"PROTECTION AND REGULATION OF INTELLECTUAL PROPERTY RIGHTS IN COMPUTER SOFTWARE AND PROGRAMS IN KENYA"

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DECLARATION

I, **FREDRICK OTIENO MEGE**, do hereby declare that this is my original work and has not been submitted and is not currently being submitted for a degree in any other University.

SIGNED…………………………………………………….

FREDRICK OTIENO MEGE

This thesis has been submitted with my approval as the University of Nairobi Supervisor,

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CHAPTER ONE

RESEARCH PROPOSAL

1.0 Introduction and Background to the Problem.

Computer programs refer to the digital instructions designed to control a computer's operations. They comprise a set of instructions readable by a computer to enable it perform certain functions.[1] Computer software and programs are a form of intellectual property that serve both as the expression of an idea and the idea itself which performs a technical function.[2] They are therefore protected under both Copyright and Patent Laws.

The intellectual property rights in computer software and programs are also protectable through trade secrets and unfair competition laws. There are however, challenges in the applicability of those regimes of the law to computer software as discussed later in this paper.

Kenya's Copyright Act[3] recognizes computer software and programs as proper subject matter of copyright protection.[4] Prior to 1st May 2002, Kenyan law then governing grant and protection of patent expressly excluded computer programs from the scope of patent protection.[5] The 2001 statute does not include computer programs among unpatentable inventions.[6] It is therefore arguable that computer programs and software are now proper subject matter of patent protection in Kenya subject to the patentable invention satisfying the statutory prerequisites for protection which include novelty, inventive step and industrial applicability.

There are challenges to the copyright protection of computer programs and software. Firstly, copyright protection is confined to expression of an idea and not the idea itself. It does not protect copying of computer program's functionality via reverse engineering and development of

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[1] The Copyright Act 2001 (TCA 2001) s2.
[2] B Sihanya, 'Digital Copyright in Kenya', (2012) Vol. 8(1) The Law Society of Kenya Journal, 119, 124
[3] TCA 2001.
[4] ibid s2.
[5] The Industrial Property Act 1990 (now repealed).
[6] The Industrial Property Act 2001 (TIPA 2001) s26.

another source code that does not infringe the initial source code's copyright.[7] Further, fitting computer programs within the copyright law requirement that an idea be "fixed in any tangible" medium can be problematic considering that a computer program is intangible since it constitutes a series of magnetic spots on a magnetized disk.[8] The owner of copyright in computer program could experience difficulties establishing that an alleged infringer had access to the object code and that the alleged copy is substantially similar to that copyrighted.

Studies have revealed that uptake of patents by Kenyans is low and that most patents registered in Kenya are owned by foreign entities.[9] A question therefore emerges as to the cause of this low uptake of patents and its general impact on the development of computer software and programs sector. Further, it leads one to question the efficacy of software patents in spurring development in computer software industry in Kenya.

The patent application process takes time in view of the time-frames set out in the Industrial Property Act and bureaucracy at the Kenya Industrial Property office.[10] It is therefore valid to question the suitability of patents to computer software bearing in mind that the digital sector is characterized with rapid technological changes and improvements.

The United States of America, one of the leading countries in software developments, allows for software patents following its Supreme Court's decision in *Diamond v Diehr.[11]* The same position subsists in Australia.[12] However, the European Union's approach to software patent is quite restrictive.[13] A comparative study is important to determine the reasons informing jurisdictions' varying approach to patenting software.

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[7] MA Stoney and S Stoney 'Dual Protection offered to Computer Programs - Why The Move Towards Patenting?' (2003) 16 Logistic Information Management 81.

[8] ibid.

[9] P Kameri- Mbote 'Intellectual Property Protection in Africa: An Assessment of the Status of Laws, Research and Policy Analysis on Intellectual Property Rights in Kenya' (2005-2) International Environmental Law Research Centre Working Paper <http:www.ierc.org/content/w0502.pdf> (12 November 2013).

[10] TIPA 2001, s 2 thereof establishes the Kenya Industrial Property Institute, a body corporate whose statutory functions include considering applications for and granting of industrial property rights.

[11] 450 U.S 175, 185 1981.

[12] See *Data Access Corporation v Power Flex Services Pty Limited* [1996] 33 IPR 194.

[13] Graham J H Smith, *Internet Law and Regulations* (4th edn, Sweet & Maxwell) 126.

There are also other issues that arise with regard to intellectual property rights (IPRs) on computer program and software. These include appropriate legal response to the technological protection measures and rights management information incorporated in the product by developers. Kenya's laws do not adequately address technological protection measures and digital rights management systems. The same are susceptible circumvention or tampering. The law ought to be applied to criminalize those acts of infringement.

Anecdotal data suggests that local start-up software developers seldom utilize the patent law system to protect their inventions and that approximately 67% of such developers had not sought to register their works with the copyright board.[14] Further, most reported litigation relating to software IPRs involve multinational developers, particularly Microsoft.

This study looks at Kenya's legal regime governing computer software and programs and interrogates its efficacy in protecting intellectual property rights of local developers and encouraging technology transfer and development in the sector.

1.1 Statement of the Problem.

Kenya's start-up software developers are not utilizing the existing IPRs regime embodied in the Copyright Act and the Industrial Property Act to protect their innovations. There is a disconnect between the said IPRs regimes and the practical requirements of the local software developers. This study seeks to explore why and propose modalities of bridging the gap and making the regime more suitable and useable by the innovators.

1.2 Theoretical Framework.

This study is underpinned by the labour theory whose central thesis is that a person is entitled to the fruits of his labour. An individual who applies his mind and effort to curve out something from what is availed by nature (the commons) is entitled to own the product. The early

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[14] H Moraa and Others 'iHub Research Intellectual Property in Technological Innovations, Perceptions from tech Start-ups in Kenya ICT Hubs' Final Report November 2012 <http://research.ihub.co.ke/uploads/2012/november/1354025437_819_126.pdf> (21 May 2014).

proponents of this theory include John Locke whose view was that a person owns his body and is consequently entitled to the product of his body's efforts (labour).[15] To Locke, it is this human labour that results in creation of objects of value.

Locke further posited that one owns the product of his labour on two conditions. Firstly, as long as his doing so does not result in loss to others and secondly that the property owner does not take more than he needs and thus create wastage.[16] Those conditions help set boundary for property ownership.

Though Locke utilized his labour theory in justification of tangible property ownership, it has been adopted in justifying IPRs which are products of the mind.

The labour theory has been criticized for example that it does not explain why mixing one's labour with the commons should entitle him to the product. However, it will be informative to this study particularly in providing a theoretical justification for protection of IPRs and further, the Lockean conditions provide a framework for balancing the IPRs vis a vis general society's well-being.

This study will also be premised on the economic theory that justifies protection of IPRs based on their economic benefit.[17] Conferring IPRs on inventions and creations gives individuals the impetus to commit resources in Research and Development (R&D) as they are certain to recoup their investment costs and make profit. Without IPRs it is unlikely that individuals would invest in R&D seeing that the products of their labour could be appropriated by free-riders at the innovator's expense.

There is the utilitarian element to the economic theory. It is argued that by providing incentive for R&D, IPRs ensure availability of quality goods and services in the market to the benefit of the entire society.

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[15] Edwin C. Hettinger 'Justifying Intellectual Property' (winter 1989) 18 Philosophy and Public Affairs Journal, 144.

[16] ibid 44.

[17] JA Otieno Odek 'Normative Framework For Patent and Plant Breeders' Protection: Trade Theory and Development Policy' (2005) 3 issue 9 University of Nairobi Law Journal, 1.

The other limb of economic rationalization argues that IPRs encourage public disclosure of knowledge. Basically, IPRs regimes (particularly patents) offer the innovators ownership in exchange for disclosure of the secrets of the innovations. Theoretically therefore, the ideas behind the innovation become available for use by others in furtherance of science and development.

The disclosure arising from IPRs system can benefit developing countries by enabling technology transfer where such countries grant protection to IPRs of foreign entities.

The theory can however be criticized for failing to take into account the technological gap scientific expertise between developed and developing countries and the latter's limitation which hinders technology transfer and limits utilization of the disclosed technology in the patent issuing country.

1.3 Literature Review.

Mark Stoney and Susan Stoney addressed the dual protection of computer programs under copyright and patent laws in Austria.[18] They observe that computer programs are granted copyright protection in Australia as literary works and highlight amendments to the country's Copyright Act[19] governing computer programs technological protection and rights management information measures. Australian copyright law prohibits both circumvention of the technological protection measures and tampering with any rights management information installed by a copyright owner.[20]

The paper argues that copyright does not offer adequate protection for computer program since it only protects expression of ideas leaving the underlying idea itself vulnerable to appropriation. With respect to computer programs therefore, one can, in the absence of additional protection, adopt the idea and utilize it without infringing copyright embodied in the program. An argument is proffered for additional protection of computer programs under patents whose strengths

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[18]MA Stoney and S Stoney 'Dual protection offered to Computer Programs-why the move towards Patenting?' (2003) 16 Logistic Information Management (2003) 81.
[19] Australian Copyright Act 1968 (ACA 1968).
[20] ACA 1968, s116A.

include ability to protect the idea behind a program. It also points out weaknesses of patent law regime in its application to software including the expensive and time- consuming application process.

Stoney and Stoney only addressed protection of computer programs by copyright and patent law regimes. They do not examine utilization of trade secrets laws in furtherance of IPRs embodied in computer software. Further, they address Australian law, leaving room for a local study.

William A. White's paper points out that there was uncertainty in the United Kingdom on copyright protection of computer programs until enactment of the Copyright Computer Software Amendment Act 1985 and subsequently the Copyright, Design and Patents Act 1988. The latter statute expressly defines computer programs as literary works which must be recorded in writing or otherwise.[21] The definition is wide enough to incorporate both the object and source codes. He then distinguishes between literal and non-literal copying and demonstrates the problems in establishing non-literal copying by comparing the decisions in *Whelan Associates Inc v Jaslow Dental Laboratory Inc*[22] and *Computer Associates Inc v Altai Inc*[23] which both agree that non literal copying amounts to infringement but develop different tests for establishing the same. In the first case, the court had to distinguish between idea and expression thereof in relation to software. He points out the judge's observation that in deciding non-literal copying the court's interest is to protect the structure and logic of the program which the owner has incurred expenses to develop.

The court in the second decision rejected the "structure and logic" argument and developed a three-stage test for establishing infringement: Abstraction, Filtration and Comparison. The judge then observed that the aim of copyright protection of software is to prevent infringement (literal and non-literal copying) and enable the developer earn from his invention.

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[21] WA White 'Copyright in Computer Software: More wrong than right?' (2003) <www.law.berkeley.edu/.../white.pdf> (22 July 2014).
[22] 479 U.S. 1031 (1987).
[23] 982 F.2d 693 (2d Cir. 1992).

White then identifies software piracy as an ever-increasing challenge on software copyright, which considerably reduces the profit margins of software developers. This is particularly so with the ease in circumvention of protection devices and the use of the internet. He also points out the threat on proprietary software by non-proprietary variants. He however concludes that despite its numerous challenges software copyright is likely to endure in view of computer software's economic importance. Despite piracy, software developers continue to earn significant amounts from the products.

The study however is specific to the United Kingdom. It does not address the institutional and regulatory framework governing computer software.

Alan Story categorizes software patents into two; proprietary one on one hand and Free/Liberal/Open Source software (described by the acronym FLOSS) on the other.[24] He analyses the two types of software and their respective socio-economic impacts to developing countries (which he refers to as countries in the South). The study highlights the importance of computer and computer software to development and posits that the debate on which type of software to adopt (proprietary or FLOSS) is so important that government of the concerned countries must participate and shape policies and laws thereon from positions of knowledge.

From the international treaties' perspective, the study highlights the fact that developing countries members of GATT are mandated by the TRIPs agreement to afford intellectual property law protection to computer software under both copyright and trade secrets regimes. He also posits that there is no specific requirement in TRIPs to grant patent protection for computer software. Story argues that intellectual property law regimes have a negative impact on developing countries computer software sectors in that proprietary softwares, among other reasons, are expensive, prevent technology transfer, stifle competition and encourage software piracy. The study therefore encourages developing countries to adopt a legal and policy framework favouring adoption and use of FLOSS over proprietary software.

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[24] A Story 'Intellectual Property and Computer Software. A Battle of Competing Use and Access Visions for Countries of the South (2004) Issue paper No. 10, UNCITAD-ICTSD Project on Intellectual Property.

Allan Story's research is insightful to this study. However, it approaches the software ownership debate from a North-South dichotomy and deals generally with developing countries. It does not address Kenya's legal framework. There is room to interrogate Alan Story's findings and conclusions in their applicability to Kenya.

David S. Evans and Ann Layne-Farrar[25] discuss arguments advanced by Open-Source software proponents against software patents. They define Open Source as a mode of distributing software that does not hide the source code but leaves the same available to the licensee to modify the software and distribute the resultant product, usually for a controlled or limited cost. The paper traces the historical and incremental development of software patents in the United States of America (USA) from *Diamond v Diehr*[26] to *Re Alappat*[27] and finally in *State Street v Signature Financial*[28]. It highlights arguments by open-source proponents against software patent in the USA including inadequacies at the US Patent and Trademark Office which result in grant of software patents for obvious and trivial patents that do not constitute an inventive step or fail to satisfy the requirement for non-obviousness. They also argue that software patents stifle development as they lead to patent thicketing which increase R&D costs thus discouraging innovation.

However, the writers conclude that protecting software by copyright and trade secrets is inadequate and that doing away with software patents could stifle innovation in the sector by reducing investments in R & D. Further, the paper argues for reforms in software patents by improving investigation capacity at the patent office, developing strategies that reduce or minimize the risk for patent thicketing. These include utilization of cross licensing and patent pools as avenues for technology sharing that would not affect developers' proprietary interests.

However, the study is local to the USA giving room for a similar study of the situation in Kenya to establish whether the arguments advanced and the proposals generated are applicable to Kenya's software legal regime.

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[25]DS Evans and A Layne-Farrah 'Software Patents and Open Source: The Battle Over Intellectual Property Rights' (Summer 2004) University of Virginia Vol. No.10Virginia Journal of Law and Technology, 1.

[26] 450 US 175, 185 (1981).

[27] Re Alappat 33 F.3d, 1526 1537 (Fed Courts (1981).

[28]*State Street v Signature Financial*, 149, F. 3d 1368, 1370 (Fed. Court (1998)).

In 2005, Prof. Patricia Kameri-Mbote published a paper analyzing the legislative and institutional framework (domestic, regional and international) governing intellectual property rights in Kenya.[29] The paper talks of Kenya having legislation providing IPRs in patents, copyright, trademarks, seeds and plant varieties and mentions amendments that had been effected or were then on the verge of being effected, to align those laws with TRIPs provisions. The study also looks at the regional and international intellectual property treaties and the impact thereof on Kenya's IP law. Various institutions governing IPRs in Kenya are also identified.

Prof. Mbote highlights the deficiencies and needs identified in the IPRs legal framework and makes recommendations on how they can be addressed. Interestingly, one of the recommendations is capacity building for both the legal practitioners and judicial officers on matters pertaining to intellectual property.

Though the study addresses IPRs generally, it provides a framework for adoption in analyzing the status of IP laws specifically governing computer software and patents. Further, Prof. Kameri-Mbote did not address Kenya's position regarding application of trade secrets law to enhancement of IPRs particularly for computer software and programs.

Bessen questions software patents utility to start-up companies.[30] He looks at various studies conducted between 1960's and 1990's which revealed that most computer manufacturing companies and software developers in United States of America were then opposed to the grant of software patents. The paper indicates that though there was a marked increase of software patents within the study period, most such patents were acquired by corporations manufacturing machineries with software enabled components. Uptake of patents by software development firms particularly nascent corporations was relatively low. Contrary to Evans and Layne-Farrah's thesis, Bessen argues that non-patenting by most software development firms and innovators had not affected innovation in the industry. Software patent litigation had increased, attributable to the patent thickets developed by the few large corporations acquiring patents in the sector.

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[29] Kameri-Mbote (n9).
[30] J Bessen 'A Generation of Software Patents' (2011) Boston School of Law, Working Paper <http://ggrn.com/abstract=1868978> (10 December 2013).

Bessen's study was also based in the United States of America. It is important to establish whether a similar trend subsists in Kenya where software patents are owned by a few large corporations and if so, the impact thereof on innovation, technology transfers and software industry growth.

Professor Sihanya[31] points out that computer software and programs are granted copyright protection under both Kenya's Copyright Act and TRIPS. He discusses the internet's impact on digital copyrights which include wider market access and ease of widespread infringement. The challenge with the digital copyright is to address infringement.

Sihanya mentions the technological measures taken by software developers to protect their intellectual property rights, including digital rights management and technological protection measures and observes the need for policies thereon that balance protection of intellectual property embodied in the technologies while encouraging utilization of the protected works to promote information access and advancement in the field of software development. However, the paper does not address Kenya's legal framework (if any) guiding such digital rights management and technological protection systems.

Though Sihanya states that over 1,794 works had been registered by Kenya Copyright Board (KECOBO), majority of which are reportedly literary works, it is important for this study to establish the percentage thereof comprised of software and programs and determine nationality of the registered owners. It is however noteworthy that the court cases he cites as having developed jurisprudence on software copyright infringement all involve Microsoft, a multinational. Further, Sihanya does not address protection of computer software and programs via patents, contracts and trade secrets.

The researcher has also examined Richard Stobbe's[32] paper which analyses software licences and agreements for online software based services. It considers the nature of online licence agreements and points out how users may indicate acceptance and enter into binding contracts by

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[31] B Sihanya 'Digital Copyright in Kenya,' (2012) Vol. 8(1) The Law Society of Kenya Journal, 119.
[32] R Stobbe 'Click and Copy: Breach of Online Licence Agreements and Copyright Infringement' (2012) Canadian Intellectual Property Review < www.fieldlaw.com/lawyer_publications.asp?lawyerID=275 >(25 October 2014).

clicking on the "I accept" button with respect to the online licence terms. The paper then highlights various decisions on such contracts. With regard to licensing terms, Stobbe points out the distinction between infringement and breach of licence and posits that not every breach of licence condition amounts to infringement of copyright as defined by statute. Stobbe's paper is limited in scope and premised on Canadian Law.

The lacunae identified from the above literature are that none of the articles address Kenya's IPRs regime governing computer software and programs, setting out the law, identifying emerging policy issues and existing inadequacies and proposing suitable changes. That is the gap sought to be addressed by this study.

1.4 Justification of the Study.

History reveals that technological revolutions often have an impact on the economic, political and social spheres of a society.[33] Computer and computer software technologies have equally caused remarkable transformation in industrial production, financial and commercial operations, government and other spheres of life.[34] Indeed, science and knowledge based industries have overtaken energy intensive sectors as the prime movers of the world economy.[35]

It has been argued that the socio-economic development experienced by countries in the European Union, Japan and USA is attributable to their deliberate emphasis on protection and promotion of intellectual property and innovation.[36] The government of Kenya has committed itself to developing a knowledge-led economy and identified Information and Communication Technology (ICT) as the foundation of that growth.[37] Computer software and programs are crucial to the ICT sector. The study is therefore important as it seeks to create a basis for further

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[33]RL Williams and WR Bukowitz 'The Yin and Yang of Intellectual Capital Management: The impact of Ownership on Realizing Value from Intellectual Capital' (2001) 2 Journal of Intellectual capital, 96 (1996) 33 IPR 194.

[34] Ben Sihanya, 'Intellectual Property for Innovation and Industrialization in Kenya' (2008) Vol. 4 No. 2 Journal of the section on Intellectual Property, Communications and Technology of International Bar Association, 185.

[35] James A Otieno-Odek, 'Normative framework for Patent and Plan Breeders' Protection: Trade theory and development policy', (2005) 3 University of Nairobi Law Journal, 2.

[36] Sihanya (n3) 185.

[37] Kenya Vision 2030 Sector Medium Term Plan (2013-2017) Transforming Kenya; Pathway to Devolution, Socio-Economic Development , Equality and National Unity <www.vision2030.go.ke/cms/vds> (4 April 2014).

study and discussions on the need for clear and comprehensive legal regime governing IPRs in computer software and programs. Further, it aims to contribute to the reform of the legal regime by identifying the ambiguities and gaps and proposing suitable amendments and improvements thereon.

1.5 Objectives of the Study.

The objectives of the study are firstly, to assess the extent to which Kenya's intellectual property law regime protects the rights of computer software and programs owners and developers. Secondly, the study seeks to assess whether the said legal regime offers adequate protection that promotes technology transfer, knowledge-sharing and spurs growth in the local computer software development sector.

1.6 Hypotheses.

This study proceeds on the following hypotheses:

- Kenya's legal and regulatory regime does not provide adequate protection for the intellectual property rights of computer software and program developers.

- The said regime is unavailable for use in protection of IPRs of local start-up software developers.

- Kenya needs to enact *sui generis* legislation governing IPRs in computer software and programs that would address the unique aspects of software.

1.7 Research Questions Sought to be Answered.

This study intends to answer the following questions:
1. Whether Kenya's legal regime embodied in the Copyright Act, Industrial Property Act and Common law principles of Trade Secrets adequately protects the intellectual property rights of computer software and programs owners and developers.

2. Whether there is need to develop a *sui generis* legislation to address unique concerns raised in protecting the IPRs of software developers.

3. Whether the legal regime advances the utilitarian principles of spurring knowledge sharing and development in computer programs and software development sector.

1.8 Research Methodology.

This study will basically be qualitative and library-oriented. Both Primary and Secondary sources of information shall be used. They include the relevant statutes, text books and journal articles.

The researcher proposes to access material and data from statutory bodies and specialized institutions such as KIPI and KECOBO, National Council of Science and Technology, The African Centre for Technology Studies and relevant government ministries. Registries of the Superior Courts of record will also be visited to obtain copies of unreported rulings and judgments.

1.9 Chapter Breakdown.

Chapter One: Research Proposal .

This Chapter will be introductory. It will contain the background and statement of the problem, lay out the objectives of the research, the hypotheses, the research methods to be used, justification for the research, theoretical framework and literature review.

Chapter two: Historical Legislative Development of IPRs on Computer Software Protection.

This chapter will define some key computing concepts and terms, lay out a brief history on development of computer and computer software protection by IPRs and set out jurisprudential

justification for software protection by IPRs, an outline Kenya's legislative history on computer software protection.

Chapter Three: Copyright: Protecting the Expression of Ideas in Computer Programs And Software.

This chapter will set out the law on copyright protection of computer software and programs, examine the established institutional and regulatory framework, undertake a comparison with a framework in the United States of America and evaluate the adequacy of Kenyan law in guaranteeing rights of the IP owner.

Chapter Four: Protecting the Idea Embodied in Computer Programs and Software: Trade Secrets, Patents and Technovations Regimes.

This chapter will look at the arguments advanced in support of additional protection of software over and above copyright regime, set out Kenya's legal and regulatory framework protecting computer software's functionality via trade secrets, patents and technovations regimes, highlight the systems' adequacy, strengths and weaknesses in guaranteeing the IPRs of computer software developers.

Chapter Five: Conclusions.

This chapter will contain the conclusions and make proposals on how the law in Kenya can be reformed to provide adequate legal and regulatory framework governing IPRs in computer programs that protects the interest of innovators while also encouraging knowledge sharing, utilization of the protected ideas and sectoral development. It will also suggest policy changes that ought to be effected by the government.

CHAPTER TWO

HISTORICAL AND LEGISLATIVE DEVELOPMENT OF IPRs IN COMPUTER SOFTWARE PROTECTION.

This chapter establishes a foundation for the study by defining key computing concepts and terms in addition to outlining the jurisprudential justification for IPRs in computer software. Further, the chapter briefly sets out the history of protecting computer programs in the USA firstly by common law trade secrets regime and the subsequent adoption thereof into IPRs regimes beginning with copyright then patent laws. Finally the chapter traces Kenya's software protection history via trade secrets and highlights the various amendments to the country's copyright and patent statutes that incrementally provided IPR protection for computer software.

2.0 Background Information.

A computer is basically a machine capable of conducting calculations and storing the results of such calculations.[38] They function via a series of electronic impulses which designate the proper responses to a series of operations submitted to the machine by the operator.[39] A computer is made up of two parts, the hardware and the software. The former refers to physical tangible computer while the latter refers to the instruments that cause a computer to operate or act in a given way.

At inception, computer hardware comprised very huge machines which in the 1960's occupied large rooms and were operated by a team of specialists.[40] Hardware design underwent metamorphosis. Technological advancements led to development of faster and smaller computer hardware culminating in the launch of personal computers in the late 1970's and subsequently in manufacture of even smaller machines including laptops, and various hand-held devices that are currently available in the market. As computer hardware got smaller, their prices reduced dramatically making the machines presence pervasive.

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[38]B Munnelly and P Holden '*The Computer Course book for Microsoft Office XP.*' Pearson Prentiss Hall.
[39] P Nycum 'Law and Computers: Overview update 1975' (1975) 68 No. 3 Law Library Journal, 234.
[40] Munnelly and Holden (n38) 3.

The computer hardware cannot however function without software. A computer is programmable via the installable software. Software can be classified into two: systems software and application software. The system software (also known as the operating system) controls how the machine itself operates. It acts as the intermediary between computer hardware and the application program. An example of system software is Microsoft Windows. On the other hand, application softwares perform specific tasks on the computer. They offer specific functionality to the user and determine what a computer can do. An example of application software is a word processor.

Hardware development is a fairly expensive exercise requiring substantial initial capital outlay to set up the industrial manufacturing plant.[41] Because of this, the industry has basically been left to large corporations who can afford those high entry costs. In contrast however, software development requires relatively less initial capital outlay.[42] An individual with the requisite skills can easily and successfully engage in software development. The dynamics in the software development industry differ from those subsisting in the hardware industry.

Development of computer software is a specialized field requiring expertise of system analysts and programmers.[43] The analysts identify the needs of computer users that require solutions while programmers develop instructions that direct the computer on how to accomplish the specific tasks. The developed software is then rendered in a programming language. The first language in which the software is rendered is known as the object code. This refers to the actual instructions understood and directly executable by the computer's central processing unit (CPU) and is rendered in binary digits.[44] The object code is usually difficult to understand and use. Therefore, programmers often translate the same into a human readable form that is referred to as the source code.[45] Both the object and source codes comprise the subject matter of IPRs in computer software.

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[41] G Philipson 'A Short History of Software' (2004) < www.philipson.info > (15 May 2014).
[42] ibid.
[43] -- Computer Software < http// *www.wiley.com/college/turban/0471073806/sc/**ch04**.pdf* > (21 May 2014).
[44] Sihanya (n2) 134.
[45] ibid.

Computers have been adopted in all conceivable sectors of human undertakings. That fact coupled by computers' availability caused the emergence of computer software as commercially viable item, forced a reconsideration of IPRs they embody and brought to the fore legal issues arising there from including IPRs, software licensing regimes and criminal law sanctions for defined infringements.

There has been a debate on whether or not to allow IPRs (particularly patents) for computer software and if so, the nature and extent of such protection. On one hand are the proponents of proprietary software who support IPRs to protect software development. At the opposite side are those who either oppose IPRs on software or champion limited scope of such rights. In this category belong proponents of free software, liberal, open source software (described by the acronym FLOSS). Those divergent software IPRs debates will be discussed later in this paper.

2.1 Jurisprudential Justification of IPRs in Computer Software.

Intellectual Property laws concern themselves with protecting products of the human intellect.[46] Development of computer software can be an expensive and time-consuming exercise. Unlike computer hardware which can be manufactured in automated assembly lines, software has to be developed by individual programmers.[47] Once developed, the software requires updates to improve in functionality and usability. This increases R&D costs particularly on human resources. It has been estimated that software development companies commit up to 80% of their Information Technology (IT) personnel to software maintenance teams leaving only 20% available to develop new applications.[48] It has been argued most corporations spend more money on software than hardware. The more complex a software, the larger R&D budget as many experts are deployed in development. Further, costs must be incurred to test such programs and deal with the ever present risk of computer bugs.

Going by the labour theory therefore, software developers require IPRs to enable them enjoy the fruits of their labour and recoup their R&D costs.[49] Such protection also facilitates public

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[46] RJ Smith *Property Law* (Sixth Edition, Pearson Longman 2010) 5.
[47] Philipson (n41) 2.
[48] -- (n43) 92.
[49] D Bainbridge *Legal Protection of Computer Software* (Fifth Edith Tottel Publishing 2008) 4.

disclosure of ideas and provides innovators with incentive to commit more resources on R&D. The result is increased development of software geared towards offering more computing solutions. Software IPRs therefore can provide a merger platform between the developer's economic interest and the utilitarian goals of advancing the interest of the larger number in society. Aside from the economic interest, the software developer possesses moral rights as the inventor of the product to have the works associated with him exclusively.

Compared to countries in the west, per capita computer availability and use in Kenya is still low. However, there has been a marked increase in the country's computerization since early 1990s[50] which is expected to improve further with the implementation of vision 2030 one of whose pillars is enhancement of the ICT Sector. Computer softwares and programs cannot therefore be ignored.

The nature of computer software makes them prone to quick and widespread infringement especially via the internet. They also undergo rapid change and development. Further, most proprietary computer softwares in Kenya belong to large corporations from the developed world, particularly Microsoft.[51] Protection of such corporations' IPRs is mandatory under TRIPS. There is a danger of such corporations turning into monopolies and stifling competitions in the sector. Finally, a software IPRs regime ought to offer quick protection in view of the nature of software. It should also be inexpensive and accessible to majority of the startup software developers who are likely to be individuals.

An appropriate IPRs regimes on computer software ought to take to account those aspects. The protection offered should not be so strong that it impedes utilization of the idea. It should also not be too weak as to deny the innovator an opportunity to benefit from his investment. This study seeks to gauge Kenyan law on those parameters.

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[50] Sihanya (n2) 132
[51] ibid.

2.2 Historical Development of Legal Protection of IPRs in Computer Software and Programs.

At the initial stages of computer technology development, computer software was not considered an item of property capable of independent commercial exploitation[52]but as business and industrial tools. Most software then were organization-specific, developed to tackle the unique processes of the customer and installed into the hardware at the point of manufacture. As computer hardware technology metamorphosed, software emerged as a distinct component capable of ownership severable from the hardware. Introduction of personal computers effected a dramatic change in the industry by making computer ownership pervasive. Computer software thus developed as a commercially viable property item deserving of protection under ambit of IP. Further, PC's provided the basic tool for any skilled person to become a software developer.

Initially, software developers relied on contract law to protect the property in the software. This was achieved via clauses in the license agreements between the software owners and their clients which required confidentiality and non-disclosure.[53] In addition to contract law, tort law concepts of trade secrets and misappropriation were adopted and utilized by courts in the USA to protect computer software.[54] Trade Secret has been defined as any formula, pattern, device or compilation of information which is used in one's business and which gives him an opportunity to obtain an advantage over competitors who do not know or use it.[55] On the other hand, the tort of misappropriation prohibits appropriation of a competitor's skill, expenditure and labour.
For protection to subsist under trade secrets, the idea or information must be secret and not something in the knowledge either of the public or persons in the trade or business.[56] Trade secrets developed into the primary mode of protecting computer software in the USA prior to incorporation of software within the IPRs regime.[57]

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[52] Bainbridge (n49).
[53] HK Szabo, 'International Protection of Computer Software: The Need for *sui generis* Legislation' (1986) 8 Loyola of Los Angeles International and Comparative Law Review 511, 526.
[54] ibid 521.
[55] ibid 526.
[56] ibid.
[57] ibid.

The United States Congress created the National Commission on New Technological Uses of Copyrighted Works whose report in 1978 recommended protection of computer software by copyright.[58] This culminated in amendment of the USA Copyright Act in 1980 to define 'computer program' as 'a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.'[59]

In the USA therefore, computer programs first received IPRs protection as copyright. That was similarly the case in the European Union.[60] By adopting a liberal interpretation of existing copyright laws, UK tribunal in *Gates v Swift*[61] brought computer programs within the scope of copyright law by issuing an injunction to seize cassette tapes containing computer programs in object code form that were said to infringe existing copyright. Further, in *Sega Enterprises Ltd v Richards*[62] interlocutory orders were issued against infringement of copyright that existed in the assembly code (software) of a video game. The Australian federal court was called upon to consider protection of computer programs' object code by copyright in *Apple Computer Inc. v Computer Edge (Pty)*[63]. The court of first instance ruled that object code did not qualify as literary works under copyright. On appeal it was held that object codes were adaptations of the source code thus protectable under copyright.

Additional IP protection under patent was however a later development. In the USA, patent protection of computer programs was achieved as a result of incremental Court decisions culminating in *Diamond v Diehr*[64]. Computer programs were ultimately accepted and adopted as proper subject of patent. The European Union had however not been so accepting of computer software patents with the European Patent Convention expressly excluding computer programs from the list of patentable inventions.

Adoption of IP laws in Kenya is a heritage of colonialism. The 1897 East African Order in Council introduced copyright to Kenya by extending application of the 1982 English Copyright

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[58] Pub L. No. 93-573, Title 11, 88 stat 1873.
[59] The United States Copyright Act 1980 (TUSCA 1980) s 101.
[60] Ibid.
[61] 1982 R.P.C 339.
[62] 1983 F.S.R 75.
[63] [1984] FSR 246.
[64] 450 U.S 175 (1981).

Act and the 1844 International Copyright Act.[65] An amended Copyright Act was enacted in England in 1956 and extended to Kenya vide the 1963 Order in Council. It continued as Kenya's statute on copyright until enactment in 1966 of the Copyright Act, Chapter 130 of the Laws of Kenya. Kenya's copyright law underwent reviews culminating in the Copyright Act, 2001.[66] The review was driven by the need to align Kenya's law with the International treaties (Including TRIPS) on intellectual property to which Kenya was a party. It is that 2001 review which, for the first time, made computer programs subject of copyright protection in Kenya and classified them as literary works.[67]

Prior to 1989, Kenya did not have an independent patent registration system. The statute then in force was the Patent Registration Act which merely provided for registration in Kenya of patents issued in the UK.[68] That position subsisted until 1989 when the Industrial Property Act[69] was enacted to repeal the Patent Registration Act. The 1989 statute provided for independent registration of patents in Kenya. However, it specifically excluded computer programs from the scope of patent protection. The current Industrial Property Act came into force in 2001. Its significant change with respect to this study was the deletion of computer programs from the list of unpatentable inventions, creating room for patenting software.

Development of Kenya's IP law particularly with respect to protection of computer programs has basically been statute-driven. The researcher has not come across any court decisions asserting IPRs on computer programs prior to the enactment of the relevant statute.

The Constitution of Kenya 2010 is a milestone in IPRs protection considering its provisions mandatorily requiring the state to promote the same.[70] A study of computer software IPRs regime therefore assumes constitutional relevance further justifying this study.

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[65] Kameri-Mbote (n9) 5.
[66] ibid.
[67] TCA 2001 s2.
[68] Section 54 Patent Registration Act.
[69] Chapter 509 of the Laws of Kenya (now repealed).
[70] Article 11 (i)(l) and Article 40(5).

CHAPTER THREE

COPYRIGHT: PROTECTING THE EXPRESSION OF IDEAS IN COMPUTER PROGRAMS AND SOFTWARE

This chapter examines Kenya's legal and regulatory framework governing software copyrights and assesses the adequacy thereof in guaranteeing developers rights. The legal framework is primarily in the Copyright Act and the treaties and conventions to which Kenya is a signatory. A comparison thereof with the USA copyright law is also undertaken. The various software regulatory bodies are also identified and their roles discussed.

3.0 Introduction.

Harmonization of intellectual property rights internationally has impacted Kenya's law via domestication of the IP treaties to which it is a signatory including the Berne Convention for Protection of Literary and Artistic Works (The Berne Convention)[71] and the Agreement on Trade–Related Aspects of Intellectual Property.[72] This chapter considers Kenya's legal provisions on software copyrights, identifies the established institutions governing software copyright and assesses the framework's adequacy in guaranteeing IPRs of software innovators. The institutions discussed include the Kenya Copyright Board (KECOBO),[73] Executive Director KECOBO[74] and Collective Management Organizations.[75]

Kenya's previous Copyright Act[76] did not adequately address computer programs. It merely defined "author" to include the person by whom arrangement for the making of a computer program was undertaken[77] but failed to define computer programs or specify where they fell in

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[71] The Berne Convention for Protection of Literary and Artistic Works (amended 28 September 1979). Accession by the Republic of Kenya was on 11 March 1993.
[72] Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPs) signed in Marrakesh, Morocco on 15th April 1994.
[73] A body corporate established under section 3 of TCA 2001.
[74] An office established under section 11 of TCA 2001.
[75] Section 46 of TCA 2001 provides for registration of copyright collecting societies.
[76] The Copyright Act 1966 Chapter 130 Laws of Kenya (now repealed).
[77] ibid s 2(i).

categorization of works eligible for copyright. The current copyright statute[78] domesticates Kenya's treaty obligations and deals with computer software and programs more extensively. It defines computer program as a set of instructions expressed in words, codes, schemes or in any other form, which is capable, when incorporated in a medium that a computer can read, of causing a computer to perform or achieve a particular task or result.[79] That definition is wide enough to cover both the object and source codes. The statute also classifies computer programs as literary works and protects them as such.[80] Salient provisions of the statute impacting software are discussed hereunder.

3.1 Eligibility to Copyright Protection of Software and the Nature of Rights Conferred.

In conformity with the territoriality of IP laws, the Kenya's Copyright statute confers copyright to eligible works whose author(s) or any of the authors (in the case of joint authorship) is a citizen of Kenya or is domiciled or ordinarily resident in Kenya. A body corporate can also receive copyright protection for eligible works as long as it is incorporated in or in accordance with Kenya's Laws. Additionally, eligible literary works first published in Kenya are protected under section 24 of the country's copyright statute.

With respect to literary works, copyright protection is conferred to the person who first makes or creates the work. The author must demonstrate firstly that sufficient effort has been expended in making the work to give it an original character and secondly that his work has been written down, recorded or otherwise reduced to material form.[81]

At the international level, the Berne Convention requires member countries to protect the rights of authors in their artistic and literary works.[82] The TRIPs Agreement provides that the object and source codes of computer programs are protected under the Berne Convention as literary works.[83] Further, the WIPO Copyright Treaty also guarantees protection of computer programs

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[78] TCA 2001.
[79] TCA 2001 s2.
[80] ibid.
[81] TCA2001 s 22(3).
[82] ibid
[83] TRIPS Art. 10.

as literary works under the Berne Convention and declares that such protection applies to computer programs whatever may be the mode or form of their expression. [84]

The Berne Convention provides for the principle of national treatment that requires each contracting state to protect works originating from other contracting states in the same way it protects works of its nationals.[85] The national treatment principle is also embodied in TRIPs.[86] Kenya, being a signatory to the above treaties, is bound to offer copyright protection to computer programs and software emanating from other contracting countries. Further, TRIPs also imposes the most-favoured-nation treatment which requires that any advantages accorded to a WTO member to nationals of any other country must be accorded to the nationals of all WTO members.[87] Kenya reviewed her Copyright Act in 2001 to reflect its obligations under the said treaties by for example protecting computer programs as literary works[88] and extending copyright protection to works of foreign nationals.[89]

A feature in the US Copyright Act absent in Kenya's equivalent statute is the provision for voluntary notification and publication of a work's protected status by placing a notice to that effect on publicly distributed copies.[90] Such notice is required to bear specified details including owner's name, year of first publication and the symbol © or abbreviation 'copr.'. The notice is to be placed in such manner and location as to give reasonable notice of the copyright claim. In infringement proceedings involving works bearing such notices, the defendant cannot raise a defence of innocent infringement.[91] The absence of similar provisions in Kenya's copyright statute impacts negatively on copyright owners who have to contend with a wider innocent infringement defence.

With respect to the nature of rights conferred by copyright, the Berne Convention requires contracting states to grant authors of literary works certain minimum economic rights including

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[84] The WIPO Copyright Treaty (adopted 20 December1996) art 4.
[85] The Berne Convention art 5 (3).
[86] The General Agreement on Tariffs and Trade (entered into force 1 January 1948) Art. III.
[87] GATT Art. 1:1.
[88] TCA 2001 s 26.
[89] TCA 2001 s 23(1) and 24 (1).
[90] TUSCA 1976, s401.
[91] ibid.

right to make adaptation and arrangement of works, to translate and make reproduction in any means or form.[92] The WIPO Copyright Treaty grants authors of literary works right to control distribution of work[93] to the public but allows for negotiations on conditions for exhaustion of the said rights. It further grants authors of computer programs the exclusive right to authorize commercial rental to the public of the originals and copies of their works.[94]

Those exclusive economic rights are enjoyed by computer programs authors in Kenya's Copyright Act including right to control the reproduction, translation, adaptation, distribution to the public of the work by way of sale, rental, lease, hire, loan or importation.[95] They however do not extend over acts by way of fair dealing, a legal term used to distinguish authorized utilization of copyrighted works from infringement. The statute defines fair dealing with respect to computer programs differently from other literary works. For example copying of copyrighted work for purposes of scientific research, criticism or review is considered fair use with respect to other literary works[96] but prohibited for computer software.[97] It however amounts to fair dealing for a computer program's licensee to make copies of the program to the extent required to correct errors, as a back-up, test the program's suitability for the licensee's use and for any other purpose not prohibited under license or agreement.[98] Those exceptions are in line with the 'free uses limitations allowed under the Berne Convention.[99]

In addition to the economic rights described above, authors of computer programs also enjoy moral rights to their works. These include rights to claim authorship, object to any distortion, mutilation or modification of the work prejudicial to his honour or reputation.[100] Analysis of their nature is outside the scope of this study.

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[92] The Berne Convention art 9.
[93] WIPO Copyright Treaty art 6.
[94] ibid Art. 7
[95] TCA 2001 s 26.
[96] TCA 2001 s 26 (1) (a).
[97] ibid s 26 (3).
[98] ibid s26 (4).
[99] The Berne Convention, Art 9(2).
[100] TCA 2001 s32(1).

The Berne Convention requires minimum protection of copyrights for the life of the author plus fifty years after his death. [101] Kenya's copyright statute adopts that period as its protection term. During that time the author enjoys exclusive rights to control the reproduction in any material form, distribution to the public and importation of the work. In the US however, copyright subsist for a longer term of author's life plus 70 years his death.[102] This study shall later interrogate the appropriateness of that protection term to computer software.

The above analysis demonstrates that the quantum of rights offered to software developers by Kenya's copyright law accords with the provisions under the treaties mentioned above. Kenya can however borrow from aspects of the USA copyright law such as that providing for voluntary notification and publication of copyright and the resulting impact on the innocent infringement defense.

3.2 Infringement of Software Copyright.

Infringement of Copyright basically constitutes doing anything within such owner's exclusive rights granted by the statute without first obtaining his consent. It includes unauthorized reproduction, translation, adaptation, distribution to the public and importation of the protected work. In the case of *Positive Attitude Safety System Inc. v Albian Sands Energy Inc.* the Court stated:

> Consequently, proof of copyright infringement requires proof of lack of consent. It is therefore illogical to conclude that there has been infringement, subject to the effect of a purported licence. It may be that a party has done something which, by the terms of the Copyright Act ... only the owner of the copyright may do. But, before the conduct can be defined as infringement, the judge must find that the owner of the copyright did not consent to that conduct. [103]

One of the central exclusive ownership rights conferred by copyright is that of reproduction in a material form. Copying software without authorization generally constitutes infringement under the Kenyan Copyright Act. However the statute allows a licensee to make a copy of copyrighted

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[101] The Berne Convention art 7.
[102] TUSCA 1976 s302.
[103] [2006] 2 FCR 50.

software without the author's permission for purposes of correcting errors, as back-up, testing purposes, decompiling the program and for any other purposes not prohibited under licence.[104]

Infringement of computer software copyright by copying is prevalent. The clearest aspect thereof is literal copying where the defendant reproduces an exact replica of the author's work without the latter's consent. The term 'software piracy' is normally applied to such direct copying.[105]These include acts such as illegal reproduction of software on CD-ROM, loading unauthorized software onto hard disks, distributing software through the internet and end user piracy where software is loaded to more computers than authorized in the licence agreement.[106] The effect of direct copying is that the infringer passes off his product as that of the copyright holder. This is prevalent particularly with proprietary software of well-known global entities like Microsoft.[107]

Software piracy basically comprises the manufacture, sale, importation and or distribution of unauthorized and infringing copies of copyrighted software. The Business Software Alliance (BSA) estimates that as at the year 2009 Africa's software piracy rate was at 60 per cent [108] while Kenya's stood at 79 per cent[109], 19 per cent higher than the African average. The high piracy rate in Kenya and Africa generally has been attributed to the relatively high costs of acquiring software in relation to the per capita income and the proprietary software sector's domination by a few software multinational corporations. For example, Microsoft Operating system Windows 7 Home-basic costs 240 US dollars (approximately Kshs. 20,640 based on exchange rates applicable in July 2014).

The BSA's arguments against software piracy are twofold. Firstly, it is contended they stifle growth of local software businesses who find themselves unable to compete with pirated

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[104] TCA 2001 s26(4).

[105] A. White, 'Copyright in Computer Software, more wrong than right' (2003). <www.law.berkeley.edu/.../white.pdf > (22 July 2014).

[106] W Maema 'Protection of Computer Programs under Kenyan Law' (2003) 1 The University of Nairobi Law Journal, 99

[107] Tony Bradley 'Microsoft plagued by Software Piracy' (2012). <www.pcworld.com/article/256318/microsoft_plagued_by_software_piracy.html > (4 September 2014).

[108] < www.balancingact-africa.com/news/en/issue-no-382/computing/business-software-al/en >   (7 July 2014).

[109] -- < www.cio.co.ke/.../softwarepiracy/kenya > (7 July 2014).

software sold at below market rates. Secondly, pirated software is vulnerable to computer viruses malware and hacking thus harmful to the consumer.[110]

Domination of the computer software sector by multinationals particularly Microsoft is evidenced by the company pioneering software copyright litigation in Kenya from the 1990's. The law suits variously sought injunctive reliefs against infringement and or damages for direct infringement. The first case was *Microsoft v Micro Skills*,[111] where the Plaintiff sought injunctive reliefs stopping the Defendant (a Kenyan corporation) from infringing the Plaintiffs' software copyright. Anton Piller Orders had previously issued leading to a seizure of infringing material that was tendered in evidence. The trial Court found for the Plaintiff and awarded Kshs. 25 Million as damages.

In *Microsoft Corporation vs. Mitsumi Computer Garage and Mitsuminet (Kenya) Ltd*[112], Microsoft sued Mitsumi Computer Garage for software copyright infringement and obtained Anton Piller Orders allowing it to enter the latter's premises and seize and inspect all computers and materials containing infringing software. However, the order was purportedly executed at the premises of a different entity Mitsuminet (Kenya) Ltd which was not even a party to the suit at the time the Anton Piller Orders were issued. The Plaintiff contended that it entered the premises of Mitsuminet Kenya under the honest and mistaken belief that the said premises belonged to Mitsumi Garage against whom the orders have been issued. On application by Mitsuminet, the Anton Piller Order was set aside and the Plaintiff directed to return all seized equipment and materials.

Microsoft was a pace setter in software copyright litigation in Kenya and is credited for bringing Anton Piller Orders to Kenya. The same were subsequently codified in Section 37 of the Copyright Act, 2001. The section allows a copyright owner to move to court ex parte and obtain preservatory orders if he can demonstrate prima facie that he has a cause of action against another person who has in his possession documents, infringing copies or other things of evidentiary value and that he has real and well-founded apprehension that the same may be

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[110] ibid.
[111] Nbi Milimani HCCC No 833 of 1999 (unreported).
[112] [2001] 1 EA   127.

hidden, destroyed or rendered inaccessible before discovery can be done in the usual manner. In that event, the court may make appropriate orders to secure preservation of the subject documents, copies or things.

Apart from direct copying, infringement can occur when the defendant copies a portion of the author's software. That is referred to as non-literal copying.[113] Establishing non-literal infringement of computer software is a technical task requiring expert evidence.[114] The question arising is how to determine whether the defendant's software infringes the plaintiff's copyright. The researcher has not come across any Kenyan Court decision on the issue. In *Oxford University Press (E.A.) Limited v Longhorn Publishers (K) Limited and 4 Others[115],* a book copyright dispute, the court granted an injunction on the basis that the defendant's work had 'substantial similarities' with the plaintiff's but did not define what exactly it meant thereby. However the evidence before the court was that there were 'picture resemblances and definition resemblances which vary from 9% to 26%'.

The following USA and UK decisions may be persuasive in charting Kenya's position on non-literal computer software copying. In *Computer Associates International Inc. v Altai[116],* a US court was called upon to determine whether the defendant's computer program which contained portions of the Plaintiffs program was substantially similar to the Plaintiffs software as to amount to infringement. The Appellate court agreed with the trial Judge that copyright protection extends beyond the strict textual form to non-literal components. It observed that infringement would be found where 'the fundamental essence or structure of one work is duplicate in another.' The court also developed a three- step procedure to determine whether a program structure was substantively similar to another; Abstraction, Filtration and Comparison.

Abstraction refers to separating idea from expression. 'The court is to dissect the allegedly copied programs structure and isolate each level of abstraction contained within it. This process begins with the code and ends with an articulation of the program's ultimate function.' Filtration

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[113] William Maema, 'Protection of Computer Programs under Kenyan Law' (2003) Vol 1 The University of Nairobi Law Journal 99.
[114] White (n21).
[115] Nairobi Milimani HCCC 729 of 2009 (unreported).
[116] 2d Cir. [1992] 982 f.2d 693.

is the second step. It entails defining the scope of the Plaintiffs copyright by separating the protectable expression from the non-protectable material including elements taken from the public domain. The third step is to compare the two and determine whether the Defendant's work copied any aspect of the protected expression and an assessment of the relating importance of the copied portion to the Plaintiffs program.

The UK court in the *Cantor Fitzgerald International & Another vs Tradition (UK) Limited and Others*[117] did not adopt the USA Courts decision in the Computer Associates Case. Instead the Judge established that a copyright infringement case is tested as follows: Identification of the work in which the Plaintiffs claims copyright; establishment of originality thereof; establishing the said work was copied. If there was copying, determining whether a substantial part of the work has reproduced. The Judge proceeded to rule thus;

> So in my judgment the substantiality of what is taken has to be judged against the collection of modules viewed as a whole. Substantiality is to be judged in the light of the skill and labour in design coding which went into the piece of code which is alleged to be copied. It is not determined by whether the system would work without the code, or by the amount of use the system makes of the code.

Problems could arise in establishing *de minimis* copying as evident from the decisions of *Dolmage v Erskine*[118] and *Veritas Operating Corp. v Microsoft Corp.*[119] In *Dolmage*, a Canadian Court found that copying of 5 percent of the original text was not reproduction of a substantial part of the whole. In *Veritas* however a court in the USA found that copying only 0.03 percent of a software code could be considered infringing.

In instances where software is legitimately in circulation, further distribution of the legitimate copies by third parties does not amount to infringement as the doctrine of exhaustion of rights comes into play. The copyright holder's right to public performance or display will be deemed

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[117][2000]R.P.C. 95.
[118] 2003 CanLII 8350 (ONSC).
[119] No. 06-073, 208 U.S Dist. Lexis 8166 (W.D Wash) Feb 4, 2008.

infringed in circumstances where the program's display is made accessible to a number of persons simultaneously.[120]

With respect to the author's right to hire, was held in the *Microsoft v Mitsuminet Garage* case that operating a cyber café constitute offering computer software for hire to the public and as such one would be guilty of infringement if the software used is pirated.

The above discussion reveals a gap in Kenya's law on what constitutes non literal software copyright infringement. The copyright Act does not offer guidance in that regard and Kenya's courts are yet to authoritatively rule thereon. However, some guidance emerges in *Parity Information Systems Limited v Vista Solutions Limited and two Others*[121] a pending software infringement dispute where it is averred that the defendant's infringing software is substantially similar to the plaintiff's product. The court determining the interlocutory injunctive relief application stated thus;

> There are similarities in the programme wording as between the two exhibits which do require further explanation/examination, once one has taken out the statements and variables in the public domain referred to in "JW6". I believe that such will be better canvassed at the hearing of this suit in due course with expert and technological assistance as necessary.

The court appears to be alluding to the second step (Abstraction) of the three- step procedure developed in *Computer Associates international Inc. v Altai* case discussed above. Its final judgment could establish way forward in determining non literal software infringement.

3.3 Remedies against infringement; civil and criminal.

The civil law reliefs available for copyright infringement under Kenyan law include issuance of Anton Piller Orders, (at the preliminary stage), injunctions, award of damages, order for

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[120] Bainbridge (n 49) 59.
[121] *Parity Information Systems limited v Vista Solutions Limited* [2012] eKLR (High Court of Kenya at Nairobi Milimani, 18 May 2012) < http:// kenyalaw.org/caselaw/> (26 October 2014).

accounts, delivery to the Plaintiff of any infringing copy or an article used or intended to be used in making such infringing copies and award of royalties in lieu of damages.[122] The Microsoft cases referred to above demonstrate application thereof.

Similar remedies are available to a plaintiff under US copyright law.[123] Additionally however, US law provides for statutory damages available to owners of registered copyrighted works.[124] These range between $750 and $30,000 for each work that was infringed. The rationale for statutory damages is to provide compensation in instances where it may be difficult to compute actual loss.[125] *In Alternate Media Limited v Safaricom Limited[126]*, the plaintiff was able to prove infringement of copyright in some artistic work but failed to adduce adequate evidence to enable assessment appropriate damages payable or inquiry as to accounts of profit. The court awarded nominal damages assessed at Kshs 100,000 in addition to injuncting the Defendant from further infringement and ordering destruction of all infringing copies. The *Alternate Media* case illustrates the need for statutory damages for infringement akin to those awardable under USA copyright law. The plaintiff therein would have benefited there from instead of only receiving nominal damages.

In addition to compensating the plaintiff, damages awarded for infringement also play a deterrent role.[127] This is illustrated in *Microsoft v Micro Skills* where an award of Kshs. 25 million was made for software copyright infringement.[128]

The USA copyright statute sets the limitation period for filing civil copyright infringement actions at three years after the claim accrued.[129] However, Kenya's copyright does not prescribe a limitation period for filing civil infringement claims. One must therefore look at the Limitation

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[122] TCA 2001 s35 (4).
[123] The US Copyright Act 1976 ,Title 17(TUSCA1976) See ss 502, 503 and 509.
[124] ibid s 504.
[125] LA Hollaar 'Legal Protection of Digital Information' (2002) <digital-law-online.info/lpdi1.0/treatise16.html> (4 September 2014).
[126] *Alternate Media limited v Safaricom Limited* [2005] eKLR. (High Court of Kenya at Nairobi, 4 October 2005) http://kenyalaw.org/caselaw/ (28 October 2014).
[127] Maema (n 113).
[128] *Microsoft v Micro Skills* (the High Court of Kenya at Nairobi Milimani, HCCC 833 of 1999).
[129] TUSCA 1976 s507.

of Actions Act which fixes the limitation period at three years for torts claims and six years for actions for which no other period of limitation is provided by the act or any other written law.[130]

Apart from the highlighted civil law remedies, infringement of copyright also attracts criminal sanctions with respect to offences set out in Section 38 of Kenya's Copyright Act. It is an offence for one to do any of the following acts with respect to an infringing copy; make for sale or hire, sell or let for hire, distribute, possess otherwise than for private and domestic use, import or make or have in his possession any contrivance used for purposes of making infringing copies.[131] A person found with two or more infringing copies is presumed by law to be in possession thereof otherwise than for his private and domestic use and thus liable to be charged for infringement.[132]

Software developers often load into their products technical measures designed to prevent infringement. These comprise devices, products, or components incorporated into the software which either limit access to the product or control its copying. Kenya's Copyright Act protects those technical protection measures. Circumvention of any effective technical measure designed to protect a work amounts to infringement.[133]

The statute also prohibits the manufacture or distribution of devices which a primarily designed or produced for purposes of circumventing technical measures.[134] Determining whether a devise is 'primarily' designed or produced for purposes of circumvention can be problematic. However the USA decision in *Sony Corp. of America v Universal City Studios*[135] provides a guide. The court was called upon to decide whether sale of videotape which could be used to make infringing copies of motion pictures, constituted contributory infringement by a seller. It was held that it did not since the devise could be utilized for substantial non-infringing uses. A similar test could be adopted in determining whether a devise is primarily designed or produced for purposes of circumventing technical protective measure.

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[130] The Limitation of Actions Act 1967(TLAA 1967) Chapter 22 Laws of Kenya, s4.
[131] TCA 2001 s38(1).
[132] ibid s 38(3).
[133] TCA s35 (3)(a).
[134] TCA s35 (3)(b).
[135] 1984, 46 4 US 417.

The electronic rights management information contained on software are also protected from removal or alteration. These refer to information by right-holders which identify the work[136] and could also indicate the terms and conditions under which the program is to be utilized. Removal or alteration of such information is considered infringement.[137]

Penalties prescribed for infringement in Kenya are to an extent graduated based on both the extent and nature of infringement. For example, the prescribed criminal penalties for infringement by way of making for sale, distributing infringing copies, importing and making any contrivance used or intended for use in making infringing copies is a fine of not exceeding four hundred thousand shillings or imprisonment for a term not exceeding ten years or both.[138] However, infringement by way of selling or letting for hire and possessing otherwise than for private and domestic use attracts a less severe penalty of a fine not exceeding one hundred thousand shillings or imprisonment for a term not exceeding two years or both imprisonment and or fines.[139]

A similar position subsists in the USA whose Copyright Act also provides graduated penalties. However the USA law is more deliberate in addressing extent of infringement and also pegs the severity of meted punishment on the value of the products infringed. For example, a person guilty of reproducing or distributing of at least ten copies of one or more copyrighted work with a retail value of more than $2,500 is liable to imprisonment for not more than five years.[140] If the total retail value is more than $1,000 the jail term is set at a maximum of one year.[141] Kenya could borrow from those provisions to factor the product's value in punishing infringement.

In Kenya, the court hearing a criminal infringement case has power to, upon convicting the infringer, order destruction or delivery to the copyright owner of any infringing copy or article used in making infringing copy.[142] Half of the fine imposed and recovered is to be paid into the

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[136] TCA s2(1).
[137] TCA s35(3)(c).
[138] TCA 2001 s38 (4).
[139] TCA 20001 s38(5).
[140] The US Copyright Act s 506.
[141] ibid.
[142] TCA 2001 s38(8).

revenues of KECOBO.[143] Statistics on such collected fines and their disbursement are not available. It is therefore difficult to undertake an assessment of that avenue's potential as an alternative   source of funds for KECOBO.

Prosecutions for infringement must be undertaken within three years immediately following the date of the alleged offence.[144] The USA law however fixes the prosecution limitation period at five years meaning the infringer is liable to prosecution for a longer period than his counterpart in Kenya.

It is evident from the above that though Kenya has a regime providing civil and criminal remedies against software copyright infringement, there are inadequacies requiring addressing including introduction of statutory damages and factoring in the infringed products value in determining the punishment for infringement.

3.4 Institutions Regulating Software Copyright in Kenya.

The institutions that regulate software copyrights in Kenya are the Kenya Copyright Board (KECOBO), the Executive Director KECOBO and the courts which arbitrate civil and criminal software copyright disputes. Another institutional framework that can be utilized in managing software copyrights are collective management societies.[145]

KECOBO is a body corporate established under the Copyright Act whose functions include licensing and supervision of collective management societies, undertake public education on copyright issues, propose legislative changes to copyright law maintain a data bank on authors and their works and administer all matters of copyright.[146] The board is comprised of members appointed from several interest groups including a 'member nominated by registered software associations'[147] The Copyright Act mandates KECOBO to appoint inspectors charged with ensuring the statute's provisions are not contravened.[148] The inspectors have powers to sieze and

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[143] TCA 2001 s38(10).
[144] TCA 2001 s38(9)(a).
[145] Section 46(1) provides for registration of copyright collecting societies by KECOBO.
[146] TCA 2001 s5.
[147] TCA 2001 s6(1).
[148] TCA 2001 s39.

detain suspected infringing articles [149] and arrest suspects.[150] The statute also allows the Attorney- General to appoint public prosecutors for offences created under the Copyright Act.[151]

The creation and existence of KECOBO has been critical in furthering the rights of software developers. It has played a key role in fighting copyright infringement generally. Data availed indicates that the body has made modest gains by prosecuting indeterminate number of persons for software infringement and seizing infringing articles including pirated softwares, computers and duplicators. Further it is indicated that approximately 5,400 cases had been filed in court for infringement.[152] However the number has not been broken down to indicate how many of those cases involve software copyrights and the conviction rate thereof.

As a specialized entity, KECOBO offers hope for more informed investigation and prosecution of infringement than would have been the case were the investigations to be undertaken directly by the Police department. KECOBO also engages in developing training programs for agencies such as the Criminal Investigation Department of the Kenya Police on copyright issues. This enhances capacity. The Board also engages in public education and sensitization on copyright issues with the intention of developing IP Protection culture.[153]

However the Board faces challenges that impede the exercise of its mandate and negatively impacts advancement of copyrights. Firstly the board is understaffed and underfunded.[154] For example the board had only eleven Police officers seconded to it as at September 2013.[155] That number is inadequate to police the entire country and tackle infringement. KECOBO is also not decentralized. Its activities are all undertaken and coordinated from its Nairobi offices. That impedes its ability to deal with copyright infringement across the country.

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[149] TCA 2001 s41(2).
[150] TCA 2001 s42.
[151] TCA 2001 s43(1).
[152] < www.kenyacopyrightboard.co.ke> (22 July 2014).
[153] ibid.
[154] ibid.
[155] H Koki 'The Role of The Kenya Copyright Board'(paper presented at University of Nairobi to the LLM (Intellectual Property) Copyright law seminar 8 September 2013).

Day to day management of KECOBO is undertaken by The Executive Director appointed by the Minister on the recommendation of the Board.[156] His responsibilities are basically administrative and include maintenance of the register of works (the Copyright Register) and deciding applications for registration of works.

Civil and criminal software infringement disputes are determined in the ordinary court system. That differs from the position subsisting for software patents where civil disputes are determined by specialized tribunal on the basis that patent disputes are complex requiring establishment of specialized resolution mechanisms apart from the ordinary courts. However, software copyright infringement disputes can equally be complex as Havelock J observed. [157] A case could therefore be made for establishment of similar special tribunal to arbitrate software copyright disputes.

3.5 Collective Management Organizations and Protection of Software Copyright.

A copyright holder is required to exercise vigilance in ensuring and enforcing his rights. That can be a heavy burden to authors who have to ensure policing within the country's territory to secure his rights. The problem is compounded with respect to computer software taking into account the networked nature of digital technologies. Individuals and or start up developers without adequate financial and or other resources may not be able to effectively secure their rights. It is against this back drop that collective management organizations are reviewed.

The copyright Act allows for collective administration of copyrights through copyright collecting societies required to be non-profit making limited liability companies whose principal objectives are the collection and distribution of royalties and ensuring that the interests of its members are adequately protected. The law allows for registration of only one collecting society for every class of rights and category of works.[158] KECOBO is charged with the responsibility of licensing and supervising the collecting societies which however remain private entities governed by their respective memoranda of association.

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[156] TCA 2001 s11(1).
[157] See *Parity information Systems Limited vVista Solutions Limited and 2 Others* (High Court of Kenya in Nairobi,18 May 2012)
[158] TCA 2001 s46(5).

By pooling together into collecting societies authors enhance their ability to reap benefits from their work. Such collecting societies are able to enforce payment of royalties on behalf of their members by requiring licenses from corporate institutions and individuals for use of copyrighted works. Collecting societies can extend their reach to other countries via reciprocal enforcement agreements.[159] They also reduce the costs attendant to enforcement through economics of scale.

To date, there are four registered collecting societies namely; The Reproduction Rights Society of Kenya (KOPIKEN), the Music Copyright Society of Kenya (MCSK), Performers Rights Society of Kenya (PRiSK) and Kenya Association of Music Producers (KAMP)[160]. None of the registered collecting societies are concerned with the rights of computer software and programs developers. Though KOPIKEN deals with literary works, its scope is limited to print and digital books, journals or magazines and online publications. It licenses copying, distribution, extraction of those works thus eliminating the chances of a potential licensee arguing that he could not reach the copyright holder to secure authorization to utilize the protected work.[161] This enhances protection and increases the revenue as the proceeds are distributed to members. KOPIKEN has also entered into bilateral agreements with like associations in Norway, The United Kingdom, Korea, Tanzania, Uganda, Singapore, India, New Zealand, and Jamaica for licensing of its members works in those foreign jurisdictions.[162] An argument can be advanced in favour of registering a collecting society to cater for the rights of individual and or start-up software developers.

3.6 Copyright Registration Regime and its Impact on Software Author's Rights.

The Berne Convention prohibits imposition of formalities as precondition to copyright protection.[163] Copyright thus subsists automatically and registration does not confer IP rights. However, many member countries, Kenya included, have provisions in their respective copyright

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[159] H Koki 'The Role of the Kenya Copyright Board' (paper presented at the University of Nairobi in LLM Intellectual Property seminarLecture given to the LL.M (Intellectual Property) copyright class 2 September 2013).
[160] www.kenyacopyrightboard.co.ke accessed 22 July 2014
[161] < www.Kopiken.org > accessed 25 July 2014.
[162] ibid.
[163] The Berne Convention, Art. 5(2).

laws for voluntary national registration of copyrights.[164] Registration of copyrights has several advantages. It provides a data base and information source on copyrights valuable for legal and economic policy formulation.[165] Registration also serves to publicize the author's right and plays an evidentiary role in copyright litigation. In Kenya for example the Register constitutes prima facie evidence of the particulars therein and certified extracts therefrom are admissible in court.[166] The register also acts to delimit the public domain by helping to identify works whose protection has ceased and thus available for utilization without the author's authorization.[167]

One of the functions of the Kenya Copyright Board (KECOBO) is to maintain an effective data bank on authors and their works.[168] In pursuance thereof, the Copyright Regulations, 2004 mandate the Executive Director, KECOBO (The Executive Director) to open and maintain a copyright register (The Register) containing the names and other specified details of authors who elect to register their works. Upon receipt of a registration application, the Executive Director is required to make such enquiries 'as he may deem fit'[169] before effecting registration. However neither the Act nor the Regulations spell out the content and scope of that inquiry. The Executive Director has discretion to amend the register by correcting any errors either relating to the name or other particulars of the applicant or other error arising by accidental slip or omission. At the instance of the Executive Director or other aggrieved person, the Board can order rectification of the register by making any entry wrongly omitted to be in the Register, expunge any entry wrongly made in, or remaining on the register, or correct any error or defect in the register.

Kenya's copyright register was established in 2002. Information availed to the researcher[170] reveals that only three literary works were registered between 2002 and 2006. The following year witnessed registration of 47 literary works. There was a gradual increase in registration since then culminating in 2013 with registration of 467 works. In 2014, 282 literary works had

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[164]Wipo, Copyright Registration and Documentation, www.wipo.int/copyright/en/activities/copyright_registration/ accessed 8 September 2014.
[165]ibid.
[166] The Copyrights Regulations, 2004(TCR 2004) r 8(11).
[167] Wipo (n136).
[168] TCA 2001 s5(f).
[169] ibid Rule 8(8)
[170] Email from Helen Koki, Deputy Chief Legal Counsel Kenya Copyright Board, to author (22 July 2014).

been registered by the month of July. Only 2,217 literary works have been registered in the country since inception of the Copyright Register. The total number of registered works across the various classes is 6,244 which figure remains low in absolute terms. However, KECOBO was not able to furnish the researcher with a breakdown of the registered literary works to enable him ascertain the percentage thereof comprised of computer software and programs.

The foregoing appear to corroborate iHub's study[171] to the effect that 67% of start-up software developers do not seek registration of their works with KECOBO for diverse reasons including; not having considered that option (50%); intention to develop works on open source platform without proprietary rights (20%); and complexity in copyright registration process (13%).[172]

The US Copyright Act equally provides for registration of copyrights.[173] That registration regime is more consequential than Kenya's since it is a prerequisite to obtaining certain infringement remedies such as statutory damages and attorney's fees.[174] The registration can be effected by the work's author and or her authorized agent. The registration process is simple requiring completion of a form which can even be done online and deposit of one complete copy of the work. Searches relating to registered copyrights can also be undertaken online at the copyright office's website.[175]

The inadequacy of copyright registration provisions with regard to software was brought to the fore in the case of *Parity Information System Limited v Vista Solutions Limited & 2 Others*.[176] The Plaintiff and the First Defendant claimed authorship of some computer programs. They both produced in evidence Certificates of Registration issued by the Board. Those produced by the Plaintiff were registered between 15th and 25th October 2010 while that to the Defendant was issued days earlier on 6th October 2010. Apart from the Certificates of Registration, the Plaintiff led evidence showing that it owned the software in dispute before registration and that as far back as the year 2006/7 had installed the same to another entity. The court (erroneously in the

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[171] Moraa (n14)
[172] ibid
[173] The US Copyright Act 1976 (USCA 1976), s412.
[174] ibid.
[175] <http//www.copyright.gov/> (7 September 2014).
[176] *Parity information System Limited v Vista Solutions Limited and 2 Others* [2012]eKLR (High Court of Kenya at Mairobi,18 May 2012) <http:// www.kenyalaw.org/caselaw/.../> (29 October 2014).

researcher's view) dismissed the Plaintiffs claim for copyright subsisting prior to registration and indicated that no authority had been availed to it on that point. It proceeded to rule against the Plaintiff partly on the fact that the Defendants' Certificates of Registration were issued earlier in time.

The fact that Registration Certificates similar were separately issued to different persons with respect to similar computer software programs within days of each other raises doubt as to what the Executive Director's considered in fulfilling its mandate. Did the Executive Director search the register before registering the Plaintiffs subsequent application? Was the Executive Director required to conduct any such search? Is the nature of the Register and the information therein such that it can enable one to compare one computer program from the other to establish substantial similarities? Those issues would not have arisen had the law specifically spelt out what the Executive Director should consider before registering computer software and spelling out what he/she ought to do should substantial similarities be established between two source codes or object codes presented for registration.

3.7 Adequacy of Copyright Law and Institutions in guaranteeing IP Rights of Computer Programs Developers.

Copyright protection of computer programs and software has several advantages. Firstly, the protection is easy to obtain since that it subsists automatically without formalities. This is distinguished from other forms of IP (Patents and Trade Marks) where protection is dependent upon registration and grant of such rights. The absence of formalities and its automatic subsistence makes copyright suitable and adoptable to computer software and programs, a form of technology characterized by rapid change. This means whenever the software undergoes an upgrade, the object and source codes of such upgrades are automatically copyrighted subject to meeting the minimum requirements for copyright protection. This is unlike other forms of IP like patent which would require fresh applications for protection of such upgraded software. Secondly, it is relatively easy for one to satisfy the copyright protection threshold of originality and reduction to material form.

The material fixation of a computer program's source code and supporting written materials is easily ascertainable and their copyrightability straightforward. However, a problem arises with regard to the machine-readable object code, which comprises a series of magnetic spots on a magnetized disk. Copyrightability of object codes was initially questioned based on the intangible nature of magnetic spots that arguably do not meet the requirement for materiality.[177] However, courts have liberally interpreted copyright laws in the past to accommodate new technologies. An example was the extension of copyright to untraditional writing like phonograph records and cassette tapes, which are not perceptible, save via specially designed machines.[178] The fact that object codes require machines to read, it was argued, should bar their copyrightability. The argument is however moot in Kenya's circumstances seeing that the definition of copyrightable software is wide enough to encompass the object code. Indeed, the WIPO copyright treaty requires copyright protection of software whatever may be the mode or form of their expression.

KECOBO's existence has had a positive impact in furthering copyright enforcement generally. It enjoys wide powers on copyright issues from policy public information, proposing copyright law reform, seizure of infringing articles, arrest of infringement suspects and driving prosecutions via specially appointed prosecutors. KECOBO thus has potential to enhance the rights of software developers. However, its human resource and funding challenges ought to be addressed to improve its effectiveness and reach. It should enabled to recruit additional personnel and decentralized to ensure its effective presence across the country.

There is also a problem in formulation of clear government policy on IP. This arises from the fact that the various government institutions dealing with IP are administratively under different Government Ministries whose policies are not necessarily coordinated. There is need to uniformity in policy by merging the various IP departments under one Government Ministry.

Copyright does not protect ideas, only the expression thereof. The danger therefrom is that copyright leaves computer software liable to acquisition via non-infringing copying. Kenya's

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[177] White (n76).

[178] Howard K. Szabo,' Intellectual Protection of Computer Software: The need for *Sui Generis* legislation' Loyola of Los Angeles International and Comparative Law Review 511, 517.

Copyright Act allows a person who is in lawful possession of a computer program to, without the consent of the owner, make copies of the computer program in circumstances enumerated above. Further, the licensee does not require the right holder's authorization to decompile the program, convert it into a version expressed in different programming language, code, notation for purposes of obtaining information needed to enable the program operate with other programs.[179] A licensee with requisite technical know-how can legitimately access the products' object code and understand its operation. By a process of reverse engineering, such licensee can learn the idea behind the software, reproduce its functionality then write the same in a different source code that does not infringe the initial authors' copyright.

Reverse engineering a computer program requires considerable skill and effort especially when the software in question is complex. It is nevertheless achievable.[180] The end product would be software similar in functionality with the first but which does not infringe the copyright. It is noted that software licensing agreements usually contain clauses prohibiting reverse engineering.[181] However such prohibition must be distinguished from statutory copyright protection. The author can sue for such reverse engineering under breach of contract, not copyright infringement.

Copyright's inability to protect the latter justifies additional protection via patent laws.

Most computer software become obsolete within ten years of development.[182] In the circumstances, the copyright protection period for literary works that extends for the life of the author and fifty years after his demise seems excessive. The import thereof is that software's object and source codes continue receiving protection even after its commercial viability has ceased. The labour theory justification for IP no longer holds for such copyright protection. The balance between protecting the authors, rights and advancing knowledge in society is no longer maintained.

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[179] TCA 2001 s26(5).
[180] White(n11) 12.
[181] See for example Apple Inc.'s MAC SDK and XCODE AGREEMENT Clause 2c which prohibits decompiling reverse engineering or attempt by the licencee to derive the source code of the product.
[182] H. Ward Classen, 'Fundamentals of software licensing,' The Journal of law and Technology

It is evident therefore that though Kenya's legal and regulatory copyright regime protects software, there are challenges thereon that ought to be addressed so as to better protect developers rights particularly startups.

CHAPTER FOUR

PROTECTING THE IDEA EMBODIED IN COMPUTER PROGRAMS AND SOFTWARE: TRADE SECRETS, PATENTS AND TECHNOVATIONS REGIMES.

The last chapter revealed copyright's inability to protect ideas embodied in particular software. Trade secrets law and patent systems offer legal and regulatory regimes that can be utilized in protecting ideas underlying particular computer programs and software. This Chapter considers the two, sets out their respective legal provisions and regulatory frameworks and assesses their suitability in protecting IPRs of Kenya's start up software developers. Additionally, the chapter also considers technovations, an IPRs regime related to patents based on the employer/ employee relationship. It's content, regulation mechanism and impact on software protection is also discussed.

4.0 Trade Secrets and Computer Software Protection.

Trade secrets are a common law concept referring to any formula, pattern, device or compilation of information which provides an enterprise a competitive edge over its competitors who do not know or use the same.[183] The developer of useful commercial information that is kept secret has a remedy in the law of tort against anyone who wrongfully obtains and uses the same. The rationale for trade secrets protection is to infuse ethics in commerce and encourage invention.[184] Trade secrets can be considered a type of IP and or a strategy in protecting IP.[185]

The prerequisites for trade secrets protection are that there must be some information; that information should not be known to the public; and it should be of economic significance to the proprietor.[186] In the course of business however a proprietor may have to share the trade secret say with employees, vendors and licensees. In that event, such proprietor should endeavour to

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[183] Szabo (n53   ) 526.
[184]   *Kewanee Oil Corp vs Bicron Corp,* 416 U.S 470, 481 [1973].
[185]   <www.ipaustralia. gov.au/get-the-right IP/other-types-of-IP/confidentiality-trade-secrets>accessed 11 August 2014.
[186] Thomas Duston and Thomas Ross Marshall, 'Intellectual Property Protection For Trade Secrets and Know-how' < www.ipo.org/.../ip_protection-for-trade-secrets > (10 September 2014).

protect his information from disclosure by ensuring execution of confidentiality and or non-disclosure agreements. The remedies lie in actions for breach of contract and breach of confidence which may result in award of damages and issuance of injunctions barring disclosure of the information.[187] *Coco v A N Clark (Engineers) limited*[188] established that a plaintiff in a breach of confidence case needs to establish three things: does the information have the necessary quality of confidence; was the information subject to an obligation of confidence; and has the information been misused by the recipient. Those conditions were reiterated with approval by Kenya's High Court in *Kilimani Junior Academy Limited v S. M. Nzioki T/A Nzioki Tax Consultants*[189]a case that sought injunction against disclosure of confidential information released pursuant to a fiduciary relationship.

However trade secrets laws do not confer the proprietor exclusive rights to the information in issue. He is only protected from improper acquisition thereof. A person who independently develops an identical or similar idea to that protected is free to work the same. Indeed trade secrets may not protect the owner from appropriation via reverse engineering.[190]

Common law protected trade secrets without any requirement for registration or other formalities.   The regime offers broad protection that extends to ideas, not merely their expression. Cundiff V.A., quoted by Alan Story, stated thus;

> Rather than focusing solely on expression or demanding novelty as a prerequisite to protection, the law of trade secrets will protect the ideas underlying particular software – including the software's structure or architecture and organization and various features routines and processes within the software, novel or not – so long as those ideas are not generally known or readily ascertainable from the marketed software and give or has the potential to give, a competitive advantage by virtue of the fact that others do not know them.[191]

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[187] www.ipo.gov.uk/types/patents/p-about/p-need-secrets.htm > (10 September 2014).
[188] [1968] FSR 415.
[189] [2012] eKLR.
[190] Duston and Marshall (n186).
[191] Allan Story, 'Intellectual Property, and Computer Software: A battle of competing use and access Visions of Countries of the South (2004) issue Paper No 10 UNICITAD-ICTSD Project on Intellectual Property.

4.1 Application of trade secrets to protect computer software in the USA; from common law to codification.

In the USA, computer software and programs were first protected via common law trade secrets regime before their adoption into the purview of copyright and patent laws. Indeed, it has been argued that trade secrets remain the primary mode of computer software protection.[192]

The need for uniformity on trade secrets laws across the states of the union led to establishment of The United States Conference of Commissioners on Uniform States Laws which developed a draft Uniform Trade Secrets Act (UTSA) in 1979,[193] that formed the basis for trade secrets legislation subsequently enacted in most states of the union. It defines trade secret to mean 'information including a formula, pattern, compilation, program device, method technique or process.'[194] The UTSA retains common law's conception of a trade secret as comprising secret information deriving its economic value from not being generally known and not being readily ascertainable by other persons who can utilize its economic potential and whose proprietor has made reasonable efforts to keep it secret.[195] The conception of trade secret under UTSA is broad enough to encompass valuable information from a negative perspective. For example, results of a lengthy and expensive research establishing that a certain process will not work are protectable.[196]

UTSA does not limit protection to any knowledge or information. It includes computer software. Acts such as limiting access to trade secrets on a need-to-know-basis, use of security systems and guards, use of computer passwords would suffice as proof of trade secrets proprietor's reasonable efforts to maintain secrecy.[197]

Under common law, liability for misappropriation of trade secrets would arise where it was established that acquisition was by improper conduct or unfair means and the information was

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[192] Ibid.
[193] ME Babirak 'The Virginia Uniform Trade Secrets Act: A Critical Summary of the Act and Case Law (fall 2000) Virginia Journal of Law and Technology <http://ww.vjolt.nt 1522> (14 August 2014).
[194] The Uniform Trade Secrets Act 1985 (UTSA 1985) s1(4).
[195] UTSA 1985 s 1(4).
[196] UTSA 1985 s 1 in-text comments.
[197] ibid.

used to the proprietor's detriment. However the UTSA's definition of misappropriation does not require proof of use.[198] Misappropriation is defined in two ways. Firstly it is the acquisition of the trade secret by a person who knows or ought to have known its protected status. Secondly misappropriation also refers to unauthorized disclosure of a trade secret by one who acquires it either via improper means or under circumstances giving rise to a duty to maintain its secrecy.[199] Improper means of trade secrets acquisition include theft, bribery, misrepresentation, breach or inducement of breach of duty to maintain secrecy and espionage via electronic or other means. In *Atari Games Corp. v Nintendo of America*[200] the federal circuit court found in favour of the respondent whose trade secret and copyright were infringed by *Atari's* unauthorized acquisition of protected source code to a computer software.

UTSA does not bar acquisition of trade secrets by proper means including discovery by either independent invention, under a license from owner, by reverse engineering, observation of an item in public use and obtaining the trade secret from published literature.[201] With respect to reverse engineering for example in *Aqua Connection Inc. v Code Rebel, LLC*[202] a federal court held that software reverse engineering did not amount to misappropriation of software trade secret.

As regards remedies UTSA provides for injunctive relief against actual or threatened misappropriation[203], award of damages for actual loss caused and recovery of unjust enrichment arising from misappropriation. Where it is established that the misappropriation was willful or actuated by malice, the plaintiff may recover exemplary damages pegged at a maximum of double the actual damages award.[204] The injunctive orders are generally issued to last for as long as the trade secret subsists but may be extended for a longer period to eliminate any commercial advantage the defender may otherwise derive from his misappropriation.[205]

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[198] UTSA 1985 s1(2).
[199] ibid.
[200] 975 F.2d 832. Fed. Cir. 1992.
[201] Restatement of Torts, Section 757.
[202] Docket Number 11-cv-05764 Judge Ronald S W 1 February 2012
[203] UTSA 1985 s 2
[204] UTSA 1985 s 3(b).
[205] UTSA 1985 s 2(a).

The UTSA requires that actions for misappropriation be lodged within three years after the misappropriation is discovered or reasonably should have been discovered.[206] It also displaces tort and other provisions of law providing civil remedies for trade secret misappropriation.[207] Such displacement does not however affect criminal remedies that may be spelt out in any written law based on a trade secret misappropriation.

4.2 Application of the trade secrets regime to computer software in Kenya.

The substance of the common law (including trade secrets law) and doctrines of equity were applied to Kenya in beginning 1897.[208] *Giella v Cassman Brown & Co. Ltd*[209] is better known as the case that outlined the principles to be considered in determining injunction applications. However it demonstrates application of common law trade secrets to Kenya. The court therein observed that an employer was entitled to protection of his trade secrets. Applicability of trade secrets to guarantee IP in Kenya has been recognized by commentators.[210] Indeed, breach of confidentiality was one of the issues for determination in *Parity Information Systems Limited v Vista Solutions & Others*[211] case with the Plaintiff contending that the Defendants (who were previously its employees) had misappropriated confidential information relating to the Plaintiffs' software and utilized the same to develop allegedly infringing copies.

Unlike the USA, Kenya does not have a statute governing trade secrets. Common law remains its reference point in determining the nature and extent of rights available thereunder. However, the Paris Convention requires protection against unfair competition and prohibits acts of competition contrary to honest practices in industrial or commercial matters.[212] TRIPs give effect thereto by specifically requiring members to protect undisclosed information (trade secrets) as a way of acting against unfair competition. The latter treaty codifies common law's trade secrets prerequisites that the information must be secret (that is, not generally known among, or readily

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[206] UTSA 1985 s 6.
[207] UTSA 1985 s 7.
[208] The 1897 East African Order in Council.
[209] [1973] EA 358.
[210] Ben Sihanya, ' Intellectual Property, Quality Assurance and ISO in Kenyan Universities' (2008) vol. 4
No 1. The Law Society of Kenya Journal 35, 52.
[211] Parity Information Systems Limitd V Vista Solutons and Others [2012] eKLR (High Court of Kenya at Nairobi, 18 May 2012) < http://kenyalaw.org/caselaw/.../> (29 October 2014).
[212] The Paris Convention for the Protection of Industrial Property, Art 10.

accessible to, circles that normally deal with the kind of information in question); must have commercial value because it is secret; and has been subject to reasonable steps under the circumstances by the persons lawfully in control to keep it secret.[213] It can be argued therefore that Kenya should enact a trade secrets legislation in conformity with her treaty obligation.

There is no specialized system for resolving trade secrets disputes and affected persons have to lodge their claims in the ordinary courts.

4.3 The suitability of Kenya's trade secrets regime in protecting software IPRs.

Common law trade secrets regime has strengths in guaranteeing software developers rights. The fact that it subsists without formalities thus offering immediate protection with no initial attendant costs makes it available for use by startup software developers.[214] A proprietor need not seek protection or registration of his work. Secondly, trade secrets owner is not required to reveal his information. That contrasts with a patent holder who has to make public his invention in exchange for limited exclusive use thereof. There is also no specified protection term with regard to trade secrets. Trade secrets can therefore be protected perpetually as long as its secrecy is maintained.

However, application of common law trade secrets regime to protecting computer software poses challenges. First of all trade secrets are difficult and expensive to maintain over time. There is no statutory body charged with the responsibility of trade secrets protection. The responsibility rests upon the trade secret owner who must ensure execution of confidentiality agreements by its employees, contractors, licensees or other persons who access the protected information. He also must individually undertake policing to ensure sustenance of his rights and commence civil proceedings for misappropriation thereof. The protection costs borne by the proprietor are substantial.

Trade secrets regime does not grant exclusive rights to the idea. A person who independently develops a similar idea or acquires the trade secret without misappropriation is free to exploit the

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[213] The Trade Related Aspects of Intellectual Property Rights Agreement Art 39 (2).
[214] WIPO, 'How are Trade Secrets Protected?' < www.wipo.int/sme/en/ip_business/trade-secrets/protection.htm >
(10 September 2014).

same. Acquisition of a software trade secret by reverse engineering does not amount to misappropriation. In effect therefore software developers who protect their works via trade secret are more exposed to non- actionable acquisition thereof than those protected by patents.

Codification of trade secrets regime is advantageous as it allows introduction of additional improved and specific remedies in relation to computer software and provides an opportunity to criminalize acts of trade secrets misappropriation analogous to those for copyright infringement.[215] Examples are evident in the provisions of UTSA highlighted above which allow for award of additional damages including exemplary damages and recovery of unjust enrichment proceeds and provide for injunctive reliefs that extend even after the information's secrecy has ceased. Codification could also provide for establishment of a statutory body akin to KECOBO with a mandate to enhance public knowledge on issues pertaining to trade secrets and enhance protection thereof.

From a policy perspective trade secrets law vary from IPRs regime in that the latter (copyrights and patents) encourage information disclosure and sharing of ideas whereas trade secrets protect confidentiality in relation thereto. Application of trade secrets regime by dominant software developers like Microsoft could hinder startup software developers in Kenya and other developing countries from accessing the technology embodied in the former's software with the result that local software sectors lag behind.

Tension can arise between patents and trade secrets in their application to software based on the two regimes differing perspectives on information disclosure. This can be demonstrated by *Maggbury Pty Ltd v Hafele Australia Pty Ltd*[216]. The facts were that the Plaintiff had disclosed certain trade secrets to the Defendant pursuant to a confidentiality agreement. Subsequently the subject secret information was disclosed by the Plaintiff in a patent application. Parties then disagreed and the Defendant attempted to sell products made utilizing the revealed secrets arguing that publication of the information via the patent application had brought it to the public domain thus defeating the trade secrets claim. The court however found for the Plaintiff and

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[215] ' Codifying Trade secrets Protection will Deter Wrongdoers' (2014) < www.penningtons.co.uk/news-publications/latest-news/codifying-trade-secrets-protection-will-deter-wrongdoers/ > (10 September 2014).
[216] (2001) 210 CLR 181.

held that the agreements confidentiality obligation continued despite public disclosure vide the patent application.

4.4 Patents and computer software protection.

Kenya's Industrial Property Act (TIPA) deals with industrial property rights comprising of patents, utility models, industrial designs and technovations. Patents are issued for qualifying inventions. The related rights (utility models industrial design and technovations) protect non patentable creations or improvements deemed deserving of specified intellectual property rights.[217]

Computer programs were previously expressly excluded from patent protection in Kenya. That prohibition was removed in the current statute.[218] TRIPs allows for software patents by providing that patents shall be available for any invention whether processes or products in all fields of technology save for certain exceptions (which do not include computer programs and software).[219] As a matter of law therefore, protection of computer programs by the patent law regime is available in Kenya.

4.5 Institutions regulating software patents in Kenya.

Kenya's Industrial Property Act establishes a framework regulating patents comprising the Kenya Industrial Property Institute (KIPI) and its Managing Director, the Industrial Property Tribunal and The High Court.

KIPI is a body corporate charged with considering applications for grant of industrial property rights, screening technology transfer agreements and licenses, providing industrial property information and promoting inventiveness and innovation in Kenya.[220] It is governed by a Board of Directors, which appoints the Managing Director and other staff. The institution is funded from the exchequer and via donations, loans and the assets that may accrue or vest in it in the course of performing its functions under the law. KIPI has a workforce of 89 persons, 59 of

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[217] TIPA 2001 s2.
[218] ibid s 21 (1).
[219] The Trade Aspects of Intellectual Property Agreement Art 27.
[220] TIPA 2001 s5.

whom are engaged in administration while only 30 are technical staff.[221] Its human resource capacity is limited.

At the organization's helm is the Managing Director who exercises powers on behalf of the KIPI and makes decisions including assessment of formal compliance and grant or refusal of patent applications.

The statute creates an Industrial Property Tribunal (the tribunal) comprising of a Chairman and four members appointed by the minister.[222] The Chairman should be a person who has been a High Court Judge or is qualified for appointment as such. Two of the members must be Advocates while the other two should have expertise in industrial, scientific and technological fields. The latter category is wide enough to include software experts.

Industrial property issues and disputes, particularly relating to patents, can be complex and technical. The law's response has been to infuse both legal and scientific expertise in tribunal's composition. However, apart from merely specifying the minimum qualifications required of the tribunal's members, the law fails to provide guidelines on how such appointments are to be undertaken. Instead, it vests discretion on the minister to appoint the tribunal's chair and members. The process is thus prone to political interference as demonstrated by the dispute that played out in Public in 2010 relating to appointment of a Managing Director, Kenya Bureau of Standards.[223]

The tribunal's members hold office for a period of three years. That period is short when reckoned against the average period for processing patent applications. There is danger of particular disputed not getting resolved within a tribunal's term exposing litigants to significant costs of repeat litigation. [224]

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[221] Kenya Industrial Property Institute, *Annual Report (2011/1)* Industrial Property (2013) 23.
[222] ibid s113.
[223] By a Gazette Notice No11901 of 5 October 2010, the then Minister in- charge appointed one Joseph Kipketer to the position only for that appointment to be revoked by the succeeding Minister who then appointed a different person to the position vide Gazette Notice No. 16175 of 23 December 2011.
[224] NR Ombija 'Case Study of Kenya's Specialized Intellectual Property Rights Courts Regime' (2011) International Intellectual Property Institute <www.kenyalaw.orgklr/index,php? Id = 787> (20 May 2012).

The tribunal has jurisdiction to determine appeals from decisions of the Managing Director[225] on issues including grant or refusal of patents, refusal to register contractual licenses and decisions on compulsory licenses. It also has jurisdiction to determine applications for revocation of patents and issue injunctions against actual or threatened patent infringement.[226] It can also award a plaintiff damages or any other remedy prescribed by law. Additionally, the tribunal issues directions on points of law or unusually important or complex matters referred to it by the Managing Director.[227] However, the High Court's decision in *ENG Kenya Limited v Magnate Ventures Limited*[228] creates confusion with regard to the tribunal's jurisdiction. The defendant argued (correctly in the researcher's view) that the proper forum to determine the dispute was the tribunal. The Judge dismissed the objection and limited the tribunal's jurisdiction in the following manner;

> With greatest respect to the counsel for the defendant, the said submission was misleading. The tribunal set up under section 112 of the Act provides an avenue for a person dissatisfied with the decision of the managing director of KIPI to appeal to such tribunal. In the present case, the managing director of KIPI has not made any decision that may be challenged before the tribunal. What the plaintiff is seeking before this court is the protection of its industrial design that is pending registration by KIPI. The plaintiff is therefore properly before the court.

A different finding was reached in *Christopher Xallion Ondieki v Safaricom limited*[229] where the Judge held that the High Court had no original jurisdiction to determine disputes arising under the Industrial Property Act 2001, the proper forum being the tribunal.

4.6 Qualification for Patent Protection of Computer software.

An invention is deemed patentable in Kenya if it is new, involves an inventive step and is industrially applicable or is a new use.[230] Similar prerequisites subsist in the USA whose patent

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[225] TIPA 2001 s112.
[226] ibid s106.
[227] ibid s113.
[228] *ENG V Magnate Ventures Limited* (High Court of Kenya at Nairobi, 29 January 2009)[10].
[229] Christopher Xallion Ondieki v Safaricom [2012] eKLR (High Court of Kenya in Nairobi, 20 April 2012) <http://kenyalaw/cases/cases/view79576 > (30 October 2012).
[230] TIPA 2001 s22.

statute refers to novelty, non-obviousness and industrial applicability respectively.[231] An invention is deemed new if it is not anticipated by prior art. Prior art is defined to include everything made available to the public anywhere in the world either in writing, orally or by other non-written means. Such disclosure must have occurred before the filing of the application or priority date where applicable. A disclosure is deemed to comprise prior art if made not later than twelve months before the filing of the application or priority date.

An invention constitutes an inventive step if it would not be obvious to a person skilled in the art to which the invention pertains on the date of application or priority date whichever is applicable. In *PLG Research v Ardon International*, the English Court of Appeal observed that the 'philosophy behind the doctrine of obviousness is that the public should not be prevented from doing anything which is merely an obvious extension or workshop variation of what was already known at the priority date.'[232] The test is objective and premised on the notional average person skilled in the art.

Industrial applicability refers to whether the invention is capable of application in any kind of industry.

Computer programs are said to 'occupy a strange world between mathematical ideas and applied engineering.'[233] That nature posed a problem in the USA and, in the earlier days, courts rejected software patent applications on grounds that they comprised non patentable mathematical algorithms.[234] Most patents attorneys resorted to framing the language of their applications to describe the software as though it were a hardware device.[235] With *Diamond v Diehr*[236] however, the Supreme Court opened the door to software patents. The challenge that developed was assessment of the software patent applications to establish whether they meet the statutory requirements for novelty, non-obviousness and utility. Determining non-obviousness proved to

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[231] The US Patent Act 1952 (TUPA 1952) s 3.
[232] [1999] FSR 116, 136.
[233] Simon L. Garfinkel, 'Patently Absurd.'
http://www.wired.com/wired/archive/2.07/patents.html (26 January 2014).
[234] *See Gottschalk v Benson* 409 US. 63 1972 where Supreme Court denied Patent to a system for converting binary coded-decimal numbers into the decimal number.
[235] Garfinkel (n17).
[236] 450 U.S. 175 [1981].

be the most challenging aspect in assessing patentability.[237] The United States Patents and Trade Marks Office (USPTO has received criticism for granting patent for obvious and trivial software. Glynn Lunney observed thus;

> If courts fail to enforce the non-obviousness requirement and allow an individual to obtain a patent for simply implementing existing methods of doing business through a computer, even where only trivial technical difficulties are presented, entire emarkets might be handed over to patent holders with no concomitant public benefit.[238]

Several reasons have been advanced to explain why non-obvious patent applications pass through USPTO. First of all patents applications are many compared to the limited number of patent examiners. This leads to below optimum scrutiny by the overwhelmed examiners. It has also been argued there is a challenge in determining what is comprised in prior art since many software innovations are not published in journals or other accessible medium.[239] The USA is a technological advanced country than Kenya. KIPI is likely to face the same challenges as USPTO, perhaps more intensely.

4.7 The Role of Patent Agents in the Patent Registration Process.

Patent agents play a key role in the patent registration process. A patent application must, by law, be presented by an agent admitted to practice before KIPI. Admission to practice as an agent is open to citizens of Kenya who are either Advocates practicing in Kenya or possess a University Degree in science or a technical field and are conversant with industrial property matters.[240] There is however no requirement for special training or examinations as a precondition for admission s a patent agent. The position in the USA mirrors that in Kenya to the extent that patent applications must also be presented by either patent attorneys or patents agents, distinguished by training.[241] The former have a background in law (attorneys) while the latter refer to non-attorneys. Unlike the Kenyan position however, both patent agents and patent

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[237] Evans and Layne – Farrah (n25) II.
[238] Glynn S Lunney, "E-obviousness,' (2001) Mich Telecomm and Tech.L.Rev. 363, 366
[239] Evans and Layne-Farrar (n 25) 11.
[240] The Industrial Property Regulations, 2002 (TIPR 2002) r 63.
[241] JR Kuester and AK Moceyunas 'Patents for Software-Related Inventions' (2003) Inerations An Interdisciplinary Journal of Software History, 1, 3.

attorneys in the USA are required to sit and pass patent bar exams before admission to practice with the USPTO.[242]

Data from KIPI reveals that 332 patent agents were registered as at 2014.[243] The number is however not broken down to facilitate identification of Advocates and non-Advocates respectively. However majority of the listed agents (289 to be precise) designate offices of law firms as their physical addresses suggesting that they are Advocates.[244] The number of patent agents in Kenya is low compared with USA which has 10,152 and 31,911 active patent agents and attorneys respectively.[245] Lack of skilled patent application drafters has been identified as one of the challenges facing software patents in Kenya.[246] This can be attributed both to the relatively low number of registered patent agents and the absence of modalities for establishing applicant's expertise in patent law and practice before admission as patent agents.

Both the statute and the statutory regulations made thereunder[247] detail the registration formalities and prescribe the fees payable. For example, the application is required to contained a request, description one or more claims, one or more drawings where necessary and an abstract. It must also contain the prescribed data on the applicant, the inventor and the agent. The description is required to disclose the invention in 'full, clear concise and exact terms as to enable any person having ordinary skills in the art to make use and to evaluate the invention.'[248] The same requirement for disclosure exists in the US Patent Statute[249]

4.8 Patent Application Process.

The date an application is received by the Managing Director shall be accorded as the filing date as long as the application meets formal requirements (that is, contains applicant's name, what

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[242] The United States Patent and Trademark Office Website.

[243] KIPI < www.uspto.gov/ip/board/oed/exam/grbpage.Jsp7 > (14 August 2014).
[244] uspto <https://oedci.uspto.gov/ OEDCI/> (20 August 2014).
[245] TIPA 2001 s.
[246] H Mutai 'To Patent or Not to patent? How We Can Protect IP in ICT.'(paper presented at Strathmore University Intellectual Property Conference, August 2012).
[247] TIPA 2001 and the TIPR 2002.
[248] US Patent Act 1952 (USPA 1952) s35.
[249] JR Kusler and AK Moceyonas (n241) 3.

appears to be a description and what on the face appears to be claim).[250] In the event of noncompliance with any of the formal requirements, the applicant will be asked to file a correction, in which case the date of receipt of such correction will be accorded as the filing date. The filing date is important as it determines priority date in determining patent rights in the event of competing claims, the first person to file would be entitled to the patent as provided for in the Paris Convention. However the position in the USA is significantly different in that priority is determined, not on the basis of the first to file but first to invent.[251]

231 patent applications were submitted to KIPI between July 2011 and July 2012, 51 percent of which were by Kenyan residents.[252] In the same period, 31 examination requests were presented and only 9 patents granted.[253] The availed numbers are not broken down to reveal whether any software patents applications and grants are comprised therein. There is however activity in Kenya's software patents sector. A perusal of the Industrial Property Journals issues for January to July 2014 reveal publication of two patents application whose descriptions indicate they are software-based.[254] In the same period, three seemingly software related patent grants were published.[255] These figures are quite low compared with the position in USA where 609,052 patents applications were filed in the year 2013 and 302,948 patents granted in the same period.[256]

4.9 Processing software patent applications and dispute resolution mechanism.

Upon receipt of an application, the Managing Director is required to publish prescribed particulars thereof either in the Kenya Gazette or an Industrial Property Journal. The purpose of the publication is to notify the public of the application and invite objections (if any). A request for substantive examination on patentability must then be submitted within three years of the filing date and upon receipt of the Managing Director's confirmation of the application's

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[250] TIPA 2001 s 41(1).

[251] Kenya Industrial Property Institute, *Annual Report 2011/12* Industrial Property (2013).

[252] ibid 6

[253] Application No KE/P/2012/001524(22) filed by Njoroge Geoffrey Kariuki in Journal No 2014/1 dated 31/1/14 and Application No KE/P/2012/001692(22) Inventor Ndonye Mackenzie in Journal No 2014/05 dated 31/5/14.

[254].Application No KE 646(45) in Journal No 2014/06, application No. AP/P/2010/005207922) in Journal No 2014/05 dated 31-5-14 and application No AP 2648 in Journal No 2014/03 dated 31-3-14.

[255]< http://www.uspto.gov/web/offices/ac/ido/oeip/taf/US_stat.htm > (20 August 2014).

compliance. The statute however fails to specify the period within which the Managing Director should inform the applicant of such compliance.

On receipt of a substantive examination application, the Managing Director causes the patent application to be examined by an examiner who then issues a report on patentability. Should the examiner's findings be against patent grant, the Managing Director is required to get submissions from the Applicant before rejecting such application. The statute does not specify the period to be taken in substantive examination or deciding disputes that may arise there from.

Processing software patents applications can be an involving and a time-consuming. Several parties play a role including the Managing Director, patent examiner, the tribunal and the High Court. The following charts illustrate patent applications movements;

A

CHART ILLUSTRATING PATENTS REGISTRATION PROCESS WHEN NO DISPUTES ARISE

APPLICATION FOR REGISTRATION
(Establishes priority date)

↓

**EXAMINATION BY MANAGING DIRECTOR
AS TO FORM**
(Time not specified)

↓

PUBLICATION OF APPLICATION
(Effected by Managing Director after expiry of
18 months from filing date/priority date)

↓

EXAMINATION AS TO SUBSTANCE
(To be applied for within 3 years of filing date.
However period taken in examination is not specified)

↓

GRANT AND REGISTRATION OF PATENT

↓

PUBLICATION OF PATENT
(Statute says as it be done as soon
as reasonably practical)

B

**CHART ILLUSTRATING PATENT REGISTRATION
PROCESS WHEN DISPUTES ARISE**

APPLICATION FOR REGISTRATION
(Establishes priority date)

↓

**EXAMINATION BY MANAGING
DIRECTOR AS TO FORM**
Time not specified. However if minor deficiencies are
found, applicant required to amend. Major omissions
will result in rejection of application.

↓

PUBLICATION OF APPLICATION
After expiry of 18 months from filing date/priority date.

↓

EXAMINATION AS TO SUBSTANCE

To be applied for within 3 years of filing date. However
period to be taken on examination is not specified. If
examiner report is against patent grant, the Managing
Director is required to hear the Applicant before deciding
on rejection. Time for such hearing is not specified.

↓

APPEAL TO TRIBUNAL

Applicant may appeal any decision of the Managing
Director within 90 days of decision. Period in which
appeal is to be determined is not specified.

↓

FURTHER APPEAL TO HIGH COURT

Any party to proceedings before the Tribunal may appeal
to the High Court period taken to determine the Appeal
is not specified.

4.10 Nature of Rights Conferred by a Software Patent.

Kenya's patent statute grants inventor three rights namely; to be granted the patent for a qualifying application; to preclude others from exploiting the patented invention and; to conclude licence contracts with respect to the protected invention. [257] The first right subsists before registration while the other two accrue after patent grant. The second right is negative. It does not confer upon the patentee right to use the invention but instead enables him to exclude others from utilizing the invention in exchange for full disclosure of the invention. For a product patent, the owner is granted the right to exclude others from exploiting the invention by making importing offering for sale, selling and using the product or stocking such product for purposes of offering it for sale, selling or using the product.[258] As regards the process patent inventor has right to patent to preclude others from using the process and dealing with products made from the process by for example selling, using or stocking the same. Unlike trade secrets therefore, patents can offer protection from reverse engineering of a computer software as the patent holder has right to prevent unauthorized working of his invention. The third right licensing is discussed below. The scope of protection is however determined by the claims presented for registration.

The rights conferred are subject to limitations as per the terms of the patent[259] and set out in law. They extend only to acts done for industrial or commercial purposes and do not prohibit acts done for scientific research.[260] They also do not apply to articles imported to Kenya by the patent holder or his licensee which are subject to exhaustion of rights doctrine.[261]

A patent owner can enforce his rights by filing proceedings seeking injunctive relief and or damages against anyone who knowingly infringes the patent.[262] A question however arises on whether a patent applicant enjoys any rights on his idea for the period between lodging the patent application and grant of patent. In *Sanitam Services (E.A) Ltd v Rentokil (K) Ltd and Kentainers*

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[257] TIPA 2001 s53(1).
[258] ibid s 54(1).
[259] ibid s 58(1).
[260] ibid s 58(1).
[261] Ibid s 58 (2).
[262] TIPA 2001 s55.

(K) Ltd[263] Kenya's Court of Appeal analyzed the position with respect to the then subsisting Industrial Property Act 1989 (now repealed) and stated thus;

> Could it be said there was protection of a patent when none was granted four years after the application or not granted at all? We think it would be a strained construction of the section to so find and we reject the contention that the unpublicised application made to KIPO was sufficient to protect the appellant. The section in our view affords protection to the owner of a patent after grant. Consequently there could not have been an infringement of a patent at that period in time either.

That lacunae appears to have remedied by the current Industrial property Act 2001 which specifically grants the owner of a patent right to claim compensation from anyone who performed any of the inventions claimed in the published application as if a patent had been granted for the same subject to the plaintiff establishing either that the defendant had actual knowledge that the invention was the subject of a published application or had received written notice of the invention's said status.[264] In *ENG Kenya Limited v Magnate Ventures Limited* [265] the High Court granted the plaintiff injunctive relief against infringement of an industrial design despite the defendant's objection that the plaintiff's application for registration with respect to the industrial design in question was still pending. While granting the prayer for temporary injunction against the defendant, Judge Kimaru stated as follows;

> Section 85(2) of the Industrial Property Act protects the rights of a creator of an industrial design in a similar manner to that of an inventor or the holder of a patent. In the present application, the defendant argued that the suburban sign of the plaintiff was not of such a unique design that it is capable of being registered as an industrial design. This court is not in a position to determine the veracity of the allegation made by the defendant at this interlocutory stage of the proceedings. What is however clear is that KIPI in its own wisdom… has determined that the suburban design of the plaintiff was an industrial design capable of being accepted for registration. I therefore hold

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[263]Sanitam Services E.A ltd v Rentokil (K) Ltd and Another [2006] eKLR (Court of Appeal of Kenya, 28 July 2006) < http:/kenyalaw.org/caselaw/…/> (29 October 2014).
[264] TIPA 2001 s55(c).
[265]*ENG Kenya Limited v Magnate Ventures Limited* (The High Court of Kenya at Nairobi, 29 January 2009) [9].

that the plaintiff has established, on a balance of probabilities, that it has an industrial design capable of being protected.

The ruling does not set out the Judge's rationalization of section 55 which limits the pre-registration remedy to recovery of 'compensation' by 'the owner of a patent'. It is not clear how the Judge extended the said provisions to grant injunctive relief to an unregistered industrial design applicant.

Patents are protected for twenty years from the filing date of the application.[266] However the patent holder is required to pay annual fees for the patent failing which the application is either deemed to have been withdrawn or the patent lapses and the invention ceases to be protected.[267]

4.11 Contractual and Compulsory Licensing of Software Patents.

The law allows a patent holder to license third parties to exercise any of the acts within his authority. Such license agreements must be in writing and signed by parties thereto.[268] They subsist as long as the patent itself remains valid. License contracts are also required to be registered by KIPI at the instance of any party to the contract. The Managing Director has discretion to consider the application for registration of patent licenses. He must however notify the petitioner and hear the parties before refusing to register any license application.

The Managing Director may refuse to register a license contract imposing unjustified restricting whose consequences are harmful to Kenya economic interests. These include contracts containing restrictions on research or technological development by the licensee, prohibiting or restricting the use by the licensee of any technology other than the technology in connection to which the contracts relates.

Contractual licensing is a tool Kenyan software developers can utilize to access useful software innovations even from other jurisdictions. In *Amarco Kenya Ltd –Vs- The Minister for*

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[266] TIPA 2001 s60.
[267] ibid s61.
[268] ibid s64.

Finance and others[269] for example the Applicant via license procured rights to deal in Kenya with a software belonging to a UK organization. The Applicant then utilized the licensed software as a platform to develop another useful product software it could sell.

Aside from contractual licensing relating to patents, the law permits the Industrial Property Tribunal (the tribunal) to issue compulsory licenses. That can be either due to non-working of the patent or where there is interdependence of patents and a patented invention cannot be worked without infringing the rights derived from an earlier patent. To qualify for a compulsory license, the applicant must establish that he attempted to procure a contractual license and the patent owner failed to confer the same on reasonable commercial terms and within a reasonable period. Secondly, the applicant must offer sufficient guarantee to work the invention and remedy the deficiency or satisfy the requirements that gave rise to his request.

 Compulsory licenses are nonexclusive, limited in scope and duration. They must also provide for payment of equitable remuneration in the patent holder. Further, a compulsory license does not entitle the licensee to grant further licenses without the patent holders' consent. The compulsory license regime thus recognizes the owner's rights and ensures he is compensated for the same

However a Minister exercising powers under the Competition Act can however affect Software IPRs as demonstrated in *Amarco Kenya Ltd –Vs- The Minister for Finance and The Commissioner, Monopolies and Prices Commission.*[270] In exercise of powers under Section 18(1) and (2) of the Restrictive Trade Practices, Monopolies and Price Control Act, (now repealed) the Minister then in charge of Finance issued a ministerial order vide a Gazette Notice requiring the applicant to supply to Inspac Technologies Ltd (INSPAC) and others the data bases of a proprietary software. The facts of the case were that applicant was the proprietor by license of a particular software initialed CQCS. Under the terms of the license, the applicant was permitted to license third parties to access CQCS. The applicant then developed another software known as AIMS 2000 which operated on the CQCS platform. Another entity

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[269] [2008] eKLR.
[270] *Amarco Kenya ltd v The Minister for Finance and Another* [2008]eKLR (High Court of Kenya at Nairobi, 16 July 2008) < http:/kenyalaw.org/caselaw />

(INSPAC) developed rival software that could also only run on the applicant's CQCS platform. INSPAC'S software was developed after it gained unauthorized access to CQCS database. INSPAC then sold its infringing software to a different entity which then sought to purchase a CQSC platform to enable it run the infringing software. The applicant declined to sell CQCS platform to the third party prompting INSPAC to lodge a complaint with the Commissioner of Restrictive Trade Practices Commission. The Commissioner condemned the applicant unheard resulting in issuance of the ministerial order directing the applicant to supply the CQSC database to INSPAC and others for a reasonable price. He also directed the applicant to further desist from the practice of refusal to supply the CQCS database a INSPAC and others. The Applicant then moved to court to seeking *inter alia* an order of certiorari quashing the Gazette Notice on ground that it was issued arbitrarily, capriciously and in disregard of the law and principles of natural justice.

The application was determined on a technicality, the applicant's failure to file an affidavit together with the application. However, it highlighted conflict that may arise in application of power under the competition statute on IPRs of computer software proprietors. It is not clear from the ruling whether the applicant was asserting copyright or patent rights on the software. However the fact is the minister issued orders impacting the applicants IPRs. The minister's act amounted to issuance of order similar to compulsory licenses but outside the scope of the patent statute law. There is need to clearly define the boundaries of both to avoid directions by the Minister that impacts IPRs outside the framework of law.

4.11 Technovations and Software.

A technovation is defined in Kenya IP laws as 'a solution to a specific problem in the field of technology, proposed by an employee of an enterprise in Kenya for use by that enterprise and which relates to the activities of the enterprise but which, on the date of the proposal, has not been actively considered for use by that enterprise.[271] Technovations are conceived within the purview of employer/employee relationships. An employee seeking recognition of his technovation lodges a written request for a technovations certificate with the enterprise which

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[271] TIPA 2001 s94.

then has three months to either issue a technovation certificate or notify the employee of the refusal (with reasons).

Technovator is entitled to remuneration determined either via collective bargaining agreement or by mutual agreement. Disputes arising from the technovation applications are resolved by arbitration.[272] An appeal lies against the arbitral board's, decision to the tribunal.

Technovation are available for computer software as evidenced in *Samson Ngengi -Vs- Kenya Revenue Authority.[273]* The Plaintiff was an employee of Kenya Revenue Authority. He claimed to have developed a software described the Geo-Spatial Revenue Collection Information System (GEOCRIS) which maps property location, identifying the owners and their tax status. Apparently KRA advertised bids for development of the software. Plaintiff moved to court and obtained interim orders barring KRA for dealing in GEOCRIS or developing any similar system pending determination of the suit. The suit was subsequently referred to arbitration as required by statute.

Technovations are advantageous in granting IP protection to start up software innovations. They protect innovations that may not meet the stringent patent requirements for novelty, inventive step and industrial applicability. A technovator need only establish that the idea offers a solution to a specific technological problem which the enterprise had hitherto not adopted. Secondly the application process is relatively simple, fast and cost-effective compared with that subsisting for patents.

However there are challenges in the technovations regimes particularly in its application to computer software. Firstly the imposition of arbitration as the mode of dispute resolution poses a problem when there is need to urgently secure the innovators interest in the interim. Appointment of arbitrators can be slow particularly when the counterpart adopts dilatory tactics. *Samson Ngengi* had to resort to filing suit at the high court to obtain interim injunctive orders despite the express statutory provisions on dispute resolution by arbitration.

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[272] Ibid s101.
[273] *Samson Ngengi v Kenya Revenue Authority* (High Court of Kenya at Nairobi, November 2008).

The other challenge lies in the fact that existence of IPRs rights on the claimed technovations is decided upon, not by an independent entity, but an interested party (the enterprise) who is also the expected consumer of the product.

Finally, the prevailing structure does not adequately protect the technovator from the publication of his idea to others who may adopt and utilize the same without compensating the technovator. The law only provides a remedy for communications made by the enterprise to a third party. It does not offer protection in instances where the technovation is revealed to third parties by other persons such as employees of the enterprise who accessed the same. Unlike a patent holder, the technovator does not enjoy exclusive rights to use of the technovation. Person who acquires the idea from source other than the enterprise would be free to exploit the same without recourse to the technovator.

4.13 The Suitability of Kenya's Patent and Technovations Regimes to Protecting IPRs Software in Kenya.

Unlike copyright, the patent regime is capable of protecting the idea behind computer software. Patent holder can prohibit exploitation of his idea by third parties whether the same were arrived at independently or via copying. Consequently patents can provide a guard against misappropriation of the idea behind software by reverse engineering.

Despite that, statistics reveal that utilization of patent system by software developers in Kenya is low compared with the rate of computerization and growth of the software sector. That trend is attributed to several reasons. Firstly, the patents registration process is involving and complex. Unskilled person will experience difficulties processing an application in person. He may need to engage a skilled drafters or legal practitioner and pay fees plus attendant prescribed processing charges including application fees, international search fees (where applicable) final inspection fees, fees for grant of patent and annual fees. Those costs make patents inaccessible to startup software developers.

Even having engaged a patent agent, the software developer would still have to wait for a considerable period before his application is processed at KIPI. Bureaucratic and logistical

challenges, coupled with the set statutory timelines slow down the process thus exposing software developers to the risk of their products becoming obsolete before protection is granted. Having obtained a patent, a software developer may require protection for its upgrade. In that event, such developer would have to start fresh protection proceedings for the upgrade, a task that may prove daunting considering that regular product upgrade is the norm in the software industry.

As a precondition to grant of patents, patent holder is required to disclose his invention in sufficient detail such that it can be worked by a person skilled in the field. This helps in knowledge exchange and advancement. The patent disclosure requirement provides an avenue vide which a developing country like Kenya can access software technology from its more developed counterparts and develop its local software sector. However the low registration of software patents even by foreign entities means Kenya Software Developers are not benefiting from the technology disclosure effected by patents.

However there are challenges in applying computer software to patents. First of all, the protection term (twenty years), though considerably shorter than that applicable under copyright, is still longer than the average life span of computer software and programs. The problems highlighted with regard to continuing to offer protection to commercially unviable software copyright will also apply to patent.

Secondly, studies in the USA have revealed that patent in the USA do not in fact spur software innovations and that most startups do not patent their products. To the contrary it has been argued that software patents actually hinder innovation as they result in patent thicketing, a situation where large corporations acquire numerous software patents to stifle competition and act as a buffer in disputes between themselves. This is best illustrated by the various patent suits between the phone manufactures Samsung and Apple. The thicketing scenarios has led Alan Story to question software patents impact on innovation in developing countries, considering their negative effects in a more technologically advanced country.[274]

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[274] Story (n24).

Another experience with software patents in the USA has been USPTO's challenge of assessing whether software patent applications meet the non-obviousness criteria, resulting in grant of patents for undeserving software inventions and exacerbating the patent thickets. Considering that Kenya predominantly relies on software owned by Microsoft and other multinationals, caution needs to be exercised in issuance of patents to prevent development of patent thickets that would completely shift software development in the countries.

Institutionally there are challenges at KIPI with respect to management of computer software and patent. Bureaucracy that is slowing patent application needs to be addressed. Secondly, it is doubtful whether the KIPI has adequate expertise to assess software patent applications and determine whether they meet the statutory requirements for patents protection. Funding and institutional capacity is also limited.

With respect to the tribunal, the manner of appointing a chairman and members lends itself to misuse and political interference which may not hinder appointment of the most qualified and negatively impact decision making in the tribunal.

There is need to enhance publication of the tribunal's decision by establishing a law reporting system to develop jurisprudence on software patents and other industrial property issues. That may call for increase of funding. Additionally the tribunal's decisions appealed against to the High Court risk getting caught up in the backlog thereat slowing decision making even further.

There is need for harmonized government policy position with the respect to IP on computer software issues especially in light of the Vision 2030's highlighting of ICT as one of its central pillars in spurning economic development. Currently KECOBO is under the office of the Attorney General while KIPI operates under the Ministry responsible for industrialization. A proposal to merge   IP regulating agencies (KECOBO, KIPI and the Anti- Counterfeit Agency) and form one entity was presented to the President of Kenya by the special task force appointed to streamline operations of state corporations and parastatals.[275] That would then fall under one

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[275] V Nzomo 'Proposed Parastatal Merger of The Copyright Board, the Industrial Property Institute an Anti-Counterfeiting Agency' (CentreIntellectual Property and Information Technology law Blog, 7 October 2013) <http:cipitlawstrath.wordpress.com/../ > (30 October 2014).

government Ministry under one Government Ministry. Such merger would help in harmonization of IP policy considerations, a move that would benefit computer software which requires protection under more than one IP regime.

In concluding this chapter, it is observed that Kenya's trade secrets, patents and related technovations regimes can be applied to protect computer software in Kenya. However, utilization thereof by software innovators generally and startups in particular is low. The challenges in applying those regimes to computer software in Kenya have been highlighted. The next chapter therefore addresses how the said challenge and those identified with respect to copyright can be tackled with a view to enhancing IPRs of software developers.

CHAPTER FIVE

CONCLUSIONS

Protecting IPRs aid in development. The USA and Japan are mentioned as examples of countries whose development is credit to strong IPRs regimes.[276] Kenya's goal of achieving industrialization via ICT will to an extent be determined by its legal and institutional framework guaranteeing IPRs of software developers.[277] Under-utilization of IPRs by Kenya's startup software innovators thus negatively impacts growth and development of the ICT Sector. The challenge arising is on how to enhance Kenya's software IPRs legal and regulatory regime to ensure suitability and adequacy in protecting innovation by startup software developers.

The nature of computer software is such that they require simultaneous protection under copyright, patent and trade secrets regimes. The research paper set out to determine whether Kenya's legal and regulatory regime embodied in the Copyright Act, Industrial Property Act and common law trade secrets adequately protect IPRs particularly of startup computer software and program owners and developers. It further sought to determine the necessity of developing *sui generis* legislation to protect computer software.

The study proceeded on two hypotheses; firstly that the regime does not adequately protect to IPRs in computer software and secondly that there was need for *sui generis* legislation protecting computer software in Kenya. This study has outlined legal and regulatory inadequacies of those regimes in application to software and affirmed the hypotheses. The following changes can be effected to tackle the inadequacies.

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[276] B Sihanya 'Intellectual Property for innovation and Industrialization in Kenya', (2008) Convergence Vol 4 No 2 185.

[277] B Sihanya 'Infotainment and Cyber law in Africa: Regulatory Benchmarks for the Third Millennium' (2001) 10 Transnational Law and Contemporary Problems 583.

5.0 Proposed Changes to the Software Copyright Legal and Regulatory Regimes.

Though copyright law offers software immediate protection without formalities, such protection is limited to expression of ideas fixated in the software's source and object codes. Copyright does not prevent non-infringing acquisition of computer software's underlying idea via processes such as reverse engineering. That justifies additional protection of the underlying ideas by patent and trade secrets regimes.

Protection of computer programs object and source codes as literary works for the life of the author plus 50 years is not beneficial considering the relative short life span of computer software. A case can be made for shorter copyright protection term of say 10 years. However it would be challenging for Kenya to legislate such shorter protection term considering its obligations under Berne Convention which requires minimum copyright protection for life plus 50 years term. However copyright's confinement to expression of ideas lessens the problem posed by that long protection period since that the ideas behind it are available for utilization by others.

Further there is need for clarity of the law on determination of indirect software copyright infringement and particularly application of the *de minimis* principle to software copyright infringement. The law ought to be amended to define what constitute indirect infringement. Utilization of copyright registration is low, meaning startup software developers are not availing to themselves registration benefits. The legal provisions on registration also require amendments to set out what must be established before KECOBO registers a software copyright to avoid registration of similar copyrights. KECOBO also needs to consider enabling searches on its software Copyright Register to be undertaken online. Kenya can also borrow from USA copyright law by introducing statutory infringement remedies available to authors of registered software copyrights. Another aspect of USA Law Kenya can borrow is to introduce a requirement for identification of copyrighted software with a mark © or "copy" and limit or eliminating defence of innocent infringement available under Section 38 of Kenya's Copyright Act with regard to computer software's codes bearing such marks.

On the regulatory front KECOBO's capacity should be enhanced. Its presence ought to be devolved across the country to improve policing and enforcement. The organization is currently based in Nairobi and with limited staff. It cannot adequately exercise its statutory mandate across the country. A case can be made for increased funding towards KECOBO's reorganization and recruitment of extra personnel.

One of the functions of KECOBO is to organize and conduct training relating to copyright matters at all levels.[278] It is apparent from the relatively low copyright registration numbers that education and sensitization of startup software developers on copyrights copyright is required.

The experience with collecting societies is that they enable members to benefit more from their works. A case can therefore be made for registration of one catering for the interest of software developers, particularly the individual or startup variety.

Copyright disputes are determined in the ordinary courts which are plagued by case back logs that hinder expeditious resolution of disputes. The resulting delays could negatively impact software in view of its nature. Further, aspects of copyright software disputes such as ascertaining non-direct software copyright infringement can be a technical exercise. One can therefore argue for establishment of specialized tribunals for software copyright disputes that could require a technical perspective in resolution of the disputes. Software patent disputes are determined by a specialized tribunal. By parity of reasoning, a similar system ought to be effected with regard to software copyright disputes.

Training of judicial officers on software copyright issues and IP law generally ought to be promoted taking into account that teaching of IP law as a course in Kenya's oldest law school is a relatively recent development meaning senior judicial officers may not have studied that branch of law at undergraduate level.

The Government should also consider adopting policies geared at reducing market prices of proprietory software. These may include reduction of taxes on software to make them more

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[278] TCA s 5(a).

affordable and reduce incidences of software piracy that are to an extent, influenced by the relatively high per capita prices of proprietor software.

5.1 Proposed Changes to the Trade Secrets Legal and regulatory regime in its application to software.

Trade secrets are, like copyright, protected without registration. However there are instances when a trade secret owner may require the execution of confidentiality agreements by employees, licensees or other persons to whom the secret is revealed in fiduciary circumstances. Trade secrets offer protection for ideas embodied in computer software but restrict exchange and advancement of knowledge. However they do not offer exclusive use of the idea and just like copyright, trade secrets cannot prevent acquisition of the software idea by non-infringing acts such as reverse engineering.

The fact that Kenya's trade secrets law is premised on common law limits its application and scope. Codification of the trade secrets law in USA via the UTSA provides a more equitable system that allows the owner to recover damages unavailable under common law including proceeds of unjust enrichment. Further though common law restricts remedies to the information secrecy period, codification via UTSA enables an owner to prevent a misappropriator from enjoying any commercial benefit from his act by allowing for extension of protection even after the information secrecy. UTSA further enhances protection by removing common law's requirement to prove use to one succeed in a trade secrets infringement suit.

Kenya ought to develop a trade secrets legislation to codify the law, introduce clarity and provide additional remedies. Such a statute could consider providing trade secrets regulatory framework by for example establishing a statutory body to enhance trade secrets and reduce the policing burden hitherto borne exclusively by owners. The statute could also criminalize certain acts of software misappropriation thus enhance protection under that regime.

5.2 Proposed Changes to the Software Patents Legal and Regulatory Regime.

The patent law regime offers protection for ideas underlying particular computer software and programs. Unlike the trade secrets law, patents regime provide proprietors with legal authority to exclude others from exploiting the patented idea. However patent protection is not automatic but subject to registration formalities. The software innovator must apply for patent and satisfy the patentability test the software will then be subjected to. The patent application process is technical and expensive rendering it unavailable for utilization by startup software developers with limited finances to procure legal experts to draft the patent applications and pursue registration. Additionally patent registration is slow and may hinder utilization of software patent. The patent application system need to be simplified and made more affordable to startup software innovators.

Based on the USA experience, there is need for stringent application of the patentability criteria to guard against patenting of non-qualifying software inventions whose effects would be to create patent thickets. KIPI ought to enhance patent examination capacity to prevent such patents. Further the requirement for disclosure needs to be enforced. KIPI should ensure adequate disclosure that would enable a skilled person understand the idea.

Patent drafting and processing is a specialized, technical field. A case can be made of enhancement training and qualifications for patent agents. The current minimum qualifications for registration as patent agents do not require expertise in patent matters. The law needs to be amended to introduce a requirement for patent competence examinations before registration as patent agents.

Just like with copyright, patents protect software for longer than may be necessary. The consequences of such extended patent protection are more noticeable than copyright in view of patents exclusivity regime. The software patent protection term needs to be shortened to reflect software's nature. The subsisting protection term prevents incorporation of patented software into the public domain even when such protection is no longer economically viable to the patent holder. That prevents utilization thereof by startup developers.

There may also be need to amend The Industrial Property Act by fixing timelines within which both formal compliance and substantive assessments of patent applications should be undertaken. That is aimed at reducing the patent processing period to ensure software patent are available for exploitation as soon as possible and eliminate.

The three institutions that regulate software patents also require reforms. KIPI should streamline its software patent application process to eliminate bureaucracy and reduce the time taken processing software patent applications. The aim is to ensure software patents are processed and, where deserving, granted as soon as possible. KIPI ought to computerize its system and provide a platform for online searches of patents and advertisement of software patent.

As already pointed out a challenge identified in the USA is in delimiting the public domain with respect to computer software. This arises from the absence of forum for software innovation publication and developers reluctance to communicate the same fearing acquisition thereof by others. In pursuance of its functions of providing industrial property information to the public and promotion of inventiveness and innovation in Kenya, KIPI should establish a such forum and help demarcate what is already in the public domain to prevent patenting of non-qualifying software innovations.

With limited technical staff, KIPI's lacks capacity to handle increased software patents applications. Increased utilization of the patent system by local startup developers could cause KIPI to experience challenges in processing the same resulting in further delays in processing patent applications. Further the overwhelmed patent examiners could compromise assessment vigilance and allow patents for obvious inventions. As software innovators are encouraged to utilize the patent system, KIPI should employ more technical staff to handle the increased applications. The institution should also restructure and computerize to facilitate undertaking of activities of such a software patent searches online.

The tribunal also requires reforms. The manner of appointment of its Chairman and members should be reviewed to eliminate political interference and provide merit-based criteria geared at constituting the tribunal with persons competent in industrial property issues. Additionally, the

terms of office for the tribunal should be made longer to avoid disruptions and facilitate conclusion of proceedings within the tribunal's term. That will minimize delay in dispute resolution and reduce repeat litigation costs occasioned by personnel change at the tribunal. There is need to enhance publication of the tribunals decisions by establishing a law reporting system to develop jurisprudence on software patents and other industrial property issues. This may call for increased funding.

As the court with appellate jurisdiction over the tribunals' decisions, the High Court also requires reform in relation to software patent dispute resolution. The already identified challenges of case backlog and enhancing judicial staff capacity on IP matters needs to be addressed. Another approach to improving service delivery could be establishment of a specialized division of the High Court to handle IP matters including appeals from the tribunal.

5.3 A case for Development of *sui generis* Software Protection Legislation.

Legal changes effected to progressively incorporate computer software into the purview of IPRs first under copyright then subsequently patent laws were driven by the realization that not one protection regime could offer adequate protection for computer software. The result was amendments to the Copyright Act and Industrial Property Act respectively to introduce software protection provisions. This has resulted in certain instances to the statutes providing criteria for software different from that applicable to traditional subject matter thereof. For example, though Kenya's copyright Act classifies computer software as literary works, it defines fair use in relation to software differently from conception thereof for traditional literary works. Such software specific provisions could also create confusion on traditional subject matter of copyright and patent. Further, some changes proposed in this study to the copyright, trade secrets and patent law regimes directed at enhancing computer programs protection may not be appropriate or required for other traditional subject matter of those regimes. Indeed some of the proposals, such as that for reduction of computer programs protection terms under patents and copyrights, could negatively impact the traditional subject matter of those IP regimes.

The fact that software is protectable under various regimes, sometimes simultaneously, leads to absurdities. A case in point is the different dispute resolution mechanisms provided for

copyrights and patents. The Copyright Act vests jurisdiction on the ordinary courts which in the event of software infringement dispute, could be called upon to consider different object or source codes of two computer programs and decide technical issues on whether the defendants copy is infringing. On the other hand, the Industrial Property Act creates a specialized tribunal to determine software patent disputes that are deemed technical. It is difficult to justify the different treatment for the same category of work.

To address the shortcomings and offer protection of computer software under one law, this is study proposes development of a *sui generis* framework for protecting IPRs in computer programs. Such statute could borrow from the WIPO Model Provisions on the Protection of Computer Software, the draft US Computer Software Protection Act and WIPO organized Draft Treaty would deal specifically with software, address its unique status and be adaptable to its rapid changing nature. It could also address Kenya's local situation and be geared towards protection startup software innovators. The protection offered would be a hybrid of both patent and copyright regimes. It would address the current deficiencies by protecting software for a shorter term of say 10 years, define the subject matter protected and set out the exclusive rights of the proprietor, define software infringement to include acts that are uniquely software based like utilization thereof in a computer, provide for registration of software and publication of the innovation. The statute could also provide a simpler registration procedure guaranteeing developers faster protection of their ideas. To address the current shortcomings in dispute resolutions the statute could provide for establishment of a specialized tribunal constituted competitively and whose term is adequate for resolution of disputes.

The statute could also provide for protection of software innovations which though not necessarily satisfying the patent protection threshold (particularly the non- obviousness criteria), are innovative and offer technological solutions. Such rights would be analogous to the technovations regime available to employees under the Industrial Property Act. They would increase the reach of IPRs for local startup innovators.

5.4 Non Legal Reforms and Policy Considerations

The low utilization of IPRs particularly by startup software developers in Kenya is partly attributable to their lack of information. That can be addressed by implementation of programmes towards educating software developers on the various IP regimes they can utilize to protect their innovations. Both KECOBO and KIPI have statutory obligations to educate the public on matters pertaining to copyrights and patents respectively. In exercise of that mandate, the two bodies should organize fora to educate startup software developers on IPRs and encourage utilization thereof to protect software innovation. The bodies can also develop policies and programs towards sensitizing the public to develop a culture of respect for IP.

The proposal for establishment of one regulatory body to oversee all IPRs is welcome, particularly with computer software that are protectable under various IP regimes. Such body would operate under a single government ministry, a situation that would ensure uniformity of computer software policy. This would facilitate adoption of uniform strategies on harnessing IP towards achieving Vision 2030. The government ought to adopt that recommendation and draft legislation giving it effect.

It has been argued that software piracy is to an extent attributable to the relatively high prices of software particularly in developing countries. Policy measures can be taken to make software more affordable and thus reduce incidences of the vice. These could include reduction and or elimination of taxes and levies on computer software.

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