

NIGERIAN LIBRARY LINK

A JOURNAL OF LIBRARY AND INFORMATION SCIENCE

A BI-ANNUAL PUBLICATION OF ENUGU STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY LIBRARY, ENUGU

NLL Vol. 15 Nos. 1 & 2

ISSN: 1597 - 1149

JANUARY 2016

Intellectual Property Considerations in Information Society
- **Akinola, Adeyemi Adewale, Kalu, Nkata Uka and Okoro, Obinna Jeremiah**

Implications of New Information and Communication Technologies (ICTs) in Nigerian Libraries: A Survey of Academic Libraries in Anambra State, Nigeria
- **Ndanwu, Angela Ifeoma and Nwankwo, Tochukwu Victor**

Utilization of Information Resources by Undergraduates of Faculty of Education, Enugu State University of Science and Technology, Enugu
- **Igbokwe Olisa Paul and Igbokwe Tobeckukwu Edna**

Information Policy Formulation and Provision: A Medium for Economic and Socio-Political participation of the Citizenry in Nigeria
- **Kalu, Nkata U.**

The Role of the Medical Libraries and Librarians in Contemporary Medical Education and Research in Nigeria
- **Ezokwuoke, N.E. (CLN) and Okereke, Chidiogo A.**

The School Library as an Academic Enhancer to Users towards Achieving the Objectives of the National Policy on Education
- **Okeke, Oluchi and Ani T. C. E. Esq.**

INTELLECTUAL PROPERTY CONSIDERATIONS IN INFORMATION SOCIETY

Akinola, Adeyemi Adewale¹

Nigerian Institute of International Affairs ((NIIA), Lagos, Nigeria.
akinolaadeyemi@yahoo.com

Kalu, Nkata Uka²

Librarian, National Open University of Nigeria (NOUN).
Keldegov@yahoo.com

Okoro, Obinna Jeremiah^{2*}

Lecturer, Department of Information Resources Management, Babcock
University, Ilishan-Remo, Ogun State, Nigeria. Obi4uk@yahoo.com

Corresponding Author: akinolaadeyemi@yahoo.com

Abstract

Intellectual property could be described as creative works or the inventions of a particular individual, organizations and countries which could be literary works, musical works, artistic works, cinematography film and sound recording. Information society creates, distributes, and consumes information with the use of information and communication technology for daily activities and for facilitating the economic development of a particular country. This paper, therefore, examines intellectual property considerations in an information society. It provides details on globalization and the issues of intellectual property, ethical issues and professional conduct in an information society. It also identifies two important aspects of intellectual property rights which include digital right management and copyright issues in information society. It also throws more light on open access and limitations of intellectual property in an information society. The paper concludes by providing some recommendations on how to address intellectual property considerations in an information society in relations to the obligations and mandates of information security.

Keywords: Intellectual Property, Intellectual Property Rights, Ethical Issues, Open Access, Information Society, Information and Communication Technology, globalization.

INTRODUCTION

Over the years, intellectual property has become one of the important aspects of development in the society in terms of economic and social development. The advancement of technology and access to information in our society has made it easier for people (most especially, academic scholars) to have the enablement and avenue to put down their intellect for the purpose of educating the public on different problems. The role of information and communication technology and the invention of new ideas into the society has brought increased access to information for national development and capacity building in various developed and developing countries.

The implications of these create new preferences on how people earn their living, spend their money and time. It also encompasses the term "the information society" where there are growing activities of creating, distributing, and consumption of information by the citizens with the use of information and communication technology. Therefore, as information and communication technology is continuously penetrating many aspects of the socio-cultural, economic, and legal systems of our environment, it has enabled significant advances in globalization than before, for easy access and location of information.

Intellectual property can be defined as creative works or the invention of individuals, organizations and countries which could be literary works, musical works, artistic works, cinematography film and sound recording. To further expatiate on the meaning of intellectual property, the intellectual work of a person must be established and be guided by law. Thus, property right is an institutional option to determine how the resources are available, whether they are owned by the government or the private sectors. Isaac and Park (2004) was of the opinion that all economic goods have the character of property rights, including the use of income and education and the right to transfer it to others.

Also, intellectual property rights are laws that guide the intellectual work of an individual which includes copyright, digital rights management, trademarks, industrial designs, geographical indicators, trade secrets and patent to name a few. These laws have been highlighted by the economic analysis, that intellectual property rights are intended to encourage innovations for information accessibility and credibility. It also shows the allocation of resources (Arrow, 1962).Based on Lewer and Saenz (2005), intellectual property rights would increase entrepreneurship activities, technology and economic growth which leads to economic development.

According to Manuel (1996), the amendment of intellectual property laws was to regulate new technology products (such as photographs, motion

pictures, sound recordings, and cable television) or new uses of works made possible by advances of technology. Furthermore, technological innovations and creativity are bringing together voice, text, audio, and visual materials into a digital format that can be stored, retrieved, manipulated, and exchanged through different technologies. As a result of this, advancement in information and communication technology has often posed challenges for intellectual property. In addition, new technologies have often given rise to contentious intellectual property litigations, such as those involving photocopying of scientific articles and home videotaping (Europe and the Global Information Society, (nd). In this scenario, the input of new technologies would bring about some changes or overwrite the intellectual property law.

This paper, therefore, examines intellectual property considerations in information society. It provides details on globalization and issues of intellectual property, ethical issues and professional conduct in an information society. It also identifies two important aspect of intellectual property rights on information society which are digital rights management and copyright issues in information society. The paper throws more light on open access and limitations of intellectual property in an information society.

Globalization and Intellectual Property

Globalization is about connecting people, organizations together through communication to form a global village. Our lives, our personalities, our identities, our emotions, our relationships with other people are being reshaped by globalizing processes because globalization invades local culture, (Runaway World, 2011). Globalization is not just an economic term but it affects all aspects of life. It has contributed effectively to technological change, most especially information and communication technology. Globalization is a set of dimensional change in the academic environment; most especially in the aspect of research findings such as political, social, cultural and economic issues. In our society we can see the changes in the academic environment; national and international, as a result of understanding the current trends in the global economy.

Intellectual property issues are being driven by changes in information and communication technology. Scholars were of the opinion that the importance of intellectual property is a key to future national economic and social prosperity (Amiuwu, 2004). The importance of intellectual property in national and organizational development cannot be overemphasized. Aimuiwu (2014) remarked that intellectual property is the only resource that is capable of conceptualizing and that can distinguish between, what is, what can be, and what should be. So, information and communication technology

through globalization provides the network that connects people regardless of location on products, ideas and resources.

Ethical Issues and Professional Conduct in an Information Society

An information society acquires, organizes, retrieves and secures life-long access to creative works which are important to our society. The society we are now in is geared towards acquiring human knowledge; such as the past, present and the future (Mason, 2009). The ethical and professional conduct of intellectual property in our society ought to depict their commitment to acquire, organize and secure accessed information, and should stress the important role that information professionals could play in the wide distribution of knowledge (Rubin, 2000). However, the most profound ethical issues or dilemmas facing intellectual property concerns censorship, selection of materials and intellectual freedom, copyright, patron privacy, computer use, internet and plagiarism (Dole, 2000). However, over the years ethical challenges presented to information professionals has increased and the ethical dilemmas faced are numerous.

The codes of ethical and professional conduct according to Mitrou, (2002) usually have a set of rules for self-regulation and describe the principles of conduct that govern intellectual property of a particular individual, organization and country. Also, the promotion of open access to knowledge and information, the protection of privacy, the respect for intellectual property and right holders, and the freedom of speech are some of the founding principles that govern most of these codes of conduct for professionals in the society.

As such, ethics and professional principles of information are not enough to cope with conflicting interests. These principles of information are useful to the point that they can regulate the relationship between information professionals and users of information. Although, it is questionable, whether these codes of conduct can regulate upon issues such as intellectual property protection and people's right for access and use of such works.

Digital Rights Management and Copyright issues in Information Society

Digital Rights Management (DRM) involves the description, layering, analysis, valuation, trading and monitoring of the rights over an organization, institution and enterprise's assets of tangible and intangible value. It covers the rights in a physical manifestation of a work of a book and digitized work. The general consensus seems to be that such high-level security is unobtainable via DRM, at least in the current PC-dominated world (Cryptographers Panel,

2002). However, past measures used in managing, trading and protecting such assets are inefficient, proprietary, or else often require the information to be wrapped or embedded in a physical format. DRM has primarily focused on the content protection issues more than the rights management issues. According to Geer (2002) it has been conjectured that online privacy can only survive if DRM succeeds.

Digital rights management through the authors, government, organizations, institutions information technology experts, and stakeholders have developed system techniques that determine how their copies of ideas may be accessed. However, the concept of digital rights management was born because they were in need of a protocol of hardware and software services and technologies that can govern the authorized use of digital content and manage any consequences of use throughout the life-cycle of the content (ALA 2003). With this, we cannot overlook the aspect of copyright in this work.

However, copyright is a law that guides the accessibility of intellectual property whether in book form or digital form, with this law authors may decide how to get across their intellectual properties to the users. While copyright holders have exclusive rights, such as the right to make a copy, or the right to distribute a work to the public thus far, they have not had the right to control how such works can be used, for example, the right to see a work, or to read a work. In addition, fair use and fair dealing limitations on rights owners allow users to exercise certain functions to access information, without copyright clearance from rights owners (American Library Association, 2003).

The encyclopedia of library and information science (1971) defined copyright as the exclusive, legal secure right to publish and sell the substance and form of a literary, musical work, by law to authors of literary, dramatic, musical and artistic work to authorize the production or reproduction of such work. Okwilagwe (2001) also defined copyright as "the exclusive right granted to an author and other creative artists to authorize the use of their work in any way".

Why are rights holders promoting DRMs?

According to Nicholson (2009) in his work, he gave some facts why intellectual owners are promoting digital right management. They are:

1. The digital networked environment makes copying and distributing of information far easier for individuals.
2. It also greatly reduces copyright owners' costs of distributing copyrighted works.
3. It has made copyright owners very nervous about the security of

their works, and protection against reproduction, modification and the making of derivative works.

4. DRMs allow copyright owners to require users to pay for each access and use of a work they wish to make.
5. DRMs can observe and report on usage characteristics, which can provide distributors of DRMs with unique marketing information not otherwise available, despite this infringing on users' privacy.

Why do we have copyright laws?

Okwilagwe (2001) is of the opinion that the copyright law came into existence for two main purposes:

- To encourage creative people to produce work of culture
- To provide incentives for the effective dissemination of work produced.

In other words, the copyright law seeks to protect the moral and economic right of the creator of a work. The world intellectual property organization (1996) in their first and second obligation of copyright stated thus:

First, countries should provide adequate legal protection, and effective remedies, against the circumvention of technological measures, such as conditional access systems and encryption used by right holders to protect their right.

Second, the technology must safeguard and enhance the reliability and integrity of the online market place by requiring countries to prohibit the deliberate alteration, or deletion, of electronic information, which accompanies any protected material, and which identifies the work, right owners, and the terms and conditions for its use.

In the view of Patry (2012), the owners in question who maintain the copyright industry may not run actual losses when their works are made more popular by the promotion of a wide range distribution of their works by whatever available means. He also draws upon insights from the field of cultural economics to explain why copyright law does not accomplish the often-stated objective of promoting creative work as effectively as is commonly assumed.

In his own contribution, Mazzone (2011) maintains that there are multifarious ways that people and firms in a wide variety of settings, unilaterally claim entitlements beyond what copyright law provides. He considers these unwarranted claims of rights to be form of fraud, referred to as

'copy fraud,' for which new penalties need to be devised. It is important to review a substantial shortening of the duration of copyrights (Patry, 2012).

DRM System Techniques

Digital rights management has developed some techniques that control their systems in order to protect intellectual properties, right, and give access/right to users.

According to Lyon (2002), Digital Rights Management Systems comprise a number of technological components which can include encryption, a surveillance mechanism, database of works, owner's and user's, license management functionality and technological protection.

Some ways of controlling digital properties are:

1. Controlling and regulating intellectual Property
2. Protection of intellectual property right
3. Monitoring
4. Tracking of digital media
5. Limiting the illegal circulation of copyright works

Furthermore, Arsenova & Rwth-Aachen (nd) gave some ways through which systems techniques can be protected; which are:

1. Encryption
2. Public/ Private keys
3. Digital certificates
4. Water marking
5. Access control
6. Secure communication protocols
7. Finger printing
8. Trust infrastructure
9. Hashing

Encryption: This has to do with the use of cryptographic algorithm to protect the content of information, or document with a secret key. The key can be either a particular phrase or string of numbers. Only the holder of the key can unlock the content and read it. However, encrypted content can be converted to its original form which is called decryption; decrypted content give access to customers with the aid of software license, and it may be valid for a period.

Public/private keys: Each key can be used to encrypt or decrypt data and also one key help in discovering the order. The two keys can enable reading messages sent by the sender, but only the sender of encrypted messages can **have** access to read them.

Digital certificates: Digital certificates are links between the people and their virtual identity. Digital certificate is created by using a cryptographic technique that connects a person's identity with his/her public cryptographic key. The digital signatures are issued by certificate authorities.

Water marking: It is the process of securing and embedding information into a data source in such a way that its very existence is hidden. This can be achieved by embedding a copyright stamp into an image, sound or a video. Only a secret key can extract the original information.

Access control: this has to do with protecting intellectual property, so that it can only be accessed by authorized users. For example, access to copyrighted software through the use of license servers and technical copy protection mechanism on the media.

Secure communication protocols: The protocols allow client/server applications to communicate in a way to design and prevent intercepting of conversations by unintended recipients, tampering and message forgery. There are also secure Sockets Layer (SSL) and Transport Layer Security (TLS) which cryptographic protocols that provide secure communications on the Internet.

Finger printing: It helps to protect information by using finger print as a signature on every copy of a document.

Trust infrastructure: The expert in charge of the system must be trust worthy and the equipment must be developed in a way that it will not be manipulated.

Open Access and Information Society

The society needs to invest in the creation of new knowledge which could have greater impact in disseminating information to the global audience through the use of technology. Through sharing of these resources, intellectual capital is brought about by developing the intellectual ability of the society, which could also benefit the country as a whole through research by making policies that best suit the level of our development.

Open access also supports the information society strategic mission to promote the society where they belong; thus:

- Opening databases such as the information catalogue to researchers worldwide which allows massive metadata retrieval.
- Providing open publishing as well as the metadata to optimize discovery via open network search engines.
- Creating metadata about persons, places and things in formats that

can be used by network scale services.

Also, to ensure better access to information, libraries, government and other stakeholders should promote Open Access initiatives, to free up information, particularly higher learning institutions, public-funded research centres. These are some objectives by Nicholson (2009):

1. To support the diverse applications and uses of content in education and libraries, for example, for e-learning, distance learning, digital libraries, online collaboration and institutional repositories;
2. To support the preservation and archiving roles of information centers;
3. To support fair use/fair dealing and educational exceptions, and avoiding other devices that disable use;
4. To enable the documentation and declaration of rights and permissions for both analogue and digital resources.(American Library Association, 2003)
5. To provide full access to digital works to users with sensory-disabilities.

Limitations of Intellectual Property Rights Consideration in Information Society

Some of the limitations of intellectual property rights in our society are listed below. They are:

1. It limits document to a user
2. It gives the number of printed copies allowed
3. It protects against file copying
4. Expiry at certain date and time
5. It specifies the number of times a document can be opened
6. It enables or disable copy/past facilities

CONCLUSION

Intellectual property has played a crucial role in the development of nations from the human history to this present age. Furthermore, the advancement of technology and access to information in our society made it easier for people to have the enabling avenue, most especially the academic scholars to put down their intellect for the purpose of educating the public on a particular problem. As technologies emerge, users of information acquire the needed information for personal development and nation's growth. However,

information society through intellectual property have become significant for improving the present and future worlds in the global economy. Thus, intellectual property holders should provide a measure in which members of the public would have access to enable information needed for their intellectual capability. These and many more would ensure development in our society by providing enabling capacity that could bring about effectiveness into our academics, society and economy of our nation.

REFERENCES

- Aimiuwu, I. E. A. (2004). "Globalisation- The Human Resource Challenge," *Management in Nigeria*, Oct 2003-March 2004, Vol. 39/40.
- American Library Association. (2003). *Digital Rights Management and Libraries*.
- Arsenova, E & Rwth-Aachan, M. (n d). Technical aspects of digital rights management.
- Arrow, K. J. (1962). *Economic Welfare and the Allocation of Resources for Inventions*, Princeton University Press.
- Cryptographers Panel, (2002). *RSA Conference*. <http://www.rsaconference.com/rsa2002/>, Last accessed October 28, 2016.
- Dole, W. V., Hurych, J. M., & Koehler, W. C. (2000). Values for Librarians in the information age, *Library Management*, 21(6), 285-286.
- Encyclopedia of library and information science. (1971). New York: Marcel Dekker.
- Europe and the Global Information Society (nd): Recommendations to the European Council, available at <http://www2.echo.luleudocsien/bangemann.html>.
- Geer, D. (2002). "Who will kill online privacy first the lawyers or the techies?" RSA Conference2002, <http://www.rsaconference.com/rsa2002/>, Last accessed October 28, 2016.
- IFLA/FAIFE, ALA, *Code of Ethics*. (1995). Available at URL: <http://www.ifla.org/faife/ethics/alacode.htm> [last check, April 10, 2009].
- Isaac, A. G., & Park, W.G. (2004). *On Intellectual Property Rights: Patent Versus Free and Open Development*, In Colombatto, E, (ed), *The Elgar Companion to the Economic of Property Rights*, Edward Elgar Publishing.

- Lewer, J., & Saenz, M. (2005). Property Rights and Economic Growth: Panel Data Evidence. *Journal of Southwestern Economic Review*, 32, West Texas University.
- Lyon, G.E. (2002). NIST special publication. Information technology: A quick reference list of organizations and standard for digital rights management. <http://xml.coverpages.org/Iyon-NIST241assmoct9.pdf>.
- Manuel, C. (1996). *The Rise of the Network Society*.
- Mazzone, J. (2011). "Copy fraud and other Abuses of Intellectual Property Law." Stanford University Press, Stanford, California, pp. 14-29.
- Mitrou, L. (2002). *The Law in the Information Age*, Sakkoulas.
- Mason, M. K. (2009). *The ethics of librarianship*, available at URL: <http://www.moyak.cona/papers/ethics-librarianship.html>.
- Nicholson, D. R. (2009). *Digital Rights Management and Access to Information: a developing country's perspective*.
- Nicholson, D. R. (2009). *Digital Rights Management and Access to Information: a developing country's perspective*.
- Okwilagwe, O. A. (2001). *Book publishing in Nigeria*. Ibadan: Stirling-Horden.
- Patty, W. (2012). "How to Fix Copright." Oxford University Press, 336p. ISBN13 9780199760091 Available at <http://s.dne.edu.au/law/sir/sir34/slr342/SLRv34no2Bowrey.pdf>.
- Rubin, R. (2000). *Foundations of Library and Information Science*, New York, Neal-Schuman publication. 265-296.
- World intellectual property organization. (1996). *Treaty on the Protection of broadcasting organization*. <http://www.wipo.int/treaties/en/ip/wct>.