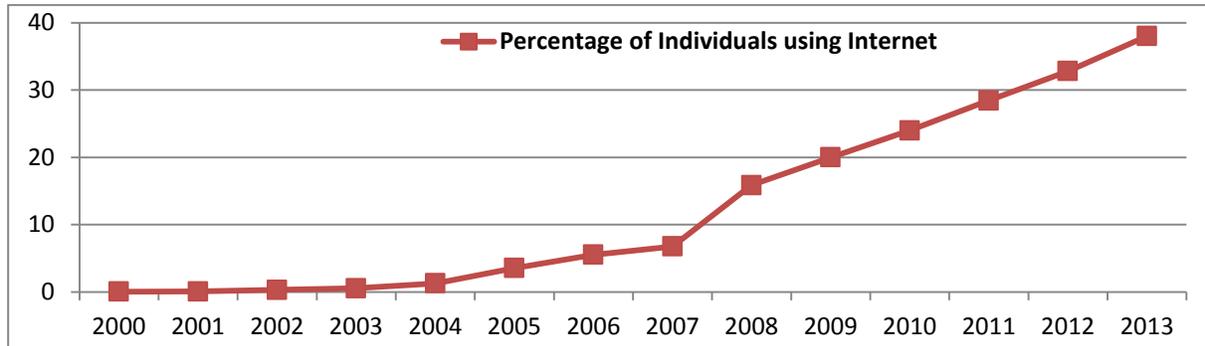
The existence of substitutes for the products and services of any industry imposes a limit on the potential of the industry, as there will obviously be a ceiling on the price of the industry players. Porter (1979) notes that the more attractive the price-performance trade-off offered by the substitute products, the firmer the lid placed on the industry’s profit potential. In the telecom industry, substitutes offer the greatest threat when they can provide consumers with better quality services at cheaper rates. In Nigeria, a number of unconventional internet-based services are in existence, which although are not yet widely used due to, say, lower internet usage by the populace, is actively draining the market for long distance and international calls of the network service operators. Yahoo messenger, Skype, Nimbuzz and more recently Viber are the major VoIP services used as substitutes for traditional telephony in Nigeria. These services are in most cases free, and, where not, are largely cheaper than telephone calls. They are mainly used by the literate population who of course are the major people that make long distance and international calls. The implication is that mobile network operators in Nigeria tend to lose a large chunk of their customers to VoIP services.

Moreover, the fact that VoIP services are legal in Nigeria suggests that such substitute products command enormous powers in the Nigerian telecommunication industry, especially in places where the internet connection over which the service is used is strong and reliable. Presently, high speed internet services such as 3.5G and 4G are widely in use in Nigeria. The cheaper and equally efficient call quality these offer is a threat to network operators in the Nigerian telecommunication industry. This threat is however somewhat limited to areas, say, the major cities where these high speed internet services are enabled. Figure 4 below shows the trend of internet connection in Nigeria. The growing trend of the population connected to the internet seen in the figure is suggestive of higher access to substitute services in the

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Nigerian telecom industry. The fact that this trend will continue to rise over time accords VoIP services even higher power and threat in the industry.

Figure 4: Trend of Internet usage in Nigeria



Source: World Telecommunication/ICT Indicators Database, 2014

Table 4: Summary of Threat of Substitutes in the Nigerian Telecommunication Industry

Force	Overall Impact of Force	Sub force	Overall impact of sub force	Factor	Condition	Impact of factor on Substitutes
Threat of Substitutes	High	Not applicable	Not applicable	Availability of substitutes	Moderate	Low threat
				Price-Performance trade-off	Moderate	High threat
				Switching Cost	Low	High threat

Table 4 above presents a summary of threat of substitutes in the Nigerian telecom industry, showing the factors impacting the competitive structure of the market.

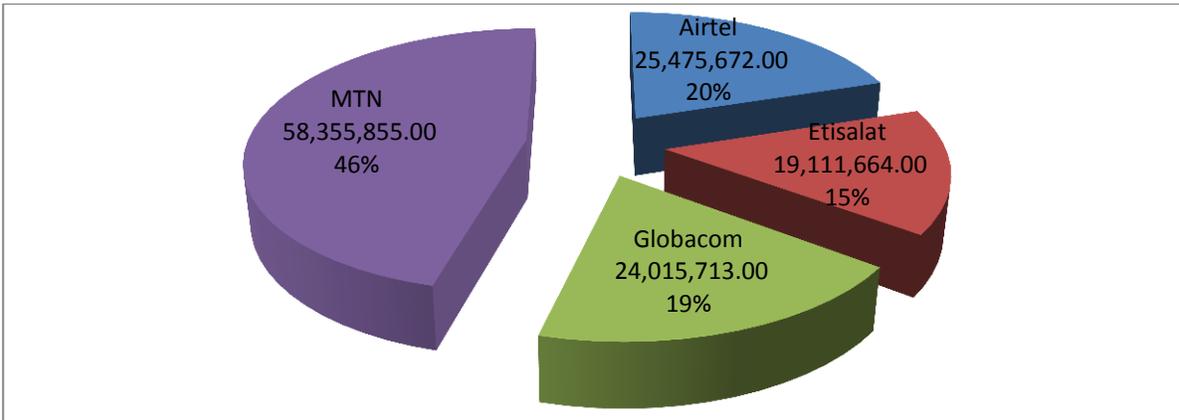
4.5 Competition Among Existing Rival

Traditional economic models have rivalry as one of the key determinants of profitability in any industry. Rivalry intensity is also considered the basic determinant of competitiveness in any industry. Economists measure rivalry using indicators such as Concentration Ratio (CR). The CR indicates the percentage of an industry’s market share held by the four largest firms in the industry. High values of the concentration ratio signify that the industry is concentrated, with only a few firms holding a large market share. The implication is that the industry is less competitive and closer to a monopoly market. On the other hand, a low concentration ratio implies that the industry is characterized by many rivals, and none of them has a significant market share. This industry structure is said to be competitive. Figures 5, 6 and 7 below show the industry market share of the individual telecommunication operators in Nigeria as at March 2014. The values in the figure suggest high operator dominance in the Nigerian telecom industry, with MTN having almost 50 percent of the market share (Airtel has just 20%; Globacom 19%; and Etisalat 15%) in the GSM segment; Visafone Limited has 98 % market

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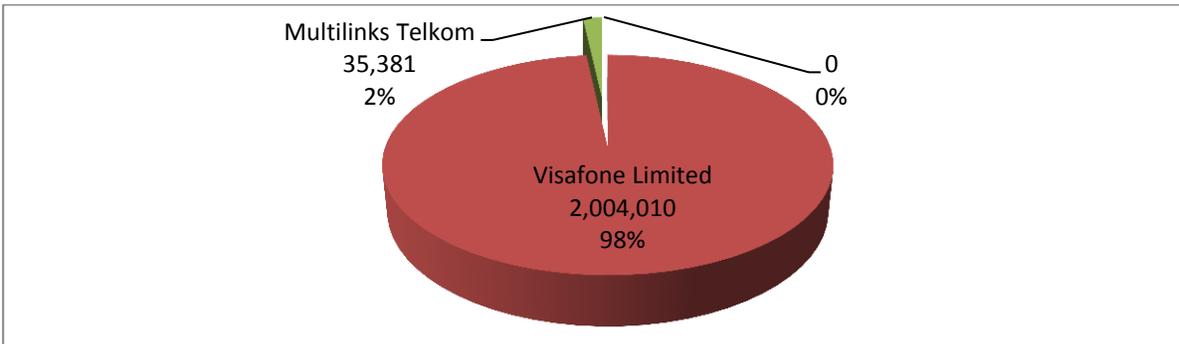
share in the CDMA segment, while MultilinksTelcom has only 2%; 21st Century Technologies and VGC/MTN both has 74% of the market share in the Fixed/Fixed Wireless segment of the market, while GlobacomMultilinksTelcom, Visafone Limited and IPNX all share 26%. Although these values do not suggest even or high competition in the industry; further analysis of the factors influencing rivalry in an industry will be more revealing.

Figure 5: Market Share of GSM Network Operators in Nigeria



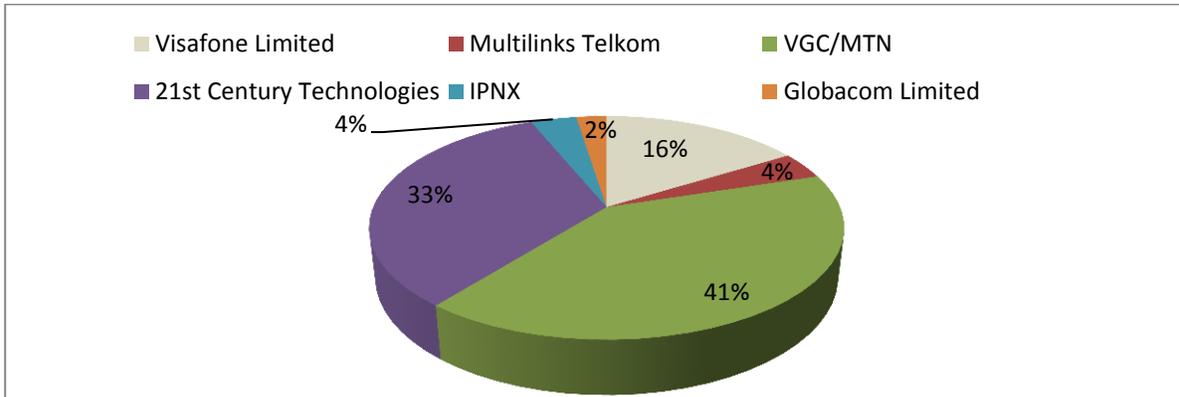
Source: Nigerian Communication Commission, 2014.

Figure 6: Market Share of CDMA Operators in Nigeria



Source: Nigerian Communications Commission, 2014

Figure 7: Market Share of Fixed/Fixed Wireless Network Operators in Nigeria

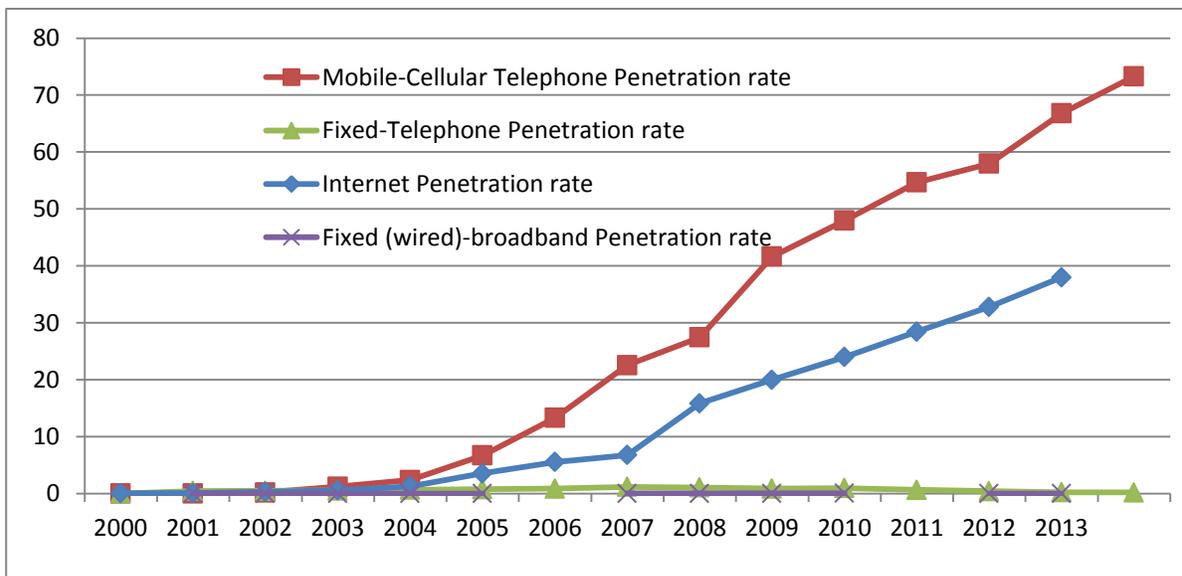


Source: Nigerian Communications Commission, 2014

High rivalry limits the level of profitability in any industry. In the telecom industry, all aspects of rivalry, including price discounting, introduction of new products, service improvements and advertising campaigns play important roles (Rajasekar& Al Raei, 2013). According to Porter, the degree of rivalry depends on the intensity as well as the basis of competition (Porter, 2008).

There are a number of factors that influence the degree of rivalry in any industry. These include Concentration, size and power of competitors, Rate of industry growth, Exit barriers and commitment of rivals, Familiarity among rivals, Price competition, and Competition on dimensions other than price. In the following paragraphs, we adapt the model of Rajasekar& Al Raei (2013) and analyze the threat of rivalry in the Nigerian telecom industry under each of the factors listed above. The impacts of the factors are further summarized in figure 8 and table 5.

Figure 8: Penetration Rates of Telecommunication Services in Nigeria



Source: World Telecommunication/ICT Indicators Database, 2014

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For the services whose penetration rate have grown over time, it can be said that more and substantial growth can be recorded in the near future, since these penetration rate are still relatively low and not yet comparable with that of other nations that have similar market sizes as Nigeria. For the fixed telephone and fixed (wired) broadband segments where no reasonable growth is witnessed, it can be inferred that the growth potentials these telecommunication services has yet to be tapped. Therefore, it can be said in general that the competition in the Nigerian telecom industry is not about scrambling over the pre-existing customers; it is more about acquiring more and newer customers, and growing the entire customer population of the industry.

Table 5: Summary of Rivalry amongst Competitors in the Nigerian Telecommunication Industry

Force	Overall Impact of Force	Sub force	Overall impact of sub force	factor	Condition	Impact of factor on rivalry
Rivalry among existing competitors	High	Concentration, size, power	High rivalry	Network Operators (GSM, CDMA and Fixed)	8	Low
				Financial strength	High	High
				Industry concentration	High	High
				Regulation for limiting no of competitors	None	High
		Rate of industry growth	Moderate rivalry	Past growth rates	High	Low
				Penetration Mobile sector	Moderate	High
				Penetration rates in fixed and internet	High	High
		Exit barriers and commitment	High rivalry	Specialized Assets	Yes	High
				Commitment	Moderate	High
		Familiarity amongst rivals	High rivalry	Signal readings	High	High
		Price Competition	High rivalry	Similarity of product of services	High	High
				Fixed cost	High	High
				Marginal cost	Low	High
				Regulation on price cuts and promotion	High	Low
		Competition on other dimensions	High rivalry	Service features	Varying	High
				Differentiation	Active	Low
				Advertisement and Marketing	High	High

5. Conclusion and Recommendation

The foregoing captures an application of Porter’s five forces model of competitiveness to understanding the Nigerian telecom industry competitiveness. The level of impact each of the forces has on competitiveness in the Nigerian telecom industry were discussed, and the impact of sub-forces and factors were also presented. In table 6 below, a brief summary of the impact of each force is shown.

Table 6: Summary of Impact of Porter’s Five Forces on the Nigerian Telecom Industry

Porter’s Five Forces	Overall Impact on Industry Competitiveness
Threat of entry	High
Power of Suppliers	Low
Power of buyers	Moderate
Threat of Substitutes	High
Rivalry among competitors	High

It can be said from the analyses that, indeed, there is high competition in the Nigerian telecom industry, especially in the GSM segment. This follows from the understanding that the higher the impact of each of the competitive forces in Porter’s model, the higher the competitive pressure that will be exerted on industry operators, which tends to promote overall industry efficiency and better service quality to consumers. Of all the forces in Porter’s model analyzed, only the power of suppliers – NEPs and labor – is found to have low impact on telecom industry competitiveness in Nigeria. The power of buyers have moderate impact, while the threat of entry, threat of substitutes and rivalry among competitors all have high impacts.

These conclusions have crucial implications for both operators and regulator in the Nigerian telecom industry, as well as for other telecom industries with similar institutional and competitive structure. High impact of threat of entry on competitiveness is one of potent forces that can be said to drive better performance in the Nigerian telecom industry, thanks to the right steps of the industry regulator, NCC. The enabling of mobile number portability is one recent action by NCC that has significantly raised the threat of entry, since new entrants would find it a bit easier to compete for existing customers in the industry as well as try to capture other potential users that are not presently being served by industry supply. Capital requirement is another factor that influences threat of entry in the telecom industry. This factor remains high; operational cost is also high in the country relative to other nations. In other words, although it may not be practical or easy to attempt reducing capital requirements for telecom operators in Nigeria – since high capital requirement is an inherent industry characteristic – lots can be done to significantly reduce operational cost, which will further raise the threat of entry, thereby yielding more positive effects on industry performance. A step in the right direction is to address the problem of epileptic power supply in Nigeria. This will significantly reduce the high cost incurred by operators in powering their plants. As a result, more players will want to enter the industry, leading to higher competition nay performance.

The low power of suppliers in the Nigerian telecom industry is not surprising. Similar analyses on other nations’ telecom industry have similar finding (see, for instance, Rajasekar& Al Raee, 2013). The main reason for this finding is that mostly the products and services of NEPs are standardized, which put them on a weaker position relative to their buyers – the network

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operators. More so, in Nigeria's case, the telecom labor force has a weak union, and suffers from the impact of excess labor supply relative to demand in the industry. As a result, operators in the industry find it easier to have their way in market interactions with these suppliers, since they can easily switch should they find a supplier unfavorable. A stronger unionism in the telecom workforce will make the power of suppliers stronger in the industry. It will reduce the plight of labor in the industry, and also weaken the power of operators in interactions with the suppliers. Overall, rising power of suppliers has the potential of reducing the profitability of operators in the industry, and if not well handled could even reduce the threat of entry, as potential entrants could consider the industry a hostile environment where suppliers reign. Regulation could, therefore, attempt addressing the plight of labor in the industry, which really is pitiable, but in so doing should not allow labor to gain much power that they begin to hold the industry and Nigerians in general to ransom – this is has been experienced with different trade unions in Nigeria in recent years.

Additionally, high power of buyers is one force that has strong influence on the discipline of telecom industry operators. As seen, the power of buyers is just moderate in Nigeria. This follows from the history of high customer switching cost in the country which only changed in 2011 when regulations for mobile number portability were put in place. Even so, there is still not much power gained by the buyers. Mainly in the GSM segment of the industry where mobile number portability is operational, it has been argued that the quality of service of the operators is strikingly similar. In addition, many subscribers following prior impossibility of mobile number portability in the industry now have mobile numbers of almost all the mobile network operators in the industry. By implication, there is really little incentive to switch supplier in the market. Notwithstanding this, since mobile penetration is still on the increase in Nigeria, there is no gain saying that new subscribers would now command more power in the market than was the case before mobile number portability became operational. They can easily switch supplier should they find their original supplier less efficient. Also, they can always take advantage of better pricing when it exists. The net result is higher pressure on industry operators to either be more efficient or lose their customers. The regulator also has a big role to play in ensuring that competition among operators does not get destructive to industry long term efficiency, since the bigger players could take advantage of low switching cost to attract subscribers of their competitors by deliberately pricing them out of the market. Also the regulator can do more to make customer switching process easier; this will improve customer willingness to switch, hence raising their competitive force and pressure on operators.

Advanced telecommunication industries often have well developed substitutes for traditional telecommunication voice calls and messaging services. High speed internet which enables efficient VoIP services is always the ready option. In Nigeria, internet penetration is found to be below 50 percent, though on the increase. VoIP services are mostly used in the country for long distance calls. The high growth rate of internet penetration in Nigeria, and the absence of restrictions on the use VoIP services, give VoIP and similar services strong substitute power in the Nigerian telecom industry. Needless to say, the growing popularity of VoIP will dampen the profit of mobile network operators over time. Operators should, as a result, achieve less cost for their service, improve the quality of long distance calls, or lose customers to VoIP. On the part of the regulator, measures should be put in place to hasten high-speed internet penetration in both urban and rural areas. NCC should also monitor and achieve affordable

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fees for internet subscription so as to ensure that industry gains from high substitute pressure are not undermined.

More so, for sustainable efficiency gain in any competitive market, high rivalry amongst competitors is sacrosanct. This has been shown to be the case in the Nigerian telecom industry. High rivalry amongst operators in the industry has led to diverse service options developed over time, low cost of service, and even significant decline in initial cost of subscribing to the service of any operator. It could be rightly argued that the industry's history service reliability is chequered, yet it is factual that, overall, there has been improvement over time – again thanks to high rivalry. More declines are expected in industry service costs. This is, however, being constrained by, amongst other things, the dominance of some operators who have the power to influence some industry costs – both MTN and Globacom play in the wholesale and retail sub-segments of the industry, they have the leverage to influence the retail prices of their competitors or squeeze their margins since they are also their customers (NCC, 2013). Therefore, stricter regulatory oversight is required to achieve more even competition among rivals in the Nigerian telecom industry. The regulator needs to ensure that dominant operators do not use their advantage to suppress industry improvement and benefits to consumers. Stricter sanction could be put in place against default to ensure that established standards are met. Additionally, rivals ought to seek innovative strategies to win customers aside just pricing. One clear path is to improve service quality; another is to develop service options that will best suit different social/income classes in the economy; finally, services could be extended to presently unserved regions using perhaps cheaper technology that can be improved over time to make up for the present low commercial viability of these regions. These will yield fruitful competition among rivals, to the benefit of the industry and economy as a whole.

In sum, the Nigerian telecom industry is growing. The competitive forces analyzed have great impacts on the future sustainable growth of the industry. Efforts on the above lines could be very helpful in unleashing the great potentials of the industry, as well as creating much greater value for the consumers. The regulator has a big role to play in ensuring that each of the five competitive forces remains very potent and to the industry's advantage.

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