

The Challenges of ICT Development with Regards to Copyright Protection in Tanzania

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Abstract - This paper seeks to discuss the challenges brought by ICT development on copyright protection in Tanzania in legal perspectives. In this paper, laws relating to copyright protection in Tanzania are discussed in order to identify the gaps in the law which ultimately contributes to the challenges in protection of copyright in online environment. The laws which are discussed include the Copyright and Neighbouring Rights Act¹(hereinafter referred to as the CNRA) and the regulations made thereunder including the Copyright and Neighbouring Rights (Production and Distribution of Sound and Audio-visual Recordings) Regulations² and the Copyright and Neighbouring Rights (Registration of Members and their Works) Regulations.³ Some basic issues which are discussed in this paper include copyright protection in Tanzania, copyright infringement in the conventional world, copyright protection in the cyberspace and the challenges arising from ICT development to copyright laws in Tanzania.

Keywords: Copyright, Infringement, Cyberspace, ICT

1.0 INTRODUCTION

Information and Communication Technology (ICT) is an area which has experienced tremendous changes over the years. The area is growing faster than any other communication vehicle in the history of mankind.⁴ Such developments include the invention of digital technology and existence of internet culture that is changing people's lifestyle. These developments have brought changes in various aspects of life including legal, social, and economic arena. As technology creates new opportunities, it also poses new challenges.⁵ From legal perspective, there are changes which have affected the legal framework resulting into making existing laws outdated or inadequate. Copyright is one amongst the most complicated areas of

law which have been affected by the development of ICT and is facing the greatest challenge. Such challenges involve difficulties in defining fair use, unclear and undefined Internet activities which are regarded as amounting to copyright infringement, for example, caching.⁶

Amongst other forms of Intellectual Property Rights (IPR), copyright seems to form a major IPR issue in the cyberspace that is increasingly calling for an effective legal framework that takes into account the impact of digital technologies. Digitization of written materials enable such materials to be used in different media, copied at the same quality as an original, manipulated and distorted, and distributed throughout the world cheaply, easily, and speedily.⁷ Moreover, the digital revolution has already thrown the music and movie industries into chaos.⁸ It has been pointed out that copyright deserves special attention now not only because millions of poor people still lack access to books and other copyrighted works, but because the last decade has seen rapid advances in information and communication technology which has transformed the production, dissemination, and storage of information.⁹

Many countries have passed legislation to protect copyright and other forms of Intellectual Property in the cyberspace but others, Tanzania being one of them; have paid little attention in addressing this pertinent aspect. Not only is brand protection at stake in cyberspace but also copyright protection is at a high risk as technology is rampantly

¹ See Cap 218 R.E 2002.

² See Government Notice No. 18 Of 2006.

³ See Government Notice No. 6 of 2005.

⁴ See Tabrez, A, Copyright infringement in Cyberspace and Network Security: A Threat to E-Commerce (November 22, 2009). *The IUP Journal of Cyber Law*, Vol.9, Nos. 1&2, pp 17-24 retrieved from http://www.slideshare.net/tabrezahmad/copyright_infringement_in_cyberspace_and_network_security_a_t(as accessed on 5-1-2014).

⁵ibid. See also, Christian, T, (1998). Implementation of the WIPO Copyright Treaty-How hard can it be? *The Computer Lawyer*, Vol. 15, No.3 at 8.

⁶ See Wherry, T.L, (2008). *Intellectual Property: Everything the Digital-Age Librarian needs to know*, at 7.

⁷ See Mambi, A, (2010), *ICT Law Book*, at 197.

⁸ See Spinello, R.A & Herman, T.T, Intellectual Property Rights) From Theory to Practical Implementation: *Intellectual Property Rights in a Networked World: Theory and Practice* at 2.

⁹See Copyright, Software and the Internet. *Integrating Intellectual Property Rights and Development Policy*, at 96, Report of the Commission on Intellectual Property Rights (2002), retrieved from http://www.iprcommission.org/papers/pdfs/final_report/CIPRfullfinal.pdf(as accessed on 22-2-2014).

misused through unauthorized new methods of exploiting copyrights.¹⁰ Since the enactment of Copyright and Neighbouring Rights Act, 1999 which has little to do with the legal implication of digital technology on copyright, many changes have taken place in the copyright field as a result of digital technology. Composers, artists, writers, authors and other copyright owners are not very confident to create, distribute, and control the use of their works within the digital environment.¹¹

2.0 COPYRIGHT PROTECTION IN TANZANIA

2.1 *Copyright and Law: A Historical Account*

Copyright protection in Tanzania is guaranteed under the Copyright and Neighbouring Rights Act, hereinafter referred to as the CNRA, and regulations made thereunder. The CNRA defines the term copyright as "...the sole legal right to print, publish, perform, film or record a literary or artistic or musical work".¹² It is an exclusive right given by law for a certain term of years to an author who can be a writer, composer, or designer, to print, publish and sell copies of her original work. Copyright protects the expression of artistic idea that is fixed in any tangible medium of expression, meaning that such expression should be written or printed on paper, painted on canvas, shaped in stone or recorded on film or videotape, and that the idea in the artist or author's mind must take a physical form.¹³

The history of copyright law starts with early privileges and monopolies granted to printers of books through the British Statute of Anne of 1710.¹⁴ This was the statute enacted for the purpose of encouraging learning by vesting the copies of printed books in the authors or purchasers of such copies. It granted legal protection of fourteen (14) years to publishers of a book and twenty one (21) years for any book already in print.¹⁵ The statute guaranteed the finite right to print and re-print books which created a public domain for literature as previously all literature belonged to the booksellers forever.¹⁶ Thus, initially, copyright law protected books only. However, over time, the subject matter of copyright protection has been expanding to include translations and derivative works. Currently, copyright covers a wide range of works including maps, performances, paintings, photographs, sound recordings, motion pictures, computer programs, and

databases.¹⁷ In Tanzania, copyright law was introduced by colonial administration in 1924, through Chapter 218 of the Copyright legislation which was repealed by the Copyright Act, No. 61 of 1966.¹⁸ The current Copyright legislation which is in force was enacted in 1999.

The development of copyright law is closely connected to technological development since technology allowed books to be produced easier, faster, and cheaper.¹⁹ Earlier, printing technology posed threats to copyright as it allowed multiple exact copies of a work to be made, leading to a more rapid and widespread circulation of ideas and information.²⁰ Today, digital technology introduces a new level of controversy into copyright policy.²¹ This called for the need to enhance protection of authors and develop international standards. As a result, the Berne Convention for the Protection of Literary and Artistic Works²² was adopted as an international instrument governing copyright. In efforts to cope with technological advancement, the WIPO Copyright Treaty was adopted in 1991 in order to provide additional protections for copyright. This Treaty ensures that computer programs and databases are protected as literary works.²³ Nowadays, national copyright laws have been standardized through international agreements such as the Berne Convention. Although there are consistencies among nations' copyright laws, each jurisdiction has separate and distinct laws and regulations about copyright whereby some jurisdictions, Tanzania being one of them, recognize moral rights of creators such as the right to claim authorship.²⁴

¹⁷*ibid.* See also, section 5 (1) & (2), section 6 (1) of the Copyright and Neighbouring Rights Act and article 2(1) & (3) of the Berne Convention for the Protection of Literary and Artistic Works, 1886.

¹⁸See Mahingila, E, (2005). Intellectual Property Landscape in Tanzania: The Emerging Role of the Business Registration and Licensing Agency (BRELA) in assisting Small Medium Enterprises use Intellectual Property at 3, retrieved from http://www.wipo.int.edocs/mdocs/sme/en/wipo_ip_dar_05/wipo_ip_dar_05_www_78437.pdf, (as accessed on 8-4-2014). This is a presentation during the WIPO Workshop on Intellectual Property for Business for Small and Medium-Sized Enterprises (SMEs), organized by the World Intellectual Property Organization (WIPO) in cooperation with the Tanzania Chamber of Commerce Industry and Agriculture (TCCIA). See also, Johansein, (2010), Intellectual Property Right in Tanzania, retrieved from <http://www.iracm.com/wp-content/uploads/2013/01/droit-de-propr%C3%A9t%C3%A9-intellectuelle-en-tanzanie-2010-anglais-4730.pdf>, (as accessed on 29-1-2014).

¹⁹ See <http://historyofcopyright.org/> visited on 8-4-2016.

²⁰ See Mahingila, *loc cit.*

²¹*ibid.*

²² 1886 as amended on 1979.

²³ See article 4 & 5.

²⁴ See Mahingila, *loc cit.*

¹⁰ See Seth, K, (2013), *Computers Internet and New Technology Laws*, (Updated First edition), Lexis Nexis, Haryana at 229.

¹¹ See Mambi, *op cit.*, at 233.

¹² See section 4.

¹³ See Wherry, *op cit.*, at 3 & 52.

¹⁴See

http://en.wikipedia.org/wiki/History_of_copyright_law visited on 8-4-2016.

¹⁵*ibid.*

¹⁶*ibid.*

2.2 Copyright Protection under the Copyright and Neighbouring Rights Act (CNRA)

The Copyright and Neighbouring Rights Act is a principal legislation that guarantees copyright protection in Tanzania. It provides protection of copyright and neighbouring rights in literary, artistic works, and folklore. For a piece of work to acquire copyright protection it must be original in the first place. This means that the particular work must be a result of skill or judgment on the part of the creator and that it has not been copied from another work. It is worth mentioning that originality required is in terms of expression of ideas not ideas themselves,²⁵ although the distinction between an idea and its expression is not always obvious. In this regard, Justice Hand observed that “[n]obody has ever been able to fix that boundary and nobody ever can”.²⁶ In *Nova Productions Limited v. Mazooma Games Limited & Others and Bell Fruit Games Limited*²⁷ the issue of idea and expression was discussed at length. The Court pointed out that “.....the well known dichotomy between an idea and its individual expression is intended to apply and does to copyright in computer software”.²⁸ The Judge further stated that:

[T]he true position is that where an “idea” is sufficiently general, then even if an original work embodies it, the mere taking of that idea will not infringe. But if the “idea” is detailed, then there may be infringement. It is a question of degree. The same applies whether the work is functional or not, and whether visual or literary. In the latter field the taking of a plot (i.e the “idea”) of a novel or play can certainly infringe if that plot is a substantial part of the copyright work. As Judge Learned Hand said (speaking of the distinction between “idea” and “expression”): “Nobody has ever been able to fix that boundary and nobody ever can”²⁹

In concluding his judgement, he pointed out that if ideas were protected by copyright law, copyright would become an instrument of oppression rather than the incentive for creation which it is intended to be.³⁰ Copyright protection

²⁵See section 5 (1) and article 2 of the WIPO Copyright Treaty, 1996. See also, also Abrams, H.B, (1992) *Originality and Creativity in Copyright Law, Law and Contemporary Problems, Vol. 55, No. 2*. This article discusses in detail about originality in copyright law. See also, Drassinower, A, (2003-2004), *Sweat of the Brow, Creativity and Authorship: On originality in Canadian Copyright Law, University of Ottawa Law and Technology Journal*, 105-123. Retrieved from <http://www.uoltj.ca/articles/vol.1.1-2/2003-2004.1.1-2.uoltj.Drassinower.105-123.pdf> (as accessed on 5-4-2014). See also, Wherry (n3) at 52.

²⁶ See Spinello & Herman, *op cit.*, at 22.

²⁷[2007] EWCA Civ. 219.

²⁸ See paragraph 31.

²⁹ The Judge stated this while Citing *Nichols v Universal Pictures* (1930) 45 F (2d) 119. See paragraph 33 of *Nova Productions Limited Case*.

³⁰ See paragraph 55.

is automatic, thus, there is no requirement of registration as a prerequisite for protection. However, registration of the copyrighted work is essential in ensuring effective copyright protection. In order to ensure that this goal is achieved, the Copyright and Neighbouring Rights (Registration of Members and their Works) Regulations³¹ have been made. These regulations oblige members of COSOTA to declare their works to the society for collective copyright protection and registration whereby such registration is free of charge. The requirement for registration serves various purposes. Such purposes include:

- (i) to simplify adducement of evidence in court and in dispute settlement because the process helps to have information on composer, creator, publisher, arranger, producers, and distributors of artistic works which will then be used for identification purposes;
- (ii) to have a database of artists who have registered themselves and their works; and
- (iii) it helps to know the total number of works registered in various categories such as music, films, literary, and artistic work.³²

It is noteworthy that the CNRA has included computer program and databases as copyrightable literary works. This is essential under the current digital age where computer programs and databases are developed by many Information Technology (IT) specialists and their infringement is likely to occur. Like any other literary work, a computer program has an expression of its own which makes it justifiable for copyright protection. That expression is in the form of application with the front end which is visible to a user and back end whereby the front end consists of screen displays, symbols, design layout, commands, menu system, and other non-literal elements and the back end consists of codes.³³

For copyright to subsist in a computer program it must be original.³⁴ However, the Act does not explain the meaning of originality in as far as a computer program is concerned and so far, in Tanzania, there is no reported case law which gives interpretation of the word “original” in relation to protection of computer program.

In other jurisdictions, UK for example, the term “original” has been interpreted through case laws. In *University of London Press Ltd v. University Tutorial Press Ltd*,³⁵ Peterson J stated that the requirement of originality is not an onerous one and does not mean that the computer program must be novel or unique in some respect. It merely means that the program has been the result of a modest

³¹ See Government Notice No. 6 of 2005.

³²Information obtained from <http://www.cosota-tz.org> lastly visited on 13-5-2016.

³³ See Sharma, V, (2011), *Information Technology Law and Practice*, (3rd edition), at 481.

³⁴ See Bainbridge, D, (2004), *Introduction to Computer Law*, (5th edition), at 26.

³⁵[1916] 2 Ch 601 as extracted from Bainbridge, *loc cit*.

amount of skill, labour or judgment and that it originates from the author.

In Germany, through the case of *SudwestdeutscheInkasse KG v. Bappert und BURker Computer GmbH*³⁶, it was said that a computer program to be protected by copyright must be the result of creative achievement exceeding the average skills used in the development of computer programs. Thus, a computer program which simply automated an existing process would be unlikely to be the subject of copyright protection. The position of law in Germany might pose a challenge to the interpretation of the term computer program as provided under the CNRA because the definition points out that a computer program is a set of instructions which is capable of causing a computer to perform or achieve a particular task or result.³⁷ This means that the CNRA does not require extra skill in developing a computer program. Furthermore, the CNRA does not provide for copyright in respect of preparatory design material for computer program.

Moreover, the CNRA seems to protect databases as original work though it does not even give the meaning of the term database. There is no specific provision which provides in detail for copyright in databases. As it is the case in computer programs, no case has been decided in Tanzania which gives an interpretation of the term database in the Tanzanian context. The CNRA points out that compilation of data or databases which by reason of selection and arrangement of their contents constitute intellectual creation shall be protected as original works.³⁸ However, no local case has been decided to give interpretation of the law as to what constitute intellectual creation.

The CNRA also protects rights management information as defined under section 4 from being infringed. The term 'Rights Management Information' (RMI) is used to identify the data about the content although it is sometimes used by technological protection measures that attempt to regulate access or replication of digital materials such as watermarking.³⁹ Many other types of technologies are applied to RMIs but most of them rely on embedding the meta-data⁴⁰ into the supplied content and apply some level of cryptography to limit access to such information.⁴¹ RMI is a cornerstone of systems that are aimed at regulating the

rights hold in digital works.⁴² It is a key to giving creators, users, conduces and all other players in the content driven world, the opportunity to know about the works that they are involved with over and above the obvious.⁴³ The basic idea behind RMI for digital works is to include meta-data along with the work that provide information on the rights that are attached to the work, for example when playing a track on digital music player the title of the track and the performer will be displayed on a screen.⁴⁴ In printed volumes, RMI accompanying works include copyright notices, publishers' information, dates, disclaimers, permissions, International Standard Book Numbers, and acknowledgments.⁴⁵

Although the CNRA contains provisions on protection of RMI, such provisions are not adequate since RMI is a broad concept that requires adequate and effective legal framework. It is worth mentioning that Tanzania is neither a member to the WIPO Copyright Treaty of 1996 nor the WIPO Performances and Phonograms Treaty of 1996 which are important international instruments imposing obligation to contracting parties concerning RMI.

2.3 *The Copyright and Neighbouring Rights (Production and Distribution of Sound and Audiovisual Recordings) Regulations*

The Copyright and Neighbouring Rights (Production and Distribution of Sound and Audiovisual Recordings) Regulations have been made by virtue of section 45⁴⁶ of the Act and they supplement on copyright protection granted under the Act. As the name suggests, these regulations specifically extend protection to sound and audio-visual recordings. They provide that:

"[a] person shall not produce, distribute or import for distribution sound recordings or audio-visual recordings in Tanzania except under a licence issued by the Copyright Society of Tanzania."⁴⁷

They further provide that:

"[a]n adhesive label, in these Regulations referred to as the HAKIGRAM, shall be affixed to each and every sound recording or audio-visual recording which is distributed or offered or otherwise exposed to the public for distribution by way of sale, hire, rental or otherwise within the United Republic."⁴⁸

Thus, for any sound recording or audio-visual recording to be distributed to the public through any of the means stated in the Regulations, the label HAKIGRAM should be affixed thereto. Any other sound recording or audio-visual

³⁶ (1985) Case 5483, BGHZ94, 276 as extracted from Bainbridge, *op cit.*, at 27.

³⁷ See section 4.

³⁸ See section 6.

³⁹ See Perry, M, *The Protection of Rights Management Information: Modernization or Cup Half Full?* at 307.

⁴⁰ Metadata is defined as "data that provides information about other data." It provides information such as the size, colour, length, date, author and short summary about a certain item's content. See <http://www.merriam-webster.com/dictionary/metadata> visited on 22-7-2014 See also, <http://www.techterms.com/definition/metadata> visited on 22-7-2014.

⁴¹ See Perry, *loc cit.*

⁴² See Perry, *op cit.*, at 306.

⁴³ See Perry, *op cit.*, at 326.

⁴⁴ See Perry, *op cit.*, at 306.

⁴⁵ *ibid.*

⁴⁶ This provision gives power to the Minister responsible for copyright and neighbouring rights to make regulations for proper implementation of the provisions of the CNRA.

⁴⁷ See regulation 2.

⁴⁸ See regulation 3.

recording without this label is considered as infringing copyright and should be seized either by COSOTA, the Police, or the Customs Department.⁴⁹ The label HAKIGRAM is exclusively delivered by COSOTA after it is satisfied that the sound recordings or audio-visual recordings have been produced and published in the United Republic or imported in the country without infringing any of the copyrights granted by the Act.⁵⁰

In ensuring the effectiveness of the provisions under these regulations, penalties have been imposed to any person who contravenes them. Such contravention renders a person to have committed an offence and on conviction he shall be liable to pay a fine of not more than four million shillings or imprisonment of up to three years for the first offence or paying a fine of not more than eight million shillings or suffer imprisonment of up to two years for each subsequent offence.⁵¹

2.4 The Role Played by COSOTA in Protecting Copyright

In order to realize the potential benefits of copyright, some developing countries have established collective management societies which represent the rights of artists, authors, performers, and collect royalties from licensing copyrighted works held in their inventories.⁵² In Tanzania, COSOTA is an organ which is responsible for copyright administration. It is a Collective Management Organization which ensures that interests of copyright owners are protected. Although Collective Management Organizations are now facing the digital age challenges, collective management of copyright is important as it allows authors and other copyright holders to monitor, and in some cases, control certain uses of their works that would otherwise be unmanageable individually due to the large number of users worldwide.⁵³ As it has been pointed out above, COSOTA is an organ which can exclusively deliver the label HAKIGRAM after it is satisfied that the sound recordings or audio-visual recordings have been produced and published in the United Republic or imported in the country without infringing any of the copyrights granted by the CNRA.

In ensuring that there is an effective copyright administration, COSOTA performs various functions including promoting and protecting the interests of authors, and in particular, to collect and distribute any royalties or

other remuneration accorded to them in respect of their rights provided under the Act, searching for, identifying, and publicising the rights of owners and give evidence of the ownership where there is a dispute or an infringement. COSOTA has also laid down the procedures to be followed when a person has a complaint on copyright issues. The procedure has been stated to be as follows:

1. The Copyright and Neighbouring Rights Act No. 7 of 1999 provides for under section 36.-(1) (a) (b) (2) that any person whose rights under the Act are in imminent danger of being infringed or have been infringed, may institute proceedings in the United Republic of Tanzania for an injunction to prevent the infringement or to prohibit the continuation of the infringement. Also one can pray for payment of any damages suffered in consequence of the infringement, including any profits enjoyed by the infringing person that are attributable to the infringement. If the infringement is found to have been prejudicial to the reputation of the person whose rights were infringed, the court may, at its discretion, award exemplary damages. Any object which was made in violation of this Act and any receipts of the person violating it and resulting from such violations, shall be subject to seizure.
2. Also a person can inform the Police Officers for further actions.
3. Also a person can bring the information at the Copyright Office by writing a letter addressed to the Chief Executive Office who is also the Copyright Administrator. The letter should contain his/her complaint.
4. Upon receipt of the letter, the office will reply to the letter and get in touch with the complainant and the person who the complaint is against to request them to come for a dispute settlement meeting.
5. The dispute settlement meeting is conducted in form of mediation
6. The parties are heard collectively and individually.
7. The parties are counselled and legally advised on the present dispute.
8. The parties are asked their way forward.
9. The society advises and state the way forward.⁵⁴

In executing its functions, COSOTA, together with police force and copyright stakeholders, conducted anti-piracy operations across the country and managed to seize various equipments which were used in production of pirated works such as computers, printers, scanners, duplicating machines, paper cutter, CD maker, VHS player, DVD players, DVD ROMs, Compact Disk, microphones, speakers, and different pirated CD/DVDs and VHS.⁵⁵ However, it is worth mentioning that the functions of COSOTA, as provided under the Act and the procedures laid down by COSOTA, do not reflect the current copyright trend in the digital age and the digital

⁴⁹ See regulation 5.

⁵⁰ See regulation 4.

⁵¹ See regulation 14 read together with Section 42 (9) of the Act.

⁵² See Copyright, Software and the Internet. *op cit.*, at 98.

⁵³ See Gervais, D.J, (2002), Collective Management of Copyright and Neighbouring Rights in Canada: An International Perspective. *Canadian Journal of Law and Technology*, Vol. 1, Issue 2, at 22 retrieved from http://cjlt.dal.ca/vol1_no2/TOC_set.html (as accessed on 6-2-2014).

⁵⁴ Information obtained from <http://www.cosota-tz.org> visited on 13-5-2014.

⁵⁵ *ibid.*

environment where for example search and seizure cannot be possibly done due to the following reasons:

Firstly, the dilemmas involved regarding search and seizure in the digital world which involves difficult questions such as what are steps to be taken by an investigator when retrieving evidence from a personal computer? What does it mean to search computer data? When is computer data seized? When is search or seizure of computer data reasonable? Answers to these questions are unclear.⁵⁶

Secondly, the difficulty involved in applying old rules to the new facts due to the differences existing between the mechanisms of physical and digital evidence collection.⁵⁷ The existing differences between the dynamics of traditional home searches and the new computer searches may make rules established for physical searches no longer appropriate for digital searches.⁵⁸ Such differences are:

- (i) Home searches are conducted by physically entering and observing whereas computer searches require passing an electric current over rotating magnetic points, processing the data and then sending it to a monitor or other output device. While in physical world the dynamic is enter, observe, and move; in digital world, a police officer does not physically enter a computer, visually observe the zeros and ones, and does not physically move anything inside it;⁵⁹
- (ii) Home searches occur at the suspects residences whereas computer searches occur offsite on a government computer that stores a copy of the suspect's hard drive;⁶⁰
- (iii) Home searches normally involve a limited amount of property because the size of houses can limit the amount of evidence they contain and individuals tend to have considerable control over what is inside their houses whereas computer searches involve entire virtual world of information since computers have large storage capacities which store a unlimited amount of information that most users do not know about and cannot control;⁶¹
- (iv) Home searches occur at a physical level whereas computer searches occur both at a physical and virtual or logical level through the use of special programs designed to retrieve evidence.⁶² While logical search is based on the file systems found on the hard drive as presented by the operating system, a physical search identifies and recovers data across the

entire physical drive without regard to the file system.⁶³

In Tanzania for example, the Criminal Procedure Act⁶⁴ and the Police Force and Auxiliary Services Act⁶⁵ were drafted to regulate searches of homes and physical property,⁶⁶ and courts have developed clear rules to regulate searches in physical world.⁶⁷ Thus, considering the reasons and differences explained above, it is difficult to apply these laws and rules in digital environment.

3.0 COPYRIGHT INFRINGEMENT IN THE CONVENTIONAL WORLD

Copyright in a work is said to be infringed when a person does or authorises another to do any of the act which the author is authorized to do without seeking his permission. As it has been discussed earlier in this work, subject to the limitation on free use, copyright provides the author with exclusive economic rights which entitles him to perform various acts, thus performance of such specified/restricted acts by any other person without the author's authority constitutes an infringement. Under the CNRA, some acts have been specified as unlawful and are held to constitute infringement of copyrights. Such acts include:

- (i) The manufacture or importation for sale or rental of any device or means specifically designed or adapted to circumvent any device or means intended to prevent or restrict reproduction of a work, a sound recording or a broadcast, or to impair the quality of copies made;
- (ii) The manufacture or importation for sale or rental of any device or means that is susceptible to enable or assist the reception of an encrypted program, which is broadcast or otherwise communicated to the public; and
- (iii) The removal or alteration of any electronic rights management information without authority.⁶⁸

Generally, infringement may either be primary or secondary.⁶⁹ Primary infringement occurs where restricted acts are carried without the author's permission. On the other hand, secondary infringement is concerned with large

⁵⁶ See Kerr, O.S, (2005). *Searches and Seizures in a Digital World* at 532 & 533.

⁵⁷ See Kerr, *op cit.*, at 533.

⁵⁸ See Kerr, *op cit.*, at 534 & 537.

⁵⁹ See Kerr, *op cit.*, at 534 & 540.

⁶⁰ See Kerr, *op cit.*, at 534, 540 & 541.

⁶¹ See Kerr, *op cit.*, at 534, 541-543.

⁶² See Kerr, *op cit.*, at 534 & 543-547.

⁶³ See Kerr, *op cit.*, at 544.

⁶⁴ See Cap 20 R.E 2002.

⁶⁵ See Cap 322 R.E 2002.

⁶⁶ See section 38, 40, 41 & 43 of the Criminal Procedure Act and section 35 of the Police Force and Auxiliary Services Act.

⁶⁷ See for example, the case of Wilfred Mahendeka v. R, [TLR] 1981 at 81.

⁶⁸ See section 44.

⁶⁹ See Mambi, *op cit.*, at 201. See also, Katz, A, (2012), Copyright in Cyberspace: Why Owners should bear the burden of identifying infringing materials under the Digital Millennium Copyright Act. *Boston University Journal of Science and Technology Law*, Vol. 18 retrieved from https://www.bu.edu/law/central/jd/organizations/journals/scitech/volume_182/documents/Katz_web.pdf (as accessed on 22-2-2014).

scale infringement taking place in actual or constructive knowledge and is usually done by a person other than a primary infringer. In other words, while primary infringement is normally done by people who are directly involved with misusing copyrighted works, secondary infringement involves people in a commercial context dealing with infringing copyright or helping primary infringers.⁷⁰ Example of secondary infringement includes authorizing copyright infringement by supplying a device or technology that may be used to make illegal copies directly. In this case, the distributor is a secondary infringer as he does not personally make the copies but the person to whom the device or technology is supplied does and is regarded as a primary infringer.

4.0 COPYRIGHT INFRINGEMENT IN THE CYBERSPACE

The emergence of internet and the increased use of the World Wide Web have aggravated the possibilities of copyright infringement. As it has been explained in section three of this paper, copyright infringement occurs when copyright owner's rights are exploited by another person without his permission. In online environment, copyright infringement often involves a violation of the reproduction right that occurs by transferring data from one computer to another.⁷¹ In the case of *Mai Systems Corp v. Peak Computer, Inc*⁷² it was found that the copy created in a computer's random access memory (RAM) was sufficiently permanent and fixed to cause an infringement of the software. The decision in this case was a distinguished decision from the early case of *Apple Computer v. Formula International*⁷³ where it was held that copies stored in random access memory were temporary and running a computer program from RAM does not create an infringed copy.

In the first case, the owner of the copyright in operating system software sued a computer repair company for infringement based on the repair company's turning on a computer running the operating system for the purpose of servicing the machine. In so doing the defendant was able to view the software programme to assist him in diagnosing the problem. It was stated that:

[t]he loading of copyrighted computer software from a storage medium (hard disk, floppy disk, or read only memory) into the memory of a central processing unit (CPU) causes a copy to be made. In the absence of ownership of the copyright or express permission by license, such acts constitute copyright infringement.

It was concluded that copying for purposes of copyright law occurs when a computer program is transferred from a permanent storage device to a computer's RAM.

⁷⁰ See *Mambi, op cit.*, at 201.

⁷¹ See *Ferrera, et al.* (2004). *Cyber Law Text and Cases (2nd edition)* at 91.

⁷² 1991 F.2d 511 (9th Cir. 1993) as extracted from *Ferrera, et al., loc cit* & *Sharma, op cit.*, at 467.

⁷³ 594 F. Supp. 617 *Ferrera, et al., loc cit* & *Sharma, loc cit.*

The position in the earlier case seems to have similar implications in Tanzania where the CNRA permits temporary reproduction if main three conditions are met. Firstly, if such reproduction is made in the process of transmitting the work or an act of making a stored work perceptible; secondly, if it is caused by a person or entity that by way of authorisation of the copyright owner or operation of law, is entitled to make that transmission or making perceptible of the work; and lastly, if it is an accessory to the transmission of making people perceptible that occurs during the normal operation of the equipment used and entails the automatic deletion of the copy without enabling the retrieval of the work for any other purpose than those pointed out in the first and second condition.⁷⁴

Furthermore, infringement may occur in copyrighted software including a computer program when such software is made available to users for downloading without the permission from the copyright owner. The software can be made available through online sources such as online advertisements and can easily be communicated to the public without authorisation.

Reproduction rights are equally affected if a copyrighted material is reproduced in an electronic form and made part of a database.⁷⁵ In the case of *New York Times Co. v. Tasini*⁷⁶ six freelance authors alleged that their copyrights had been infringed by the inclusion of their articles in the database. The freelancers contributed their articles to three print periodicals, that is, two newspapers and one magazine. The periodical publisher agreed with two computer database companies (Electronic Publisher) to place copies of freelancers' articles into three databases without freelancers' authority. The US Supreme Court concluded that the electronic publishers infringed copyright by reproducing and distributing the articles in a manner not authorized by the authors. It was further concluded that, the periodical's publisher infringed the authors' copyrights by authorizing the electronic publishers to place the articles in the databases and by aiding the electronic publisher in that endeavour.

Copyright infringement in the cyberspace also occurs through internet activities such as scanning, downloading, uploading, browsing, and file swapping.⁷⁷ These activities facilitate transmission of information from one computer system or network to another, involving temporary storage of information into RAM, unauthorized storage of such information, a violation of the copyright owner's exclusive right to make copies, a violation of the copyright owner's exclusive distribution right, an appearance of a copyright image in a web browser infringing the copyright owner's public display right and an infringement of the copyright owner's exclusive right to prepare derivative works.⁷⁸

⁷⁴ See section 13.

⁷⁵ See *Sharma, op cit.*, at 469.

⁷⁶ 533 US 483 (2001) as extracted from *Sharma, loc cit.*

⁷⁷ See *Sharma, op cit.*, at 466 & 495.

⁷⁸ *ibid.*

Scanning a copyrighted printed document into a digital file or scanning in the image and storing the work electronically are instances of unauthorized reproduction which amounts to copyright infringement.⁷⁹ Infringement continues when a person download or upload a digital copyrighted file or image.⁸⁰ In downloading a person receives a file or data from the internet to the computer whereas in uploading a person sends a file or data from a computer to the internet.⁸¹ While downloading involves acts such as opening a web page, receiving email, purchasing music files and watching online videos, uploading acts include sending email and posting photos on a social media site. All these acts may, in one way or another, facilitate copyright infringement.

In browsing, web pages are usually displayed at the request of the user's browser. When a browser requests a website or web page the request is executed by first searching and then connecting to the said website or web page. Once a connection is established, the said website or web page is downloaded for the viewing on computer system or network. In such scenario, the website owner is deemed to be the owner of the copyright material, which has been downloaded from the web server. Thus, any person who subsequently does any act of publication, transmission or storage of downloaded information in an unauthorized manner will be infringing the display right of the copyright owner.⁸²

File swapping involves "peer to peer" transmission of digital file from one computer to another via the internet.⁸³ Peer to peer file sharing is a technology in which there is software that enables the online exchange of MP3 Music and other copyrighted files. It is a system that comprises a network through which file exchange occur.⁸⁴ In *A&M Records v. Napster, Inc.*⁸⁵ a complaint was filed against Napster for facilitating transmission of MP3 files between and among its users through "peer to peer" (P2P) file sharing. By so doing, Napster allowed its user to store MP3 music files on individual computer hard drives which could then be searched by others, as well; users were allowed to transfer exact copies of the contents stored from one computer to another through internet. It was held that since it was established that majority of Napster users used the service to download and upload copyrighted music there was copyright infringement. In this case the court found that Napster materially contributed to copyright infringement by providing software and the central server, thus sustained an injunction for plaintiffs on their contributory claim. Other peer to peer networks include

Gnutella and KaZaA which are, however, distinguished from Napster file swapping service as they do not have a central server that maintains a list of files that users can download and they allow for exchange of a wide range of material in addition to MP3 music files, including movie files, books and other text files, and photographs.⁸⁶

Moreover, copyright may be infringed by copying a website or by creating and maintaining hypertext links to other websites.⁸⁷ This is a common practice amongst website owners where they provide links to other websites or web pages by publishing their URLs which often provide the user with helpful information or resources related to the product and/or service being offered once such user click on such URLs. In many websites, however, the terms of use published restrict the user to make only one copy for personal use of any information displayed.⁸⁸ In *Shetland Times Ltd v. Dr Jonathan Wills*,⁸⁹ the defendant operated a website on which he had placed headlines from the Shetland Times and anyone accessing the headlines could gain access to the news items on the Shetland Times website by clicking on the link. By doing so, a person could get direct access to the news from Shetland Times hence by-passing the front page with its advertisements. The court held that the incorporation by the defendant of the headlines provided at the pursuers' website constituted an infringement since the headlines were literary works in their own.

It is noteworthy that in Tanzania, news of the day published, broadcasted, or publicly communicated by any other means are not subject of copyright protection.⁹⁰ Thus, in the event like this in Shetland Times case infringement could not be established. However, in Tanzania, the important point to note is that where a link is created and such link direct a person to information which form the subject matter of copyright protection, infringement claim may be maintained. It is advised that parties should enter into Web-linking agreement with the linked site to avoid misunderstanding regarding copyright infringement.

Adaptation rights may be infringed when a web designer creates a website by combining some special features of various websites as it amounts to unauthorized adaptation.⁹¹ In Computer programs for example, making an arrangement, translating or altering version of a computer program without authorization constitutes

⁷⁹ See Ferrera, *et al*, *op cit.*, at 91.

⁸⁰ See Ferrera, *et al*, *op cit.*, at 91 & 92

⁸¹ See Seth, *op cit.*, at 238 & 239

⁸² See Sharma, *op cit.*, at 471.

⁸³ See Sharma, *op cit.*, at 466.

⁸⁴ See Seth, *op cit.*, at 242. See also, Spinello & Herman, *op cit.*, at 41-43.

⁸⁵ 114 F Supp 2d 896 (N.D. Cal 2000) as extracted from Sharma, *op cit.*, at 474.

⁸⁶ See Spinello & Herman, *op cit.*, at 43. See also, Sharma, *op cit.*, at 478-479 & Seth, *op cit.*, at 242-244.

⁸⁷ See Mambi, *op cit.*, at 199. See also, Burk, D, (2005), Feminism and Copyright in Digital Media, *Intellectual Property Rights in a Networked World: Theory and Practice*, at 175 & 176.

⁸⁸ See Ferrera, *et al*, *op cit.*, at 92.

⁸⁹ [1997] FSR 604 as extracted from Bainbridge, *op cit.*, at 79 & Sharma, *op cit.*, at 472.

⁹⁰ See section 7.

⁹¹ See Tabrez, *loc cit.*

infringement.⁹² In Tanzania, the Act does not define the term translation but in the UK the term is defined to mean a version of the program which involves conversion of computer language or code.

Distribution and display rights may as well be infringed. This occurs when copyrighted materials are placed on the Internet or webpage and can be downloaded by users since it amounts to worldwide distribution.⁹³In *Michaels v. Internet Entert. Group Inc*⁹⁴, it was held that making available videotape over the internet without authorisation amounts to violation of owner's exclusive statutory right of display. Also, in *Marobie-FI. Inc. v. National Ass'n of Fire Equip. Distribs*⁹⁵ where unauthorized copies of the plaintiff's electronic clip art were placed on the defendant's web pages, it was held that this act constituted an infringing distribution because the files were available for downloading by internet users.

Copyright infringement is also facilitated by the advancement in circumvention technology which tends to circumvent technological means of copyright protection such as encryption. Technological protection measure is a technological method intended to promote the authorized use of digital works.⁹⁶ It accomplishes this by controlling access to such works or various uses of works including copying, distributing, performing and displaying.⁹⁷ For example, the technology referred to as the Decode Content Scrambling System (DeCSS) which circumvents the encryption technology of Content Scramble System (CSS).⁹⁸ The CSS is an access control and copy prevention system for DVDs which requires the use of appropriately configured hardware such as DVD player or a computer DVD drive to decrypt, unscramble, and playback but not copy motion pictures on DVDs.⁹⁹ However, the DeCSS as

a new technology was developed to enable users to break the CSS copy protection system hence view DVDs on unlicensed players and make digital copies of DVD movies.¹⁰⁰

In *Universal City Studios Inc. et al v. Reimerdes et al*¹⁰¹ an injunction was issued barring the defendant from posting the source code and object code for DeCSS on any website. The court concluded that an injunction was highly appropriate since it was observed that the DeCSS was harming the plaintiffs not only because they were exposed to the possibility of piracy and thus obliged to develop costly new safeguards for DVDs but also because the threat of piracy was real particularly as internet transmission speeds continue to increase.

Copyright infringement is also facilitated by media-sharing sites such as YouTube. These sites are regarded as purely copyright infringers that owe copyright owners millions in royalties and damages. The infringement occurs when copyrighted works are shared and when users of media sites use copyrighted works such as songs in the process of creating their own content.¹⁰² Infringing uses are either substitutional or complementary depending on the extent of effect of such use. When media sharing sites reduce overall consumption of information goods they may be deemed substitutional or when sites such as YouTube increase consumer appetite for or devotion to certain content the use is complementary.¹⁰³

Generally, copyright infringement over the internet has posed a threat to creative works all over the world. Through the internet, the work of authors can be displayed in different jurisdictions and it is very difficult to detect. In Tanzania specifically, the law governing copyright protection seems to be unable to protect the unauthorized distribution and use over the internet due to the fact that it contain provisions with much focus on copyright protection on conventional world. Even the functions which are performed by COSOTA as stipulated under the Act, do not reflect the digital environment we are living in.

⁹² See Bainbridge, *op cit.*, at 41.

⁹³ See Wherry, *op cit.*, at 53.

⁹⁴ 5 F. Supp. 2d 823 (C.D. Cal. 1998) as extracted from Ferrera, *et al, op cit.*, at 94.

⁹⁵ 983 F. Supp. 1167 (N.D III 1997) as extracted from Ferrera, *et al, op cit.*, at 92 & Sharma, *op cit.*, at 470.

⁹⁶ See Reynolds, G, (2006), A Step in the Wrong Direction: The Impact of the Legislative Protection of Technological Protection Measures on Fair Dealing and Freedom of Expression. *Canadian Journal of Law and Technology*, Vol. 5, Issue 3, at 179 retrieved from http://cjlt.dal.ca/vol5_no3/index.html (as accessed on 6-2-2014).

⁹⁷*ibid.*

⁹⁸ See Sharma, *op cit.*, at 485-490. See also, Ginsburg, L, (2002), Anti-circumvention rules and fair use. *UCLA Journal of Law & Technology*, Vol. 6, Issue 2, 2-4 retrieved from http://www.lawtechjoynal.com/articles/2002/04_021027_ginsburg.pdf. See also, Spinello & Herman (n7) at 52-54 (as accessed on 6-2-2014).

⁹⁹ See Sharma, *op cit.*, at 485. See also, Ginsburg, L, (2002), Anti-circumvention rules and fair use. *UCLA Journal of Law & Technology*, Vol. 6, Issue 2, 2-4 retrieved from

http://www.lawtechjoynal.com/articles/2002/04_021027_ginsburg.pdf.

¹⁰⁰ See Sharma, *op cit.*, at 485. See also, Ginsburg, *op cit.*, at 3.

¹⁰¹ 82 F Supp 211 (S.D.N.Y. 2000) as extracted from Sharma, V, *op cit.*, at 486.

¹⁰²See Katz, A, (2012), Copyright in Cyberspace: Why Owners should bear the burden of identifying infringing materials under the Digital Millennium Copyright Act. *Boston University Journal of Science and Technology Law*, Vol. 18at 17retrieved from https://www.bu.edu/law/central/jd/organizations/journals/scitech/volume182/documents/Katz_web.pdf(as accessed on 22-2-2014).

¹⁰³See Katz, *op cit.*, at 22.

5.0 CHALLENGES ARISING FROM ICT DEVELOPMENT TO COPYRIGHT PROTECTION IN TANZANIA

The development of ICT, particularly, the emergence of internet has been associated with many challenges. The internet has been referred to as the “Wild West” frontier of the modern world which poses significant challenges to traditional modes of legal regulation and protection due to its seemingly limitless possibilities and unexplored mediums. The uniqueness of the forum, the ever-increasing influence of cyberspace on daily life, and its speed and scale are amongst factors that contribute to these challenges.¹⁰⁴In Tanzania several challenges are associated with development of Information and Communication Technology in relation to legal and administrative mechanisms on copyright protection. Such challenges include the following:

(i) The emergence of new forms of copyright infringement in the cyberspace. Technologies that are raising issues for copyright law are those related to digital storage and transmission of works. Aspects to these technologies that have implications for copyright law include making ease of reproduction and dissemination. Once a work is rendered in digital form, it can be reproduced rapidly, at little cost and without loss of quality. Each copy can further be reproduced without any loss of quality. Similarly, the emergence of global digital networks allows rapid dissemination of work in digital form worldwide. Thus, technological developments have made copyright material easier to access and reproduce but more difficult to protect. As it has been discussed above, there are internet activities which facilitate copyright infringement. In this digital age, any person having access to internet can become a publisher because downloading, uploading, saving or creating a derivative work is very simple tasks. Taking content from one site, modifying or reproducing it on another site has been made possible by digital technology and this has posed new challenges for the traditional interpretation of individual rights and protection.¹⁰⁵

The emergence of these new forms of copyright infringement through advancement of technology pose challenges to the Copyright and Neighbouring Rights Act since most of its provisions do not accommodate online infringement despite the fact that it has pointed out electronic or wireless means as forms through which acts of communication to the public and transmission can be done.¹⁰⁶ The Act is silent on electronic infringement, as well, literal and non-literal copying of computer programs are not regarded as constituting infringement. It suffices to say the Act is not exhaustive in as far as copyright

protection in this digital age particularly in the cyberspace is concerned.

(ii) The growth of multimedia technology offering large storage of a wide variety of works on a single disk such as a Compact Disk (CD) or Digital Versatile Disk (DVD). This is a new technology which poses considerable challenges to copyright law and the traditional role of copyright which has only recently come to terms with the computer program and database. Already, there are serious issues relating to balancing controls over the access and use of works and freedom of speech.¹⁰⁷ There is a debate as to whether internet should be regulated or it should be allowed to exist without rules or regulations. One view is that regulating the internet will keep it under reasonable control so that the medium is not misused; the other view emphasizes on the concept of freedom of speech and argues that this medium should be a free space where anyone can express one’s view’s freely without any restrictions.¹⁰⁸ The second view insists that infringement of protected works in the cyberspace would not be considered as punishable.

It is arguable that mass storage of all manner of works on electronic media will create insuperable problems for copyright law. In the years back, copies of copyright works were only available as stored or on some tangible item such as book or disk. Nowadays, with information cyberspace these tangible items are no longer necessary for the distribution or use of copyrighted works and there are unprecedented challenges ahead for copyright law.¹⁰⁹

(iii) The other challenge relates to adaptation right due to the fact that there is increasing possibilities for adapting and transforming works which are embodied in digital format. Users can easily manipulate text, sounds, and images of copyrighted materials electronically. This raises a debate as to the clear and appropriate balance between the rights of the author to control integrity of their work electronically by authorizing modifications on one hand and the rights of users to make some changes in digital format on the other hand.¹¹⁰ In Tanzania, the Act does not define what constitutes adaptation while other countries like UK have defined it to include making new arrangement of a song, changing a cartoon strip into a story told by words, and conversion of codes in a computer program.¹¹¹

(iv) There is also a challenge in relation to licensing rights. Section 17 of the Act gives author or owner of copyright right to grant exclusive or non exclusive licenses¹¹² which authorize the carrying out of certain

¹⁰⁴ See O’Reagan, K.M, (2009), Downloading Personhood: A Hegelian Theory of Copyright Law. *Canadian Journal of Law and Technology*, Vol. 7, Issue 1, at 6 retrieved from http://cjlt.dal.ca/vol7_no1/index.html (as accessed on 6-2-2014).

¹⁰⁵ See Tabrez, *loc cit.*

¹⁰⁶ See Section 4.

¹⁰⁷ See Bainbridge, *op cit.*, at 74.

¹⁰⁸ See Seth, *op cit.*, at 226.

¹⁰⁹ See Bainbridge, *op cit.*, at 91.

¹¹⁰ See Mambi, *op cit.*, at 200.

¹¹¹ See Bainbridge, *op cit.*, at 41.

¹¹² Exclusive licence entitles the licensee to carry out the specified act to the exclusion of all others whereas a non-exclusive licence entitles the licensee to carry out specified

specified acts covered by his or its economic rights. Unlike in conventional world where licensing rights may be easily exercised; in internet, the permission to digitise is unlikely to have been obtained or included in any license agreement covering the copyrighted work as ownership of the copyright in the material may be unclear as physical ownership of a work does not automatically confer copyright ownership. It is pointed out that a copyright owner who places material on the internet without notifying the user of any use restriction is likely to be giving an implied license to the user to download or print the material.¹¹³

(v) The expansion of scope of subject matter of copyright protection has created another challenge. Due to rapid revolution of digital technology the subject matter of copyright protection has expanded to include websites and cable program. Since web site design and development are costly ventures, legally protecting them with copyright ownership incurs a special significance on the internet.¹¹⁴ In *Shetland Times Ltd v. Dr. Jonathan Wills*¹¹⁵ there was an issue as to whether operating a website is within the meaning of providing a cable program service for the purposes of copyright law. Lord Hamilton said, it was at least arguable that operating a website was operating a cable program service and even later decisions have reinforced the view that operating a website is within the meaning of providing a cable program service for the purposes of copyright law. It is worth mentioning that this was the first case to be decided on the copyright nature of the internet. In Tanzania, neither of these forms part of subject matter of copyright protection under the Act. This means in the event that copyright infringement has been committed through the website, the infringer may escape liability. Despite the fact that the Act contains provisions on computer programs and databases such provisions are not adequate as they are not exhaustive. As it was pointed earlier in this paper, the term database is not even defined and it has just been mentioned once as a work whose author may acquire exclusive economic rights.

(vi) The boundary less nature of the cyberspace has also created a challenge to copyright protection. The internet does not recognize boundaries while under digital technology copyright can be infringed anywhere. Because the internet has no boundaries, the copyrighted works may be easily infringed online and when this happen the problem that might arise is on the place to sue given the fact that copyright protection is territorial.

act concurrently with the author, other owner of copyright or any non-exclusive licensees.

¹¹³ See Cyberspace Law Materials retrieved from www.cyberlawcentre.org visited on 5-1-2014.

¹¹⁴ See Ferrera, et al, *op cit.*, at 84.

¹¹⁵ [1997] FSR 604 as extracted from Bainbridge, *op cit.*, at 79.

(vii) The other challenging issue is the complexity involved in detecting copyright infringement.¹¹⁶ It is very difficult to detect infringers in the cyberspace due to its anonymity nature. Even when infringement is detected, enforcement such as jurisdiction becomes difficult due to issues such as jurisdiction in invoking legal actions and financial implications.¹¹⁷ As it has been pointed above, infringement in the cyberspace is very easy and it involves a chain of individuals. For example, when a video tape is placed on the internet for download, it may be downloaded by many individuals from different places of the world. The fact that the activities of many individuals can cause massive and large scale infringement raises serious questions about enforcement as it is quite difficult for copyright owners to identify, locate, and bring enforcement actions against the vast number of individuals who might be infringing their works. Copyright infringement may occur anywhere while protection is territorial,¹¹⁸ thus it becomes difficult to enforce since the cyberspace does not recognize boundaries. It also becomes impossible to control copying and unauthorized use of works in the cyberspace.

(viii) Getting the right balance between protecting copyright and ensuring adequate access to knowledge and knowledge-based products particularly on interpretation of “fair use” or “fair dealing” exceptions is another challenging issue.¹¹⁹ As it has been pointed above that in Tanzania there are no determining factors which have been developed as to what constitute free use even in conventional world. Thus, it is urged that this issue need to be addressed to ensure that developing countries have access to important knowledge-based products as they seek to bring education to all, facilitate research, improve competitiveness, protect cultural expressions, and reduce poverty.¹²⁰ Due to development and diffusion of digital technology which permits unauthorized creation of unlimited, perfect, and costless copies and distribution of protected works instantly and worldwide, the copyright industries respond by using digital technology in the form of encryption technologies and anti-circumvention measures.¹²¹ It is argued that these measures restrict “fair use” and may reduce the ability of teachers, students, researchers, and consumers to access information particularly in developing countries. Thus, new approaches are needed to ensure that appropriate “fair use” exceptions can be preserved in the digital context.¹²²

¹¹⁶ See Seth, *op cit.*, at 223.

¹¹⁷ *ibid.*

¹¹⁸ See Seth, *op cit.*, at 228. See also, Mambi, *op cit.*, at 198.

¹¹⁹ See Copyright, Software and the Internet, *op cit.*, at 96.

¹²⁰ *ibid.*

¹²¹ See Copyright, Software and the Internet, *op cit.*, at 100.

¹²² *ibid.*

(ix) The last challenge is on software copyright protection particularly off-the-shelf business applications.¹²³ Although copyright protection enables companies to prevent copying, limit competition, and charge monopoly prices for these products, in developing countries, this presents two main problems.¹²⁴ Firstly, due to the fact that, currently, in developing countries there is widespread copying together with low local purchasing power¹²⁵, there is a concern that stronger protection and enforcement could mean a more limited diffusion of such technologies. This may be a risk because the network effects of business applications tend to re-enforce the dominance of existing software producers.¹²⁶ Secondly, there is a problem on protection of the software source code. That is, where the source code is also protected, this may make it harder to adapt the products for local needs.¹²⁷ It may also restrain competition in development of inter-operating applications through follow-on innovation by reverse engineering.¹²⁸ However, this problem may be avoided if national copyright laws are drafted appropriately taking into consideration the fact that under TRIPS, developing countries are permitted with the flexibility to allow reverse engineering of software.¹²⁹

¹²³ Off-the-shelf software is the software that is used at home or school. It includes word processors, spreadsheets, databases, desktop publishing packages and graphics packages. It is relatively cheap, easily available from most computer shops, easy to install and easy to use. See http://www.teach-ict.com/gcse_computing/ocr/213_software/custom_offshelf/miniweb/pg2.htm (visited on 22-2-2014). See also <http://www.bcs.org/content/conwebdoc/2767>(visited on 22-2-2014).

¹²⁴ See Copyright, Software and the Internet, op cit., at 105.

¹²⁵ For example, it has been pointed out that many people and organizations in developing countries who currently use American software products would not be able to pay the high prices for these products that have been set by American pricing standards. See Spinello & Herman (2005), op cit., at 24.

¹²⁶ See Copyright, Software and the Internet, op cit., at 105. See also, Herman, T, (2005). Recent Copyright Schemes: Implications for Sharing Digital Information: Intellectual Property Rights in a Networked World: Theory and Practice at 193.

¹²⁷ See Copyright, Software and the Internet, op cit., at 105.

¹²⁸ Reverse engineering is the process of moving backwards (reverse) in order to understand the ideas, principles and algorithm contained and expressed in a computer program. This being done through processes of disassembly which converts object code into low-level assembly and decompilation which allows one to translate a machine language program(object code) into a high level representation program which is more understandable. See Sharma, op cit., at 482.

¹²⁹ See Copyright, Software and the Internet, op cit., at 105.

Generally, it is stated that emerging technologies have thrown challenges of varying degrees to the copyright regime and the law has to adapt itself to respond to these changes. Most copyright works such as texts, images, sound, and video can now be digitalised and transmitted across the entire globe over networks and internet at little cost and in minimum time. While earlier rights of reproduction and distribution affected only tangible physical copies of a work, new technology has brought in intangible reproduction and distribution to transmit valuable copyrighted works like music, songs, movies, and computer software all over the world free of cost. Thus, the copyright law is currently being increasingly challenged by developments in digital regime.¹³⁰

Despite the fact that copyright law has proved to be capable of adapting to protect new forms of technological expression such as photograph, sound recordings, broadcasts, and computer programs, technology is still a threat as new technology come to pace.

Generally, new technologies often prompt debate about whether set of exclusive rights granted to authors and rights holders should be modified either with new or broadened right or new broadened exemptions in order to continue to serve the purpose of copyright.¹³¹ In recent years, the international community has paid significant attention to the need to adjust the existing framework of exclusive rights to address issues of new technology. This has been a result of the degree to which advances in digital technology have facilitated rapid, widespread reproduction, and dissemination of works.¹³²

6.0 CONCLUSION

Generally speaking, technological changes have resulted into making the Copyright and Neighbouring Rights Act inadequate in as far as copyright protection in the cyberspace is concerned since it does not have provisions which specifically protect copyrighted works against infringement in the cyberspace. Moreover, it has few non-exhaustive provisions which address copyright issues in the digital age. Currently, the courts in Tanzania might not have come across with cases involving copyright infringement in the cyberspace but they might see the influx of internet related cases in the near future. Therefore, the legal institution for the production of information superhighway gateway should be prepared. This means that, there is a need for establishing an appropriate copyright law and strong legal institutions to effectively address challenges of copyright infringement in the cyberspace. So to say, the Act should be amended to include provisions which will cope with rapid

¹³⁰ See Paranjape, V, (2010), Cybercrimes & Law, at 90.

¹³¹ See Peters, M, The Challenge of Copyright in the Digital Age; *Focus on Intellectual Property Rights*, U.S Department of State Publication, at 53 retrieved from http://www.copyright.gov/fls/fl_102.html (as accessed on 29-1-2014).

¹³² See Peters, op cit., at 50.

technological changes. On top of that, a multidimensional approach is required in order to protect copyright works in the cyberspace. This approach will include adoption of legal, social, and technological measures. There should be stringent legal framework; as well, social awareness must be spread amongst the general public.

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