

INNOVATION BENEFITS OF SOFTWARE PATENTS IN KENYA

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Abstract

Globally, it is generally accepted that the legal protection of creations of the human mind, such as software, should contribute to technological innovation. In Kenya, software is ordinarily regarded as literary work and therefore protected by way of copyright. Recently, however, there have been suggestions that software should be patented. This raises the problem of whether and how the tension between copyright and patent protection of software can be resolved in a manner that is just, fair and reasonably proportionate to the highly desirable goal of incentivising production and dissemination of technology. This study examines the extent to which software patents in Kenya might be appropriate in light of both the nature of software and the need to foster innovation. Using the capabilities approach as the basic theory and comparative methods, the study finds that patents provide better protection for the idea embodied in software than does copyright and this is in exact accordance with the capabilities Kenyan's would like the protection to provide for them. It recommends that Kenya should consider improving its intellectual property regime by making provisions for patentability of software or some *sui generis* right akin to software patents in order to aid in fostering innovation.

Keywords: Innovation, Software Patents, Copyright, Capabilities, Values

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1.0 Introduction

The State is obligated to protect and promote creations of the human mind otherwise known as intellectual property. These creations include computer programs and software. Computer software is a broader classification that encompasses both computer programs and databases. Recently, however, database protection has been viewed in a different protective spectrum and, hence, this work deals with computer programs under the umbrella of computer software as a series of instruction(s) that control or condition the operations of a computer. There is, however, no universally agreed definition.

While there are numerous mechanisms for the legal protection of intellectual property, computer programs and software in Kenya are mainly protected by copyright law. However, it is not entirely clear whether this form or mechanism of protection is the most appropriate in light of both the nature of computer programs and software and the fitness of copyright for the purpose of fostering technological innovation. This work explores the extent to which legal protection of computer programs and software in Kenya is adequate and effective. It suggests that the idea of software patents might have some innovation benefits that programs or software copyright lacks. Part 2 of the work introduces the arguments for and against software patents. Part 3 gives an overview of the basic theories behind the study. Part 4 presents the Kenyan legal regime governing the protection of computer programs and software. Part 5 outlines the international policies and regulations while Part 6 canvasses the comparative jurisprudence. Lastly, conclusions and recommendations are made in Part 7.

2.0 Background to the Problem

Patenting in information technology industries and allied fields has always been a matter of legal and intellectual controversy.¹ This is occasioned by the fact that there has been a great deal of legal debate as to whether software and other computer related programs should be patented

¹ Campbell-Kelly Martin, 'Not All Bad: An Historical Perspective on Software Patents' (2005) 11 Michigan Telecommunications and Technology Law Review 192.

or copyrighted.² Traditionally, computer programs and software have been protected by copyright law as they were viewed as literary works.³ However, the rapid advancement in information technology law which calls for better protection mechanisms⁴ pits the mainstream copyright law against emerging ideas of software patents and the common law concept of trade secrets or the law of confidence.⁵

Patents are a relatively novel field of intellectual property in Kenya and software patenting is an equally emerging field.⁶ Patents ordinarily protect the idea while copyright protects the expression of the idea. However, a literary work is often a vehicle for ideas and as such where ideas have been expressed in a literary work, they become an important part of that literary work. This is more so with regard to situations where the essence of the work is scientific in nature. In other words, where the scientific content of a work is of greater importance than the precise mode of expression, there is likely to be a merger of the idea and its expression. Computer programs and software provide a good example of works for which there might be no clear delineation between the idea and its expression. As such, once the ideas which relate to a computer program and software are manifested in an outwardly perceptible form, it is not only the form but the form together with the ideas that are entitled to copyright protection.⁷ The idea in a computer program and software is the source code or object code that is fed and executed by the computer to give a desired result. The manifestation of the idea is the outlook or the feel of the software. This poses the difficulty of protecting computer programs and software by way of copyright if one were to apply the classical straight jacket idea-expression dichotomy rule that there is no copyright in ideas. On the other hand, if one were to go for software patents, they would get protection

² Mambi J. Adam, *ICT Law Book: A Source Book for Information and Communication Technologies and Cyber Law* (Mkuki na Nyota Publishers 2010) 207.

³ *Sega Enterprises v Richards* (1983) FSR 73; *Apple Computer Inc. v Computer Edge Pty Ltd* (1984) FSR 481; *Apple Computers inc. v Mackintosh Computers Ltd* (1990) 2 SCR 209, 71 DLR (4th) 95.

⁴ Reed Chriss & Angel John (eds), *Computer Law* (4th ed, Oxford University Press 2000) p 1-7.

⁵ Bainbridge David, *Introduction to Computer Law* (4th ed, Longman Pearson 2000) p 7.

⁶ *Sanitam Services (E.A) v Rentokil (k) Ltd and Another* (2006) eKLR. There is generally minimal legislation and scanty jurisprudential corpus of software in Kenya.

⁷ *Galago Publishers (pry) Ltd & Another v Erasmus* 1989 (1) SA 276 (A) at 283-285; *Peter Ross v Ramesar* 2008 JDR 060 (c).

for the object code or the source code but not for the outlook or feel. The idea of software patents, nevertheless, has not been readily accepted.⁸ Further, even as software use, utility and viability become widespread and the commercial value realised, it has been remarkably difficult to classify software within a specific category of intellectual property protection.⁹

Another reason fuelling this intricacy on the idea of software patents is the unabated fear of the monopolising effect of patenting software. Such concerns are responsible for the development of denial symptoms towards the idea of software patents. Even with the benefit of hindsight from the decision of the American Supreme Court to the effect that '[i]t was never the object of patent laws to grant a monopoly for every trifling device, every shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufactures.'¹⁰ The court here acknowledged the fact that such indiscriminate creation of privilege tends to obstruct rather than encourage innovation, hence, the need to exercise restraint in granting patents.¹¹ This form of intellectual caution, however, has not served much to break up the fear associated with patenting software. The fear, therefore, of patenting what was viewed as literary works or an art rather than an industrial process, which could mathematically be reduced so close to abstraction,¹² contributed to the flourishing of copyright law in this field.¹³

Other reasons for the sceptic reception of software patents include the apparent absence of a technical character¹⁴ and the existence of computer programs and software that merely perform mental acts on a purely software base i.e. with no direct correlation with a hardware or machine aid.¹⁵ Some legal scholars have argued that in determining patentability with pin-point

⁸ Campbell-Kelly (n1).

⁹ Gonz lez Andre's Guadamuz, 'The Software Patent Debate'(2006) 1 Journal of Intellectual Property Law & Practice 1.

¹⁰ *Atlantic Works v Brady* (1883) 107 US 192.

¹¹ *Atlantic Works* (n10); Bainbridge (n5). 'Patent nevertheless is seen as a desirable form of intellectual property because it gives to the owner a certain monopoly of his invention, thereon enabling him to exploit the invention for a number of years to the exclusion of all others (subject however to the provisions designed to prevent abuse of the monopoly granted).'

¹² Stephen Mason, 'Electronic Signatures in Practice' (2007) 4 The ICFAI Journal of Cyber Law 1, 8-22.

¹³ Lloyd J Ian, *Information Technology Law*, (Oxford University Press 2000) p 3006-3007.

¹⁴ *Merril Lynch's Application* (1989) EPOR 561-606.

¹⁵ *Ibid: Fujitsu Ltd's Application Case* (1997) RPC 610; *Re The Computer Generation of Chinese Characters* (1993) FSR 315.

accuracy, a critical attention must be paid to the technical effects or solutions to a technical problem.¹⁶ Even in early machines that utilised software, the question was whether the machine, without taking the computer program into account, adds anything to the state of the art.¹⁷ In that regard, machines embodying software were patented but the software was never patentable per se.¹⁸ As demonstrated above, it is still unclear whether or not they should be protected as literary works, artistic works, or, indeed, protected not by copyright but by some other legal right (i.e. sui generis right) or simply through contractual provisions.¹⁹

The foregoing concerns have always been discussed on the platform of the nature of computer programs which utilise ‘machine code’ or ‘source code’ which the computer will understand. These are codes of electronic pulses in unwritten form fed into the Central Processing Unit to execute the desired function.²⁰ Such unique operation of software proves impossible to place it within any of the mainstream categories of intellectual property law. Against that backdrop, the World Intellectual Property Organisation has suggested that software should be protected by a new separate category or a sui generis right.²¹

In light of the existence of the abovementioned corpus of classical literature that paint a clear trail of the perception of software patents and their reception, this area has not come to terms with the reality that the realm of technology is advancing faster than the law. This inadequacy of the law was judicially demonstrated in an American Appellate Court thusly:

Generally we think that copyright registration, with its indiscriminating availability - is not ideally suited to deal with highly dynamic technology

¹⁶ Bentley L and Sherman B, *Intellectual Property Law* (Oxford University Press 2002) 390-391.

¹⁷ Bainbridge (n5).

¹⁸ *Vicom Systems Incorporated's Patent Application* (1987) OJ EPO 14.

¹⁹ Cotter Anne-Marie Mooney (Ed) *Intellectual Property Law* (Cavendish Publishing Limited 2003) 75.

²⁰ Cotter (n 19).

²¹ International IP Protection of Software: WIPO, available at www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0ahUKEwj6jdCB_dLRAhVrCsAKHXvfBIMQFgggMAE&url=http%3A%2F%2Fwww.wipo.int%2Fedocs%2Fmdocs%2Fcopyright%2Fen%2Fwipo_ip_cm_07%2Fwipo_ip_cm_07_www_82573.doc&usg=AFQjCNH6Zi1HwrZOJZN0_ScUHlrZvXrV2g&sig2=ASfHyH90nnsXOVYuty2Jw&bvm=bv.144224172,d.ZGg, accessed on 21st January, 2017.

of computer science...patent registration with its exacting up-front novelty and non-obviousness requirements might be the more appropriate rubric of protection of intellectual property of this kind.²²

Over time, evolutionary practices have led to the recognition of computer programs and software as integral to the computer industry. With that evolutionary nature, the position of software patents has changed internationally. At the international arena, the patentability of computer programs and software is echoed under the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement under article 27(1) to the effect that ‘patents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced’ which seems to cure the slippery slope posited by the wording of article 10 of the TRIPS Agreement, hence, allowing nations to choose the best available method or the path to take.²³ This provision brings on board two types of patentable inventions - a product invention and a process invention.²⁴ This, however, has by no means elevated the earlier position that computer programs were not patentable per se, although, there have been cases in the United Kingdom, Germany, Japan and in the United States where computer programs have been granted patents indirectly, usually as being part of a machinery or an industrial process.²⁵ In Kenya, computer programs are deemed to be literary works and, therefore, protected by copyright.²⁶

Historically, software patents owe their origins to the early office machine industry, the most direct ancestor of the software industry.²⁷ Office technologies like software were sequential and cumulative, but patents did not inhibit innovation. Critics argued that patenting software or computer programs impedes innovation; history has a different narrative altogether.²⁸ They did, nonetheless, impede non-innovative makers of clone products.²⁹ As these

²² *Computer Associates v Altai Inc* (1992) 982 F 2d 693.

²³ Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS) signed in Marrakesh, Morocco on 15th April 1994.

²⁴ Bainbridge (n 5).

²⁵ Gonzales (n9).

²⁶ The Copyright Act, 2001, s 2.

²⁷ Campbell-Kelly (n1), p 194.

²⁸ Ibid, p 194.

²⁹ Ibid, p 194.

changes took shape, in the history of development, majorly, software patents owe their birth to two cases: *Gottschalk v Benson*³⁰ and *Diamond v Diehr*³¹ which were premised in the controversy whether or not computer algorithms constituted patentable subject matter. With that brewing controversy, spawned the debate on what to consider when patenting software.

The Kenyan legal regime, interestingly, is not new to this otherwise thorny debate. The Industrial Property Act does not recognise computer software as patentable or as technological inventions.³² With this in mind, the position laid down in the Copyright Act, 2001 is, therefore, sublime and evident that the Kenyan software regime is under the grip of copyright law.³³ However, the Constitution of Kenya, 2010 gives impetus to promotion of human rights, dignity and potential of the Kenyan people, thereby raising the concern on how the country has incorporated modern trends to protect the intellectual property of Kenyans.³⁴ The stated constitutional obligations require that the State puts in place adequate and effective measures for the protection of such creations as computer software. Further, such protection should take into account the objective to foster innovation as contained in such undertakings as the Vision 2030³⁵ and Sustainable Development Goals.³⁶

3.0 The Changing Perspective

At the heart of software technology, is the cybersociety which faces the greatest challenge of counterfeit trade both in Kenya and internationally.³⁷ Many modern products and technologies run on software platforms and some are wholly based on software. Therefore, with the advent of the Internet, information technologies and cyber networking, the menace of

³⁰ *Gottschalk v Benson* (1972) 409 US 63.

³¹ *Diamond v Diehr* (1981) 450 US 175.

³² *Industrial Property Act*, Cap 509, s 21.

³³ The Copyright Act (n 26).

³⁴ The Constitution of Kenya, 2010, Article 11 (1) (c), 40 (5), 69 (1) (c).

³⁵ Republic of Kenya, The Kenya Vision 2030 (2007), no 8.

³⁶ United Nations Development Programme, Sustainable Development Goals (2000) no 8.

³⁷ Wekesa Moni and Sihanya Ben (Eds) *Intellectual Property Rights in Kenya* (Konrad Adenauer Stiftung 2009) 235.

counterfeiting is prevalent.³⁸ In light of these developments, the mainstream realm of protection of literary works was applied to novel set of facts and hence raising the question as to whether protection of software and computer related innovations were watertight. This lacuna was accurately summed up as follows:

The precise scope of what is a patentable invention is an important issue because, traditionally, patents have been granted for industrially useful things such as new machines, chemical compounds and materials and processes for making such things or otherwise achieving a useful result. A computer program of itself is not, to many minds, such a thing.³⁹

The State is currently obligated to protect the intellectual property of Kenyans. This obligation is somewhat couched in a human rights framework based on the capabilities approach. This approach focuses on how intellectual property can expand the capabilities of real people in real situations. In the context of computer programs and software protection, the relevant question would be what capabilities do Kenyans like the protection to create for them. It is very likely that they would like intellectual property protection to foster innovation that is beneficial to society as a whole. In changing gears, therefore, it is imperative that one looks at the development of software protection in Kenya, which will inform the shifting perceptions and the frontiers of knowledge towards a patent regime for software in order to foster innovation.

The main purpose of any academic legal writing being to perceive and portray patterns and relations in a body of legal rules so as to make it manageable, teachable, comprehensible and usable,⁴⁰ both to the legal and the lay world, the purpose of this work, is to set in motion a course for the shifting perspective. Such a shift is informed by the need to reward the fruits of the author's labour as espoused by John Locke in his labour theory which is the

³⁸ David S Evans et al, *Invisible Engines; How Software Platforms Drive Innovation and Transform Industries* (The MIT Press 2006) 1-5. "It is argued that there are modern industries or innovations that rely totally on computer software for technological advancement."

³⁹ Reed (n 4). P 119; Wekesa (n 37). 'There is no clear legislation or policies on patenting e-commerce related innovations in many countries.'

⁴⁰ Jennings Roberts, in his foreword to Sands Philippe and Mackenzie Ruth, *Principles of International Environmental Law* (3rd Ed, Cambridge University Press 2012) xxi.

philosophy of the natural rights that ‘we all own the fruits of our labour.’⁴¹ As a result, such human creations ought to be afforded the highest possible level of protection. This is to enable the harmonious exploitation of the fruits of their labour and thereon spur inventions and innovations due to the prospect of gain and protection that patents afford. This theory is supported by economic analyses of intellectual property which view patent protection of software as promoting creativity by rewarding the creative authors while ensuring that the users have access to the works by way of disclosure in return for the patent.⁴² Safeguards in this manner prevent free riding by third parties.⁴³ The economic theory further postulates that property rights in creative works are instruments that help in the achievement of economically efficient allocation of information goods.⁴⁴

Application of these two theoretical treatises brings forth a case that maximises the overall social utility in the intellectual property market. While economic analysis has become useful in making the costs and benefits of intellectual property protection more explicit, it has not in practice proved any more effective than natural rights approaches e.g. in establishing clear legal limits for such protection. As such, the capabilities approach might help one to better determine the most appropriate balance in order to attain the desired innovation outcomes. The capabilities approach does not seek to dispel the economic understanding of law. It recognises the role of economic analysis but goes beyond economics to introduce additional values (values other than market based values). However, its main objectors claim that in some cases it might be too complex to be useful.

4.0 Applicable International Legal Rules

By dint of the constitutional provision that international laws shall be part of the laws of Kenya, the international legal and institutional framework

⁴¹ Asmamaw Fekadu, *Software Patents: Justifications and Arguments*, 9 June 2015, available at www.abbyssinialaw.com/blog-posts/item/1469-software-patents-justifications-a, accessed on 7th December, 2016.

⁴² Ouma Marisella, ‘The Role of Copyright in Economic Development: A Review from Kenya’ (2012) *NIALS Journal of Intellectual Property [NJIP]* 68.

⁴³ Ibid.

⁴⁴ Towse Ruth, *Creativity, Incentive and Reward: An Economic Analysis of Copyright and Culture in the Information Age* (Edward Elgar Publishing 2001) p 1-23.

in relation to intellectual property also form part of the laws of Kenya.⁴⁵ In this case, the Berne Convention for the Protection of Literary and Artistic Works,⁴⁶ which requires the member states to protect in an effective and uniform a manner as possible the rights of authors in their literary and artistic works.⁴⁷ The import of this preambular provision is that it suggests evidence of the concern the international community has placed on the realm of copyright and the desire to give it the best possible form of protection. Literary and artistic works are defined under the Convention to include every production in the literary, scientific and artistic domain.⁴⁸ This provision effectively brings the subject of software into the protection of this Convention.

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement sets out the minimum standards of intellectual property which members of the World Trade Organisation (WTO) are required to incorporate into their legal regimes to ensure compliance with the agreement.⁴⁹ It came into force on January 1, 1995.⁵⁰ The TRIPS Agreement incorporates the Berne Convention in terms of its article 9.⁵¹ Significantly, the stated objective of TRIPS is to incentivise creation and dissemination of information. It is in this regard that the most appropriate national legal protection regime for computer software should be one that seeks to exact balance desired by TRIPS. Indeed, article 1 of the TRIPS grants states the autonomy to design an implementation matrix as long as the chosen method of implementation does not contravene the agreement.

⁴⁵ The Constitution of Kenya (n 34), Articles 2 (5) and (6).

⁴⁶ Official Website, *WIPO-Administered Treaties, Contracting Parties - Berne Convention*, available at www.wipo.int/treaties/en/ShowResults.jsp?treaty_id=15, accessed on 22nd January, 2017. Entered into force on June 11 1993.

⁴⁷ Berne Convention for the Protection of Literary and Artistic Works of September 9, 1886, completed at Paris on May 4, 1896, revised at Berlin on November 13, 1908, completed at Berne on March 20, 1914, and revised at Rome on June 2, 1928, at Brussels on June 26, 1948, at Stockholm on July 14, 1967, and at Paris on July 24, 1971.

⁴⁸ Ibid, Article 2 (1).

⁴⁹ Kameri-Mbote Patricia, 'Community, Farmers' and Breeders' Rights in Africa: Towards a Legal Framework for *Sui generis* legislation' (2003) 1 The University of Nairobi Law Journal, 1.

⁵⁰ World Trade Organisation (WTO) website, Overview: the TRIPS Agreement (WTO 2015) available at: www.wto.org/english/tratop_e/trips_e/intel2_e.htm, accessed 22 January 2016; Gabriel Kitenga, *Introduction to Tax Law* (LawAfrica 2010) 22 accessed on 1st February, 2017.

⁵¹ Watal J, 'Intellectual Property Rights in the WTO and Developing Countries' (2001) 1 Kluwer Law International, 210.

Lastly, the World Intellectual Property Organisation (WIPO) Convention, a constituent instrument of the World Intellectual Property Organisation, was signed at Stockholm on July 14, 1967, entered into force in 1970 and was amended in 1979.⁵² WIPO, as an intergovernmental organisation, became in 1974 one of the specialised agencies of the United Nations system of organisations. WIPO's two main objectives are: to promote the protection of intellectual property worldwide and to ensure administrative cooperation among the Intellectual Property Unions established by the treaties that WIPO administers.⁵³ It provides a platform for the WTO to implement its policies and to carry out administrative duties aimed at fostering the protection of intellectual rights across the globe. In achieving these objectives, WIPO, undertakes a number of activities, including: setting of norms and standards for the protection and enforcement of intellectual property rights through the conclusion of international treaties, legal and technical assistance to States in the field of intellectual property, international classification and standardisation activities, involving cooperation among industrial property offices concerning patent, trademark and industrial design documentation, and registration activities, involving services related to international applications for patents for inventions and for the registration of marks and industrial designs and engages in collaborative effort with other institutions for the promotion of the desired goal. Recently, WIPO has been keen to push a development agenda that requires the protection of intellectual property should foster innovation for sustainable development.

5.0 The Kenyan Legal Regime

In Kenya, just like the world over, the creation of an adequate and effective legal protection system for computer programs has been a difficult process largely due to the novelty of the field.⁵⁴ As demonstrated earlier, a number of intellectual property rights regimes govern the area but at its core is copyright law with relatively narrow but rich and noble history.⁵⁵ As

⁵² World Intellectual Property Organisation, *Summaries of Conventions, Treaties and Agreements Administered by WIPO*, (2011) World Intellectual Property Organisation 6.

⁵³ *Ibid.*

⁵⁴ Swinson John, 'Copyright or Patent or Both: An Algorithmic Approach to Computer Software Protection' (1991) 5 *Harvard Journal of Law and Technology* 145.

⁵⁵ Robin Jacob et al, *Guidebook to Intellectual Property*, (5th Ed, 2004) 147.

originally intended, it was primarily for the protection of intellectual capital and to provide a legal foundation for the innumerable transactions by which owners of such capital are paid for their work; over time, however, it was soon applied to the computer and software industry.⁵⁶ Patents were never applied at the initial states and have remained controversial ever since.

5.1.0 The Constitution of Kenya, 2010

Fundamentally, the Constitution of Kenya, 2010 has captivated both the citizenry and jurists alike; it has been described as a transformative charter.⁵⁷ It establishes the basis on which every action can be exercised.⁵⁸ Integral to it is the bill of rights which provides the framework for social, economic and cultural policies.⁵⁹ In protecting the property of Kenyans, the state is mandated to afford protection to the intellectual rights.⁶⁰ This denotes a departure from the old dispensation where constitutional protection of property did not explicitly encompass intellectual property and now the idea of software protection can be duly discussed in the realm of human rights.⁶¹ Protection of intellectual rights and capital is cognisant of the fact that other powerful entities and persons other than the state can infringe on human rights.⁶² The thematic approach of the relationship between intellectual property and human rights has not only been ignored in Kenya but the world over.⁶³ Recently, the judiciary demonstrated its willingness to secure such accruing rights in the case of *Anne Nang'unda Kukali v Mary A. Ogola and another* where the court stated:

I am satisfied that the Applicant has shown that in the event of her original work being used by the 1st Respondent in her degree course approval, the Applicant

⁵⁶ Robin (n 46).

⁵⁷ *Speaker of the Senate & Another v Hon. Attorney-General & Another & 3 Others* [2013] eKLR par 51.

⁵⁸ The Constitution of Kenya (n 34) Article 2 (2).

⁵⁹ *Ibid*, Article 19.

⁶⁰ *Ibid*, Article 40, 260.

⁶¹ The Constitution of Kenya, 1963, s. 75 (The Repeal Constitution); Hoffmann Gretchen McCord, *Copyright in Cyber Space 2: Questions and Answers for Librarians* (Neal-Schuman Publishers 2005) 17;

See also The Constitution of the United States of America, Art 1, s. 8, Clause 8.

⁶² See Oduor Maurice, 'On the Tripartite Nature of Human Rights: A Reply to a Reply' (2014) 1, *The Journal of Law and Ethics* 99.

⁶³ Helfer R. Laurence and Austin W. Graeme, *Human Rights and Intellectual Property: Mapping the Global Interface* (Cambridge University Press 2012) 1.

is likely to suffer substantial loss due to violation of her intellectual rights. A prima facie case has been made by the Applicant which justifies the granting of the orders sought. The application is meritorious and I allow it as prayed with costs to the Applicant.⁶⁴

The foregoing decision discussed in the context of the constitutional guarantee of human rights demonstrates the fact that the courts have an elevated function in terms of constitutional guarantees and giving it a generous and purposive interpretation.

5.2.0 The Copyright Act No. 12 of 2001

The Act classifies a computer program as a literary work and defines it as ‘a set of instructions expressed in words, codes, schemes or in any other form, which is capable, when incorporated in a medium that the computer can read, of causing a computer to perform or achieve a particular task or result.’⁶⁵ Copyright in such a program subsists automatically and there is no formal requirement for registration for its validity other than for evidentiary purposes.⁶⁶ The definition of computer software rendered by the Copyright Act is wide enough to cover both the ‘object code’ and the ‘source code’.⁶⁷ Such protection has been faulted by technologists and jurists alike for protecting only from literal copying as it bars copying of non-literal elements such as the program’s structure or “outlook and feel”. Critics have argued that, such protection leaves the most critical innovations in the programs’ behaviour unprotected and fails to provide sufficient incentive for investment in software development.⁶⁸ This challenge is equally pronounced and is not adequately addressed in Kenyan law. The nature of digital technologies is indicative of its vulnerability that the copyright regime is incapable of curing. Such a premonition raises the question of whether the legal regime is realistically capable of securing the interests of software developers and users as envisioned in the claim that

⁶⁴ (2010) eKLR.

⁶⁵ The Copyright Act, s 2.

⁶⁶ Wekesa (n 37) 115.

⁶⁷ Cotter (n19), p 75.

⁶⁸ See Burk L Dan, ‘Patenting Speech’ (2000) 79 Texas Law Review 99; Koepsell R David, ‘The Ontology of Cyberspace: Law Philosophy and the Future of Intellectual Property’ (2000) 14 Harvard Journal of Law and Technology 325.

what is worth copying is *prima facie* worth protecting.⁶⁹ The development of digital technology has greatly impacted the regime of copyright and hence the concern on the level of protection by copyright.⁷⁰ Consequently, it has dawned that copyright cannot protect computer software from practices like reverse engineering which make copyright restriction circumvention possible and thereby disadvantaging the legitimate owner of the software.⁷¹ However, such flexibilities as the freedom to invent around an invention or reverse engineer can be beneficial to society as they facilitate transformative creations.

Further, the Act espouses a teleological aspect in its broad definition of a computer as an electronic or similar device having information processing capabilities.⁷² This somewhat sweeping definition can be taken to mean the wide array of telecommunication devices in the wake of micro and sensory computing manifested in mobile telephony, smartphones and the ever-fascinating era of personal computer and the internet. This definition read together with that of the computer program earlier defined, effectively divides the program into the process and the final result and, therefore, the dilemma of the subject of protection, expression of the idea or the idea itself constituting the process. The integral part of the software is the code which is the idea and not the expression of the idea in the outlook and feel of the software. This then reveals the inadequacy of copyright to protect the code that is fed into the computer to produce the desired result because it constitutes the idea and not the expression of the idea.⁷³

An interesting phenomenon is, however, alluded to by section 26(3)-(6). In the preceding provisions, in relation to other literary and artistic works, the case of fair dealing seems to be absolute, subject only to sufficient acknowledgment of the author.⁷⁴ On the anti-thesis, however, the case is different as it suggests an intention to afford computer programs a different level of protection. Further, in the spirit of collective management, the Act recognises the existence of software organisations and their right to sit on the board responsible for the streamlining of intellectual capital in copyright.⁷⁵

⁶⁹ *University of London Press Ltd v University Tutorial Press Ltd* (1916) 2 Ch 601.

⁷⁰ Mambi (n 2), p 199.

⁷¹ *Ibid* p. 167.

⁷² The Copyright Act (n 26).

⁷³ *Sega Enterprises Ltd v Richards* (1983) FSR 73.

⁷⁴ The Copyright Act (n 26), s. 26 (1), (2).

⁷⁵ *Ibid*, ss 3, 6.

While this may be speculated as inherently prophetic as to the status of software in the future constituting its own empire, it is hardly sufficient to clothe it with special quality. Additionally, with the advancement of technology in the digital age, mechanisms embodying the latest developments in digital technology are being created to form the infrastructure for electronic copyright management.⁷⁶ The question as to whether this will culminate in the acceptance of software patents is still grey.

Lastly, it is noteworthy to observe that the Kenyan law on copyright enacted in 2001, is fairly new and it is based on international standards evolving fast in the institutional framework.⁷⁷ It has come up with laws that are based on international conventions, treaties, protocols, etc and, therefore, do not reflect the local conception due to external pressure.⁷⁸ Consequently, Kenya was pressured to come up with laws but not policies. It was not until early 1990s that discussions regarding the policy on IP began.⁷⁹ This means that the laws developed were not linked to policies guiding the development of the country.⁸⁰ It is then upon this ground that it is ripe to rethink the software policy applicable in Kenya and the possibility of incorporating a more robust protection measure i.e. through patents or incorporating patents and copyright in protecting different software components.

5.3.0 The Industrial Property Act, 2001

The Act provides for the promotion of inventive and innovative activities, facilitation and acquisition of technology through the grant and regulation of patents, utility models, technovations and industrial designs.⁸¹ To effect that, it establishes the Kenya Industrial Property Institute⁸² and bestows upon it the function of considering applications and granting industrial property rights; screening technology transfer agreements and licences; providing to

⁷⁶ World Intellectual Property Organisation (WIPO), *Intellectual Property Handbook, policy, law and use*, (WIPO 2004, second edition, reprinted 2008), 388.

⁷⁷ Wekundah M. Joseph, 'A Study on Intellectual Property Environment in Eight Countries: Swaziland, Lesotho, Mozambique, Malawi, Tanzania, Uganda, Kenya and Ethiopia' (2012) African Technology Policy Studies Network, Working Paper Series No 66, 29.

⁷⁸ Wekundah (n 68).

⁷⁹ Ibid.

⁸⁰ Ibid.

⁸¹ Industrial Property Act (n 32), preamble.

⁸² Ibid, s 3.

the public, industrial property information for technological and economic development; and promoting inventiveness and innovativeness in Kenya.⁸³

Under the Act, innovation is defined as a new and useful art (whether producing a physical effect or not), process, machine, manufacture or composition of matter which is not obvious, or any new and useful improvement thereof which is not obvious, capable of being used or applied in trade or industry and includes an alleged invention.⁸⁴ Conditions for patentability are that it must be new, involve an inventive step, and is industrially applicable or is a new use.⁸⁵ Undoubtedly, computer software programs qualify as patentable per se as some espouse all the requirements for grant of patent. However, the Act specifically excludes certain creations from patentability. These include discoveries, scientific theories and mathematical methods; schemes, rules or methods for doing business, performing purely mental acts⁸⁶ or playing games; methods for treatment of the human or animal body by surgery or therapy, as well as diagnostic methods practised in relation thereto, except products for use in any such methods; mere presentation of information; and public health related methods of use or uses of any molecule or other substance whatsoever used for the prevention or treatment of any disease which the Minister responsible for matters relating to health may designate as a serious health hazard or as a life threatening disease.⁸⁷ These exclusions might be explained and justified on the basis of the compelling social need to take into account broader public interests.

The import of the above exception is that it specifically eliminates computer software that performs mental tasks from patentability. Akin to this is the case of Raytheon Co's Application⁸⁸ where patent to computer software was denied simply because it performed mental tasks. The fact that it was used to identify ships by comparing the silhouette of an unknown ship with the databases of ship's silhouettes was held to be a mental task similar to that of the human mind even though it used algorithms and performed it in a totally different way.

⁸³ Ibid, s 5.

⁸⁴ Ibid, s 2.

⁸⁵ Ibid, s 22.

⁸⁶ See *Re The Computer Generation of Chinese Characters* (1993) FSR 315.

⁸⁷ Industrial Property Act (n 32), s. 21 (3).

⁸⁸ *Raytheon Co's Application* (1993) RPC 427.

From the above provisions of the Act, it is clear that patentability of software faces innumerable challenges. Historically, software patents were exclusively outlawed from patentability by statute.⁸⁹ The position has not changed much since some of the processes that computer software performs are still within the exclusion of the Act, which then raises the concern whether the much anticipated idea of software patents as a viable option for Kenya is forthcoming.

5.4.0 Other Relevant Statutes

5.4.1.0 The Anti-counterfeit Act

The Anti-counterfeit Act which seeks to combat trade in counterfeits in Kenya⁹⁰ also affects the software industry. Today, even government entities use counterfeit software.⁹¹ Counterfeiting is defined under the Act to include imitation of the original brand, packaging in misleading brands and producing unauthorised copies.⁹² Software is prey to a number of these counterfeiting challenges, especially the making of unauthorised copies. This not only has the effect of depriving the genuine software owners of their economic privilege but also exposes the users of the software to vices in the cyberspace like cybercrime and related crimes. In Kenya, this problem is majorly attributed to the weak package of laws surrounding the software protection platform.⁹³ This Act, however, is not directly connected and neither does it have a direct bearing on the issue of software patents. It only seeks to enforce the applicable law that subsists in the form of software copyright. The efforts of such anti-counterfeit bodies can be made possible and effective if the necessary protection mechanisms are put in place to promote their fight against counterfeiting. Once the option of software patents is availed, anti-counterfeit agencies can carry out awareness to ensure that software developers maximise the use of their software and effectively protect it from counterfeiting.⁹⁴

⁸⁹ See The Industrial Property Act, 1990, (Repealed by Industrial Property Act, No 3 of 2001) s 6.

⁹⁰ Anti-Counterfeit Act, 2008, preamble.

⁹¹ Wekesa (n 37) p. 211; Ngugi Brian, Software Piracy in Kenya Costs Sh 12.8 Billion; The Kenya Copyright Board Says that Illegal Installations in the County stand at a staggering 78 Pc, *Business Daily*, 7 April, 2016.

⁹² *Anti-Counterfeit Act* (n 81), s. 2.

⁹³ Ngugi (n 82).

⁹⁴ *Anti-Counterfeit Act* (n 81), s. 4.

5.4.2.0 The Competition Act

The Competition Act, 2010, was established to safeguard and promote competition in the national market and to protect customers from misleading market conduct as well as to establish the necessary institutional framework.⁹⁵ This Act has some desirable features that can be used to foster competition which include the aspect of extraterritorial application.⁹⁶ The enforcement of such elaborate apparatus set out in the Act is, however, hampered by the inadequacies of copyright law and perhaps patents might give an easier avenue for enforcement of competition laws as espoused in the Act.

5.4.3.0 The Trademarks Act

Trademark is equally available for those who want to register marks associated with their products and services.⁹⁷ The main purpose of trademark law is to serve as an indicator of trade origin, thus, business goodwill and reputation is protected but this has a secondary effect of protecting the buying public from deceptive practices.⁹⁸ The law of passing off is also instrumental in the protection of computer programs and software from illegal copying or exposure to trade in counterfeits. However, this is subject to the proof of goodwill in the product.⁹⁹ In registering a trademark, the owners of the software will have evidentiary leverage in instances of passing off or counterfeiting of the product. Registration requirements are provided for under section 12 of the Trademark Act. In conclusion, the regime of trademarks would offer a comprehensive way of protecting computer products only in reference to the problems of public confusion and counterfeiting.

6.0 Comparative Jurisprudence

The longest standing, best known and arguably economically most valuable form of protection of rights provided by the law of intellectual property comes in the form of patents.¹⁰⁰ Such developments have been sustained

⁹⁵ See Competition Act No. 12 of 2010, preamble.

⁹⁶ Ibid, s.6.

⁹⁷ The Trademark Act, Cap 506, see the preamble, s. 2.

⁹⁸ Bainbridge (n5), p. 12.

⁹⁹ Bainbridge (n5).

¹⁰⁰ Torremans Paul, *Holyoak and Torremans Intellectual Property Law* (6th Ed Oxford University Press 2010) 14.

and developed worldwide over a very long period of time.¹⁰¹ However, in relation to software, the world outlook is still varied and controversial. This is illustrated by the fact that there have been varied outcomes of litigation across the globe and mixed feelings on when patents can be granted. The global perception, however, has changed as espoused in *Aerotel v Telco*¹⁰² in which, in the words of Lord Justice Jacob, the court demonstrated the willingness of the United States authorities to grant patents for software-related innovations and thereby ushering an ‘arms race in which the weapons are patents’.¹⁰³ Indeed, the acceptance of software patents has been treated differently in jurisdictions including the United States, Japan and the United Kingdom.

The first United Kingdom cases involving the eligibility of software-related inventions for patent protection arose under the Patents Act, 1949.¹⁰⁴ The Genentech Inc’s Patent¹⁰⁵ case demonstrated a move from initial judicial hostility to acceptance of the need for and desirability of bringing the embryonic software industry within the scope of the patent system.¹⁰⁶ Incidentally, however, it is noteworthy that the United States, generally regarded as the jurisdiction most friendly towards issuing patents for software-related inventions - the patent law in force dates back to 1952 and is based upon similar principles as those found in the United Kingdom’s Act of 1949.¹⁰⁷ The cold attitude in the UK in relation to software has since subsided as espoused by later decisions as in the case of International Business Machines Corp’n’s Application¹⁰⁸ that readily granted patents to computer software.

In the United States in the 1970s, the Supreme Court twice examined whether inventions containing computer software were patentable, but both times, the Supreme Court answered in the negative.¹⁰⁹ In *Gottschalk v. Benson*,¹¹⁰ the Supreme Court struggled with the question of whether an

¹⁰¹ Ibid, p 42.

¹⁰² *Aerotel v Telco* (2006) ECWA Civ 1371.

¹⁰³ Ibid.

¹⁰⁴ Lloyd Ian J, *Information Technology Law* (6th Ed Oxford University Press 2011) 306.

¹⁰⁵ *Genentech Inc’s Patent* (1989) RPC 147.

¹⁰⁶ Lloyd (n 104), 306- 307.

¹⁰⁷ Ibid.

¹⁰⁸ *International Business Machines Corp’n’s Application* (1980) FSR 654.

¹⁰⁹ Bitlaw, *The History of Software Patents: From Benson, Flook, and Diehr to Bilski and Mayo v Prometheus* available at www.bitlaw.com/software-patent/history.html, accessed on 16th February, 2016.

¹¹⁰ (1972) 409 U.S. 63.

algorithm to convert binary-coded decimal numbers into true binary numbers was considered patentable.¹¹¹ The Court felt that a patent on this concept would pre-empt the entire mathematical algorithm.¹¹² Since mathematics could be considered an abstract idea, which is generally not patentable, the Supreme Court held that the algorithm in question was not patentable.¹¹³ This position then took root and was subsequently applied in cases like *Parker v Flook* and was applied in a way to defeat the idea of software patents. This position, however, did not apply for long. Soon it was overturned by the advancement of technology. The breakthrough came in the case of *Diamond v Diehr*¹¹⁴ where the court said that ‘[b]ecause we do not view respondents’ claims as an attempt to patent a mathematical formula, but rather to be drawn to an industrial process for the moulding of rubber products, we affirm the [validity of the patent].’¹¹⁵ This decision ushered in the regime of patenting software and other information technologies making software a subject of patentability.

Amazingly, the US statutory regime contains no reference to computer programs and the approach taken by the US Patent and Trademark Office and the US Federal courts has fluctuated somewhat over the years.¹¹⁶ Even though there exists bars to what is patentable, the current position in the United States is to exclude only a narrow range of claims from patentability.¹¹⁷ These exclusions, however, have been watered down by the courts in subsequent decisions and now there exists a thin sheet of restrictions.¹¹⁸ That being the position, it must be borne in mind also that in the United States there are no statutory exclusions to worry about, let alone one for computer programs.¹¹⁹ This is probably the main reason why the scope of what is patentable in the United States is wider in many aspects than in Europe and other jurisdictions across the globe.¹²⁰

¹¹¹ Ibid.

¹¹² Ibid.

¹¹³ Ibid.

¹¹⁴ (1981) 450 US 175.

¹¹⁵ Ibid.

¹¹⁶ Reed (n 4).

¹¹⁷ Ibid.

¹¹⁸ *In Re Bilski* (Fed Cir 2008) 545 F 3d 943; see Julie E Cohen & Mark A Lemley, ‘Patent Scope and Innovation in the Software Industry’ (2001) 89 California Law Review, 1.

¹¹⁹ Reed (n 4), 139.

¹²⁰ Ibid.

Notable on the Japanese front, is the liberal approach of what is adopted as invention and what is patentable. This has exalted it to the global limelight in the realm of software protection.¹²¹ Majorly, the development or the improvements of methods of protection of technology by countries have been geared towards protecting their companies and fostering the advancement of technology and striving towards global domination and economic viability.¹²² A case in point is *Matsushita v Justsystem*¹²³ which dealt with the elusive issues of indirect infringement, inventive step and prior art search.¹²⁴ Matsushita Electronic Industrial Co. Ltd., a large multinational manufacturer of electronic products, components and parts, was granted a patent for an invention known as the ‘help function’, which claims that the user can drag and drop an icon to receive on screen instructions.¹²⁵ Matsushita then filed a case of infringement against the Justsystem and another company Sotec Company Ltd who objected claiming it lacks the inventive step and prior art.¹²⁶ The court decided that ‘a computer on which Justsystem’s products are installed’ satisfies the constituent features of the invention described and hence constitutes an invention of a process.”¹²⁷ It also found that Justsystem was not liable for indirect infringement under Patent Law Article 101(4) that stipulates that the “act of producing, assigning, etc. any product” constitutes patent infringement when the process described in the invention can be worked using the said product, because Justsystem was manufacturing and selling only Justsystem’s products used for manufacturing personal computers rather than manufacturing or selling said computers themselves.¹²⁸

Such expanded scope of patentability shows that from comparative jurisprudence, there is a great deal of advancement as opposed to the Kenyan conception where even by statute, some aspects of the software are still locked away from the subject of patentability.

¹²¹ Hamilton L Pamela, ‘Protections for Software under US and Japanese Law: A Comparative Analysis’ (1984) 7 Boston College International & Comparative Law Review 2, 353-354.

¹²² Ibid.

¹²³ *Justsystem Corporation v. Matsushita Electric Industrial Co.* (2005) Heisei 17 (NE) 10040.

¹²⁴ Ibid.

¹²⁵ Ibid.

¹²⁶ Ibid.

¹²⁷ Anne Nang’unda (n 55); *ibid.*

¹²⁸ Ibid.

7.0 Conclusion and Recommendations

7.1.0 Conclusion

From the foregoing exploration of the idea of software patents, it is clear that while software patents are becoming acceptable, copyright law reigns supreme. Further, with the advancement of technology, there have emerged other forms of technological developments. Such concepts include biotechnology and nanotechnology that operate using very complex pieces of robotic machinery that perform remote surgery and involve the coordination of numerous complex functions that are controlled by sophisticated software.¹²⁹

Consequently, copyright law might be inadequate and/or ineffective. Patent or a *sui generis* regime could offer more appropriate alternatives to foster innovation that is beneficial to the society. Not only is the duration for patents shorter, patents do not suffer from the idea-expression dichotomy difficulties. Trade secrets protection would inhibit transfer of information and as a common law concept is difficult to prove.¹³⁰ However, the concept of a criterion for determining what is patentable in software is still alien and calls for a proper delimitation on what constitutes patentable software. This will instil certainty and encourage the formation of a definite instrument of protecting software. The delimitation of the criterion should be guided by the stated objective of fostering innovation for the overall social utility.

7.2.0 Recommendations

This study recommends that the intellectual property framework in Kenya should be changed to include computer programs and software as unequivocally patentable. On the other hand there is the concept of developing a *sui generis* right for protection of software as suggested by WIPO. In Kenya, this can be achieved by borrowing from the American and the Japanese models that embody a liberal aspect of software as a subject of patentability. In line with that, policy and legal guidelines should provide a certain and definite criteria of what should be considered patentable software. Such arrangements will go a great way to create a conducive environment for securing the desired human rights and sustainable development outcomes.

¹²⁹ Boucher M. Patrick, *Nanotechnology: Legal Aspects* (CRC Press 2008) 127.

¹³⁰ *Kewanee Oil Corp vs Bicron Corp*, 416 [1973] US 470, 481; Szabo HK, 'International Protection of Computer Software: The Need for *sui generis* Legislation' (1986) 8 *Loyola of Los Angeles International and Comparative Law Review* 511, 526.