



Assessing the Economic Impacts of Copyright Reform on Internet Service Providers in Nigeria

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ABSTRACT

This report emphasises the economic impact of four optional approaches to dealing with the Copyright Act as it relates to the issue of copyright viability and liability for Internet service providers (ISPs). The report commences by signifying the options under consideration and the important stakeholders, and then proceeds to profile the Nigeria ISP industry. The ISP industry is designated to serve consumer and business subscribers, to make provisions of broad access to both dial-up and broadband Internet access services at prices that will be classify among the lowest in the world. This report is to make provision for economic analysis for propose amendments to copyright legislative in Nigeria. It is also to concentrate on the impact of these proposed reforms on the ISP industries in Nigeria, the effect on the stakeholder (e.g consumers, content producers). The problems facing content producing industries as a result of the Internet and piracy are briefly discussed, with the primary threat being the free digital distribution of copyright contents over the Internet through peer-to-peer (P2P) networks and illegal duplication of copy right contents. The number of digitally encoded music files (MP3/MP4) distributed has no definite estimation on yearly basis because there is no extent that piracy and downloads cannibalize sales do not go to. It is likely that the net effect of digital music downloads on CD sales is negative. The economic impact of each of the proposed copyright reform options is emphasised. The options as follows; the standing quo on significant economic cost to effect of law on outdated and complexity of internet services. Also on benefit clarification of legal matters and subjects ISPs to explicit condition on exemption from copyright liability. Practice of "Notice and Takedown" and "Notice and Notice" adoption to guide ISPs to work with content providers after receiving "Notice" of copyright infringement. Levying a mandatory licensing "tariff on ISPs, base on the magnitude of the tariff and its implimentation. It is recommended that the copyright be reformed to give explicit boundry on ISP copyright dependence for transmission, linking, production and detecting of copyrightd content by employing Notice and Notice or Notice and Takedown method.

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Introduction

The widespread adoption of the web has a big transformative effect on corporations, industries, and economies. Obscurity is that transformation felt more deeply than in industries whose merchandise fall within the domain of copyright protection. Copyrights, at the side of different styles of material possession rights (IPR), area unit being challenged by the introduction of latest technologies whose ramifications could not be seen once the relevant legislation was written. The process of extending or adapting material possession rights is important to however the "knowledge based mostly economy" can evolve, as IPR in many ways define the infrastructure of the knowledge-based economy, very much like physical assets (e.g.,roads, factories) outlined the infrastructure of the economic economy[1].

Internet service suppliers (ISPs) represent a replacement business that is at the nexus of many of the considerations encompassing copyright. The close to omnipresent ability of digital communications technology to capture, reproduce, and, via the web, rapidly disseminate "digital content" can doubtless drive a significant reorganization of content manufacturing industries. In discussing copyright law, Samuelson and Varian (2001) note "...intellectual property policy is hampered by the

shortage of great analysis of the economic impact of changes in each the law and in operation practices. It might be value considering the ways to form Associate in organisation framework beneath that economic concerns can be delivered to bear on scientific discipline issues, given their increasing importance for the economy at giant."

1. standing Quo: The copyright act would not be amended to specifically address ISP copyright liability. Instead, case law would still be used to clarify the difficulty. **2. Notice & Takedown:** A provision within the Copyright Act that would need ISPs to require down (remove) infringing content upon notice, in correct type, from rights holders. within the context of this approach, Organisation of ISP would not be liable for having infringing material on one or a lot of of its sites unless it failed to block access at intervals a given amount of your time upon receiving "proper notice" from a rights holder, or different interested party, that such material was probably infringing [2]. There would be limitations on the liability of ISPs for any economic damage resulting from compliance with the notice and take-down regime. That is, an ISP that acts in straightness to dam access to a website laid out in a "proper notice" is not to blame for the damage suffered in consequence by its client or different third party. Further more, the applicant should

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orroborate its claim in a timely fashion. The Copyright Act could need to be amended to limit liability of ISPs for the making of: (i) transient or incidental reproductions for transmission over networks (such exception would apply to any or all users and not simply to ISPs); and (ii) reproductions that area unit created for the storage of knowledge on networks (caching, hosting). With regard to the communication of materials over the web, the "common carrier" exception within the Copyright Act ought to still apply to ISPs.

2. **Notice & Spot:** ISPs can be needed, upon receipt of a statutorily defined notice from a copyright holder alleging violation by a site hosted by the ISP, to successively offer a statutorily-defined notice of the allegation to the party answerable for the alleged infringing website at intervals a specified amount of your time. ISPs would not take down content till served with a correct writ that, among different things, confirms in reality and in law that inclusion of the content on the net website amounts to a copyright infringement. This approach could embrace amendments to the Copyright Act that may establish Associate in Nursing accelerated method for a copyright holder to seek and procure a judicial take down order.

3. **Notice and Takedown** proposal on top of, the Copyright Act could have to be amended to limit liability of ISPs for the creating of: (i) transient or incidental reproductions for transmission over networks (such exception would apply to any or all users and not simply to ISPs); and (ii) reproductions that are created for the storage of knowledge on networks (caching, hosting).

Likewise, the "common carrier" exception within the Copyright Act ought to continue to apply to ISPs relating to communication of copyright material over the web. 4. **mandatory Licensing:** ISP's would be needed to pay royalties according to a tariff, probably set by the Copyright Board, for copyright material whether or not infringing or non-infringing that's current over their facilities or is being hosted on their servers, beneath either the communication right or the copy right. There would be no more Copyright liabilities on ISPs.

4. **Notice and Spot:**The angle of ISP shoppers, the Notice and spot is additionally most well-liked because it is perceived as putting a higher balance between the rights of ISP shoppers and rights holders Given the lower body and legal prices of the Notice and spot regime, it may have positive implications for the international aggressiveness of Nigeria ISPs. Likewise, if the Notice and spot approach is most well-liked by shoppers,Nigeria ISPs could profit by attracting shoppers from alternative countries.

Stakeholders

In assessing the economic impact of these projected changes to the Copyright Act, 3 categories of stakeholders area unit directly relevant.

1. **Internet Service Providers:** These proposals directly have an effect on the operation environment for Nigeria ISPs. a number of the alternatives have the potential for considerably raising the operation prices of ISPs, albeit with intrusion limitation on liability. The bulk of the discussion later discussed an address the impacts of those alternatives on Nigeria ISPs.

2. **Content Producers:** corporations that manufacture copyright material, whether or not text ,images, sound, film, software, or different digital content, clearly have a vested interest within the reform of copyright law. Discussion will elongate define of issues facing content producers and the impacts of the projected alternatives on them.

3. **Web Subscribers:** the shoppers of the Nigeria ISP trade square measure firms and consumers that contract with ISPs for

access to the net, as well as a number of subsidiary services, foremost is the hosting of content (websites) on the net. The planned alternatives might have significant price or competitive implications for the ISP trade, which will be, to a bigger or lesser extent, passed on to their customers. Implications for people and companies that are dependent on web subscribers (e.g., suppliers to a firm that sells its merchandise via an internet site hosted by a Nigeria ISP) will not be expressly thought-about. However, this may additionally be significant. Again, the implication for customers and business customers of ISPs.

Stakeholder Visitation & Engagements Sub-Committee

According to Nigeria Communications commission(NCC) justification, the following are the duties and terms of reference of the Stakeholder Visitation & Engagements Sub-Committee of the Industry Working Group on Multiple Taxations[10].

1. To identify the critical stakeholders to be engaged on the issue of multiple taxation in the telecoms industry;
2. To arrange meetings with these stakeholders and coordinate such meetings;
3. To Prepare report of all meetings with the stakeholders and present to the IWG;
4. To liaise with Federal Internal Revenue Service (FIRS) and Joint Tax Board (JTB) to explore a review of the Taxes and Levies (Approved List for Collection) Act of 1998 which appear to have become moribund;
5. To engage the NCAA with a view to exploring the possibility of a review and harmonization of the fees for masts and towers around the country;
6. To advise on measures to achieve the declaration of telecom infrastructure as a critical national asset

Legal & Judicial Review Sub-Committee

Nigeria communications commission states the following as duties and terms of reference of the Legal & Judicial Review Sub-Committee of the Industry Working Group on Multiple Taxations.

1. Review recent cases/complaints of multiple taxation imposed on telecom operators to determine their legality or otherwise, as well as, the reasonableness of the amounts imposed.
2. Review relevant laws on taxation, as well as, the Land Use Act to ascertain whether such laws support multiple taxation.
3. Propose harmonization of taxes & levies in respect of telecom sector across Federal State & Local Government Levels.
4. Identify & review non-telecom sector regulations/guidelines which also seek to regulate telecom at the three tiers of Government.
5. Review the relevant laws/regulations within the context of the provisions of item 46 of the Exclusive Legislative List of the Constitution of the Federal Republic of Nigeria 1999;
6. Seek judicial interpretation of item 46 of the Exclusive Legislative List of the Constitution of the Federal Republic of Nigeria 1999.
7. Articulate the industry position on dangers of multiple non-sectoral taxations and regulations.
8. Plan and coordinate a meeting of the IWG with the Attorney General of the Federation;
9. Articulate short term measures to achieve the declaration of telecom infrastructure as critical national infrastructure.
10. Present your findings to the IWG[11].

Regulations

The following are the regulations issued by the Commission;

- Regulations on the Registration of Telecoms Subscribers
- Frequency Pricing Regulations

- Frequency Pricing Regulations (Amended)
 - Regulations for Type Approval
 - Regulations on Numbering
 - Regulations for Telecommunications Networks Interconnection
 - Regulations for Competition Practices
 - Regulations on Universal Access and Universal Service
 - Consumer Code of Practice Regulations
 - Regulations on Enforcement Processes - 2005
 - Regulations on Quality of Service
- Nigeria Communication commission act [11]

Recommendation on regulation measures

Thus, it is counseled that the Copyright Act should be amended to supply specific limitations of ISP copyright liability for transmission, replica, linking, and caching of proprietary content victimisation either the Notice and spot or Spot and Takedown approach. The following square measure drafts of laws presently into account.

- Regulations on Licensing
- Regulations on social control Processes – 2013
- Annual operative Levy laws
- Lawful Interception of Communications laws
- Mobile range movability Regulation

Nigeria Communication commission act [12]

Compliance Monitoring and Enforcement Report Legislation

The legislation governing the Nigerian telecommunications industry are: Nigerian Communications Act (2003)

'The Nigerian Communications Act 2003 was signed into law by the President, Chief Olusegun Obasanjo (GCFR) on the 8th of July 2003 after being passed by both Houses of the National Assembly. The Act strengthens the capacity of the NCC to properly carry out its Regulatory Activities'

Consistent with **Section 89 of the Nigerian Communications Act 2003** which mandates the Commission to monitor all significant matters relating to the performance of all licensed telecoms service providers and publish annual reports at the end of each financial year, the NCC has developed Compliance Monitoring and Enforcement strategies to prosecute the above mandate and achieve the Commission's objective of fair competition, ethical market conduct and optimal quality of service in the Nigerian telecommunications industry

Lists of Licenses

Regards to licence provision, all company paid complete fees before collecting their licence document for the classes of telecommunications endeavor before the time of assortment of Licences into category and Individual Licences. Even though, as argued, there is an associate degree economic logic to copyright law and additionally competition law in addressing downstream prices of copyright protection. There are outstanding and unresolved problems with the best scope of those laws. Above all, it has been recommended that copyright law can be simplified and improved in numerous respects to search out a stronger balance between the interests of copyright house owners, users and the public. There have additionally been long and in progress arguments regarding the exact boundary between copyright law and competition law. These are self-addressed in turn [12].

The underlisted documents below contain the list of licensees under their individual service license categories.

Class Licenses

- Sales & Installation of Terminal Equipment (including Mobile Cellular Phones & HF/VHF/UHF Radio etc)
- Repairs & Maintenance of Telecoms Facilities

- Cabling Services
- TeleCenter/Cyber Cafe
- Public Payphone Services

Individual Licenses

- Internet Service
- Prepaid Calling Card
- Sales & Installation
- Unified Access Service Licence
- Digital Mobile Licence (GSM)
- Electronic Directory Information Services
- Fixed Wireless Access (FWA)
- Global Mobile Personal Communications by Satellite (GMPCS)
- Internet Exchange
- International Data Access
- International Gateway
- Interconnect Exchange
- Metropolitan (Fibre) Cable Network
- National Carrier
- National Long Distance Communications (NLDO)
- Public Mobile Communications - Trunk Radio Services
- International Submarine Cable Infrastructure & Landing Station Services)
- Value Added Services (VAS)
- Infrastructure Sharing & Collocation Services
- Central Equipment Identity Registry Services
- Automated Vehicular Tracking Service

Private Network Links (PNL)

- VSAT (Hubs & International)
- VSAT (Domestic)
- Fixed Telephony
- Local Exchange Operator [13].

Methodology

Given the timeframe and the scope of this project, information assortment was primarily limited to publically out there sources, like Statistics Nigeria, Industry Nigeria and Nigeria Radio-television and Telecommunications Commission (NRTC). These sources provided information on the present standing of the Nigeria ISP industry. Additionally, marketing research companies like (Nigeria ISPs industry, Content producers were further captured.

The study also created the use of knowledge collected from the Nigerian Communications Commission's (NCC) database. The info square measure complemented with those collected from field survey during which 1200 users of telephone and net services were haphazardly questioned in Lagos, the business nerve centre of the country. The selection of Lagos is premised on the necessity to require samples from a section that accommodates all operators within the business. The world is decent in the character of ISPs, contents producers, phonephone services across Nigeria is same. Additionally, a market survey of phonephone accessories was created in four cities, namely Lagos, Port Harcourt, Kano and the Federal Capital Territory. The info square measure analysed victimization trend analysis.

Customers

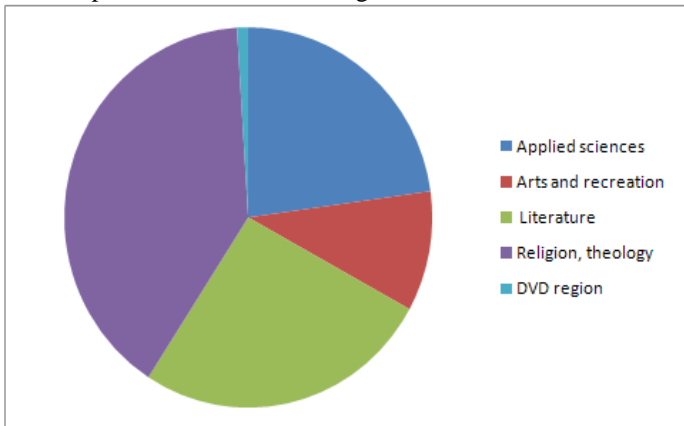
The customers of the Nigeria ISP industry are business and residential customers subscribers, with retail customers accounting for 35% of the revenues for the ISP industry in 2009. Concern over access to the internet could be a common theme of telecommunications policy, as access to the internet is related to both education and financial gain. The "gap" in terms of Internet usage between different teams supported financial gain, education, age, geographical location (urban versus rural), and

even ethnicity has been labelled the “digital divide” in Nigeria policy[8,9].

Table 3 above shows the entry lists of the number of Internet hosts available within a country. An Internet host is a computer connected directly to the Internet; normally an Internet Service Provider's (ISP) computer is a host. Internet users may use either a hard-wired terminal, at an institution with a mainframe computer connected directly to the Internet, otherwise connect remotely by way of a modem via telephone line, cable, or satellite to the Internet Service Provider's host computer. The number of hosts is one indicator of the extent of Internet connectivity. International Internet bandwidth is the contracted capacity of international connections between countries for transmitting Internet traffic. This entry gives the number of users within Nigeria that access the Internet. Statistics vary from country to country and may include users who access the Internet at least several times a week to those who access it only once within a period of several months. Secure servers are servers using encryption technology in all Internet transactions. Price basket for Internet is estimated based on the cheapest available tariff for accessing the Internet 16 hours a month (8 hours peak and 8 hours off-peak). The basket does not include the telephone line rental but does include telephone usage charges if applicable. Data are compiled in the national currency and converted to Nigeria currency Naira using the annual average exchange rate.

Fig 2: Content producers statistics in Nigeria

Content producers statistics in Nigeria



Spectrum Fees & Pricing

The Nigerian Communications Commission's spectrum pricing policy is targeted toward achieving the following objectives as set out in the Frequency Spectrum (Fees & Pricing) Regulations of 2004 (Amended 2009).

- Establish a transparent, fair, competitive and non-discriminatory pricing structure that include, but not limited to, auctions, "beauty contest" and other internationally accepted methods of bidding for the acquisition of frequency spectrum;
- Standardise frequency spectrum fees and pricing system in order to promote uniformity, consistency and efficiency in spectrum management in Nigeria in conformity with international standards;
- Ensure that the prices reflect the market value and are directly proportional to frequency spectrum size;
- Promote efficiency and competition in the usage of frequency spectrum;
- Facilitate access to frequency spectrum by simplifying and harmonising the electronic magnetic wave spectrum pricing process; and

- To achieve government policy objectives of even development of telecommunications infrastructure across Nigeria and the universal service goals.

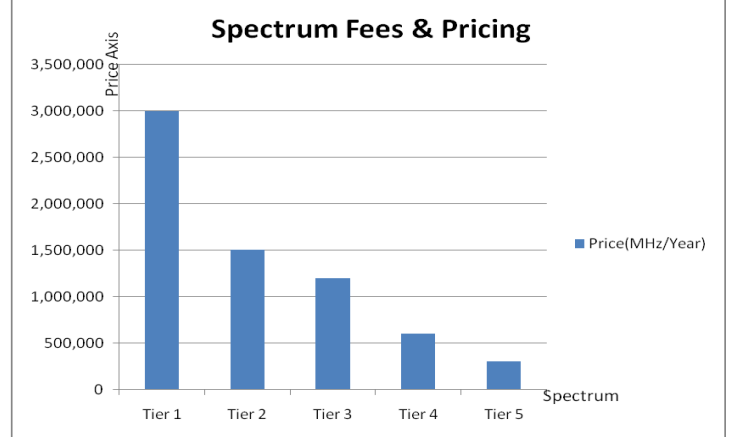
The pricing formulas for Commercial Frequency Spectrum and Microwave Frequency Spectrum respectively are shown on Table 5 and 6.

$$\text{Spectrum Fee} = (U) \times (B) \times (K_1) \times (K_2) \text{ per State}$$

Where;

U = Unit Price: This varies according to Licensing Region/Tier of the State in which the applicant seeks to operate.

Fig 2: Nigeria ISPs Coverage Spectrum Fees & Pricing



B = Assigned Bandwidth (Spectrum Size) in MHz

K₁ = Band Factor

- 1.0 for 3.5 GHz Band
- 1.6 for 1.8/1.9 GHz Band
- 1.4 for 800/900 MHz Band
- 1.2 for 2.0 – 2.5 GHz Band
- 0.33 for 10.5 GHz Band
- 0.12 for 26 GHz
- 2.0 for 450 MHz
- 0.5 for 5.0 GHz

K₂ = Tenure Duration Factor

- 0.3 for 3 months
- 1.0 for a 1 year License
- 4.0 for a 5 year License (Standard)
- 7.2 for a 10 year License
- 10.4 for a 15 year License

Duplex/Simplex

For simplex channel, unit price per State will be half of equivalent duplex channel.

Source: Nigeria Communications Commissions

Discussions

If the problem of ISP liability is not expressly processed by change to the Copyright Act, the main issue facing Nigerian ISPs is uncertainty over the potential copyright liability they will face within the future. This uncertainty can have two primary results. First, ISPs are forced to either (a) still bear this economic risk, perhaps explicitly setting aside funds to cope with any future liability ought to it arise, procure insurance to hide such potential liability, that has solely recently 67 *Indeed, CAIP explicitly recommended such a course of action to its members as a precaution should the caching liability stand up to appeal*, [3].

Most ISPs in Nigeria report that their insurance prices square measure in reality rising dramatically, even excluding the acquisition of copyright insurance. ISPs, particularly giant ISPs, can face continued legal prices as they attempt to resolve this uncertainty, in a very manner favourable to them, either within the courts or by lobbying for brand spanking new legislation. Favourably, they need the potential to place the Nigeria ISP

trade at a disadvantage with relation to Africa and alternative ISPs that have specific exclusions of copyright liability.

Notice and Takedown

The Notice and Takedown regime includes a range of points to suggest it from the perspective of ISPs by providing specific limitations on copyright liability due to transmission, copy, linking, and caching of copyright material. An important part of the Notice and Takedown regime is provision of “safe harbours” or limitation in liability for third party damages caused by associate ISP complying with the Notice and Takedown regime. (For example, once associate ISP takes down a client’s web site as a results of a “proper notice” that seems to be unfounded, the shopper will not sue the ISP for damages however can, presumably, sue the author of the notice.) The downsides of a Notice and Takedown approach, as made public within the comment on statement from CAIP, square measure as follows:

1. The imposition of associate unwanted “quasi-judicial” role on ISPs in judgement complex copyright problems between ISP shoppers and rights holders

2. The erosion of the connection between the ISP and therefore, the shopper as a result of having to a pace accommodates takedown notices.

3. The executive and legal prices of yielding with the regime, in terms of analysing notices to envision if they compliant with regulation, tracking actions taken, and then forth. One of the objections to the Notice and Takedown approach is that it's a “shoot first and raise queries later” or “guilty till tried innocent” approach that deprives alleged copyright infringers the advantage of due process of law and judicial oversight, *See “Reply comment from Canadian Association of Internet Providers”* [15].

The force of this argument can rely critically on the implementation of the Notice and Takedown system. for instance, the America system permits associate alleged infringer to file a counter-notification so as to own content reinstated after a 10-day waiting amount. The waiting amount permits time for the plaintiff to obtain a judicial writ before the content being reinstated. The executive mechanisms of notice, counter-notice, and waiting periods before takedown (if any) and reinstatement, likewise as any accelerated judicial method for getting court orders give for several tools with that legislation will arrange to balance the rights of ISP shoppers and copyright holders.

In terms of the international aggressiveness of Nigeria ISPs, the Notice and Takedown approach can probably place Nigerian ISPs on nearly identical competitive footing to America and European ISPs in terms of copyright liability. the ever present nature of the Internet combined with increasing copyright legislation worldwide would build it terribly troublesome for ISPs to deal with varied needs in several countries. This problem enhances the worth of an even approach towards copyright legislation following the initiatives of the Canada, America, Australia, and therefore the European Community. The Notice and Takedown approach is unlikely to be harmful to Nigeria ISPs and has a lot of to suggest it over the established order.

Notice and spot

In its elementary parts, the Notice and spot regime is analogous to the Notice and Takedown approach therein it provides specific limitations on copyright liability due to transmission, copy, linking, and caching of copyright material in refrence to table 4. The fundamental distinction is that upon receipt of a notice of alleged infringement by one of its shoppers, the ISP doesn't takedown the allegedly infringing content, but rather notifies its shopper of the alleged

infringements and facilitates the 2 parties resolving the problem. The ISP wouldn't reveal the identity of the shopper to the complainant, however would collaborate with an officer investigation.

The primary advantage over the takedown approach from the angle of ISPs isn't putt ISPs in a very “quasi-judicial” role that conflicts with the interests of their shoppers. Legal and body prices could also be below within the Notice and Takedown approach likewise.

Nigeria communication commission raise procedure standard leading to the issuance of a license or permit by the Nigerian Communications Commission, is discussed bellow[5].

1. Provide Application Form for each licence required to applicant.

Cost of Application: N1,000.00 only - payable in bank draft, to the Nigerian Communications Commission.

Provide receipt, acknowledging the submission of application by applicant upon receipt of the completed application form.

Evaluate Application

Presentation of project implementation plans and status report - designed specifically for network and network based services[5].

Legislation

The legislation governing the Nigerian ISPs indutry are:

- Nigerian Communications Act (2003) The Nigerian Communications Act 2003 was signed into law by the President, Chief Olusegun Obasanjo (GCFR) on the eighth of Gregorian calendar month 2003 when being lapsed each homes of the National Assembly. The Act strengthens the capability of the NCC to properly do its restrictive Activities.

Guidelines

Nigeria communication commission (NCC) produce legal tips issued by the Commission that square measure state below;

- Guidelines On Procedure For Granting Approval To Disconnect Telecommunications Operators
- Guidelines on Short Code Operation in Nigeria
- Guidelines on Advertisements & Promotions
- Guidelines for the Installation of Telecommunications Masts and Towers
 - o Appendix (9.61 MB)
- Guidelines on business Satellite Communications
- Guidelines for preparation of Broadband Services on the five.2-5.9GHz Band
- Guidelines on Technical Standards for Interconnectivity of Networks
 - Guidelines on Consultations
 - Guidelines on sort Approval
 - Guidelines for the availability of net Service
 - Guidelines on Collocation and Infrastructure Sharing
 - Guidelines for International Access and vocalization net Protocol (VoIP)
 - Guidelines for Dispute Resolution
 - o Arbitration theme & Mediation Rules for Interconnection Dispute Resolution
 - o Dispute Resolution Panel of Neutrals (10.85 kB)
 - Guidelines for the employment of two.4GHz philosophy Band for business medium Services (Deployment of Wi-Fi [15][16].

In veiw of this study, the reform of copyright propose should follow the following guide principles

As even the higher than transient summary shows, copyright provides a posh mixture of rights and limitations aimed toward equalization the interests of householders, authors, users and also the public.

Table 1: Internet Products and Services in Nigeria

Name of Providers	Products & Services	Technology	Coverage	Spectrum frequency rane
Atmospace	Wireless Networking	Wi-Fi hotspots,	Nigeria	High speed
Global Technology & Communication Systems Ltd	Wireless Networking	fixed wireless	Africa and Nigeria	High speed
Hitecpro.com	Wireless Networking	Not Available	Nigeria	30x faster than traditional dialup Internet access
Horizon Broadcasting & Communications Ltd	voice, video and data service	Not Available	Nigeria	
Linkserve	Wireless Networking		Abuja, Port Harcourt, Victoria Island, Lagos	
MetroNG	data, voice	radio network	Apapa, Ikorodu, Victoria Island, Ikeja, Surulere, Ilupeju, Lagos Island	
Adesemi Nigeria	Wiman breed	Wireless Network	Lagos, Rivers, Cross Rivers, Abia; Imo	
Cyberspace	Broadband technology	Wireless Network	Lagos and Delta State	3.5GHZ Broadband
MicroAccess	fiber optic connections, digital 56K modems, high bandwidth, brand name equipment and software from companies including Intel, Cisco, Compaq, Microsoft, Netscape, and Linux	Wireless Network		
MTN Nigeria	Wireless, Wireline, broadband, Mobile Telephone Networks	2G, 3G, 3.75G	Nigeria and Africa	
Multi-Links Telecommunications Ltd.	Wireless Networking		Nigeria	
Netcom Africa Ltd	Wireless Networking	Axity 3G	Lagos, Abuja, Port Harcourt and Kano	
Odu'a Telecoms	voice and data services, including videoconferencing	62 wireless licenses	Oyo, Ogun, Ondo, Osun and Ekiti in southwest Nigeria	
Rosecom.Net	Small Enterprises, Cyber Café and SOHO application	Dial-Up and Point-to-multipoint wireless	Abuja, the Federal Capital of Nigeria	
SKANNET		Electricity		
SWIFT NETWORKS	Broadband Internet, Digital Telephony, Data and Video surveillance solutions		Nigeria	
ThirdWave Networks	Internet access, data transfers, wireless and multimedia applications			high-data rate
SwiftTalk	VSAT services, Microwave Radio Installation, Metropolitan Area Networks (MAN), ISP Services using Wifi and Hotspots, VOIP services, International Telephone calling card services and Cybercafé card services	Telecommunications	Nigeria and Africa	
Accelon Nigeria Limited	Broadband internet access		Nigeria	
PINET	Beyond dial-up Internet s, focus on HostDirect, LAN, WAN, DomainDirect, Training and Consultancy	Wireless Network	Africa	
Mega Tech	voice and high speed internet access	fixed wireless access		3.5GHz frequency
21st Century Technologies Limited	broadband communication systems, satellite-based videos, audio, inter data distribution networks	Wireless Network	Nigeria	

HYPERIA Ltd	Wireless Networking	Internet and Communication Services	Nigeria	
Electronic Connections limited	High level network, communications and network security solutions	ISP networking	Nigeria	
ABIMCO	Ku and C band	Internet Connection Via VSAT	Nigeria	
WEBCOM Limited	Call conferencing, Prepaid Calling Card Services, High speed Internet Connection Cyber cafe and Cafe Setup, PABX Connection and Centrex	Wired Telephone Network	Nigeria	
World Web Limited (WWL)		National ISP with Points Of Presence (POPS)	Kaduna	
SimbaNET Nigeria	Setting up ISP setup, VSAT solutions, Wireless Solutions, Inmarsat BGAN etc.	Internet Provisioning	Nigeria	
Integrated Telekom Networks	Broadband Internet Access	ICT Services	Nigeria	

Source: Nigeria ISPs Providers [14]

Table 2: Nigeria Education depending on Copyright Contents

Adjusted savings: education expenditure > % of GNI	0.85 % of GNI
Duration of compulsory education	6 years
Duration of education > Primary level	6
Duration of education > Secondary level	6
Education enrolment by level > Primary level	24,563,004
Education enrolment by level > Secondary level	6,313,110
Education enrolment by level > Tertiary level	947,538
Education enrolment by level, percentage girls > Primary level	43.97%
Education enrolment by level, percentage girls > Secondary level	43.79%
Education enrolment by level, percentage girls > Tertiary level	40.08%
Education enrolment ratio, net, primary level	70%
Education enrolment ratio, net, primary level > Men	74%
Education enrolment ratio, net, primary level > Women	65%
Education, percentage of pupils starting grade 1 reaching grade 5	62.6%
Education, percentage of pupils starting grade 1 reaching grade 5 > Men	61.4%
Education, percentage of pupils starting grade 1 reaching grade 5 > Women	64.1%
Education, primary completion rate	80
Education, primary completion rate > Men	87
Education, primary completion rate > Women	73
Female enrolment share > Primary level	44.5%
Female enrolment share > Secondary level	45.6%
Geographical aptitude results	63.808
Girls to boys ratio, primary level enrolment	0.86
Girls to boys ratio, secondary level enrolment	0.84
Girls to boys ratio, tertiary level enrolment	0.55
Gross intake rate in grade 1, female > % of relevant age group	107.38 %
Gross intake rate in grade 1, male > % of relevant age group	123.6 %
Gross intake rate in grade 1, total > % of relevant age group	115.69 %
Illiteracy rates by sex, aged 15+	31.9%
Illiteracy rates by sex, aged 15+ > Men	24.5%
Illiteracy rates by sex, aged 15+ > Women	39%
Illiterate population by sex, aged 15+	21,823,300
Illiterate population by sex, aged 15+ > Men	8,414,400
Illiterate population by sex, aged 15+ > Women	13,307,200
Literacy rate, adult female > % of females ages 15 and above	38.38 %
Literacy rate, adult male > % of males ages 15 and above	59.38 %
Adjusted savings: education expenditure > % of GNI	0.85 % of GNI
Duration of compulsory education	6 years

Sources: World Development Indicators database; UNESCO; Source: UNESCO UIS Data | UNESCO Institute for Statistics; The Geography Zone; Household survey data, net enrolment data

Table 3: Internet access statistic by income in Nigeria

Broadband subscribers	500
Country code	.ng
Hosts	1,048
International Internet bandwidth > Mbps	130 Mbps
Internet Service Providers	11
ISP	11
Livejournal users	41
Price basket for Internet > US\$ per month	50.42 \$/month
Secure Internet servers	36
TLD	.ng
Users	10,000,000

SOURCES: World Development Indicators database; IANA: Internet Assigned Numbers Authority; All CIA World Factbooks 18 December 2003 to 18 December 2008; CIA World Factbook, December.

Table 4: Content producers statistics in Nigeria

Book production, titles by the Universal Decimal Classification > Applied sciences	116
Book production, titles by the Universal Decimal Classification > Arts and recreation	52
Book production, titles by the Universal Decimal Classification > Literature	133
Book production, titles by the Universal Decimal Classification > Religion, theology	203
DVD region	5
Fixed line and mobile phone subscribers > per 1,000 people	150.61 per 1,000 people
Households with television > %	25.6 %
Mobile phone subscribers	18,587,000
Newspapers and periodicals > Circulation > Daily	2,760,000
Newspapers and periodicals > Number of titles > Daily	25
Number of PCs	867
Phone subscribers	8.9
Radio receivers	23,500,000
Radios	23,500,000
Telephone system > Regulation	1992
Television broadcast stations	3
Television receivers	6,900,000
Television standard > VHF	PAL B
Televisions	6,900,000

SOURCES: Source: UNESCO UIS Data | UNESCO Institute for Statistics; Amazon.com; World Development Indicators database; ITU; ; All CIA World Factbooks 18 December 2003 to 18 December

Table 5: Spectrum Fees & Pricing

Tier	State(s)	Price(MHz/Year)
Tier 1	Lagos	₦3,000,000
Tier 2	Delta; Federal Capital Territory, Abuja; Kaduna; Kano; and Rivers.	₦1,500,000
Tier 3	Abia; Anambra; Edo; Ogun; and Oyo.	₦1,200,000
Tier 4	Akwa Ibom; Bauchi; Benue; Borno; Cross River; Enugu; Imo; Kogi; Kwara, Niger; Ondo; Osun; and Plateau.	₦600,000
Tier 5	Adamawa; Bayelsa; Ebonyi; Ekiti; Gombe; Jigawa; Katsina; Kebbi; Nassarawa; Sokoto; Taraba; Yobe; and Zamfara.	₦300,000

Source: Nigeria Communications Commission

Table 6: Licence fee structures

S/N	SERVICES	VALIDITY OF AUTHORISATION	FEE (=N=)
1	Sales & Installation of Terminal Equipment Including Mobile Cellular Phones & HF/VHF/UHF Radio (Including Fixed Telephone sets, Modem,	One-Off	10,000.00
2	Repairs & Maintenance of Telecom Facilities: Category A-For an individual technician operating small workshop Category B-For companies operating small & medium workshop Category C-For companies operating comprehensive workshop		10,000.00
3	Cabling: Category A-For an individual technician (cabling within premises only) Category B-For companies (cabling within premises and/or estate) Category C-For companies (including underground cabling)		10,000.00
4	Tele-Centre/Cyber Café: Commercial Telephone call centre only. In Urban areas In rural areas Commercial Telephone call plus retail Internet services		10,000.00
5	Public Payphone:		10,000.00

It's important to know this in assessing the advantages of copyright and also the prices, a difficulty mentioned below[7].

Conclusion

The study examines the consequences of the competition that was caused by liberation and liberalisation of the ISPs industry on handiness, quality and price of ISPs services in Nigeria in ten years of the reform. The result shows associate degree new high Wireless Technology penetration with teledensity increasing from 2G to 3.75GB technology with high internet speed. In the vary of services was witnessed however with comparatively poor quality. alternative findings embody a forceful fall within the price of reference to price of ISP service with overcoming of 3G, 4G technology my GSM operators offering mobile internet services, teleconferences, broadband VoIP, Data bundle varieties.

Aside the positive findings, there area unit alternative attendant issues like loss of jobs within the GSM operators, which is undergoing privatisation method, perceived foreign domination of the arena, redoubled rate of cyber crime and health hazards created by varied medium firms' installations among others.

While the reform is also for the most part adjudged successful, there still exist needs for improvement, particularly within the areas of service quality and tariffs reduction. it's visible of this that improvement of electricity provide becomes expedient so as to enhance service quality and cut back price of services.

The Nigerian Communications Commission (NCC) ought to address the difficulty of network infrastructure sharing, notably in areas wherever there's one supplier. This can promote Nigeria ISPs products and services shared infrastructure, cut back dominance and later on cut back tariffs. This becomes necessary visible of the fact that each licenced operator cannot give the infrastructure it needs. Implementation of range movability is of equal importance to strengthen consumers' selection. Many users could will modification their network however area unit strained by their temperament to alter the number with that they're famous. once range movability, that permits subscribers to alter network and retain their numbers, is combined with provision of different network infrastructure, dominance within the market are greatly reduced. With this, grade playground is ensured and honest competition can bring down tariffs. alternative necessities to enhance true embody a big reduction of interconnection rate and regular review of market activities with a read to distinctive and eliminating anti-competitive practices. What has been witnessed in 10 years of ISPs reform in Nigeria is a sign that competition, instead of monopoly, is covetous in sure public service delivery. However, such competition needs comfortable legislation and regulation to succeed. Otherwise, an inclination toward private monopoly could develop. The success story of telecommunications reform in Nigeria is part due to the restrictive competency of the NCC.

Recommendations

Thus, it's suggested that the Copyright Act be amended to supply specific limitations of ISP copyright liability for transmission, replica, linking, and caching of proprietary content victimization either the Notice and see or Spot and Takedown approach.

The required licensing approach is dramatically completely different from the 3 previous alternatives in its legal approach. putt aside the question of lawfulness or constitutionality of such associate approach, the technical and economic practicability of a "targeted tariff" is doubtful. Before discussing practicability,

note that the order of preference for the premise for applying a "targeted" tariff would be:

1. the degree of infringing copyright material
2. the degree of copyright material, whether or not infringing or non-infringing
3. the degree of file sorts that usually contain infringing copyright material
4. the entire volume of information

This preference ranking relies on theory, and also the notion that efficiency needs that tariff fall on users of (infringing) copyright material. Each of these four alternatives ar thought-about below.

A tariff on the transfer of infringing copyright material has 2 associated problems that build it unfeasible. First, the ISP would got to verify whether or not the material being transferred was proprietary. as a result of copyright doesn't got to be registered, there's no central repository of proprietary material, and so no resource against that material can be compared to verify whether or not it's copyright. Second, albeit associate ISP were able to verify that a file contained copyright materials, the ISP would then got to verify whether or not the viewer had purchased or was given the proper to transfer that file, or whether or not they were infringing. Currently, there's no means for ISPs to see this reality once and for all and at cheap value.75 The Nigeria Communication commission (NCC) judgement concerning the ISPs Tariff some proposal came to an analogous conclusion, noting that it absolutely was not technically possible for ISPs to observe the copyright standing of fabric flowing across their systems.

Because it's not possible for ISPs to see whether or not files ar copyright or not, both of the primary 2 tariff approaches ar unfeasible. The third approach would be to "target" the tariff toward infringing kinds of files (e.g., MP3) or applications (e.g., P2P systems). presently it'd be technically feasible, though labour intensive, for ISPs to spot the applications that are transferring packets across their networks. The approach would rely on victimisation the conventions that sure applications use sure protocol port numbers.

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