2007 Nigeria Telecommunications Sector Performance Review
a supply side analysis of policy outcomes
IKE MOWETE
Nigeria
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Nigeria
This report presents a comprehensive review of the performance of the post-reform Telecommunications and ICT sector in Nigeria, using the performance indices specified and adopted by the ITU. In particular, the review examines the effectiveness of the country’s ICT/TELCOM policy and regulatory instruments, by weighing the goals and objectives set forth therein against actual performance, as reflected by the conventional performance indicators. Details of these goals and objectives are specified by the National Telecommunications Policy (NTP), National Information Technology policy (NITP), and the Communications ACT 2003, in which sector regulatory responsibilities to National Frequency Management Council (Spectrum Allocation), National Broadcasting Commission (Radio/TV Broadcasting), and the National Communications Commission (Telecommunications, including Internet Services) are assigned. In addition to these organs, there is the National Information Technology Development Agency, whose responsibility through the Federal Ministry of Science and Technology is for IT policy implementation, and National Space agency for the space communications issues.

The market regime that emerged from the implementation of the strategic specifications of the policy statements is as envisaged by the NTP, characterised by multiple operators providing telecommunications and ICT services in a largely competitive market environment. Indeed, at the time of this report, Nigeria had two national carriers, four mobile telephony services providers, 22 fixed telephony operators, 52 VSAT operators, as well as 36 registered Internet service providers. 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 stood at about 6.4 million, representing about 26% of the sector’s total subscription. CTEL, an earlier close rival of MTN, has 24% of the market share, 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 in the main.

The review’s finding revealed that private investments in the telecommunications sector, which stood at US$500 million in 1999 rose to US$1.2 billion in 2001 and was in excess of US$10 billion by the end of 2006. Indications are that this trend will continue in 2007, particularly with the imminence of a “unified licence” regime, under which, with the termination of the exclusivity period granted to pioneering operators of mobile telecommunications services, operators can obtain licences to offer the range of services available within the sector. As may be expected, this growth in private investment impacted positively, and proportionately, on the sector’s employment profile. For example, in 1999, the total number of employees in the communications sector was 17,409, representing 0.48% of the total employment figure, but by 2005, the figures had increased respectively, to 467,260 and 10.32%. From the point of view of real growth in access to ICTs, the sector performance may be rated as satisfactory because penetration statistics suggest that the penetration rate, particularly for the rural areas where majority of the citizens reside, is still rather low. Data obtained from the National Bureau of Statistics (NBS) and the National Communications Commission show that the total number of Internet users in Nigeria was as low as 107,194, and that whereas this number increased ten-fold to 1,769,661 in 2004, and to 2,040,814 in 2006, the penetration rate has yet to approach 5%. Even then, the majority of the users are urban dwellers, most of whom (close to 80%) reside in Lagos, Nigeria’s commercial capital. On the other hand, the telephony penetration rate (teledensity increased from less than 2% in 2000 to close to 25% by 2006) has steadily increased, evidently due to subscriptions to mobile communications services, which in 2006 accounted for some 95% of the total telephony subscription base. It is noteworthy that over the years, pre-paid subscribers have consistently outnumbered contract subscribers, the figure in 2006 being some 21,000,000 for pre-paid compared with about 200,000 contract subscribers. One of the main achievements of the reform model in use concerns the significant reduction in call tariffs, typified by the fact that in 2000, before the introduction of market reforms, international calls cost an average of NDN130 per minute; but by 2006 the rate had fallen to less than NDN30 per minute, with indications that more reductions will be recorded in future.

The review concludes that, in the main, market entry in the sector has become much easier than before, and that this has not only attracted remarkable increases in the level of investment, but that the resulting level of competition has contributed to significant reductions in telephony tariff regimes. Although some 520 operators were granted licences to operate as Internet Service Providers (ISPs), most of them using VSAT technologies to support about 2,350 Cybercafés nationwide, the
Internet penetration rate has remained low, evidently because of the cost of acquiring personal computers. Most Nigerians perceive the main sector regulator (NCC) as effective in several areas, but that effectiveness has yet to translate into compelling the mobile communications operators to improve the quality of voice communications services, which is poor indeed. Access to the ICTs in rural areas remains a big issue some five years after market liberalisation; nonetheless, it would appear that the Universal Access policies, which were being implemented at the time of this review, have the potential of making the difference and hence realising one of the core objectives of market reforms.

On average, the review finds that the sector in Nigeria has performed satisfactorily when rated in terms of the conventional performance indicators, but that there is a lot of room for improvement, particularly in the areas of quality of service and universal service.
**Nigeria**

**Introduction**

For the developing countries of the world, the most compelling arguments for the adoption of policy reform models for the telecommunications and ICT sectors are those concerning predictions of accelerated socio-economic development with the potential of alleviating poverty and more generally, improving standards of living. It follows therefore, that any assessment of the performance of a developing country’s ICT sector necessarily measures the extent to which the sector has contributed to growth and associated national development aspirations. This is done using the metrics of performance indicators, including cost, spread, density, quality, and depth of use in daily living, of the telecommunications and ICT services in that country. As pointed out by Ndukwe (2005), the ability of market reform models to eventually deliver on the promises of growth is not in doubt, but the experiences of several developing nations indicate that the degree of success depends significantly on the nature and peculiarities of the market environment. In the case of Nigeria, Ndukwe suggests that the delay in the privatisation of the incumbent had some negative impacts, which, nonetheless, did not adversely affect net performance, mainly because of a “fair, firm, and forthright regulatory environment”. In a related contribution, Wills and Daniels (2003) took the position that the “extensive cost distribution model” adopted by Nigeria for the deregulation of the telecommunications market, and which witnessed the licensing of several small operators as a tool for effectively meeting market demands, has been largely successful, but at the cost of certain regulatory challenges, including managing a rather complex market. One important implication of the foregoing observations is the view that when the regulatory environment is well-organised, the ICT sector can grow and contribute to economic growth, even if the policy framework is lacking in some other desirable respects.

It is the main objective of this presentation to review the performance of the ICT sector in Nigeria (as part of a continent-wide review), towards establishing, to the extent that it is possible to do so, a measure of how policy implementation has reflected specific policy objectives. The review starts with a brief description of the policy and regulatory environment as defined by the existing policy framework, institutional arrangements, nature of competition issues, regional and GATS commitments, and new policy developments. Attention is then focused on the country’s market structure and examines the status of access to the ICTs, as measured in terms of the rural/urban divide profiles of mobile communications and Internet use data. After reviewing the cost of ICT usage, an analysis is undertaken to determine the extent to which performance compares with planned objectives, and based on that analysis, challenges faced by sector regulation in the country are identified and briefly described. This is followed by concluding remarks, including indicated recommendations for the improved performance of the sector.

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1 See Telecommunications Sector Performance in 16 African Countries; a supply-side analysis of policy outcomes [www.researchICTAfrica.com](http://www.researchICTAfrica.com)
Policy and Regulatory Environment

It may be said that the protracted process of market reform in Nigeria’s ICT sector effectively began in 1999, when the Privatisation and Commercialisation Act was passed into law. This event was quickly followed by the establishment of the Bureau of Public Enterprises (BPE) as the policy implementation organ. Prior to that, the promulgation of Decree 75 of 1992 established the Nigerian Communications Commission (NCC). Its mandate at the time included supervising the telecommunications sector, establishing and maintaining technical standards, ensuring fair play and competitiveness, protecting licensees and consumers, and ensuring rapid growth in the sector. But it was not until the advent of the Telecommunications Act (passed into law in 2003), which reformed the NCC, that the drive towards significant privatisation began to yield fruitful results. The focus of this section is on the policy and regulatory environment of the sector, starting with a review of the existing policy instruments.

Policy Framework

A national Information Technology Policy was approved by the Federal Executive Council of Nigeria in March 2001. This 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 by the year 2005, using IT as the engine for sustainable development and global competitiveness”. The policy’s general objectives and strategies for implementation are set forth in the policy document (FGN, 2003) and include the following:

- establishing institutional frameworks at all tiers of government (Federal, State, and Local);
- adopting open standards as a means of achieving eventual complete sector liberalisation, and instituting fiscal measures (including incentives towards the improvement of teledensity figures), which will make IT affordable and available to all citizens;
- forging a formal, organised, and sustainable public/private collaboration, focused on the attainment of national self-reliance in ICT; and
- utilising the opportunities offered by IT to enhance access to government information and facilitate interaction between citizens and government.

Another notable development in the evolution of the policy framework occurred in July 2003, when the Nigerian Communications Act 2003
was signed into law to reconstitute the NCC as the main regulatory organ responsible for policy implementation in that sector. The Act specifically requires the NCC to promote "fair competition in the communications industry", protect communication services and infrastructure, and enforce compliance by all operators with their licence conditions.

**Institutional Arrangements**

The institutional arrangements in place for the implementation of the policy objectives recognise the NCC as the regulator of the telecommunications sector and the Nigerian Broadcasting Commission (NBC) as the regulatory body for radio and television broadcasting. Frequency management is the responsibility of the National Frequency Management Council, and the National Information Technology Development Agency (NITDA) is assigned the responsibility of implementing the objectives of the National Policy on Information Technology, USEIT (FGN, 2001).

**The National Information Technology Development Agency (NITDA)**

The National Information Technology Development Agency (NITDA) came into being in March 2001, when the Federal Executive Council formally approved its establishment with the main responsibility of implementing policy objectives. According to the Agency’s pioneering Director General, (Ajayi, 2002), NITDA faced an initial challenge of devising a means of attracting significant contributions from the private sector, general public, and international institutions, particularly in carrying out a baseline study in various areas of IT development. This challenge, and the agency’s interpretation of its assigned responsibilities evidently informed NITDA's Strategic Plan for Implementation (NITDA, 2005), whose stated main focus is on capacity building; human resources, infrastructural, and institutional. According to Ajayi (2005), the expectation of the agency is that by replicating NITDA at the other two tiers of government (local and state), the objectives of institutional capacity-building can be attained. By instituting a Public Services Network at all tiers of government, e-government can be brought about, and thus, the strategic goal of institutional capacity-building can be achieved. In addition to these implementation strategic objectives, NITDA constituted a committee of professionals representing various sections of the civil society and Nigerians in Diaspora (notably NITPA) which prepared a long-term national strategic plan of action. In particular, the committee recommended the “use of the strategy to plug into global, regional, and sub-regional debates or initiatives” particularly advancing human development.

**The National Frequency Management Council**

Under the provisions of the Communications Act 2003 the organs of government responsible for the management of the radio frequency
spectrum are the Ministry of Communications, the National Frequency Management Council (NFMC), the Nigerian Communications Commission, and the National Broadcasting Commission. The Act specifies the functions of the NFMC as including the development of the national frequency plan and the allocation of frequencies.

THE MINISTRY OF COMMUNICATIONS
All frequencies in Nigeria are under the custody of the Ministry of Communications under the Communications Act. And it is this ministry that is responsible for spectrum use issues at the sub-regional, regional, and international levels, particularly the ITU (FGN, 2003).

NATIONAL BROADCASTING COMMISSION
This organisation was established by Decree number 38 of 1992, as amended by Decree 55 of 1999, with responsibilities extending to the ownership and operation of radio and television stations, including cable TV services and any other media of broadcasting, as well as the spectrum management issues associated with them.

NATIONAL COMMUNICATIONS COMMISSION
The NCC was established during the military government era of 1992 when Decree 75 was promulgated to vest regulatory authority for Nigeria’s telecommunications industry in the NCC. That enabling decree gave the NCC, as it was then constituted, the responsibility of supervising telecommunications services provision, establishing technical standards, ensuring fair play and competitiveness, protecting licensees and the consumer alike, and generally ensuring the efficient growth of telecommunications in the country. In July 2003, the Nigerian Communications Act was signed into law by the President, and in addition to effectively reforming the NCC, the Act created the National Frequency Management Committee, which as earlier noted, has the responsibility of management of the radio frequency spectrum in the country. The Act 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).

There are a number of other provisions of the Act that are of relevance to this report, the most important of which concerns Universal Access/Universal Service, for which 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 underserved areas, or for unserved groups within the community.
Nigeria

COMPETITION ISSUES AND GATS COMMITMENTS

Nigeria’s membership of the WTO resumed on 01 January 1995, after the ratification of the WTO agreement on 06 December 1994, though as pointed out by a WTO Trade Policy Review (WTO, 2005) the instrument that established the WTO (Marrakech agreement) has yet to be incorporated into the country’s law. This has created ambiguities about the legal status of WTO obligations. The WTO’s review under reference here suggests that traders and investors find themselves unable to invoke provisions of the WTO agreements in local courts because the agreements have not been accorded the force of law in the country. It is noteworthy that although a number of notifications were required to be sent to the WTO by the country under agreement, obligations remain outstanding: notifications concerning Nigeria’s specific commitments (as indicated in Table I below) (WTO, 2005).

TABLE 1: NIGERIA’S SCHEDULE GATS COMMITMENTS- COMMUNICATION SERVICES

<table>
<thead>
<tr>
<th>SECTOR-SPECIFIC COMMITMENTS</th>
<th>Limitations on Market access</th>
<th>Limitations on national treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding Sector or Sub-sector</td>
<td>2. COMMUNICATION SERVICES</td>
<td>C. Telecommunication Services</td>
</tr>
<tr>
<td>7521 Sale/installation</td>
<td>1), 2), 3), 4) None</td>
<td>1), 2), 3), 4) None</td>
</tr>
<tr>
<td>of terminal equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7522 Operating pay phones</td>
<td>1), 2) Not applicable</td>
<td>1), 2) Not applicable</td>
</tr>
<tr>
<td>7523 Mobile communications</td>
<td>1), 2) Unbound</td>
<td>1), 2) Unbound</td>
</tr>
<tr>
<td>cellular, paging, etc.</td>
<td>3), 4) None</td>
<td>3), 4) None</td>
</tr>
<tr>
<td>7523 Value added services</td>
<td>1), 2), 3), 4) None</td>
<td>1), 2), 3), 4) None</td>
</tr>
</tbody>
</table>

Source: [http://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_commit_e exempt_list_e.htm](http://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_commit_e exempt_list_e.htm)

Notes: The numerals in column three of this table refer to issues concerning “cross-border supply” (1), “consumption abroad” (2), “commercial pressure” (3), and “presence of natural persons” (4) as described in the reference cited above. In column two, the number 2 refers to a footnote, which observes “that provisions of any service across the border by passing the network or diverting international traffic from NITEL is not permitted, and such measures can only be done in cooperation with NITEL."

Competition issues are addressed by a recent publication of the NCC’s Competition Practises Regulations 2006, which the Commission describes as “the regulatory framework for the promotion of fair competition in the communications sector, and protection against misuse of market power or other anti-competitive practices” including definitions of market dominance and abuse as well as merger procedures NCC (2006).
In addition to these regulations, the NCC, through another publication (NCC, 2003) gave specific attention to interconnection of telecommunications networks. The commission’s guidelines on the issue (NCC, 2003) provide a detailed set of rules meant for application during interconnection negotiations and dispute resolution. The guidelines extend over the general responsibilities of the commission, definitions for interconnection and dominant market position, rights and obligations (including significant obligations imposed on dominant operators) of interconnection, interconnection principles - transparency, non-discrimination, and cost orientation, good faith negotiations, accounting separation, and interconnection charges and costs, to mention a few. These guidelines inform, among several other things, (NCC, 2003), that:

- during the period of transition to full competition, the NCC will limit the extent of the obligations of the dominant operators, so as to avoid the possibility of over-regulation;
- asymmetric regulation will be utilised as a tool for guaranteeing access by non-dominant operators to interconnection services. As soon as the market becomes completely competitive in terms of interconnection, arrangements with the hitherto dominant operators for interconnection will be deregulated;
- interconnection with other operators is the right of every operator, regardless of type of technology employed, and operators are obliged, when requested to do so, to negotiate with other operators that demand interconnection; except in the event that technical limitations make it impossible to accommodate the request.

It is expected that further improvements in the policy and regulatory environment will be recorded when the Federal Competition Bill, which proposes to establish a Federal Competition Commission is passed into law. According to its authors, the bill is designed to “provide the necessary conditions for market competition and to stimulate creative business activities, protect consumers and promote the balanced development of the national economy by prohibiting restrictive contracts and business practices that substantially lessen competition and preventing the abuse of dominant position of market power and anti-competitive business combines, and to establish the Federal Competition Commission for the effective implementation and enforcement of this bill and for matters concerned therewith”.

(http://www.bpeng.org/docs/Competition%20Bill%20(Draft).doc)
NEW POLICY DEVELOPMENTS

The main policy development during the period under review concerns the termination of the exclusivity period for digital mobile licences, and the consequent introduction of unified licences. In February 2005, the NCC served notice of its intention to introduce a unified licensing regime, explaining that the measure is to facilitate the opening up of the market by allowing existing fixed wireless and mobile licensees to provide both service types, subject to the geographical / regional limitations imposed by their licences. Furthermore, the commission stipulated that the post-exclusivity period will be characterised by licences that permit the licensee to offer voice, data, or multimedia services, as deemed fit, once spectrum is assigned, with all wireless licences awarded before the expiry of exclusivity amended to reflect the new position, (NCC, 2005). After the expiry of the consultation period on 10 January 2006, a framework (see Annexure I) for the unified licence was issued by the NCC. The provisions of that framework acknowledge “the current trend of increasing convergence of telecommunications services” as well as recent developments in sector regulatory practices, which indicate bias in favour of the use of general authorisations and class licences as tools for regulating market entry. It is further noted by the NCC that conventional wisdom suggests that as markets become more mature, regulators should become more disposed towards reducing regulatory intervention at the point of market entry, relying instead on general conditions and ex post regulatory remedial action, and industry self-regulation. The new licensing framework encourages the growth of new applications and services through a simplification of existing licensing procedures to ease market entry and operations, regulatory flexibility to enable ready accommodation of market and technological developments and promotes efficient utilisation of network resources by encouraging the use of individual networks for the provision of a broad range of services.

It is worth noting that during the final consultation period, the Commission invited comments and suggestions from the existing operators and other industry stakeholders. As may be expected, the operators of fixed wireless services welcomed the development, whilst the mobile wireless service operators had several objections. For example, MTN and V-mobile both suggested that NCC’s declaration of intention was in reality a move towards restructuring the market as defined by the national telecommunications policy, to which the NCC responded that it was not only consistent with the objectives of liberalisation, easy market entry, and modernisation in accordance with international best practices; but also with the National Telecommunications Policy, which has provisions for Multi Services Access operators’ licences. The commission also disagreed with a suggestion by CELTEL (then known as V-Mobile) that the proposed regime will send negative signals to investors, because of the operator’s opinion that it will distort business
plans. In its response, the NCC observed that the exclusivity period was for five years to the knowledge of the international community, and that the fact that Government kept faith in that regard should make investors favorably disposed towards the country. However, it appears to be in agreement with MTN’s position that the capital outlay required for meaningful participation in the unified licence era makes a strong case for the “provision of subsidies, concessions, and / or financial incentives to operators” that are found deserving, in terms of previous contributions to national transmission capacity.

REGIONAL COOPERATION ON POLICY AND REGULATORY ISSUES

Africa remains the main focus of Nigeria’s foreign policy, and this has informed the nature and scope of the country’s regional cooperation on policy and regulatory issues. Thus apart from her membership of the African Telecommunication Union and the International Telecommunication Union, policy and regulatory issues often focus on sub-regional (ECOWAS, WATRA) and regional cooperation and policy integration. In this section, the report gives brief descriptions of these issues from the WATRA and ECOWAS points of view, as representative examples of the issues of interests.

ECOWAS

The main forum for regional cooperation and economic integration in the West African Sub-region, is provided by the Economic Community of West African States (ECOWAS), a regional organisation of 15 member states that was established in 1975. In December 2000 the West African states that form the membership of ECOWAS adopted decision A/DEC.7/12/00 (ECOWAS, 2004), as the ECOWAS information communication policy. This decision abrogated decision C/DEC./5/90 (concerning an ECOWAS priority program of action on information) and includes a number of provisions, which define the region’s formal policies for regional cooperation in telecommunications and Information Technology. In 2001 the West African Economic and Monetary Union (UEMO) adopted a recommendation, whose objectives centered on the improvement of ICT infrastructures and services in member states. The recommendation in question identified a need for the harmonisation of regulatory frameworks through a committee of regulators to serve as a platform for interaction between operators and service providers necessary for the liberalisation of telecommunications markets and provision of new ICTs. This was echoed by another resolution of ECOWAS ministers (ECOWAS, 2004) to harmonise regulatory frameworks and institutions, develop a regional regulatory organ, and to facilitate the installation of a regional backbone, reliable and robust enough to support seamless connectivity in West Africa. As part of the policy implementation process, ECOWAS, as an organisation, has embarked upon a number of projects aimed at physical integration,
including efforts towards the interconnection of existing networks in the areas of telecommunications, transport, and energy.

**WEST AFRICAN TELECOMMUNICATIONS REGULATORS ASSOCIATION /ASSEMBLY (WATRA)**

One of the key provisions of the ECOWAS revised treaty is informed by the recognition of a need for cooperation at regional level in order to develop essential infrastructure that will enhance the level of socio-economic activities in the region. As noted by Ndukwe (2003), because telecommunications is considered pivotal to the promotion of socio-economic development, the building of technical capacity required for an effective regulatory regime is an imperative, which need, can be met through the exercising of the option of sharing resources, facilities, and experience as a means of instituting affordable but effective regulatory organisations. Ndukwe (2003) further observes that in addition to cost considerations, investors are known to be favorably disposed to those regions where standards and regulatory processes are uniform. Evidently persuaded by these and similar arguments, Telecommunications / ICT regulators in the sub-region came together in September 2000 to form the West African Telecommunications Regulators Association (WATRA), which is now known as the West African Telecommunications Regulators Assembly.

Nigeria, which through the NCC has almost single-handedly funded WATRA from inception, is very strongly committed to the ideals of the organisation, which include the establishment of modern legal and regulatory structures in all member states, and encouragement of the creation of independent regulatory organisations in countries where none exists. It also works towards the harmonisation of regulations concerning service pricing and delivery across the region, and encourages initiatives directed at increased market liberalisation and introduction of competition. It aims to facilitate the exchange of ideas and contributions to the development of policies that will promote universal access in the region. as well as the conceptualisation and formulation of an eventual recommendation for an ICT master plan that will set policy objectives and milestones for the modernisation of ICT infrastructure and service delivery (WATRA, 2000).
Market Structure

The market structure that evolved in Nigeria was informed by the main objective of the country’s National Telecommunications Policy, “to establish a long-term telecommunications market structure in which multiple operators provide service on a competitive basis to the broadest range of customer” (FGN, 1992). The policy envisaged that with such a structure, the appropriate and sustainable levels of prices charged by carriers for access to their services would be determined by market forces. In implementing this policy, the NCC in endeavoring to ensure that the objective of increasing telephony is achieved, utilised what Wills and Daniels (2003) refer to as “infrastructure licensing”. Today, the market is characterised by a positive impact of liberalisation occasioned by a relatively fair and stable policy and regulatory regime with intense participation by the private sector. Many observers such as INTELCON (2006) hold the view that with a large and sophisticated young population, the opportunities offered by the country are huge, and that increasing competition has yet to satisfy the strong demand for services.

MARKET SHARE

There are two national carriers in Nigeria, namely: NITEL, in which TRANSCORP has acquired majority shares in a recent conclusion of a drawn-out privatisation process, and Globacom, which is deploying a fiber optic backbone along specific routes. Of the four licensed long-distance operators, SEPSKOM has had its licence revoked whilst the three others have yet to commence operations. At the time of this report, four mobile communications concerns (MTN, CELTEL (V-Mobile), MTEL, and GLOBACOM) were in operation, but a fifth licence had been awarded to the UAE-based Mubadala Development Company. In addition to these operators, there are quite a few private telephone operators (PTOs) mainly offering fixed wireless services (Table 2).

<table>
<thead>
<tr>
<th>SERVICE CATEGORY</th>
<th>NUMBER OF OPERATORS &amp; SERVICE PROVIDERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1999</td>
</tr>
<tr>
<td>National Carriers</td>
<td>1</td>
</tr>
<tr>
<td>Mobile (GSM)</td>
<td>1</td>
</tr>
<tr>
<td>Fixed Telephony</td>
<td>9</td>
</tr>
<tr>
<td>VSAT Networks</td>
<td>N/A</td>
</tr>
<tr>
<td>Internet Services</td>
<td>18</td>
</tr>
</tbody>
</table>

*Including three Fixed Wireless Access (FWA) Operators**Including four Fixed Wireless Access (FWA) Operators
As can be seen from Table 2, the number of national carriers and mobile telephony operators has remained unchanged since 2001, but the number of fixed telephony operators has increased steadily from 16 in 2001 to 22 in 2004. 51 VSAT networks were licensed in 2003 and an additional network came into existence in 2004. Figures 1(a) and 1(b) reveal that MTN (with a subscription base of about 10,376 million registered subscribers) has about 41% of the market share, followed by Globacom, whose subscription base of about 6.4 million subscribers, represents 26% of the total subscription, as at September 2006 (Farroukh, 2006).

These figures are only slightly different from those provided by Odufuwa (2006), whose figures indicate, as shown in Figure 1(b), that Globacom may have a slightly lesser market share, and MTEL, a slightly bigger share than what Figure 1(a) suggests.
MARKET INVESTMENTS

The investment climate continues to improve steadily, with private investments increasing from a value of US$50 million in 1999 through US$1 200 million in 2001 to some US$6 080 million in 2005, according to the figures released by the Federal Government, (Ogbu, 2006). The investment displayed in Figure 12.2 below includes a projection that by the end of 2007, private investments should have risen in excess of US$12bn.

FIGURE 12.2: PRIVATE INVESTMENTS IN TELECOMMUNICATIONS IN NIGERIA

![Graph showing private investments in telecommunications in Nigeria from 2001 to 2007.](source: Odufawu, 2006; Ogbu, 2006)

This prediction is supported by available data (NCC, 2005), which reveal that recent massive investments include US$43m invested in STARCOMMS by ARCTIS and Emerging Market Partnerships, the US$1.4bn representing MTN’s capital expenditure on network roll-out in 2004, a financing deal to the tune of US$1.2bn put together by V-Mobile, (CELTEL) for the expansion of its network nationwide, and the US$675m contract that Globacom awarded to ALCATEL for the installation of mobile lines, switches and 100,000 fixed lines. It should also be noted that Ahmad Farroukh, MTN (Nigeria)’s Chief Executive Officer reported (Farroukh, 2006) that the company’s financing situation as at September 2006 is characterised by the following facilities:

Foreign Facilities:
- N 5.4bn, a long-term facility from Standard Corporate Merchant Bank (SCMB)
- N 9bn, a long term facility from the International Finance Corporation (IFC)
- N 4bn, a long term facility from the Development Finance Institutions (DFI)

Local Facilities:
- N 49.1bn, offered as a long term facility by a consortium of local banks.
EMPLOYMENT PROFILE

One of the surprising findings of the research is that operators of mobile services are unwilling to give information about their company’s employment profiles, which explains the absence of readily available and reliable data about employment statistics in the telecommunications and ICT sector. What appears certain is that the telecommunications industry ranks as the fastest growing employer of labour, which in 2004 was reported to have created some 5,000 new jobs and over 400,000 indirect jobs through dealerships, retail outlets, one-man phone shops, recharge card business, and phone technicians, (IM Diversity 2005, quoting the NCC as source of information). Farroukh (2006) indicates that MTN has between 167 and 230 registered distributors, 10,000 sub-dealers, 30,000 sub-sub-dealers, and 50,000 retail points / hawkers.

Data obtained from some fixed services operators are as follows:

- MTS first 200 full-time staff
- MONARCH 76 full-time staff
- CELLCOM 119 full time staff
- STARCOMMS about 580 full-time staff
- NITEL about 20 000 full-time staff
  (with retrenchments pending after recent privatisation)
- MTEL 922 full-time staff

However, statistical data obtained from the National Bureau of Statistics (NBS 2006) reveal that the telecommunications sector has been the biggest single source of employment generation in Nigeria. As seen from Table 3 below, the total number of employees in the telecommunications sector increased from 17,409 in 1999 to 19,682 in 2001, and rose from this figure to 1,545,674 in 2005.
TABLE 3. TOTAL NUMBER OF EMPLOYEES IN SOME SECTORS OF THE NIGERIAN ECONOMY 1999-2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Agriculture</th>
<th>Manufacturing and Production</th>
<th>Building and Construction</th>
<th>Hotels, Restaurants &amp; Tourism</th>
<th>Transport</th>
<th>Communications</th>
<th>Educational Services</th>
<th>Mining &amp; Quarrying</th>
<th>Utilities</th>
<th>Banking</th>
<th>Distributive Trade</th>
<th>Private</th>
<th>Professional Services</th>
<th>Real Estate &amp; Business Services</th>
<th>Health</th>
<th>Finance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>76,540</td>
<td>1,916,781</td>
<td>29,057</td>
<td>537,067</td>
<td>154,693</td>
<td>17,409</td>
<td>8,228</td>
<td>86,137</td>
<td>14,896</td>
<td>26,283</td>
<td>140,577</td>
<td>7,047</td>
<td>75,004</td>
<td>305,860</td>
<td>24,108</td>
<td>24,108</td>
<td>3,659</td>
</tr>
<tr>
<td>2001</td>
<td>80,702</td>
<td>1,905,077</td>
<td>476,454</td>
<td>572,939</td>
<td>179,180</td>
<td>28,342</td>
<td>12,444</td>
<td>187,373</td>
<td>14,565</td>
<td>24,274</td>
<td>162,478</td>
<td>7,630</td>
<td>85,552</td>
<td>318,367</td>
<td>28,189</td>
<td>28,189</td>
<td>3,568</td>
</tr>
<tr>
<td>2002</td>
<td>81,254</td>
<td>1,849,207</td>
<td>476,454</td>
<td>556,216</td>
<td>192,873</td>
<td>315,682</td>
<td>18,402</td>
<td>199,514</td>
<td>14,481</td>
<td>24,086</td>
<td>177,084</td>
<td>7,797</td>
<td>85,552</td>
<td>346,082</td>
<td>28,747</td>
<td>25,350</td>
<td>3,504</td>
</tr>
<tr>
<td>2003</td>
<td>88,386</td>
<td>1,944,024</td>
<td>409,933</td>
<td>544,291</td>
<td>198,873</td>
<td>315,683</td>
<td>20,384</td>
<td>21,887</td>
<td>15,172</td>
<td>24,453</td>
<td>183,549</td>
<td>8,041</td>
<td>94,283</td>
<td>347,082</td>
<td>355,726</td>
<td>26,846</td>
<td>4,244</td>
</tr>
<tr>
<td>2004</td>
<td>100,513</td>
<td>1,987,518</td>
<td>398,798</td>
<td>538,214</td>
<td>189,142</td>
<td>325,047</td>
<td>21,887</td>
<td>25,781</td>
<td>15,448</td>
<td>25,312</td>
<td>190,048</td>
<td>9,594</td>
<td>93,986</td>
<td>330,042</td>
<td>330,042</td>
<td>52,398</td>
<td>4,523</td>
</tr>
<tr>
<td>2005</td>
<td>12,376</td>
<td>1,912,906</td>
<td>431,731</td>
<td>520,556</td>
<td>241,354</td>
<td>467,299</td>
<td>25,781</td>
<td>35,862</td>
<td>14,896</td>
<td>29,893</td>
<td>196,511</td>
<td>10,206</td>
<td>103,348</td>
<td>310,842</td>
<td>330,042</td>
<td>52,398</td>
<td>4,523</td>
</tr>
</tbody>
</table>

(Source: NBS 2006)

A graphical comparison of the numbers for selected sectors is displayed in Figure 3(a), whilst Figure 3(b) graphically describes the real growth rate associated with employment in some key sectors.

FIGURE 3(A). COMPARISON OF TOTAL NUMBER OF EMPLOYEES IN SOME KEY SECTORS
Evidently, the employment growth rate in the communications sector far outstripped that recorded by the other sectors, including the banking sector, for which employment growth rate became comparable with that obtained in the communications sector between 2004 and 2005, when mergers of banks came about on account of a Central Bank requirement on minimum financial bases for commercial and other banks.

FIGURE 3(B): COMPARISON OF REAL EMPLOYMENT GROWTH RATE IN SOME KEY SECTORS

In terms of gender distribution of employment, we find from available data (NBS, 2006) that the percentage of female employees in the communications industry fell from 16.43% in 1999 to 15.13% in 2000, only to increase sharply in 2001 to 31.05%. The percentage, as can be seen from figure 3(c), has remained, since then, at close to 30%.

Access To ICTs

Access to the ICTs in Nigeria may be said to be defined by an emerging trend, in which the mobile phone has emerged as the most indispensable personal life style device (Odufuwa, 2006). Predictions are that by 2007, at least a quarter of the population would own mobile phones, with 96.4% of the urban population having mobile phones. According to the results of a survey conducted by the National Bureau of Statistics (NBS, 2006) the indices for household personal computer ownership in the country is 1.3%, with a figure of 2.7% for the urban areas, and 0.6% for rural dwellers. Although about the same figures were recorded for access to fixed telephones, the figures for mobile telephony were much higher, standing at 28% nationally, with 58% of the urban households indicating ownership of mobile phones, against a figure of 15.2% for rural households. Data for zonal distributions revealed that the South West zone of the country had the highest figures, whilst the lowest figures were recorded in the North East zone, where only 8.8% of the households interviewed claimed ownership of mobile phones.

Fixed Telephony Access

The number of fixed telephony subscribers increased from 600,321 in 2001 to 1,589,026 by August 2006, according to data available from the NCC (2006). Figure 4(a) depicts the growth trend for total connected fixed lines, but it should be pointed out that as suggested by the growth trend displayed in Figure 4(b) virtually all the growth recorded for fixed-line telephones came from the PTOs, particularly those offering fixed wireless services. Indeed, the total number of NITEL (the incumbent fixed-wired services operator) dropped from 447,979 in December 2005 to 439,246 by August 2006.

Figure 4(A). Trend in Growth of Total Connected Fixed-telephone Lines 2001 - August 2006 (Data Source NCC)
It is also interesting to observe that the growth rate for 2006 is significantly higher than the corresponding figures for 2005 (see Figure 4(a)), which might be an indication of a period of boom for that sector.

Another interesting fact revealed by Figure 5 is that whereas total fixed connected lines experienced a growth rate of about 6% in January 2004 - 2005 a negative figure was recorded for January 2005 - 2006. This development might not be unconnected with the fact that a number of NITEL subscribers (many of them corporate subscribers) did not renew their subscriptions during the period in question, opting in most cases for the use of mobile and fixed wireless subscriptions.

Figure 6 pictorially describes the scope of fixed telephony coverage of the country as at May, 2005, and it suggests that the spread covers most of the country, with the highest density around the country’s south west areas, particularly Lagos, the commercial centre.
MOBILE TELEPHONY ACCESS
Mobile telephony has become the de facto method of voice communication in Nigeria. The country’s mobile communication market is widely acknowledged as the fastest-growing in the world, with a reported growth rate of 191% in 2004.

Table 4: DISTRIBUTION OF PREPAID AND CONTRACT SUBSCRIBERS 2000 – MARCH 2006 (SOURCE, NCC)

<table>
<thead>
<tr>
<th>Year</th>
<th>Prepaid ('000)</th>
<th>Contract ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>31.5</td>
<td>3.5</td>
</tr>
<tr>
<td>2001</td>
<td>245.144</td>
<td>21.0</td>
</tr>
<tr>
<td>2002</td>
<td>1,545.922</td>
<td>106.83</td>
</tr>
<tr>
<td>2003</td>
<td>2,902.0</td>
<td>157.47</td>
</tr>
<tr>
<td>2004</td>
<td>9,082.46</td>
<td>91.47</td>
</tr>
<tr>
<td>2005</td>
<td>18,041.13</td>
<td>185.87</td>
</tr>
<tr>
<td>2006</td>
<td>21,301.96</td>
<td>215.25</td>
</tr>
</tbody>
</table>

Table 4 indicates that the prepaid subscribers far exceed the contract subscribers in number, and in fact constitute the bulk of the total number of mobile communications subscribers in Nigeria, as very clearly revealed by Figure 7 below.
We find from Figure 7 that the growth rate of this sector appears to be witnessing a decline, and in particular, that a drop from a rate of about 700% in 2001 to about 50% was recorded in 2003, after which it rose close to 200% in 2004 and dropped steadily thereafter to a value of just below 50% in mid-2006. This may not be an indication that the market is becoming saturated, because a comparison of the penetration rate provided below suggests that even as at 2004, when the growth rate was declining, the penetration rate was on the increase.

Source: ITU World Telecommunication Indicators Database
The urban / rural divide of the penetration rate is not apparent from the data described earlier in this section. A measure of the extent of the divide is provided by the outcome of a survey carried out on behalf of the NCC by INTELCON (2005). According to the survey findings, there are a number of rural areas that are ordinarily unreached by the mobile communication spread, but whose citizens still contrive to subscribe to the services of the operators. Those concerned install bamboo poles to heights of between 5 m and 8 m, mount antennas on the poles, and attach the antennas to mobile handsets to receive signals from base stations located up to 50 km away. About 33% of respondents in rural areas claim to have family members abroad, and some 89% family members in Abuja, Lagos and other major urban centres outside their states. These observations tend to explain the finding of the survey that 26% of rural dwellers, for lack of access to phones go in person to communicate as against the corresponding figures of 16% for urban dwellers and 18% for semi-urban dwellers.

ACCESS TO BROADBAND AND THE INTERNET

At the time of this report, 522 operators had been granted licences to operate as Internet Service Providers (ISPs) whilst 110 VSAT licences had also been awarded. Of these, only a combined total (ISP and VSAT operators) of 98 were operational, servicing 2,350 cybercafés and an estimated 3.5 million users including some 88,000 (wired and wireless) dial-up accounts, with an international bandwidth estimated at 4GB, to give a penetration of 2%, (INTELCON, 2005).

Despite the fact that Internet awareness is increasing in the country, the penetration rate is much slower than should be expected because of a myriad problems, the more prominent of which are, (Omo-Ettu, 2006) high costs of individual equipment, a small number of available T1 bandwidth, poor status of national infrastructural facilities (particularly electric power supply) and predatory pricing in the market, forcing some providers to close their businesses as being unviable.

Rural/Urban use distribution is typified by the figures on Table 4, which are pictorially represented in Figure 7.
TABLE 6: TOP 10 INTERNET MARKETS (BY USE POPULATION) IN NIGERIA

<table>
<thead>
<tr>
<th>YEAR / USER CENTRE</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAGOS</td>
<td>837,392</td>
<td>918,619</td>
<td>1,166,646</td>
<td>1,574,971</td>
</tr>
<tr>
<td>PORT-HARCOURT</td>
<td>56,168</td>
<td>61,616</td>
<td>78,253</td>
<td>105,641</td>
</tr>
<tr>
<td>KANO</td>
<td>45,009</td>
<td>49,375</td>
<td>62,706</td>
<td>84,653</td>
</tr>
<tr>
<td>IBADAN</td>
<td>33,078</td>
<td>36,286</td>
<td>48,083</td>
<td>62,213</td>
</tr>
<tr>
<td>BENIN</td>
<td>28,762</td>
<td>31,552</td>
<td>40,071</td>
<td>54,096</td>
</tr>
<tr>
<td>KADUNA</td>
<td>20,967</td>
<td>23,004</td>
<td>29,211</td>
<td>30,435</td>
</tr>
<tr>
<td>CALABAR</td>
<td>18,848</td>
<td>20,676</td>
<td>26,259</td>
<td>35,449</td>
</tr>
<tr>
<td>ABUJA</td>
<td>16,295</td>
<td>17,875</td>
<td>22,792</td>
<td>30,647</td>
</tr>
<tr>
<td>ABEOKUTA</td>
<td>15,773</td>
<td>17,393</td>
<td>21,975</td>
<td>29,966</td>
</tr>
<tr>
<td>JOS</td>
<td>12,783</td>
<td>14,203</td>
<td>17,810</td>
<td>24,043</td>
</tr>
</tbody>
</table>

(Source: NCC, 2006)

FIGURE 10: A PICTORIAL VIEW OF THE FIGURES ON TABLE 6

It is very clear that the majority of the users are located in Lagos, whose share of users in 2006, for example, is about 78% whilst Jos had about 1.2% of the user population. When it is understood that Jos is not classified as rural area (may be semi-urban) it becomes easy to imagine the extent of the urban/rural divide of Internet usage in the country.

Most of the Internet connections in Nigeria are made via VSAT links. As suggested by Figure 10, 53% of the connections are made through VSAT links, followed by wireless microwave links, which account for 19%. Between them, Wi-Fi and E1 links barely account for 1%, although DSL access accounts for 4%. These figures are not surprising, since the majority of users (81%, Omo-Ettu, 2006) patronise Cybercafés in order to have access to the Internet. Available figures (NBS, 2006) suggest that less than 10% of users access the Internet from the workplace, and that barely 4% have access to the Internet from home.
These observations are consistent with the figures obtained for PC usage in the country, as reported by an NBS survey (NBS, 2006). According to the said figures, PC penetration was at about 0.84% in 2003, and increased almost linearly, to a value of about 0.97% (corresponding to about 120,000 PCs) in 2006. The implication is therefore that even if providers are able to extend services to homes and workplaces, relatively few people would be able to take advantage because of lack of personal computers. Field survey results reported by NBS (2006), (also Odufuwa 2006) indicate that there is a significant demand for access to the Internet from home. For example, the surveys in question discovered that 100% of respondents in Bauchi State (not featured in the list of top 10 use population centers) would want to access the Internet from home, whilst the corresponding figure for respondents in Kano State, which ranked third in the list of use population centres, was 91.5%.

Source: Omu-Etu, 2006

These figures, it should be pointed out, do not include firm data on government usage because no such data was available from the different government sources approached, despite promises made.
Cost of ICT Usage

One of the main achievements of the market reform model adopted by Nigeria concerns reductions in tariffs for phone calls in the country. For example, in 2000, prior to the introduction of the reforms, the cost of making international calls was as high as NGN130 per minute, on average; this has decreased to an average of less than NGN30 per minute in 2006. This section reviews the going rates for use of telecommunications and ICT services in Nigeria, using representative data, and starting with fixed services.

COST OF FIXED VOICE COMMUNICATIONS SERVICES

Table 7(a) displays the going rates for calls made with the use of fixed wireless services. Connection charges for business subscriptions range from NGN8,000 (approx. US$62) (Intercellular) to NGN20,500 (or about US$157) for MULTILINKS, where the current exchange rate is US$1 = NGN130. The corresponding charges for residential phones are about the same. It is to be observed that while business users of these services pay either NGN1,000 access charge or NGN10,000 usage charge / month, the same does not apply to residential users.

TABLE 7(A): COST OF ACCESS TO FIXED (WIRELESS) VOICE COMMUNICATIONS SERVICES

<table>
<thead>
<tr>
<th>Operator</th>
<th>Business phone</th>
<th>Residential Phone</th>
<th>Cost of 3 min local call</th>
<th>Cost of 3 min national call</th>
<th>Cost of 3 min US call</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Monthly Charge</td>
<td>Monthly Charge</td>
<td>Peak Off-peak</td>
<td>Peak Off-peak</td>
<td>Peak Off-peak</td>
</tr>
<tr>
<td></td>
<td>Subscription</td>
<td>Charge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CELLCOM</td>
<td>17,000.00</td>
<td>1,000.00</td>
<td>Zero</td>
<td>20.55</td>
<td>14.25</td>
</tr>
<tr>
<td></td>
<td>Plus Access</td>
<td>Plus Access</td>
<td>Plus Access</td>
<td>94.50</td>
<td>79.50</td>
</tr>
<tr>
<td></td>
<td>phone set</td>
<td>phone set</td>
<td></td>
<td>Plus Access</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>120.00</td>
<td>120.00</td>
</tr>
<tr>
<td>MULTILINKS</td>
<td>20,500.00</td>
<td>1,500.00</td>
<td>1,000.00</td>
<td>19.50</td>
<td>19.50</td>
</tr>
<tr>
<td></td>
<td>Plus Access</td>
<td>Plus Access</td>
<td>Plus Access</td>
<td>66.00</td>
<td>66.00</td>
</tr>
<tr>
<td></td>
<td>phone set</td>
<td>phone set</td>
<td></td>
<td>Plus Access</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>105.00</td>
<td>105.00</td>
</tr>
<tr>
<td>INTER-CELLULAR</td>
<td>8,000.00</td>
<td>Zero</td>
<td>8,000.00</td>
<td>34.50</td>
<td>27.00</td>
</tr>
<tr>
<td></td>
<td>Plus Access</td>
<td>Plus Access</td>
<td>Plus Access</td>
<td>81.00</td>
<td>64.80</td>
</tr>
<tr>
<td></td>
<td>phone set</td>
<td>phone set</td>
<td></td>
<td>Plus Access</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>132.00</td>
<td>117.00</td>
</tr>
<tr>
<td>ITN</td>
<td>9,000.00</td>
<td>Zero</td>
<td>9,000.00</td>
<td>19.50</td>
<td>19.50</td>
</tr>
<tr>
<td></td>
<td>Plus Access</td>
<td>Plus Access</td>
<td>Plus Access</td>
<td>66.00</td>
<td>66.00</td>
</tr>
<tr>
<td></td>
<td>phone set</td>
<td>phone set</td>
<td></td>
<td>Plus Access</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>45.00</td>
<td>45.00</td>
</tr>
</tbody>
</table>

Source: Operators (Note: US$1 = NGN130)
A rather surprising development is that connection charges for fixed-wire access compare with those for fixed wireless access, ranging from NGN10,500 (MONACOM) to NGN20,500 (21st Century). The call rates, however, differ significantly. For example, the average cost of 3-minute peak-period local calls using fixed wireless services is NGN23.3, whereas the use of fixed-wire services attracts an average of NGN19.50 for a 3-minute call. Corresponding charges for trunk (national) calls are NGN76.9 and NGN66.0, respectively.

COSTS OF MOBILE VOICE COMMUNICATIONS SERVICES
Representative data concerning call rates for the four mobile operators is displayed in Table 6 below.
TABLE 8: REPRESENTATIVE CHARGES DATA FOR THE FOUR MOBILE OPERATORS

<table>
<thead>
<tr>
<th>Product name</th>
<th>Operator</th>
<th>Prepaid monthly</th>
<th>Mobile (other GSM)</th>
<th>Connection fee *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vbusiness (post-paid)</td>
<td>V-Mobile</td>
<td>NGN2,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>V100b (post-paid)</td>
<td>V-Mobile</td>
<td>NGN3,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>V200b (post-paid)</td>
<td>V-Mobile</td>
<td>NGN6,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>V400 (post-paid)</td>
<td>V-Mobile</td>
<td>NGN4,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>V6000 (post-paid)</td>
<td>V-Mobile</td>
<td>NGN8,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Veego (pre-paid)</td>
<td>V-Mobile</td>
<td>Nil</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Bumper psb 1000 (pre-paid)</td>
<td>V-Mobile</td>
<td>NGN1,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Bumper psb 2000 (pre-paid)</td>
<td>V-Mobile</td>
<td>NGN3,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Bumper psb 3000 (pre-paid)</td>
<td>V-Mobile</td>
<td>NGN6,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>BT-2,500 zero access (pre-paid)</td>
<td>MTN</td>
<td>NGN2,500</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>BT-5000 zero access (pre-paid)</td>
<td>MTN</td>
<td>NGN5,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>BT-7,000 zero access (pre-paid)</td>
<td>MTN</td>
<td>NGN7,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>BT-10,000 zero access (pre-paid)</td>
<td>MTN</td>
<td>NGN10,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>BT-12,500 zero access (pre-paid)</td>
<td>MTN</td>
<td>NGN12,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Pay-as-you-go (prepaid)</td>
<td>MTN</td>
<td>Nil</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>BT-5,000 Bundle (prepaid)</td>
<td>MTN</td>
<td>NGN3,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>BT-10,000 Bundle (prepaid)</td>
<td>MTN</td>
<td>NGN5,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>BT-15,000 Bundle (prepaid)</td>
<td>MTN</td>
<td>NGN7,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>BT-25,000 Bundle (prepaid)</td>
<td>MTN</td>
<td>NGN12,500</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>BT-35,000 Bundle (prepaid)</td>
<td>MTN</td>
<td>NGN17,500</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Business 400 (post-paid)</td>
<td>GLO</td>
<td>NGN9,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Business 600 (post-paid)</td>
<td>GLO</td>
<td>NGN12,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Glo Premium (prepaid)</td>
<td>GLO</td>
<td>NGN1,750</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Classic (prepaid)</td>
<td>GLO</td>
<td>Nil</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Glo MaxProfit (prepaid)</td>
<td>GLO</td>
<td>NGN2,500</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Glo MaxProfit Plus (prepaid)</td>
<td>GLO</td>
<td>NGN9,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>PowerTalk 1 (prepaid)</td>
<td>MTel</td>
<td>NGN2,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>PowerTalk 2 (prepaid)</td>
<td>MTel</td>
<td>NGN4,000</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Now Now (prepaid)</td>
<td>MTel</td>
<td>Nil</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
<tr>
<td>Post paid services</td>
<td>MTel</td>
<td>Unavailable</td>
<td>NGN18.00/m or 0.30/s</td>
<td>NGN5.52/m or 0.092/s</td>
</tr>
</tbody>
</table>

* PSB Interconnection fee before September 2006

(Source: Operators)
It can be seen from the table that call rates are about the same from operator to operator, though higher than corresponding rates for similar services offered by fixed-wire and wireless operators. A comparison of the costs, which also describes the fall in different tariff regimes, is displayed in Figure 11 (Odufuwa, 2006).

**FIGURE 11: TELECOMMUNICATIONS TARIFF TRENDS-2000-2006**

The illustration reveals that the lowest recorded declines were in the costs of GSM calls (6.9%) and local calls (6.7%).

An estimate of the average monthly expenditure on telephone calls as reported by NBS (2006) is provided in Table 9 below.

**TABLE 9: AVERAGE MONTHLY TELEPHONE EXPENDITURE AS A PERCENTAGE OF HOUSEHOLD INCOME**

<table>
<thead>
<tr>
<th></th>
<th>Adjusted for income (PPP)</th>
<th>Adjusted with expenditure cap of 15%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average HHLD income (NGN)</td>
<td>Average HHLD income (US$)</td>
</tr>
<tr>
<td>Urban</td>
<td>42,287</td>
<td>3,903</td>
</tr>
<tr>
<td>Semi-Urban</td>
<td>40,209</td>
<td>3,712</td>
</tr>
<tr>
<td>Rural</td>
<td>31,711</td>
<td>2,927</td>
</tr>
<tr>
<td>Total</td>
<td>36,394</td>
<td>3,359</td>
</tr>
</tbody>
</table>

(Source: NBS, 2006)
The data suggests that the average monthly expenditure of rural households is only some 4% lower than for urban households, though cost components in the case of rural households include costs of travelling to nearest phone booth or phone access point.

**TABLE 10A: 2006 LOW OECD USER BASKET – COST IN US$ USING NOMINAL END OF 2006 EXCHANGE**

<table>
<thead>
<tr>
<th>Country</th>
<th>Cost (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>12.5</td>
</tr>
<tr>
<td>South Africa</td>
<td>10.9</td>
</tr>
<tr>
<td>Kenya</td>
<td>10.6</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>9.7</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>9.7</td>
</tr>
<tr>
<td>Namibia</td>
<td>8.6</td>
</tr>
<tr>
<td>Cameroon</td>
<td>7.9</td>
</tr>
<tr>
<td>Zambia</td>
<td>7.6</td>
</tr>
<tr>
<td>Mozambique</td>
<td>7.0</td>
</tr>
<tr>
<td>Benin</td>
<td>7.4</td>
</tr>
<tr>
<td>Senegal</td>
<td>7.3</td>
</tr>
<tr>
<td>Uganda</td>
<td>7.3</td>
</tr>
<tr>
<td>Botswana</td>
<td>7.0</td>
</tr>
<tr>
<td>Ghana</td>
<td>6.5</td>
</tr>
<tr>
<td>Tanzania</td>
<td>5.8</td>
</tr>
<tr>
<td>Rwanda</td>
<td>5.6</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Esselaar, Gillwald and Stork (2007)

**TABLE 10B: 2006 LOW OECD USER BASKET – COST IN US$ USING IMPLIED PPP CONVERSION RATES**

<table>
<thead>
<tr>
<th>Country</th>
<th>Cost (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uganda</td>
<td>32.4</td>
</tr>
<tr>
<td>Mozambique</td>
<td>30.8</td>
</tr>
<tr>
<td>Ghana</td>
<td>30.5</td>
</tr>
<tr>
<td>Rwanda</td>
<td>19.2</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>19.2</td>
</tr>
<tr>
<td>Namibia</td>
<td>27.9</td>
</tr>
<tr>
<td>South Africa</td>
<td>27.2</td>
</tr>
<tr>
<td>Kenya</td>
<td>20.5</td>
</tr>
<tr>
<td>Nigeria</td>
<td>20.0</td>
</tr>
<tr>
<td>Botswana</td>
<td>16.4</td>
</tr>
<tr>
<td>Cameroon</td>
<td>15.4</td>
</tr>
<tr>
<td>Senegal</td>
<td>15.4</td>
</tr>
<tr>
<td>Côte d’Ivoire</td>
<td>17.9</td>
</tr>
<tr>
<td>Benin</td>
<td>16.3</td>
</tr>
<tr>
<td>Tanzania</td>
<td>14.3</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>5.3</td>
</tr>
<tr>
<td>Zambia</td>
<td>11.6</td>
</tr>
</tbody>
</table>

Esselaar, Gillwald and Stork (2007)
COST OF INTERNET ACCESS

Tariffs for Internet access, like those for voice communications services, have, on average, steadily declined from 2000 to date, as suggested by available data (NCC, 2006). The figures indicate that the most significant drops were recorded in the monthly charges for VSAT connections (by far the most popular), which dropped from NGN120,000 in 2000 to just about NGN40,000 in 2006. Dial-up connection charges have remained significantly lower, recording insignificant changes. On the other, the cost of access through microwave links, which, in 2000 stood at about NGN120,000 per annum (NGN10,000 per month) have fallen to about NGN85,000 per annum or NGN7000 per month in 2006.

Typical charges obtained from two leading Internet Services Providers (ISPs) in the country are provided in the following tables.

TABLE 11A: BILLING RATE: HOME USERS CATEGORY

<table>
<thead>
<tr>
<th>Subscription Type</th>
<th>Bandwidth</th>
<th>Volume Limit</th>
<th>Price (NGN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 hrs access</td>
<td>80K</td>
<td>0.5GB</td>
<td>2,625</td>
</tr>
<tr>
<td>Night time access (8pm - 8am)</td>
<td>80K</td>
<td>0.5GB</td>
<td>2,500</td>
</tr>
</tbody>
</table>

SKANNET Charges:
- Equipment NGN45,000 (= US$350) (inclusive of VAT charges)
- Account Activation fee NGN 3,517.50

TABLE 11B: BILLING RATE: BUSINESS/OFFICE CATEGORY

<table>
<thead>
<tr>
<th>Subscription Type</th>
<th>Bandwidth</th>
<th>Volume Limit</th>
<th>Price (NGN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-hr access</td>
<td>96K</td>
<td>1.3GB</td>
<td>5,250</td>
</tr>
<tr>
<td>24-hr access</td>
<td>128K</td>
<td>2.8GB</td>
<td>10,500</td>
</tr>
<tr>
<td>24-hr access</td>
<td>160K</td>
<td>4.0GB</td>
<td>15,750</td>
</tr>
<tr>
<td>24-hr access</td>
<td>192K</td>
<td>7.5GB</td>
<td>26,250</td>
</tr>
<tr>
<td>24-hr access</td>
<td>224K</td>
<td>11GB</td>
<td>38,050</td>
</tr>
<tr>
<td>24-hr access</td>
<td>256K</td>
<td>15GB</td>
<td>52,030</td>
</tr>
<tr>
<td>24-hr access</td>
<td>288K</td>
<td>23GB</td>
<td>76,500</td>
</tr>
<tr>
<td>24-hr access</td>
<td>320K</td>
<td>30GB</td>
<td>103,650</td>
</tr>
</tbody>
</table>

SKANNET Charges:
- Equipment NGN45,000 (= US$350) (inclusive of VAT charges)
- Account Activation fee NGN 3,517.50
WEB ACCESS RESOURCES LIMITED

a) Dial-up Internet Access

<table>
<thead>
<tr>
<th>Duration</th>
<th>Charges (NGN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly</td>
<td>5,900</td>
</tr>
<tr>
<td>Quarterly</td>
<td>17,000</td>
</tr>
<tr>
<td>Bi-annually</td>
<td>34,000</td>
</tr>
<tr>
<td>Yearly</td>
<td>45,000</td>
</tr>
<tr>
<td>Yearly (Corporate)</td>
<td>52,000</td>
</tr>
</tbody>
</table>

b) Enterprise Solution

- Equipment cost Point–to–Multi-point without amplifier
  NGN600,000
- Equipment cost Point–to–Multi-point with 1 amplifier
  NGN705,000
- Equipment cost Point–to–Multi-point with 2 amplifiers
  NGN1,000,000

c) Wireless Internet Service Charge (Monthly, exclusive of VAT)

- Dedicated 32/32KBps
  NGN100,000.00
- Dedicated 64/64KBps
  NGN200,000.00
Sector Achievements and Regulatory Challenges

The main objective in this section is to assess the achievements of the ICT sector against performance measures specified by policy and regulatory objectives. As noted by the NCC, the overall performance objective centers around the creation of a competitive telecommunications market capable of meeting the specific objectives set forth by the National Telecommunications Policy, which may be summarised as follows (NCC, 2002):

- to facilitate the institution of an information rich and telecommunications-technology-based economy;
- to ensure the emergence of a seamless national network and optimised telecommunication infrastructure;
- to enable efficient service delivery.

To further these objectives, the NCC in 2002 published a five-year strategic management plan, with the goals and targets summarised briefly below. Details of these goals and targets are available in the NCC publication referred to here (NCC, 2002), but it suffices for the purpose of this report to point out that the document also specifies measures with which the organisation’s performance in terms of meeting the set objectives are to be measured.

The Commission’s strategic plan of action focuses on the promotion of market entry in the telecommunication’s sector as its primary goal, with the objective of providing reliable, affordable and efficient services for the citizens. From this goal, other goals and objectives may derive, including:

- establishing an effective and efficient enforcement mechanism and ensuring consumer protection;
- ensuring the effective and economically and technologically efficient use of the radio spectrum;
- establishing standards comparable to the best in the world for telecommunications services;
- developing a sustainable institutional framework for the achievement of universal services and universal access;
- promoting cooperation with other government agencies, the private sector, and international organisations;
- instituting an effective and efficient organisational framework towards the continuous improvement of regulatory capacity.

The telecommunications regulatory environment survey, which does not simply assess the regulator but the entire telecommunications reg-
Nigeria

ulatory environment including the policy framework and regulatory effectiveness, was run across several other African countries as part of a wider RIA! project. Nigeria was one of the few countries to score positively in terms of regulatory effectiveness, a tribute to the gains made by the NCC over the last few years, the other with a positive outcome being Côte d’Ivoire.

FIGURE 12: TRE SCORES: AVERAGE SCORE ACROSS ALL CATEGORIES

REGULATORY CHALLENGES
The analysis undertaken and described in Annexe A clearly reveals that the NCC, as the main sector regulator in Nigeria, has performed well above average in most areas of sector regulation endeavors. Indeed liberalisation has attracted very many gains, including exponentially improving teledensity measures, increasing awareness and use of the Internet, and increasing levels of investment in the sector. There are nonetheless several areas in which performance could be better. Industry stakeholders and commentators all share the view that there are certain key policy and regulatory challenges that need attention in order to further improve the sector performance landscape. These challenges may be summarised as follows (Omo-Ettu, 2006; Intelcom, 2005; Farroukh, 2006):

- Effectiveness of liberalisation has yet to be fully felt in all sub-sectors;
- Policies appear to be technology biased. Commonly cited examples include high licence fees for satellite frequencies and the yet-to-be
resolved issue of formal ruling on the status of VoIP, WiMax, and WiFi2;

- High lending rates coupled with limited availability of local funds;
- Slow local rate of skills acquisition / limited local ICT equipment production capacity;
- Limitations imposed by high import duties for telecommunication and ICT equipment;
- Poor state of the public electric power supply industry, leading to ordinarily avoidable overheads and attendant effects on service pricing;
- Poor state of roads;
- General insecurity;
- Inability / refusal of some operators to quickly settle interconnection debts;
- Network challenges (mainly uptime and quality issues) in the South Eastern areas of the country;
- Quality of mobile communications services which have not improved significantly from the status in 2001.

These challenges combine either directly or indirectly to undermine the commendable efforts of the regulator and the adequacy of the framework, with the result that ownership of basic ICT devices (phones, PCs, etc) is still at a very low level. Indications are that the regulator is aware of these challenges and is addressing them through consultations with appropriate agencies of government, with a view to finding lasting solutions.
Conclusions and Recommendations

This report has reviewed the performance of the ICT sector in Nigeria, using standard performance metrics as indices for performance measurement. A brief overview of the policy and regulatory environment is given in the first section of the report, and with this definition of the reform model adopted for use by the country, it becomes possible to assess the performance of the market in terms of operators’ market share, investors’ perception (as measured by level of investments), and the capacity of the market to generate employment. One important sector performance indicator is the level of access to ICTs, and for a developing country like Nigeria, the extent to which access is available in the rural areas is of critical importance. Available data reveals that whereas access to telephones is increasing at a tremendous rate in the country, most of the impact of the market reforms in that regard, is limited to urban and semi-urban areas of the country. On the other hand, Internet penetration is at the low level of 2%, and the majority of the Internet users (some 78%) are to be found in Lagos, the country’s commercial centre. The use of broadband for access is still in its infancy, but it would appear that with the coming on stream of a unified licence regime, broadband use will experience an exponential growth. Without doubt, market reforms have impacted hugely on the tariff regimes for access to ICTs. Average costs of local calls on fixed lines, which stood at well over NGN100 before the advent of liberalisation, have fallen to below NGN80, though the drop in mobile telephony calls stands at 6.9%, despite increasing competition.

Using strategies set forth by the NCC’s strategic management plan as an analytical tool, the review examined the extent to which policy objectives had been met over the period of the review. The analysis revealed that the regulatory body has performed better than average, in spite of unavoidable limitations. In particular, the Commission’s notable achievements include the publication of interconnection rules and guidelines, development of a viable spectrum plan for the country, the institution of a consumer affairs bureau, and development of various regulations directed at promoting fair industry market practices. A survey carried out during the course of the review examined the perception of the regulatory environment by industry stakeholders. The findings of that survey (Annexure II of this report) clearly support the foregoing conclusions about the performance of the sector and the main sector regulator.

In terms of penetration in the rural areas, it is to be observed that mobile communications services are now available in all of the country’s 36 states, covering half of the 776 local governments, and a mini-
A perusal of the list of regulatory challenges presented in the previous section of this report will show that a good number of these challenges (poor infrastructure, lending rates, import duty rates, security issues) are outside the jurisdiction of the ICT regulator; but in addition to being well-positioned to influence and catalyse positive action from those government agencies concerned, the commission is also well-advised to review implementation strategies on matters concerning full liberalisation of the sector, legislation on VoIP, Wifi, etc, bad interconnection debts, poor quality of mobile communications services, and network challenges (particularly security issues).

**KEY RECOMMENDATIONS**

The recommendations indicated by the outcomes of the foregoing review of the performance of the ICT sector in Nigeria are as follows:

- One of the most critical challenges in the sector concerns ownership of basic ICT devices and costs of services. A policy review that will facilitate the lowering of costs for PCs, mobile handsets, fixed (wired and wireless) handsets, cost of bandwidth and ICT services in general, is indicated. The Universal Service Provision Fund offers a number of possibilities in this regard;

- The commission should find means of effectively enforcing the provisions of its quality of service regulations as a means of attracting improvements;

- Consumer demands appear greater than anticipated by the strategic measures in place. A comprehensive study to clearly identify the demands (if not already done, as appears to be the case) should be carried out before the Universal Access Projects move too far in the direction in of implementation;

- Initiatives directed at skills acquisition, capacity building, and micro-financing in the ICT sector should be reinforced; Power supply in the country has been rather unreliable, forcing operators to seek alternative solutions, thus attracting significant and avoidable overheads. It is expected that remedial actions will come from the ongoing restructuring of that sector, and the NCC’s continuing contributions, based on its experience in the ICT sector, should prove invaluable;

- So-called illegal operations by ISPs who offer voice services remain a vexing issue. A clearer legal position is desirable;
Nigeria

- Special concessions should be obtained from government on import duties for imported telecommunications and ICT equipment. Such concessions should be readily forthcoming, if well-articulated arguments are put together;

- Consultations with local finance houses should continue in order to find mutually satisfactory solutions to the problem of high lending rates;

- Finally, the general security situation in the country is alarming, and not conducive to investment, but the issue needs to be addressed at the wider national level.
References


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National Information Technology Development Agency NITDA (2005): “NITDA begin strategic plan for the implementation of Nigeria IT policy”, www.nitto.org


Economic Community of West African States (2005): “Achievements of ECOWAS; development of physical infrastructure, roads, telecommunications and energy” http://www.sec.ecowas.int/estone/enc 第83页502.html


Annex A

TABLE 12.13: PLANNED (NCC, 2002) VS. ACHIEVED ANALYSIS

Performance Indicators and Measures
Indicator: Promote Market Entry and Cooperation in the Telecommunications Sector

Performance Metrics
- Number and experience of organisations attracted to supply telecommunications services
- Public perception of transparency in telecommunications regulation
- Public perception of effectiveness of telecommunications regulations
- Significant rise in investments in industry leading to improved distribution and quality of service
- Promote as required by Government, the privatisation of NITEL
- Issuance of contracts and licences in connection with Wire Nigeria (WIN) project
- Mix and balance of licensed operators in each market sector, contributing to improved delivery
- Downward trend in tariffs
- Teledensity growth nationally
- Reduction in consumer complaints
- Existence of a tariff policy for all industry sectors

Corresponding findings of the review exercise
Regulator is perceived by the public as being transparent and effective. Investments in the sector have increased dramatically, and whilst distribution has also improved, there is a lot of room for improvement of quality of service. NITEL has since been privatised, but WIN has yet to make any significant impact. The mix and balance of licensed operators is good, and there is a definite downward trend in tariffs.

Teledensity is improving at a commendable rate, but it is debatable whether consumer complaints have been reduced to any significant extent.

Performance Indicators and Measures
Indicator: Establish an effective and efficient enforcement mechanism and ensure consumer protection:

Performance Metrics
- Availability of compliance information, including consequences for non-compliance with licence obligations
- Creation of an adequately resourced enforcement team
- Adequacy of legal powers to ensure compliance or punitive action
- Reduction in, and eventual removal of illegal operators or service provision
- Availability of terms of reference for the commission to make a determination in the case of dispute between licensed operators or service providers
- Effectiveness of a code of conduct on the performance of licensed operators or service providers
- Reduction in turn around time of dispute resolution through the introduction of a standard for resolution mechanisms
- Effectiveness of consumer education programmes and interest groups and interaction (feedback) procedures
- Reduction in turn around time resulting from the introduction of an automated complaint resolution process
Corresponding findings of the review exercise

Compliance information is readily available and widely publicised, but it is doubtful that the enforcement team is as effective as it should be. Despite the adequacy of the Commission’s legal powers, it has proved difficult to significantly reduce the extent of illegal operations, due on the one hand to the ingenuity of illegal operators and on the other hand, to breadth and spread of the operations. The conflict resolution mechanisms have been tested and proved fairly effective, though they have yet to be automated as planned. Consumers, through the consumers’ parliament, are receiving desirable education, and have in the parliament an effective platform for getting reactions for their complaints.

Performance Indicators and Measures

Indicator:

Ensure optimal use of spectrum

Performance Metrics

- Degree of frequency reuse applied to the transmission system deployed throughout Nigeria relative to accepted global practice
- Increase in the number of spectrum-based services and the introduction of new services and technologies requiring spectrum allocation
- Reduction in the number of (or where feasible, elimination) of unlicensed commercial service providers
- Publication of a policy on spectrum management
- Publication and industry acceptance of a spectrum plan for the telecommunications industry
- Reduction in the reported cases of harmful interference of licensed operators
- Reduced response time in dealing with interference complaints
- Progressive increase in spectrum occupancy data made available to frequency licensing unit
- Degree to which the commission is prepared with respect to making spectrum available to services as they apply in the global environment
- Report on the investigations of the possibilities and potentials of broadband wireless services in Nigeria
- Report on the studies of the potentials and implications of introducing commercial land mobile radio services in Nigeria

Corresponding findings of the review exercise

The spectrum management capabilities of the Commission in terms of these metrics are quite good. The frequency plan published has been widely accepted by industry players, and with imminent auction of licences for the 2GHz band, a reduction is expected in the number of unlicensed commercial services providers.

Performance Indicators and Measures

Indicator:

Ensure standards for telecommunications services that are comparable to international telecommunications union (ITU) recommendations and other relevant standards.

Performance Metrics

- Improvement in the grade of service supplied to consumers including but not limited to a higher number of call completions and reduction in call drop outs
- Improvement in the quality of service supplied to consumers including but not limited to reduction in waiting lists, accuracy of consumer service information, reduction in fault handling times, etc
- Reliability of systems and components through compliance with minimum availability criteria set by the commission
- Difference in actual performance of Nigerian operators when benchmarked against other countries with regard to technical and operational standards
- Creation of a revised numbering plan capable of addressing the numbering requirements for Nigeria to 2010
Corresponding findings of the review exercise

The call drop out rates and particularly call incompletion rates have yet to satisfactorily reduce, even if there is a downward trend. Waiting lists are now virtually non-existent (particularly for fixed wireless and mobile wireless services) but there is room for improvement in the area of fault handling. A revised numbering plan has been published, and it meets the stated specifications. Whereas operators in Nigeria have put in place commendable operational and technical services, there are just too many local constraints working against their meeting the best of international connection standards.

Performance Indicators and Measures

Indicator: Promote Universal Access and Rural Telecommunications Services:

Performance Metrics

- Completion and articulation of an instrument for universal access
- Completion and articulation of a universal access strategy for Nigeria
- Establishment of a universal access fund and articulation of the processes to manage the fund
- Establishment of policies and strategies on disbursement and investment mechanism for the universal access fund
- Effectiveness of micro-financing arrangements
- Availability of cost-effective interconnection capacity for university access applications
- Economic benefits of incentives for rural operators
- Availability and teledensity of telephones in rural communities with a minimum population of 500
- Increased telephone access in underserved areas
- Steady reduction in the number of rural communities without access to telephone
- Availability of telephone access to all local government areas throughout Nigeria

Corresponding findings of the review exercise

The Universal Access and Universal Service Regulations published by the NCC certainly satisfy the first performance metrics listed. Local banks have bought the concept of micro-financing, and it is most likely that suitable arrangements will be made when UA projects eventually take off. Though arrangements have been concluded for the implementation of the articulated UA policy (the Universal Service Provision Fund began operations earlier in 2006, with the appointment of a team including an Executive Secretary, and applications have been invited and received from would-be contractors and operators) the projects have yet to commence at the time of this report.

Performance Indicators and Measures

Indicator: Promote cooperation with other government agencies, local communities, private sector, and international organisations:

Performance Metrics

- Creation of regular constructive working relationships with Ministries and government agencies
- Effective and productive relationships with private sector
- Regular consultation with stakeholders including local community groups
- Increased influence of commission in relevant inter-governmental activities and policy development bodies and feedback of knowledge to wider telecoms community within Nigeria
- Creation of regular, constructive working relationships with influential international and regional representative bodies
- Effective and productive relationships with other national regulatory authorities
- Increase in the number of requests for Commission’s staff to attend and present papers or points of view at international meetings
• Degree of technical, commercial, and/or operational benefits accruing to Nigeria of wider regional representation
• Increase in the range and frequency of training and development programs available to the commission and its peers
• Effectiveness of established interactive forums with and between regional and international organisations
• Increased influence of Commission in relevant international bodies as a contributor to setting both agenda and deliverables

Corresponding findings of the review exercise
This is one area in which the NCC has performed excellently. All listed performance metrics were assiduously pursued, and results were outstanding.

Performance Indicators and Measures

Indicator:
Establish an effective and efficient organisational framework to increase regulatory capacity.

Performance Metrics
• Increased level of consultations with all interested parties in key decision-making processes
• Enhancement of draft communication law (or pending legislation)
• Establishment of a central library and knowledge management system
• Existence of a performance management system
• Creation of a budgetary control system for budget setting and regular financial reporting
• Timely production of annual activity reports
• Opening of commission’s telecommunications training institute
• Establishment of new zonal offices
• Establishment of appropriate data gathering and feedback mechanisms in respect of consumer and industry education

Corresponding findings of the review exercise
The NCC has certainly over the years increased its level of consultation with industry stakeholders through the organisation of workshops, serving notices of intended rule-making, etc. With the passing of the Communication ACT 2003, the NCC can claim a major achievement in addition to that, due to the commencement of training at the Digital Bridge Institute, Abuja. New zonal offices have been created in the country’s 6 geo-political zones, and although the data gathering mechanisms appear adequate, the same cannot be said of the data dissemination process; for example, no annual activities report has been produced, to the best of our knowledge.
Annexe B

LICENCE FRAMEWORK (NCC, 2006)

Objectives
- Encouragement of the growth of new applications and services;
- Simplification of existing licensing procedures to ease market entry and operations;
- Regulatory flexibility to address market and technological developments;
- Efficient utilisation of network resources, so that individual networks may be used to provide a broad range of ICT services;
- Encouragement of a full range of operators, including large scale and micro entrepreneurs.

To ensure that the transition to a converged licensing regime fosters a level playing field among all competitors, countries have introduced new licensing approaches and opted for different models. These include:
- Distinguishing between facilities-based and service-based licences;
- Distinguishing between network facilities providers, network service providers, application service providers and content application service providers;
- Unifying licences to encompass all ICT services or defined licence clusters under a single licensing classification;
- Establishing a general authorisation process, eliminating licences except for scarce resources such as spectrum and numbers.

In Nigeria, the law provides for the categorisation of licences as individual or class licences. In the current setup, licensing covers a broad variety of network operations and service provisions.

OPTIONS FOR UNIFIED LICENSING

In deciding the framework for Unified Licensing, the following aspects were considered:
- The mapping of existing service specific licences into Unified licensing model
- The scope of Unified licence
- The limits of Unified licensing
- The desired level of regulation
- Licence fees
- Implementation strategy for Unified licensing regime: Phased or one-step implementation.

Keeping the above in mind, several options on how to shape the new licensing regime were considered, taking into consideration the Nigerian environment. These options were varied in terms of services to be covered by licence, types of licences and time-schedule for implementation. At the conclusion of this exercise the following option emerged as the best for unified licence at this time.

THE LICENCE

The Commission is introducing a Unified Access Service licence as an individual licence under the powers granted to it by section 32 of the Nigerian Communications Act, 2003.

TENURE

The Licence will be valid for a period of ten years from the date it is issued with an option for renewal for the same term.

SCOPE OF THE LICENCE

The Unified Service licence will cover the following services:
- Fixed Telephony whether wired or wireless;
- Digital Mobile Services: International Gateway Services
- National Long Distance Services;
- Regional Long Distance Services.

In the Unified Access Service licence, the following services will be allowed:
- PWA and PNI licensees (Fixed Telephony and LEO) will be allowed to provide mobile services subject to the frequency assignment and geographical limitations in the original licence;
- Digital mobile licensees will be allowed to provide fixed and data services;
- All Unified Licensees will be able to provide ISP, VAS and Payphone services;
- International Gateway for own use and third party will be allowed.
Please note that National carrier licences and all other existing licences will remain unchanged.

QUALIFICATION CRITERIA
To be eligible for unified licence existing licensees must meet the following criteria:
- Have an existing and operating network infrastructure;
- Have a customer base of at least 10,000 connected subscribers or justifiable evidence of financial capability for substantial network rollout;
- Be up to date Payment of all fees and charges due to the Commission such as Annual Operating Levy (AOL), Spectrum and Numbering fees;
- Be up to date on submission of annual audited accounts;
- Be up to date on payment of company tax;
- Be up to date with equipment type approval;
- Be up to date in settlement of Interconnection obligations;
- New applicants will be subject to the usual licensing application requirement.

SERVICE AREA
The service area will be as in the original licences issued by the Commission to the applicant. A nationwide mobile or FWA licence will be converted in a nationwide Unified licence and a regional FWA or PNL licence will be converted into a Unified licence that covers the same region.

ROLLOUT OBLIGATIONS
In line with technological advancements, many regulators are reviewing their universal access policies for the new converged environment. It is no longer thought necessary to apply rollout obligations to licensees. To spur the growth of rural service provision, regulators are rethinking their strategies and it has been found that reduced entry barriers, lower entry fees, infrastructure sharing and unhindered use of new wireless broadband technologies are more effective measures to promote cost-effective and rapid deployment of last-mile network technologies in rural and unserved areas.

However, a purely market-based approach to universal service has its limits, and if resources become stretched, remote and rural areas face the risk of remaining significantly underserved. Therefore, it is important to define national universal access targets and to develop mechanisms, such as establishing a universal access fund, designation of universal access operators or service areas subject to special treatment under a universal service approach. The Commission is developing universal access regulations in order to achieve service penetration that also includes marginalised groups and disadvantaged regions.

The Commission will not impose separate rollout obligations on unified licensees, but rather deal with universal access issues in a separate universal access regulation, in which universal access targets and respective designation mechanisms are defined.

NUMBERING
As a guiding principle, numbering blocs assigned to the operators will take into consideration the different needs of operators and provide distinctive numbering assignments for nation-wide and local service providers. Interconnection problems will otherwise emerge, as fixed services may not be distinguishable from mobile services.

One important question in implementing the Unified licence is the category of numbers an FWA operator providing full mobility services should use.

It is recommended that FWA operators be obliged to provide fixed services on demand. FWA subscribers who use this service will retain fixed numbers while new subscribers to fully mobile services of these operators will use a new mobile number.

It is also recommended that fixed line operators retain fixed numbers while new subscribers to fully mobile services will use new mobile numbers.

Numbering fees are to be paid for the allocation of numbering and for annual renewal.
INTERCONNECTION

Under the Communications Act, 2003 there is an obligation for interconnection. Most FWA and PNL operators interconnect directly with the fixed and mobile operators.

The move to the Unified licence regime will therefore not change the structure of interconnection.

The interconnection obligation remains mandatory for all operators. Dominant operators will be mandated to publish a list of local and tandem exchanges on which interconnection is possible and also publish a Reference Interconnection Offer (RIO).

FREQUENCY MANAGEMENT

Frequency Spectrum issues will be dealt with separately as provided for under the Act and Spectrum licences. Frequency Spectrum fees will be paid in accordance to the Frequency Spectrum (Fees and Pricing, etc) Regulations, 2004.

NUMBER OF UNIFIED LICENCES TO BE ISSUED

In the new framework, unified licence operations would be open to competition, subject however to the availability of frequency spectrum.

The Commission may, however, consider issuing a new licence if it determines that the competitive environment is inadequate.

QUALITY OF SERVICE

Unified Licensees will be mandated to maintain the quality of service standard prescribed by the Commission and other quality of service thresholds mandated.

OPERATING LICENCE FEES (A)

The Commission proposes the following fee schedule for National and Regional Mobile service.

<table>
<thead>
<tr>
<th>Tier</th>
<th>Fee (NGN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1</td>
<td>33,000,000</td>
</tr>
<tr>
<td>Tier 2</td>
<td>20,000,000</td>
</tr>
<tr>
<td>Tier 3</td>
<td>16,000,000</td>
</tr>
<tr>
<td>Tier 4</td>
<td>14,000,000</td>
</tr>
<tr>
<td>Tier 5</td>
<td>9,000,000</td>
</tr>
</tbody>
</table>

OPERATING LICENCE FEES (B)

The following fee schedule is proposed for any fixed telephony operator wishing to migrate to a Unified licence:

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee (NGN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile service</td>
<td>as appropriate</td>
</tr>
<tr>
<td>International Data Access (Gateway)</td>
<td>25,000,000</td>
</tr>
<tr>
<td>National long Distance</td>
<td>20,000,000</td>
</tr>
<tr>
<td>Regional long Distance (within a state)</td>
<td>9,000,000</td>
</tr>
</tbody>
</table>

Note: Any PTO wishing to migrate to Unified Licensing should surrender its existing licence and would be credited with the unexpired portion of its licence fees and issued a unified licence of 10 years’ tenure.

OPERATING LICENCE FEES (C)

Fees to be paid by existing mobile operators wishing to migrate to Unified licence

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee (NGN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Telephony</td>
<td>44,000,000</td>
</tr>
<tr>
<td>International Gateway</td>
<td>50,000,000</td>
</tr>
<tr>
<td>National Long Distance</td>
<td>20,000,000</td>
</tr>
</tbody>
</table>
Annexe C
A SURVEY OF THE REGULATORY ENVIRONMENT

Evaluation of the Telecommunications Regulatory Environment:

<table>
<thead>
<tr>
<th>Network / Services</th>
<th>Poor</th>
<th>Unsatisfactory</th>
<th>Neutral</th>
<th>Satisfactory</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>How easy is market entry?</td>
<td>0 (0%)</td>
<td>4 (13.8%)</td>
<td>4 (13.8%)</td>
<td>19 (65.5%)</td>
<td>2 (6.9%)</td>
</tr>
</tbody>
</table>

Comments:
Majority of the respondents appear satisfied with the regulator’s performance in this regard.

<table>
<thead>
<tr>
<th>Interconnection regime?</th>
<th>1 (3.4%)</th>
<th>10 (34.5%)</th>
<th>5 (10.3%)</th>
<th>14 (48.3%)</th>
<th>1 (3.4%)</th>
</tr>
</thead>
</table>

Comments:
The rating here is below par (48% considered the performance satisfactory).

<table>
<thead>
<tr>
<th>Tariffs been regulated?</th>
<th>0</th>
<th>14 (48.3%)</th>
<th>9 (31%)</th>
<th>6 (20.7%)</th>
<th>0 (0%)</th>
</tr>
</thead>
</table>

Comments:
The prevailing view here is that there is a lot of room for improvement.

<table>
<thead>
<tr>
<th>Resources such as spectrum and numbers ensured?</th>
<th>1 (3.4%)</th>
<th>9 (31%)</th>
<th>8 (27.6%)</th>
<th>10 (34.5%)</th>
<th>1 (3.4%)</th>
</tr>
</thead>
</table>

Comments:
Most of those who offered reasons for their disapproval indicated that auction designs favour only the big multi-nationals or the extremely rich locals with strong political connections.

<table>
<thead>
<tr>
<th>Anti-competitive regulation been enforced?</th>
<th>3 (10.3%)</th>
<th>8 (27.6%)</th>
<th>7 (24.1%)</th>
<th>11 (37.9%)</th>
<th>0 (0%)</th>
</tr>
</thead>
</table>

Comments:
Quite a few expressed the view that when the Unified licence regime comes into being, the situation may improve.

<table>
<thead>
<tr>
<th>To what extent has progress been made towards achieving universal access?</th>
<th>1 (3.4%)</th>
<th>3 (10.3%)</th>
<th>11 (37.9%)</th>
<th>14 (48.3%)</th>
<th>1 (3.4%)</th>
</tr>
</thead>
</table>

Comments:
The recent appointment of an Executive Secretary for the Universal Service Fund appears to have persuaded many that the objectives are being firmly pursued.

FIGURE 12: RESPONSE OF INDUSTRY STAKE-HOLDERS ON PERCEPTION OF THE REGULATORY ENVIRONMENT.
A total of 70 questionnaires were distributed (physically and electronically by e-mail) to respondents in academics, the press, and in the telecommunications services provision industry. Of these, only 29 (about 41%) were completed and returned. It is noteworthy that all nine respondents who accepted e-mail deliveries completed and returned the questionnaires.

As suggested by numbers in the table and the graphical display of the responses, the following conclusions may be drawn:

a) Most of the respondents are satisfied that the environment makes for easy market entry;

b) Whilst 48% of the respondents expressed satisfaction with the effectiveness of the interconnection regulations, 34.5% of them were not satisfied, and 10% were undecided;

c) Tariff regulations attracted the worst rating, with 48.3% of respondents expressing dissatisfaction, and about 21% satisfaction.

d) This is followed by the anti-competition regulations, which 25% regard as not being effective, though 24% were undecided, whilst some 40% felt that the regulations were effective.
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a supply side analysis of policy outcomes

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