

COMPARATIVE PERSPECTIVES TO PATENTABILITY OF SOFTWARE INVENTIONS IN AFRICA

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Abstract

The world is fast going digital, whereby technology has permeated every sphere of life including inventions. Technological applications, artificial intelligence, blockchain have had great impact on intellectual property requiring protection for this computer-based invention. Patent is one of the rights provided by Intellectual Property giving the patent owner the exclusive rights over his inventions. This study will give a comparative analysis to the patent laws in Africa with a focus on Nigeria, South-Africa and Ghana to examine what is considered inventions that are not patentable and inventions that are patentable. It particularly considers how their laws regard software inventions. Are they inventions? If they are, are they patentable? A comparative analysis was done by considering jurisdictions with best practices like the USA and Japan. A doctrinal research design which is adopted from a qualitative approach of research is used to carry

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out this study. The Primary sources includes, Patent Laws of the various countries and The Agreement on Trade Related Aspect of Intellectual Property Rights (TRIPS) which will be analyzed. Secondary sources from journal articles, and research papers obtained from public, private and electronic libraries, as well as online materials, will also be examined. It is the finding of this research that Patent Laws in Africa as it is can accommodate the patent of Software Inventions. There is however, a need to amend the Patent Laws to meet with the times driven by technological inventions. This will enable Africa benefit economically from the wealth of technological and software-based inventions.

Keywords: Software Inventions, Patent, Africa, Software Applications, Computer programs.

1.0 Introduction

Applications for software are constantly being created to address a wide range of issues in messaging, manufacturing, financial services, payment systems, and other fields.¹ People can now speak with relatives and business associates who live thousands of kilometres apart, thanks to software programs. Software applications are also becoming a major player in the IT sector. In Nigeria, the information and communication technology sector contributed 13.23% of the country's total nominal GDP in the first quarter of 2023, up from 10.42% in the previous quarter and 10.55% in the same quarter of 2022.²

¹ Ife Ogunfuwa, 'Nigeria's software industry in need of government boost', Punch NG, 28 April 2019, <<https://punchng.com/nigerias-software-industry-in-need-of-government-boost>> accessed 23 April 2024.

² National Bureau of Statistics, 'Nigerian Gross Domestic Product Report Q1 2023' NBS May 2023.

Blockchain technology, robotics, artificial intelligence, digital assets, and other recent technical advancements have mainly concentrated on software applications. The potential for software theft, counterfeiting, and piracy still exists despite its growing significance in the fourth industrial revolution. Therefore, it is necessary to investigate how software protection works as an intellectual property (IP) right in Africa, specifically in Nigeria, Ghana, and South Africa.

Consequently, this article looks at whether software creations can be patent protected. It does this by analysing the Patent and Designs Laws and highlighting the requirements for patentability as well as the types of inventions that are denied patent protection. The patentability of software inventions was also investigated in other jurisdictions that exhibited best practices, such as the United States, the United Kingdom, China, and Japan.

2.0 Discussions

2.1 Conceptual Clarification

2.1.1 Inventions

An invention is a new product or process that solves a technical problem. This is different from a discovery, which is something that already existed but had not been found.³

An Invention is any process (way of doing or making things), machine, manufacture, design, or composition of matter, or any new and useful improvement thereof, or any variety of plant, which is or may be patentable under the patent laws... ⁴

³ World Intellectual Property Law. 'Learn from the past create the future: Inventions and Patents' WIPO Publication No. 925E September 2010 edition.

⁴ Loma Linda University Research Affairs, 'What is an Invention?' <https://researchaffairs.llu.edu/technology-transfer/what-is-an-invention> accessed 28 April 2024.

2.1.2 Computer Software

Computer software is a program that enables a computer to perform a specific task, as opposed to the physical components of the system (hardware).⁵ The software consists of the entire set of programs, procedures, and routines associated with the operation of a computer.⁶

Computer Software refers to programs and procedures that manage and carry out a computer's functions. It consists of computer programs such as the operating system, applications, and utilities. Software falls into two primary categories: System Software and Application software. While application software, like word processors and games, handles specialized tasks for the user, system software, like the operating system, regulates the computer's fundamental operations.⁷

2.1.3 Patent

A formal document issued by the government to an inventor is called a patent. Generally speaking, this document grants the inventors the right to prevent unauthorized use, duplication, distribution, or sale of their innovation. Intellectual property, which includes patents, is a legally recognized means of safeguarding any works of human creativity.⁸

⁵ New World Encyclopedia, <https://www.newworldencyclopedia.org/entry/Computer_software> accessed 28 April 2024.

⁶ Britannica, Software <<https://www.britannica.com/technology/software>> Accessed 23 April, 2024.

⁷ Nessar Uddin, 'What is Computer Software' 2023 <https://www.researchgate.net/publication/367335862_What_is_computer_software> accessed September 4 2024.

⁸ World Intellectual Property Law, 'Learn from the past create the future: Inventions and Patents' WIPO Publication No. 925E September 2010 edition.

An innovation, a product, or a method that gives a fresh approach to an old problem or a novel technical solution is entitled to a patent, which is an exclusive right.⁹ After receiving an application detailing the amount of intellectual property that is possessed and wants to be protected, the government grants patents. The statutory inventor is the one who is entitled to a patent for an invention.¹⁰

2.2 Patents Law Protection in Nigeria

The Patent and Designs Act¹¹ is the legislation that governs patents in Nigeria. According to the Act, an invention can be patented if it originates from inventive activity, is new or improves upon an existing invention, and has the potential for industrial use.¹² A patent could be granted for the invention in cases where these conditions are met. The Act also states inventions that are excluded from patent and they include plant and animal varieties, biological process, inventions contrary to public morality and discoveries of scientific nature.

Section 1 *Patent and Designs Act 1971* states:

1. (1) ...an invention is patentable-
 - (a) if it is new, results from inventive activity and is capable of industrial application; or (b) if it constitutes an improvement upon a patented invention and also is new, results from inventive activity and is capable of industrial application.
- (4) Patents cannot be validly obtained in respect of-

⁹ WIPO, Patents <<https://www.wipo.int/patents/en/>> Accessed April 23, 2024

¹⁰ s 2 of the Patent and Designs Act

¹¹ 1971, Cap P2 Laws of the Federation of Nigeria, LFN, 2004

¹² s 1 of the Patent and Designs Act

- (a) plant or animal varieties, or essentially biological processes for the production of plants or animals (other than microbiological processes and their products); or
- (b) inventions the publication or exploitation of which would be contrary to public order or morality (it being understood for the purposes of this paragraph that the exploitation of an invention is not contrary to public order or morality merely because its exploitation is prohibited by law).

(5) Principles and discoveries of a scientific nature are not inventions for the purposes of this Act.

The question then arises whether software-based inventions are patentable under Nigerian law?

2.2.2 Patentability of Software-Based Inventions in Nigeria

By law, computer programs are registrable as patents once the earlier listed patentable conditions are satisfied.¹³ Computer programs are protected by copyright as literary works under Nigerian law, however patent are useful for the protection of the software's functional components. The Patents and Designs Act's (PDA) section 6(1)(b) states that a process may be the subject of a patent application, and the patent holder is entitled to prevent others from using the process in relation to a product that was made directly using the technique. Software's functional components can therefore be filed as a patentable process.¹⁴

¹³ Damilola Salawu & Ors, 'Protecting Intellectual Property Rights In A Software: A Jurisdictional Analysis' 2019 accessed at <<https://www.olaniwunajayi.net/blog/wp-content/uploads/2019/05/Protecting-Intellectual-Property-Rights-in-a-Software.pdf>>

Accessed April 23, 2024

¹⁴ Omulomo Adefe, 'Right to Patent software-based inventions' *Mondaq* 2023.

However, software must meet the criteria of novelty, originate from inventive activity, and be capable of industrial application in order to qualify as a patentable process. Article 27(1) of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) which Nigeria is a signatory to, stipulates that inventions in all domains of technology, whether they be products or processes, should be eligible for patent protection as long as they are new, involve an inventive step and have the potential for industrial use. Software in general cannot be excluded from patentability under the TRIPS agreement. Thus, under the PDA, software-based inventions may be registered as processes.

Many legal professionals, however, believe that Nigerian Patent Registry currently refuses to register software applications as a patent. Although, Software has become a technological tool used to augment business processes, the Registry does not consider software eligible.¹⁵ One of the explanations provided by the Nigerian Patent Registry for their refusal to accept patent applications for computer-implemented or software inventions is that the Nigerian Legislature did not anticipate for software patent registration when they enacted the Patents and Designs Act.¹⁶

2.3 Patent Act of Ghana 2003 Act 657

Patent in Ghana is governed by Patents Act, 2003 (Act 657), as amended by the Patents (Amendment) Act, 2020 (Act 1060) and the Courts Act, 1993 (Act 459).

Section 1 of the Act states:

- (1) Patent means the title granted to protect an invention.

¹⁵ Florence Bola-Balogun & Davidson Oturu, 'Protecting Software as Intellectual Property Rights in Nigeria' AELEX 2020 <<https://www.aalex.com/wp-content/uploads/2020/01/Protecting-software-as-intellectual-property-rights-in-Nigeria.pdf>> accessed 20 July 2024.

¹⁶ Ayodele And Damola, 'Patentability of Inventions under the Nigeria's Patents and Designs Act: An Examination' NAUJILJ 8 (2) 2017.

(2) Invention means an idea of an inventor which permits in practice the solution to a specific problem in the field of technology.

(3) An invention may be, or may relate to, a product or a process.

Section 2—Matter Excluded from Patent Protection.

(a) discoveries, scientific theories and mathematical methods;

(b) schemes, rules or methods for doing business, performing purely mental acts or playing games;

(c) methods for treatment of the human or animal body

...

(d) inventions, the prevention within the country of the commercial exploitation of which is necessary to protect public order or morality, which includes:

(i) the protection of human, animal or plant life or health; or

(ii) the avoidance of serious prejudice to the environment; if the exclusion is not made

because the exploitation is prohibited,

(e) plants and animals other than micro-organisms;

(f) biological processes for the protection of plants or animals other than non-biological

and micro-biological processes; and

(g) plant varieties.

Section 3—Patentable Inventions.

(1) An invention is patentable if it is new, involves an inventive step and is industrially applicable.

However, in spite of the fact that there have been legislative interventions for patents for over three decades now, some authors are of the opinion that there has been no significant development in the patent system. registration and enforcement of rights continue to lack behind other Intellectual

Property rights such as trademarks and copyrights.¹⁷ An invention is patentable in Ghana if it is new, involves an inventive step and is industrially applicable on the other hand, the Patents Act excludes some inventions from the grant of patent.

These include:

- (i) discoveries, scientific theories and mathematical methods;
- (ii) methods for conducting business or playing purely mental games; and
- (iii) inventions contrary to public policy and morality.¹⁸

The provisions of the Patent Act of Ghana as it is can accommodate the patent of software inventions as it was not specifically excluded from patentability. Software Inventions can also be patented as a process because an invention in section 1(3) refers to either a product or a process. However, at the time of this research, no information was found as to the approach of Ghana Patent office towards patent of software inventions. Neither has the court made any pronouncement concerning patent of software inventions.

2.4 Patentability of Computer Programmes in South-Africa

In South Africa the legal position regarding the protection of computer software is uncertain and also widely debated. The patent law is currently regulated by the *Patents Act 57 of 1978* amended in 1988.

Section 25 of the Patents Act states that:

- (1) A patent may, subject to the provisions of this section, be granted for any new invention which involves an

¹⁷ Eunas Koffi Eshun & Others, 'Patent Law & Regulations Ghana' 2023 <<https://iclg.com/practice-areas/patents-laws-and-regulations/ghana>> accessed September 4 2024.

¹⁸ Aelex, 'Tech Start-Up Companies Tool Kits Ghana' 2024 <<https://www.aelex.com/techstart-up-companies-tool-kits-ghana/>> accessed September 4 2024.

inventive step and which is capable of being used or applied in trade or industry or agriculture.

(2) Anything which consists of—

(f) a program for a computer; or ...

shall not be an invention for the purposes of this Act.

(3) The provisions of subsection (2) shall prevent, only to the extent to which a patent or an application for a patent relates to that thing as such, anything from being treated as an invention for the purposes of this Act.

It appears from reading section 25(2) that patent protection does not extend to computer software. Subsection (3), on the other hand, seems to indicate that the Patents Act's exclusions are not unqualified. Positively expressed, the clause provides that computer software can be eligible for patent protection provided that the software itself is not the subject of the patent.¹⁹ Therefore, it would appear that a computer program may be patentable if it makes a technological addition to the art that is novel, inventive, and has an industrial application with the possible exception of the portion that pertains to a computer program specifically. As such, it would be appropriate to look into the meaning of the phrase 'as such' in the Act.²⁰

The South African courts have not yet rendered a decision on the subject. Nonetheless, the courts will look to international case law because there isn't any precedence in South Africa. The majority of US and European case law has determined that computer software is patentable.²¹ The object and source code of computer programs can be protected by copyright in the majority of nations, including South Africa. Some jurisdictions patent

¹⁹ DTI, 'Inventing the future: An Introduction to Patents for Small & Medium-sized Enterprises' Intellectual Property for Business Series ¾ 2018.

²⁰ *Ibid.*

²¹ For more information on the patentability of computer software in other countries, contact the relevant national or regional patent office (see www.wipo.int/directory/en/urls.jsp).

software inventions like the United States and China. These countries will be considered next.

2.5 Best-Practices on the Patentability of Software-Based Inventions

In the United States of America, software-based inventions are patentable. They must, however, fulfil certain technological requirements, such as enhancing computer capability, streamlining the computer's overall operation, and resolving an odd computing conundrum.²² The software patent application must also fulfil one of two requirements: either the invention must be substantially more than an abstract concept, or if the idea is abstract, it must have additional components that convert the concept into a patentable application.²³ The court developed the two-step process for figuring out whether a certain piece of software is patentable, as stated in *Alice v CLS Bank*.²⁴ Three categories of software, however, are not patentable. They consist of abstract ideas, scientific laws, and algorithms.

In the United Kingdom, new and creative software that can be employed in industry may be eligible for patent protection.²⁵ Software and computer programs are not protected by patents under the *UK Patents Act 1977*, although they may still be issued if an evaluation of their novelty reveals a technical advancement above existing knowledge.²⁶ Patent in China is governed by Patent Law of the People's Republic of China (Revised in

²² Outlier Patent Attorneys, 'Is Software Invention Patentable in the United States' 2024 <<https://outlierpatentattorneys.com/software-patents>> accessed September 4 2024.

²³ *Ibid.*

²⁴ *Alice Corp. v. CLS Bank International* 134 S. Ct. 2347 (2014),

²⁵ Bisola Scott, Intellectual Property Protection for Software Rights in Nigeria https://spaaajibade.com/intellectual-property-protection-for-software-rights-in-nigeria/?utm_source=mondaq&utm_medium=syndication&utm_term=Intellectual-Property&utm_content=articleoriginal&utm_campaign=article#_ftn28 Accessed April 20, 2024

²⁶ 'Patent Protection for Software in the UK – A Practical Approach' <https://www.elkifice.com/news-and-views/2016/03/02/software-patents-in-the-uk>, accessed on April 25, 2024.

2020). In China, software applications that accomplish a technical effect, adopt a technological measure, or solve a technical problem are patentable.²⁷

Computer programs are referred to as patentable subject matter under *Article 2(3)(i) of the Japanese Patent Act*. According to the Act, in order for the claimed subject matter to be eligible for patent protection, it must be acknowledged as a ‘creation of technical ideas utilizing the law of nature.’ A claim for a software-related creation must show that software and hardware resources cooperate in order to be eligible for a patent award, according to the Japan Patent Office’s Examination Guidelines.²⁸

3.0 Summary of Findings

3.1 Arguments for and Against the Patentability of Software Inventions

There have been arguments for and against the patentability of software inventions. Some arguments against the patentability of software inventions include:

i. Inability to determine novelty

It is stated that a computer program cannot contain absolute novelty, because so many software programs are generated each year. Therefore, the state of the art would virtually always exclude new software from meeting the statutory criteria of absolute novelty.²⁹ The Patent Office might not be

²⁷ Li Hui, ‘Patent eligibility for software in China’ <https://www.vantageasia.com/china-patent-eligibility-software/>, accessed April 22, 2024.

²⁸ WIPO. Patent Protection for Software-Implemented Invention https://www.wipo.int/wipo_magazine/en/2017/01/article_0002.html Accessed April 25, 2024.

²⁹ T Pistorius, ‘The Copyrightability and Patentability of Computer Programs: An International Survey and Recommendations for Legislative Reform in the Republic of South Africa’ (LLM Dissertation, University of Pretoria 1990) 159.

able to determine if computer software, for which a patent is requested, genuinely constitutes a part of the state of the art on the priority date due to the absence of an examination procedure in the majority of African patent laws.³⁰ An investigation into conformity with the Patents Act's validity requirements is not made easier by the registration system. Thus, it is simple to register a patent that violates an already-existing patent by filing a patent application. Some authors are also of the opinion that a contributing factor to the amplification of the shortcomings in the patent system is the incompetence and ignorance of the patent registry staff.³¹ Another author went on by saying that because of their inexperience, those who handle the required patent registration find themselves unable to recognize that the invention is not inventive.³²

ii. Readily obvious to an expert in the field

Alternatively, should we be able to get around the issues associated with not being able to establish novelty? A great deal of study has shown that computer software is typically evident to an expert in the field, which may exclude it from being eligible for patent protection.³³ However, software patents should not be completely barred from receiving patent protection, because, even if computer software might be able to meet the prerequisites of the Patents Act, it would not seem just to deny it the chance to receive a patent. The mere fact that the majority of computer software does not meet these standards does not mean that creative and well-designed software should be completely excluded from the same opportunities as non-creative software.

³⁰ H Klopper, 'Copyright and the Internet' in S Papadopoulos & S Snail, (eds) (2012) *Cyberlaw @ SA III: The Law of the internet in South Africa* 3rd edition Pretoria: Van Schaick Publishers 132.

³¹ Thethiwe Nomalanga Mashinini, 'The Computer Software Patent Debate: A Double - edged Sword? (LLM Thesis) University of Pretoria 2016.

³² B Bakker, 'Software Patents: IP or not IP?' (2007) 6 (7) ITWeb Brainstorm 26.

³³ *Ibid.*

iii. Lack of industrial application

In addition, while computer software is typically employed for word processing, graphic design, and gaming, among other things, it is not frequently utilized in industrial applications.³⁴ However, in recent times, technological innovations are being used in various industries like the agricultural sector, finance sector, educational sector and even the health sector. Therefore, it would be against the principles of fairness to deny legal protection to software inventions.

iv. Additional Non-Patentable Subject Matter

Patents on computer software may also be contested on the grounds that they are covered by one of the other exclusions mentioned, which could include a technique for carrying out a mental act, a scientific theory, or a mathematical theory.³⁵ This argument's proponents contend that computer software is not suitable for patent protection because of its abstract character.³⁶ It is been suggested that patenting software is the same as patenting maths or arithmetic, which belongs in the public domain and should be used by everyone.³⁷

There is a counterargument in favour of the idea that software should be patentable despite its abstract nature. The viewpoint is based on the concept of restricted allowance, which states that pure software found on general-purpose devices cannot be patented and that only software having a physical effect can be patented.³⁸ Accordingly, software that is solely mathematical and scientifically designed should not be protected by

³⁴ Joliffe 'The word-processing patent—a sceptical view from a person having ordinary skill in the art' 2005 (35) SACJ 7.

³⁵ C De Villiers & T Shaya, 'Software and Business Method Patents' (2008) JILT 2.

³⁶ C De Villiers, 'Argument about the Validity of Software Patents' 2007 7 (5) WP 25.

³⁷ H Klopper, 'Copyright and the Internet' in S Papadopoulos, & S Snail, eds, *Cyberlaw @ SA III: The Law of the Internet in South Africa* (3rd ed Pretoria: Van Schaick Publishers 2012) 132.

³⁸ *Ibid.*

patents. However, the idea of fairness dictates that computer software should instead be handled on an individual basis. This is because it would not seem just to exclude any software, even if its creator can demonstrably show that it is neither a mathematical theory nor a mental act.

There have been arguments for the patent of software inventions which includes:

i. International Trends indicate a Software Patent Future.

The fact that some of Africa's main trading partners, including China, Japan, the United States of America, and the European Community, allow software patents is a pertinent point that can be made to support the idea that patent laws need to be changed to permit computer software patents.³⁹ Because of this, a patent would be necessary as a safeguard or as a component of a licensing agreement if a Nigerian company, for example, wanted to do business with an American corporation.⁴⁰ On the other hand, it can be claimed that African nations should not adopt the trend of developed nations permitting software patents as our legal systems are different. Because of these differences, what works in Western countries could not work in Africa. Furthermore, it's possible that resources and qualified personnel would not be available to support this kind of legal reform and, consequently, compete globally.

ii. International law's effects

The Agreement on the Trade Related Aspects of Intellectual Property Rights (often known as the TRIPS Agreement) is one of the international

³⁹ C De Villiers, & L Abramson, 'Patenting Computer Software-Related and Business Method Inventions: Part 2' (2006) WP 38.

⁴⁰ De Villiers & Abramson 'Patenting computer software-related and business method inventions: Part 2' 2006 6 (10) WP 39.

laws that the majority of African nations have ratified.⁴¹ As a result, nations that have ratified the TRIPS Agreement should have laws pertaining to patents that are consistent with its provisions. According to Article 27(1) of the TRIPS Agreement, patents are granted in all fields of technology provided that they are new, involve an inventive step and are capable of industrial application, these includes products and processes.⁴²

According to TRIPS Agreement, Patents must be accessible and pleasurable to all without regard to the technological domain in which an invention is created.⁴³ It could be argued that the Patents Act ought to explicitly permit software patents in all cases where software is demonstrated to be creative, based on the principles of international law. If software is shown to meet the Patents Act's validity requirements, it should not be excluded from patent protection.

iii. Problems with the registrations system

It is crucial to remember that the process of obtaining a patent through a registration system is not correlated with the need that an invention satisfy the inventiveness requirement by not being readily obvious to a person with reasonable ability in the relevant field. The countries of South Africa, Ghana, and Nigeria do not examine patent applications. It should be challenging to prove that the invention is evident to someone who is at least somewhat knowledgeable in the relevant art without looking at the patent.

iv. The patents of software inventions facilitate innovation

The topic of whether software patents encourage or inhibit innovation is one of the main points of contention in the discussion over computer

⁴¹ Agreement on the Trade-related Aspects of Intellectual Property Rights (TRIPS Agreement) accessed at <http://www.wto.org/english/docs_e/legal_e/27-trips.pdf> accessed 20 July 2024.

⁴² C Ncube, 'Harnessing Intellectual Property for Development: Some Thoughts on an Appropriate Theoretical Framework' (2013) 16 (4) PER/PELJ 369/487.

⁴³ Art 27(1) of the TRIPS Agreement.

software patents.⁴⁴ It is stated that when people are unable to replicate the technological innovations of others, they are compelled to use their creativity to make new, superior discoveries that outweigh the originality of already-existing technology.⁴⁵ Advocates of software patents argue that software patents provide incentives for investors to allocate their capital towards new and existing companies and for starter players of the software industry to invest in research and development.⁴⁶

In addition, a patent claim reveals the source code that computer software is written in, making it easier to use and educating other software creators about what's out there.⁴⁷ To the benefit of software end users, this will facilitate the establishment of transparency in the software business and make it easier to produce new software that is compatible with the functionality of existing software. Clients can benefit from the computer software being patented in this way by using it in conjunction with other suitable software to their satisfaction and advantage.⁴⁸

4.0 Conclusion

One of the most popular technological instruments available today for enhancing business processes is software. Nigeria, once Africa's largest economy offers a desirable market for goods in high demand, like software. The nation needs to get more involved if it is to reap the financial rewards of encouraging innovation and competition in the tech sector. The same holds true for other African nations that aspire to develop rapidly economically.

⁴⁴ C De Villiers & L Abramson, 'Patenting Computer Software: Part 1' (2006) 6 (9) WP 14.

⁴⁵ C Dutfield & U Suthersanen, *Global Intellectual Property Law* Cheltenham (Edward Elgar Publishing Limited 2008) 110.

⁴⁶ HB Klopper & P Van der Spuy, *Law of Intellectual Property Gezina*: (Printburo 2012).

⁴⁷ HKlopper, 'Copyright and the Internet' in S Papadopoulos, & S Snail, eds, *Cyberlaw @ SA III: The Law of the internet in South Africa* (3rd ed Pretoria: Van Schaick Publishers 2012) 131.

⁴⁸ *Ibid.*

As mentioned earlier in this paper, obtaining patent protection forbids third parties from creating, utilizing, distributing, or importing software that is patented. For instance, Google's PageRank engine is the subject of multiple patents, which has helped keep competitors like Yahoo, Altavista, and Excite from stealing Google's search algorithm. The advantages of obtaining patent protection can be extraordinary. An action can be taken against an infringer of a patent software who can be ordered to pay damages to the patent owner

In the case of Apple Inc. v. Samsung,⁴⁹ Samsung Electronics Company Limited was ordered by a U.S. court to pay Apple Inc. \$539 million for replicating certain patented smartphone features that Apple Inc. claimed were present in all of Samsung's product lines, including the Admire, Galaxy Nexus, Galaxy Note, Galaxy Note II, Galaxy S II, Galaxy S II Epic 4G Touch, Galaxy S II Skyrocket, Galaxy S III, Galaxy Tab II 10.1, and Stratosphere.⁵⁰

Nonetheless, there have been very heated discussions in South Africa and Nigeria regarding the patentability of software inventions. Currently, software and computer-implemented invention patent applications are not readily accepted by the Nigerian Patent Registry based on the argument that the Nigerian legislature did not foresee the registration of software patents when it passed the Patents and Designs Act.

However, patent protection for software and computer programs is essentially provided in the United States of America. In the same vein, certain computer programs and software inventions that satisfy the conditions of patentability have been given patents, despite the fact that

⁴⁹ Samsung Electronics Co Ltd et al v. Apple Inc 137 S. Ct. 429.

⁵⁰ Supreme Court of the United States, <https://www.supremecourt.gov/opinions/16pdf/15-777_7lho.pdf> accessed September 4 2024.

they are not patentable under the European Patent Convention. It is imperative that Africa be included in the latest legal modifications pertaining to computer programs and software innovations.

5.0 Recommendations

- i. Acceptance of Patent Applications for Software Inventions: The Patent Offices in Africa should not refuse or be reluctant to accept software inventions that meet the patentability requirements. So long as the software invention meet the patent conditions, it should be granted a patent.
- ii. Software Invention as an Inventive Process: Software inventions or computer-based inventions can be accepted for patent as an inventive process. This is because most of the patent laws accept patent applications for inventive products or processes.
- iii. Training of Patent Office Employees: The lack of training of the patent office staff is capable of hindering inventions that ordinarily should be granted patents. The registrar and other members at the Patent Office should be educated on the patentability of software inventions and how the present Patent Law can accommodate the patentability of software inventions. They should also be trained, especially in computer technology knowledge, to enable them to properly examine computer-based inventions.
- iv. Funding for the Patent Registry Office: The Patent Office should be well funded by the government to enable them to carry out their functions. Experts in various fields who can examine patent applications in situations where there are no such experts in the office should be invited.
- v. Attract investors and encourage R&D funding: There should be intentionality in accepting software applications, which will attract foreign investors to Africa because the world has gone

digital. It will also encourage funding for research and development (R&D).

vi. Amendment of Laws: The Patent Law of Nigeria which is the Patents and Designs Act of 1970, has been operational for 49 years since it was adopted. This is similar to the Patent Act of South Africa (Patent Act 1978 amended 1988). In the same vein, the patent system in Ghana despite the legislative changes is yet to improve. These Laws and systems require upgrades and modifications to be in tune with the emerging technological changes in the world.