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Protection of computer programs and other internet works in Nigeria; need to domesticate the wipo copyright treaty

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Abstract
Since the beginning of the 20th century, the world has witnessed astronomical advancement in scientific and technological innovations which have changed the face of the modern society leading many thinkers to term this present civilization 'the jet age'. This technological advancement has had enormous impact on the world's legal systems, disrupting traditional modes of protection of intellectual property and has left the law completely in a state of flux due to the ever changing forms of innovation; such as computers including palmtops and hi-tech phones, satellite and cable receivers/signals, facsimile transmissions and the perpetually growing internet. Nigeria is a signatory to several conventions on Copyright including the Berne Convention. The WIPO Copyright Treaty was adopted in 1996 with the aim of giving protection to digital works. This paper is basically a call on the Nigeria Government to overhaul the extant copyright law to bring it in sync with current development in technology by domestication the WIPO Copyright Treaty.

Keywords: beginning, witnessed, advancement, digital

1. Introduction

It is a truism that the greatest heritage of a nation remains the creativity of its citizens, therefore one of the primary functions of law is to protect the ingenuity, resourcefulness and the innovation of the citizenr [1] Thus the dictum of *Belgore, J in Oladipo Yemitan V. The Daily Times Nigeria Limited* [2] is very apt when he said:

"The right of a man to that which he had originally made is an incorporeal right and must be protected".

Since the beginning of the 20th century, the world has witnessed astronomical advancement in scientific and technological innovations which have changed the face of the modern society leading many thinkers to term this present civilization 'the jet age'. This technological advancement has had enormous impact on the world's legal systems, disrupting traditional modes of protection of intellectual property and has left the law completely in a state of flux due to the ever changing forms of innovation; such as computers including palmtops and hi-tech phones, satellite and cable receivers/signals, facsimile transmissions and the perpetually growing internet [3] Sadly, the extant legal regime on copyright protection has failed to rise up to the occasion in terms of making concrete provisions for the protection of works in the digital environment such as computer programs, works on the internet etc. Hence, the ease of dissemination of information on the internet has become rampant and uncurtail. Once material is stored in digital format, further copying results in no loss of quality, the resultant effect being loss of economic and financial benefit to creators and owners of work in digital form. One example that readily comes to mind in this regard is copying of movies via the internet in utter and blatant disregard for the right of the copyright owner.

The World Intellectual Property Organization (WIPO), an arm of the United Nations created to deal with international intellectual property issues, adopted two new treaties dealing with copyright law on December 20, 1996. The treaties were created in response to the arrival of the digital age, which has made information a key business asset, expanded international commerce, and enabled faster and easier copying of copyrighted work. The value of harmonizing global copyright law has grown accordingly. The Copyright Treaty was formed both to harmonize global copyright law and to extend that law into the digital domain. The Treaty builds on the Berne Convention for the Protection of Literary and Artistic Works (the Berne Convention), which set out some international copyright standards in 1886 [4].

This paper considers in particular, the provisions of the WIPO Copyright Treaty ("the Treaty" or "WCT") as it relates to the protection of computer programs and digital works. In discussing the provisions of the Treaty, an attempt is being made to examine the inadequacies of the current legal regime on copyright protection in Nigeria as it relates to computer programs and other internet works, focusing on the need to immediately domesticate the Treaty in order to stem the tide of incessant and uncurtail infringement in this regard. This paper goes further to examine some issues relating to copyright infringement of internet works and other computer programs such as the liability or otherwise of

[1] Faga, H.P "*Limits of Copyright Protection in Contemporary Nigeria: Re-examining the Relevance of the Nigeria Copyright Act in Today's Computer Age*" available at http://www.ajol.info/index.php/naujiij/article/view/82405. Accessed on 18th June, 2017
[2] [1980] FHCR (Federal High Courts Report]186 at 190
[3] Faga, H.P (Supra)
[4] Jukie, S.S, "The WIPO Copyright Treaty" Berkley Technology Law Journal, Vol. 13 1998. Available at http://shorlarship.law.berkley.edu/btij/vol13/iss1/34. Accessed on 20th June, 2017

Internet Service Providers (ISPs). In order to get a clearer picture and to convincingly establish the need for the current legal regime relating to copyright protection to be reviewed, a quick foray into the implementation of the Treaty in other jurisdiction is being made. Thus, to correct this socio-legal problems connected with infringement of digital, internet and computer programs, this paper strongly recommends a vivid restructuring of the extant copyright law to expressly incorporate the protection of works and the right of their author in the digital environment. In this wise, the need to criminalize and impose heavy penalty on culprits, amongst others, is seen as a way forward.

In the light of the above, this paper has been divided into seven parts. Apart from this introduction which forms the first part, part two deals with the definition of major terms and examples of digital works that requires protection, part three attempts a brief summary of the Treaty, part four examines the Application of the Treaty in other jurisdictions particularly the United Stated of America, part five examines the need for protection of works in the digital environment. This part also discusses the present attitude to protection of digital works in Nigeria. The application of the Treaty in the protection of computer programs, data and other digital work in other jurisdictions also forms part of the discussion in this part. Finally, part six deals with recommendations and part seven, conclusion.

2. Definition of Terms

2.1 Copyright

Copyright is a form of intellectual property protection provided by law. Copyright protection is available for original works of authorship that are fixed in tangible form, whether published or unpublished. The categories of works that can be protected by copyright laws include paintings, literary works, live performance, photographs, movies and software.

According to the Black's Law Dictionary [5], copyright is the right of literary property as recognized and sanctioned by positive law. An intangible incorporeal right granted by statute to the author or originator of certain literary or artistic productions whereby he is vested for a limited period, with the sole and exclusive privilege of multiplying copies of the same and publishing and selling them.

The above-mentioned right which is known as 'copyright' can be "licensed, transferred and/or assigned by the author of the work". This position has been adopted judicially in a host of cases including Corelli v. Gray, Jerrold v. Houston [6], and Rees v. Melville [7] where Lord MacCoughton defined copyright as a negative right (because it restricts others from doing a particular act). In Nigeria under the Copyright Act, the term 'copyright' is not expressly defined, but on a broader perspective, the meaning of the term can be appreciated in the provisions of section 6 of the Copyright Act [8], which provides that:

"Copyright in Nigeria of an eligible work is the exclusive right to control, to do or authorise the doing of any of the acts restricted to the copyright owner".

The totality of the above attempts to define copyrights can be harmonized to best describe the nature of the term. Thus, copyright is a form of protection provided by the laws of a state or international instrument, to the creators of original works which in Nigerian jurisprudence operates to include musical works, literary works, cinematograph films, artistic works, sound recordings, and broadcast. The protection offered by copyright is available to both published and unpublished works of authors [9].

It is important to state at the early stage of this paper that before the representation of intellectual property materials as listed above, in digital form, they could be represented on paper, tape or celluloid and other traditional storage media. Copying or duplication of intellectual property works therefore could not be carried out with ease as the digital storage media [10]. In essence, little or no attention was paid to protection of works represented in digital form or soft copies of works on computers or other electronic devices including data collections and arrangements. It is in recognition of this development (digitalization) that the World Intellectual Property Organization (WIPO) created the Treaty in 1996 to address new issues touching the protection of copyright owners and their works in the digital environment. As will be discussed later in this paper, the Treaty was created to address two main issues viz: (a) Computer programs, whatever the mode or form of their expression, (b) Compilation of data or other materials ("databases"). These are in addition to the protection granted copyright owners under the Berne Convention.

2.2 Computer Programs

Whilst the necessity of defining 'computer programs' may not be appreciated, it is pertinent for the purpose of this paper, to attempt a brief description of what is meant by computer programs. This is because, it will be difficult if not impossible to appreciate a discourse on protection of computer programs and other digital works without a proper understanding of the concept itself. Needless to say that computer programs are necessary vehicles through which work are stored in electronic forms on the computer and the internet as the case may be. The fact that the gamut of the WCT is hinged on works of copyright owners as it relates to computer programs in the digital environment makes the definition of the concept apt in this regard.

A computer program is a collection of instructions that performs specific task when executed by a computer. A computer requires programs to function and typically execute the program's instructions in a central processing unit. A computer program is usually written by a computer programmer in a programming language [11] From the program in its human-readable form of source cod [12], a compiler can derive machine code- a form consisting of instructions that the computer can directly execute. Alternatively, a computer program may be executed with the aid

[5] Bryan, A.G, Blacks' Law Dictionary (8th edition: West Publishers N.Y) P. 361
[6] [1857] Mac G. Cop 117
[7] [1914] 3 K &J. 703
[8] Cap C28 LFN, 2004
[9] Faga, H.P, Op. Cit. at P.1
[10] Marcus, A.A "*A Need for Cyber-crime Specific Legislation to Address Cyber-crime as a New Phenomenon of Crime* (University of Ibadan Journal of Public Law) Vol.7, 2012 p.80

[11] This is a formal language that specifies a set of instruction that can be used to produce various kinds of output. Programming language generally consist 0f instructions for computer.
[12] A source code is any collection of computer instructions possibly with comments, written using a human-readable programming language, usually as ordinary text

of an interpreter. A part of a computer program that performs a well-defined task is known as algorithm [13]. A collection of computer programs, libraries and related date are referred to as software. Computer programs may be categorized along functional lines, such as application software or system software. Computer programs also extends to data collection, compilation, arrangement etc [14].

It is important to quickly point out that most copyright related infringement of computer, internet and other digital works are carried out using specific software to circumvent some protection made by owners of copyright of works in electronic format and works on the internet to prevent illegal copying, transfer and dissemination of their works. The circumvention of measures of protection of these works also constitute one of the salient provisions of the WCT.

2.3 Internet

A holistic definition of computer programs cannot be attained without having recourse to what is meant by 'internet'. It is of common knowledge that in this time and age, the internet is an indispensable tool for carrying out various activities ranging from research, communication, advertisement, publications, transactions, education, etc. It is therefore not possible to discuss copyright of computer programs and other digital works without a clear understanding of 'internet' being a major tool in internet copyright infringement. As stated in the introductory part of this paper, the role of Internet Service Providers ("ISPs") in "online" infringement is paramount. This will be discussed in full details later in this paper.

The internet sometimes simply called "the Net" is a world-wide system of computer networks- a network of networks in which user at any one computer can, if they have permission, get information from any other computer (and sometimes talk directly to users at other computer). It was conceived by the Advanced Research Project Agency (ARPA) of the U.S Government in 1969 and was first known as ARPANet [15]. The original aim was to create a network that would allow users of research computer at one university to "talk to" research computers at other universities. A side benefit of ARPANet's design was that, because messages could be routed or rerouted in more than one direction, the network could continue to function even if parts of it were destroyed in the event of military attack or other disaster. Today. The internet is a public, cooperative, and self-sustaining facility accessible to millions of people world-wide. The most widely used part of the internet is the World Wide Web (often abbreviated "www" or called "the web". Its outstanding feature is hypertext. The internet has continued to grow and evolve over the years of its existence. IPv6, for example, was designed to anticipate enormous future expansion in the number of available IP addresses. In a related development, the Internet of Things (IoT) is the burgeoning environment in which almost any entity or object can be provided with a unique identifier and the ability to transfer data automatically over the internet [16].

3. Summary of the Wipo Copyright Treaty ('The Treaty")

The World Intellectual Property Organization (WIPO), an arm of the United Nations created to deal with international intellectual property issues, adopted two new treaties dealing with copyright law on December 20, 1996. The treaties were created in response to the arrival of the digital age, which has made information a key business asset, expanded international commerce, and enabled faster and easier copying of copyrighted work. The value of harmonizing global copyright law has grown accordingly. The Copyright Treaty was formed both to harmonize global copyright law and to extend that law into the digital domain. The Treaty builds on the Berne Convention for the Protection of Literary and Artistic Works (the Berne Convention), which set out some international copyright standards in 1886 [17]

The Treaty is a special agreement meant to increase the rights and obligations of its members, authorized under Berne's Article 20. It consist of 25 Articles, and WIPO published along with it the Agreed Statement concerning the Treaty, which attempts to clarify some of the Articles in the Treaty. As in the Berne convention, the Treaty protects expression and not ideas, methods of operation, or mathematical concepts. Article 3 of the Treaty incorporates Articles 2 to 6 of the Berne convention, which consist mainly of procedural rules, such as the rules that parties cannot impose formalities on the nationals of other parties as a condition for claiming protection [18].

Article 4 of the Treaty ensures that copyright protection is extended to computer programs by explaining that they are "literary works" under Article 2 of the Berne Convention. The Berne Convention does not list computer programs in its non-exhaustive list, but notes that literary works include "every production in the literary, scientific and artistic domain, whatever may be the mode or form of expression" [19]

Article 5 of the Treaty further protects original compilation of data (databases) that incorporate copyrightable authorship. This protection does not extend to the data or material itself. The protection of database is extended by virtue of the compilation, selection, and arrangement [20]

A summary of the Treaty given by the World Intellectual Property Organization in its official website [21] shows that the Treaty basically mentions two (2) subject matters to be protected by copyright viz:

1. Computer programs, whatever the mode or form of their expression; and
2. Compilations of data or other materials ("database"), in any form which, by reason of the selection or arrangement of their contents, constitute intellectual creation. (Where database does not constitute such a creation, it is outside the scope of the Treaty).

As to the rights granted to authors, apart from the rights recognized by the Berne Convention, the Treaty also grants: (i) the right of distribution (ii) the right of rental; and (iii) a broader right of communication to the public.

[13] In mathematics and computer science, an algorithm is a self-contained sequence of actions to be performed. Algorithm can perform calculation, data processing and automated reasoning task.
[14] https://simple-wikepedia.org/wiki/computer program.
[15] Searchwinddevelopment.techtarget.com>ASP.NET>internet technologies. Accessed 20th June, 2017
[16] ibid
[17] Julie, S.S, Op. Cit. at Page 3
[18] Julie, S.S, Op. Cit. at page 8
[19] ibid
[20] ibid
[21] www.wipo.intl accessed on 20th June, 2017

1. The right of distribution is the right to authorize the making available to the public of the original and copies of work through sale or other transfer of ownership.
2. The right of rental is the right to authorize commercial rental to the public of the original and copies of three kind of works (i) computer programs (except where the computer program itself is not the essential object of the rental); (ii) cinematographic works (but only in cases where commercial rental has led to wide speed copying of such works, materially impairing the exclusive right of reproduction and (iii) works embodied in phonograms as determined in national law of contracting parties.
3. The right to communication to the public is the right to authorize any communication to the public, by wire or wireless means, including "the making available to the public of works in a way that the members of the public may access the work from a place and at a time individually chosen by them". The quoted expression covers in particular, on-demand, interactive communication through the internet.

As to limitations and exceptions, Article 10 of the Treaty incorporates the so called "three step test" to determine limitations and exceptions, as provided for in Article 9(2) [22] of the Berne Convention extending its application to all rights. The Agreed Statement accompanying the Treaty provides that such limitations and exceptions, as established in national law in compliance with the Berne Convention, may be extended to the digital environment. Contracting states may devise new exceptions and limitations appropriate to the digital environment. The extension of existing or creation of new limitations and exceptions is allowed if the conditions of the "three-step test" are met.

The Treaty further obliges contracting parties to provide legal remedies against the circumvention of technological measures (e.g encryption") used by authors in connection with the exercise of their rights, and against the removal or altering of information, such as certain data that identify works or their authors, necessary for the management (e.g licensing, collecting, and distribution of royalties) of their rights. ("Rights Management Information") [23] Finally, the Treaty obliges each contracting party to adopt in accordance with its legal system, the measures necessary to ensure the application of the Treaty. In particular, each contracting party must ensure that enforcement procedures are available under its law so as to permit effective action against any act of infringement of rights covered by the Treaty. Such action must include expeditious remedies to prevent infringement as well as remedies that constitute a deterrent to further infringement [24].

4. Implementation of the Provisions of the Treaty in Other Jurisdictions

At the ninth session of the Standing Committee on Copyright and other Related Rights held at Geneva, in June, 2003, a survey on the implementation of the provisions of the Treaty was conducted. The document containing the results of the survey covers provisions in the national legislation of member states which have ratified or acceded to the Treaty [25].

By virtue of the said report, legislations of 39 member states, who acceded to or ratified the Treaty before April 1, 2003 were surveyed. The countries include: Albania, Argentina, Belarus, Bulgaria, Burkina Faso, Chile, Colombia, Costa Rica, Croatia, Czech Republic, Ecuador, El Salvador, Gabon, Georgia, Guatemela, Honduras, Hungary, Indonesia, Jamaica, Japan, Kyrgyzstan, Latvia, Lithuania, Mali, Mexico, Mongolia, Republic of Moldova, Nicaragua, Panama, Paraguay, Peru, Philippines, Romania, Saint Lucia, Senegal, Slovakia, Ukraine, and United States of America [26].

The legislative provisions of the listed nation states as contained in the survey cover the following issues: coverage of computer programs and databases; the right of making available to the public; protection against circumvention; protection of right management information; exceptions and limitations, the right of performers and; the liability of internet service providers [27].

It is pertinent to note that thirty-five of the laws reviewed protect computer programs expressly, either under the scope of literary works, or as separate works. Language in the various legislation of the surveyed nation states varies between "computer programs" or "computer software", sometimes also includes application and operating systems.

In respect of liability of internet service providers (ISPs), 10 of the laws included in the survey deal expressly with this subject. Of those which do, seven reflects the wordings of the Agreed Statement 8 to the Treaty [28]]. Japan and the United States have extensive provisions on the subject; both containing provisions whereby ISPs have a mechanism to avoid liability through notice and take down procedures. The Japanese law also provides a right to ascertain information concerning the identity of the alleged infringer, with a provision that such provision should not be used abusively.

A survey of the Copyright Act of the United States of America reveals that virtually all the provisions of the Treaty have been domesticated. In other words, the provisions of the Treaty form part of the Copyright Act of the United States. For example Article 5 of the Treaty protects original compilation of data (databases) that incorporate copyrightable authorship. This provision is embodied in Section 103 of the United States Copyright law [29] and same was also given the force of law in *Feist Publications, Inc. V. Rural Telephone Services Co* [30]. where it was held that an alphabetically listed compilation of phone numbers was not protectable in part because it did not incorporate any creativity in selection or arrangement. Also the Treaty incorporates the "exclusive right of authorizing the

[22] Art. 9(2) provides that "it shall be a matter for legislation in the countries of the union to permit the reproduction of such works in certain special cases, provided that such reproduction does not complicit with a normal exploitation of the work and does not reasonably prejudice the legitimate interest of the author"
[23] See Article 11 of the WIPO Copyright Treaty
[24] Article 11 WIPO Copyright Treaty, Op. Cit.
[25] See the Survey of the implementation of the provision of WCT and WPPT by the Standing Committee on Copyright and Related Rights given in 2003. Available at www.wipo.intl Last accessed, 28th June, 2017
[26] Ibid www.wipo.intl
[27] www.wipo.intl ibid
[28] The Agreed Statement provides "it is understood that the mere provision of physical facilities for enabling or making a communication does not in itself amount to communication within the meaning of this Treaty or the Berne Convention. It is further understood that nothing in Article 8 precludes a contracting party from applying Art. 11(2)." Art. 8 provides for right of communication to the public.
[29] Julie, S.S Op. Cit. p.3
[30] 499 U.S 340, 348 (1991)

reproduction" of protected works set forth in Article 9 of the Berne Convention. Section 106 of the Copyright Act of the U.S as well sets out an "exclusive" right "to reproduce the copyright work". The United States' general exclusive right of reproduction, then, seems to be in accord with the Treaty's exclusive right to reproduction [31].

Finally, Section 102 of the United States Copyright Law is in line with Article 11 of the Treaty which provides that parties must provide "adequate legal protection and effective legal remedies" against circumvention of technologically based security measures used to prevent copyright infringement. Section 102 of the United States Copyright Law prohibits the importation, manufacture, or distribution of a device with the primary purpose of circumventing a certain "copy management system". Courts in the United States have held that a party can be liable for contributory infringement if they know or have reason to know of a third party's infringing activity, and induce, materially contribute to, or further those infringing acts.

5. Liabilities of Internet Service Providers (Isps) for Copyright Infringement

There have been series of debates as to the liabilities of ISPs for infringement of copyright in the digital environment. It is important to quickly point out, that temporary electronic copies are excluded from the definition of 'copies' as those temporary copies are transitory in nature and therefore cannot be regarded as 'fixed' [32]. So in the digital context, transitory copies are not regarded as copies in strict sense of the term and this brings us to the question of liability of ISPs. Since ISPs are not liable for millions of temporary copies that are made on their computers, where does the question of ISPs liability arise?

6. Who is an Internet Service Provider?

An Internet Service Provider (ISP) is an entity that connects people to the internet and provides other related services such as website building and hosting [33].

It can also mean a company that might be performing any of a multitude of services over the Internet. Traditional ISPs provide connection to the Internet and usually offer users email and newsgroup access [34] others offer web space for users to create their own home pages. Bulletin Board operators could also be regarded as ISPs. ISPs could also include telecommunications infrastructure such as Cisco and local telephone companies [35]

Other more specialized, functions of ISPs include those that provide connectivity software employing a central server such as file-sharing programs or Internet Messenger services.

Software that does not require a central server can be described as pure peer-to-peer networking or decentralized. It is these newer functions of ISPs that are most problematic for copyright holders.

The Digital Millennium Copyright Act 1998 (hereinafter referred to as DMCA) has two definitions for ISPs. The first definition in section 512(k) (1) (a) provides thus:

"An entity offering transmission, routing or providing of connections for digital online communications, between or among points specified by a user, of the material of user's choice, without modification to the content of the material as sent or received."

The second definition in section 512(k) (1) (b) identifies a 'Service provider' as "a provider of online services or network access, or the operator of facilities therefore'. It is submitted that the DMCA definition is broad enough to encompass all activities on the internet where companies are providing some sort of service to users or where they are providing a direct connection [36

The E-Commerce Directive (EU) provides a similarly broad definition: a 'service provider' is

"Any natural or legal person providing an information society service."

In the Nigerian context, the extant Copyright Act 2004 proffers no definition or explanation of an ISP. Also, the Nigerian Communications Act 2004 is devoid of any definition of an ISP. The best description of an ISP in Nigeria is expressed in section 13(1) of the Advanced Fee Fraud and other Related Offence Act 2006 [37] and it provides thus:

"Notwithstanding the provisions of the Nigerian Communications Commission Act 2003 or the provisions of any other law or enactment, any person or entity who in the normal course of business provides telecommunications or internet services or is the owner or person in the management of any premises being used as a telephone or internet cafe or by whatever name called shall...."

From the wordings of this section, it appears that an ISP could be described as any person or entity who in the normal course of business provides internet services. Be that as it may, it is submitted that this section does not explain term "internet services".

Suffice it to say, for the purpose of this paper that an ISP is an entity that provides subscribers with services like World Wide Web, e-mail, Bulletin Board System (hereinafter referred to as BBS) [38], newsgroup, web site hosting and design and other additional services.

7. Arguments against liability of intermediaries

1. ISPs argue that they are only "passive conduits" and some writers have described them as messengers and are no different from a traditional post office which is not liable for a defamatory letter that is posted through it or a telephone company which is not responsible for an obscene call made by a user. Thus in *CoStar v LoopNet* [39] the majority held

[31] Julie, S.S (Supra)

[32] Thilmini, K. 2007. Liability of Internet Service Providers for Third Party Online Copyright Infringement: A study of U.S and Indian Law, *Journal of Intellectual Property Rights*. Vol.12, P.558.

[33] Chambey, R.2008. "An Introduction to Cyber-crime and Cyber Law" (Kolketa: Kanal Law House,)

[34] Just, M, Internet File-Sharing and the Liability of Intermediaries for Copyright Infringement: A Need for International Consensus. *The Journal of Information, Law and Technology*. Available at http://elj.warwick.ac.uk/jilt/03-1/just.html

[35] Ibid

[36] Toritsjesu, O, Liability of Internet Service Providers (ISPS) for Copyright Infringement in the Nigeria Context. Available at www.Nigerialawguru.com

[37] 2006 Act No.14. The marginal note of Section 13(1) provides for the duties of telecommunication and internet service providers and internet cafes. From the wordings of this section, it appears that the Act contemplates of a situation where internet cafes are not subsumed in the description of internet service providers.

[38] Bulletin Board means a computer bulletin board that offers computer users the ability to obtain information from a central source assessed through a telephone modem.

[39] 373 F. 3D 544 (4th Crr.2004)

that an ISP should not be held liable for direct infringement when its facilities are used to infringe a copyright with no intervention made by the ISP.
2. It is highly impracticable to expect ISPs to screen all the contents passing through their systems giving the large number of transactions taking place. Even after constant screening, 100% accuracy cannot be achieved so as to prevent every single instance of copyright infringement.
3. Screening contents of transactions passing through their system will inevitably lead to violation of subscribers' privacy rights.
4. In the case of false claims from supposed copyright holders, the intermediary may be liable for breach of contract to the subscriber where it screens purported offending material.

8. Arguments for liability of intermediaries

1. It is difficult to find the real culprit as the internet allows users to remain anonymous, making it difficult to trace the actual perpetrators. It is not always clear from which part of the world information emanates from and it is less clearer which countries the requested information passes through to arrive at its final destination. The ISP is identifiable and locatable and sometimes situated in the same jurisdiction as the culprit, thus easier to hold them liable in terms of locating the culprits.
2. The ISPs are more lucrative targets for litigation than the originator of the offending information content. Siffard notes that ISPs are better targets for law suits as they will typically have deeper pockets than individual users. Hence it is economically viable to hold ISPs liable.
3. ISPs possess the requisite apparatus to monitor activities on the internet. In this regard ISPs can close down the home page or remove an e-mail and can stop further infringements by closing a site. They can also deny an offending subscriber access to copyrighted material.
4. Another argument in favour of holding ISPs liable is that under contracts that they (ISP's) enter into with their customers, ISPs are authorized to close down websites as well as email addresses in cases of infringement [40].

Prior to the enactment of the DMCA by the United State, the US courts were confronted with the conundrum of determining liabilities of intermediaries for copyright infringement in line with traditional legal principles [41].

Accordingly, in *Playboy Enterprises v Frena* [42] the court was called to determine liability of a BBS operator for the acts of users who had uploaded and downloaded the plaintiff's copyrighted photographs. The contention of the defendant was that he never uploaded the photographs. In fact, he removed the photographs from the BBS when he received the complaint and had since that time monitored the BBS to prevent additional photographs from Playboy being uploaded. The court found Frena liable (on the principle of strict liability and therefore avoiding the knowledge requirement) as a direct infringer for violating the plaintiff's right to publicly distribute and display copies of its work. This decision was severely criticized on the grounds that it would compel intermediaries to monitor private transmission of their users in an effort to detect potential copyright violations.

Subsequently in *Religious Technology Centre v Netcom* [43] the court held that a service provider could be liable as a contributory infringer if it knew or ought to have known that infringement was taking place in its system and if simple steps to prevent it were not taken.

Also in *Sega Enterprises Ltd v Maphia* [44] the BBS was apparently established specifically to permit the uploading and downloading of videogames. The defendant in this case knew what its approximately 400 users were doing, and what they were paying their monthly fee for.

The defendant claimed that such copying was a fair use because it was for home use only. The court held that since the defendant had not uploaded or downloaded the software, it could not be liable for direct infringement. However, the court ruled that since the defendant knew of the infringing activities and substantially participated in them by inducing, causing or materially contributing to the infringing conduct, the defendant was liable for contributory infringement.

The Digital Millennium Copyright Act (DMCA) of 1998 endeavours to balance the interests of internet service providers and copyright owners when copyright infringement occurs in the digital environmen [45]. The DMCA protects internet service providers from liability for copyright infringement by their users, if the internet service provider meets certain statutory requirements which are referred to as "safe harbours". To fall within the protection of the DMCA, an internet service provider must, among other things, take certain steps when it receives notice that infringing material resides on its network; adopt and implement a policy that provides for termination in appropriate circumstances of users who are repeat infringers; and accommodate standard technical measures that are used by copyright owners to identify and protect copyrighted works.

9. Need for Copyright in the Digital Environment

Today, information and communication technologies have radically changed the way works and services circulate, and have also changed the way protected works are accessed and used. They have made it possible for information to be communicated at high speed over wired and wireless networks practically everywhere and have allowed for the opportunity of simultaneous access by an unlimited number of individuals [46]. Digitization and circulation of works over networks such as the internet means that low-cost, high quality copies can be made quickly, and these copies can also be sent to many other people around the world irrespective of boarders. Furthermore, digital works are easily altered, or even falsified, which means that there are many potential threats to the moral rights of authors. The relationship between creators, society and the users of protected works has also changed considerably.

Given all the above, it is pertinent to mention that the economic interest of authors of works in digital form is at the core of the

[40] Thilmini, K, Op. Cit. P. 12
[41] Toristjesu, O. Op. Cit. P. 12
[42] 839 F. Supp.152 (M.D. Fla.1993)
[43] 907 F. Supp. 1361 (N.D. Cal.1995)
[44] 948 F. Supp 923, 932 (N.D.Cal.1996)
[45] Toristjesu, O. Op. Cit.
[46] Totcharova, P. "Copyright in the Digital Environment." Available at www.accu.or.jp/appreb/10copyr/pdf_ws0605/c2_1/pt.pdf Last accessed on 28th June, 2017

Treaty. Being an intangible property, it is important for authors to enjoy the fruit of their labour economic wise. This being the case, it is important to put in place measures to ensure that author of works in digital or other electronic form are not relegated to abject poverty. While some have argued that free access to all educative, cultural, and informative content for "this poor part of humanity" are justified on ethical ground, the paradox however, is that even if copyright owners decided to be so generous, it would not be those same poor human beings who would benefit from such generosity because, there are intermediaries, service providers, telephone companies etc which will continue to stand between the authors and users in poor part of the world [47]

Although much has been done at the international level to adapt the global principles of application of copyright to the digital era, there is still a lot which needs to be resolved at the national level and in relation between states. The concept of copyright itself needs to be adapted to the philosophy of the web to incorporate the responsibilities of service providers and of users, the security of the network as well as the scope of limitations and exception to copyright protection [48].

10. Computer programs, data, and Internet works protection in Nigeria

The Nigeria Copyright Act accords certain protection to digital innovations in the country. However, no adequate provision is made of internet works in the strict sense of it. While it is not in dispute that the Copyright Act makes adequate provisions for the right of authors and also provide measures for protecting those rights against infringement, the inadequacies of these provisions in terms of computer programs and internet works cannot be overemphasized.

Section 51 of the Copyright Act [49] only accords protection to computer software, which in the view of this writer is limited in all intent and purposes and does not fall in line, stricto sensu with the provisions of the Treaty. For the avoidance of doubt, section 51 of the Copyright Act defines computer software as follows:

"a set of statement or instructions to be used directly or indirectly in a computer to bring about certain result".

The section defines software as an aspect of literary works. Consequently, any provision of the copyright Act applicable to literary works is applicable to computer software. Section 1(a) of the Act enumerates works eligible for protection and two conditions required for their eligibility, is that sufficient effort must have been expended in the work to give it originality of character, and it must be fixed in a definite medium of expression.

The lacuna in the extant law on copyright in Nigeria as regards computer programs, digital and internet works is obvious. Apart from the scope of rights by the Act in relation to computer programs, the Act has failed to address other issues addressed and covered by the Treaty. This is coupled with the fact that the definition of computer software under section 51 is limited. The Act is also silent on the protection of data (databases) as well as the liabilities or otherwise of ISPs.

Nigeria still has a long road to go with respect to the protection of digital works as well as in providing adequate protection for computer software, programs and works on the internet. The lack of adequate legislative incursion in this area has led to a dearth of judicial jurisprudence on the subject, which has also accounted for Nigeria recording the highest incidence of piracy of computer programs and other digital innovations in the whole of Africa [50]

The nature of infringement of copyright of computer programs, digital and other works on the internet is such that it cannot hopefully be arrested with the realms of our skeletal provisions on the copyright Act. Therefore, an amendment of the extant law on copyright in Nigeria is necessary to incorporate the new innovations in the Treaty.

11. Recommendations.

Having critically examined the WIPO Copyright Treaty in relation to the apparent shortcomings and challenges facing our copyright legal framework as it relates to protection of owners of copyright in computer programs, digital and internet works, it is the opinion of this writer that something urgent needs to be done to salvage the situation and this has to do with, apart from domesticating the Treaty, adopting some technological, legislative, administrative and judicial measures.

It is recommended that Nigeria takes a clue from the United States of America by making a separate legislation aimed majorly at protecting owners of works in computer programs, digital, data (databases) and internet. This legislation should make adequate provisions for liabilities of ISPs. There should also be a more stringent enforcement procedure apart from those contained in the extant copyright Act. Furthermore, the Legislative enactment should also create more regulatory bodies which would be charged with the responsibilities of ensuring the enforcement of legislative measures and laws.

A special commission, made up of individuals with specialized knowledge in computer technology should be created to work in conjunction with the existing Nigeria Copyright Commission.

A good law without effective administrative enforcement mechanism is an effort in futility. Consequently, because the fact that enforcement of copyright remains the basis of the protection of varied hybrid of digital and computer technologies, the Nigeria Copyright Commission should, in conjunction with the specialized commission to be created, adopt adequate administrative measures for protection of copyright in digital works.

Finally, efforts should be made to domesticate the Treaty as fast as possible as it is believed that this will be of great help in addressing infringement of copyright in computer programs, digital and other internet works.

12. Conclusion

In 1996, the World Intellectual Property Organization passed the WIPO Copyright Treaty. The Treaty was to bring international copyright issues in tandem with the growing use of the internet and technological advancements. Nigeria has since signed this Treaty but is yet to domesticate it. If Nigeria will play a leading role in the emerging economy, there is the need to strategically domesticate this law to enable copyright owners and the general public maximize the opportunities created by the advancements in technology. The whole idea of strategic domestication is to ensure that whatever laws are enacted should be primarily focused on favouring national development and on a secondary

[47] Ibid
[48] Ibid
[49] Copyright Act, Cap C20 LFN, 2004
[50] Toristjesu, O. Op. Cit.

level should accommodate the whole global community. The general observation has been that many developing countries enact legislation that do not favour nationals but rather favour developed countries [51], such engagement with legislation cannot promote national development, hence the need for Nigeria to strategically domesticate the legislation.

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