

The computer software patent debate: A double - edged sword?

by

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Abstract

In writing this dissertation, the aim is to investigate the patentability of computer software - whether it is possible and legally advisable to make way for software patents in South Africa. This is an uncertain and highly debated area in our law. Ultimately, this study is aimed at checking the validity of proposed arguments and suggestions emanating from within the computer software patent debate itself. The Patents Act 57 of 1978 only excludes the patenting of computer software 'as such'. As a result, it is left open for interpretation what it is that the legislature meant by the phrase 'as such' and whether indeed computer software can be patented, since we lack case-law to clarify this point of law. Presently, there are arguments that software patents may possibly fall in line with the required growth and development for our country's economy. The debate also revolves around the issue whether patents are better suited as legal protection for computer software in contrast to the protection offered under the Copyright Act 98 of 1978. This study will therefore be carried out with an aim to determine and recommend the suitable direction which our law should follow in order to have a competitive stance and facilitate economic growth for our country, specifically in the computer software industry.

Keywords: computer software patent; computer program; technical effect; invention; novelty; inventiveness; copyright law; patent law; innovation; originality; patentability of computer software.

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Acronyms & Abbreviations

A	South African Law Reports, Appellate Division
All ER	All England Reports
BP	Burrell's Patent Law Reports
Brexit	British exit from European Union
CC	Constitutional Court
CILSA	Comparative International Journal of South Africa
CIPA	Chartered Institute of Patent Attorneys
DR	De Rebus
EPC	European Patent Convention
EPO	European Patent Office
EU	European Union
EWCA Civ	England and Wales Court of Appeal, Civil Division
EWHC	England and Wales High Court
EWHC (Pat)	England and Wales High Court (Patent)
FOSS	Free Open Source Software
JA	Judge of Appeal
JDR	Juta's Daily Reports
JILT	Journal of Information, Law and Technology
JIPLP	Journal of Intellectual Property and Practice
JWIP	Journal of World Intellectual Property
LAWSA	(Joubert) The Law of South Africa

OECD	Organization for Economic Cooperation and Development
PER/ PELJ	Potchefstroom Electronic Law Journal
R.P.C	Reports of Patent, Design and Trade Mark Cases
SA	South African Law Reports
S Afri J Sci	South African Journal of Science
SACJ	South African Computer Journal
SALJ	South African Law Journal
SAPO	South African Patent Office
SCA	Supreme Court of Appeal
Stell LR	Stellenbosch Law Review
THRHR	Tydskrif vir Hedendaagse Romeins-Hollands Reg
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
UJ	University of Johannesburg
UK	United Kingdom
UKIPO	United Kingdom Intellectual Property Organisation
UP	University of Pretoria
WIPO	World Intellectual Property Organization
WP	Without Prejudice
WPS	World Patent System
WTO	World Trade Organization

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Chapter 1: Introduction

1.1 Introduction

In South Africa, as in many countries, the legal position regarding the protection of computer software is uncertain and also widely debated. Computer software qualifies as intellectual property; however, it is not easy to determine which intellectual property rights are suitable for the protection of computer software.¹ It is suggested that software is not always created from an original idea and that when it is; computer software fails to satisfy the legal requirements of an invention.² Legal scholars and software inventors hold different views on whether computer software should be protected under the law of inventions, copyright law or even the law of trade secrets.³ This has spurred on an international debate regarding the protection of computer software. Only an authoritative word in the form of legislative reform can bring this debate to a halt.

The computer software patent debate forms the basis of this study. This research is aimed at coming up with a suitable solution to bring clarity regarding aspects of the legal protection of computer software. In subsequent paragraphs the following points will be discussed: the research problem, significance and motivation of this study; the methodology and approach which has been employed for this study; the definition of key terms which are used in this study, and the structure, overview and limitations of this study.

1.2 Research problem

The world we live in today has moved into a new technological sphere where most business and personal activity occurs through the use of computer software. A number of computer software producers have taken the opportunity to exploit the way in which human interaction has developed, by introducing software which facilitates, fastens and brings convenience to the daily communication and

¹ Pistorius *The copyrightability and patentability of computer programs - An international survey and recommendations for reform in the Republic of South Africa* (LLM Dissertation 1990 UP) 6.

² Pistorius (1990) LLM 6; De Villiers & Tshaya "Software and business method patents" 2008 2 *JILT* 13.

³ Pistorius (1990) LLM 6.

transactions which occur between human beings and automated computers. Creating computer software encompasses incorporeal property created through the mental process, creativity and effort of a human being and which requires protection under the law of intellectual property.⁴ The big question is which type of intellectual property protection should be awarded to the owners of computer software which can serve as a correct form and secure measure of protection and which offers the best legal remedies to computer software inventors.⁵

In our law, the Copyright Act 98 of 1978 (hereinafter ‘the Copyright Act’) confers a right on the holder of computer software and affords the holder thereof certain entitlements under the Copyright Act, upon registration of the right.⁶ At first sight it seems that copyright protection is suitable to protect computer software. However, even in the daily world, people infringe on copyright by either partaking in photocopying of books or pirating digitally stored works such as music and videos. These shortcomings raise the question of whether patent protection is or could be a stronger form of legal protection for computer software, in comparison to copyright protection.⁷ The best route to take in this instance is to consult and compare the statutory provisions and remedies found in the law of inventions and copyright law in order to determine whether patent protection is more suitable for computer software.

Our law of inventions is currently regulated by the Patents Act 57 of 1978 (hereinafter ‘the Patents Act’). Any invention which fulfils the requirements of the Patents Act may be registered for protection thereunder.⁸ In contrast to copyright protection; patent protection is not merely aimed at the protection of a corporeal

⁴ Du Plessis *et al*, *Adams & Adams Practitioner’s Guide to Intellectual Property Law* (2011) 1; Klopper & Van der Spuy *Law of Intellectual Property* (2012) 2.

⁵ Klopper & Van der Spuy (2012) 2.

⁶ s11B of the Copyright Act 98 of 1978 provides that the holder of copyright in a computer program has the exclusive right to authorise the reproduction and publication of the program; the making, reproduction or publication of an adaptation of the program; letting or offering or displaying of a copy of the program either directly or indirectly; the performing of the program and causing the program to be transmitted in a diffusion service. See Klopper & Van der Spuy (2012) 35; Klopper “Copyright and the Internet” in Papadopoulos & Snail (eds) *Cyberlaw @ SA III: The Law of the Internet in South Africa (3rd ed)* (2012) 147; Blignaut “Copyright” in Dean & Dyer (eds) (2016) *Introduction to Intellectual Property Law* 25.

⁷ Van der Merwe *et al*, *Information and Communications Technology Law (2nd ed)* (2016) 61.

⁸ In terms of ss25(1) of the Patents Act 57 of 1978, the requirements for an invention to be protected by means of a patent are that the invention must be new, involve an inventive step and be capable of being used or applied in a trade, industry or agriculture, and must not fall under the listed exclusions in terms of ss25(2) of the Act, read with ss25(3) thereof; Klopper & Van der Spuy (2012) 223.

thing or the application of an idea, but rather the idea of the invention itself.⁹ However, computer software is part of the subject-matter which is excluded from the Patents Act. Further analysis of the Patents Act reveals confusion in the interpretation of its provisions; which is the cause of the legal uncertainty which we experience regarding the legal protection of computer software today.¹⁰

There are equally strong arguments in favour of as well as against the patentability of computer software. As a result, one can say that the debate resembles a double-edged sword; it has no blunt and outright incorrect argument attached to it. This is because on the one hand, the patenting of computer software makes sense from a legal perspective; while on the other hand computer software patents come with far-reaching negative effects on our economy.¹¹ If parliament ever decides to choose one side over the other side, we run the risk of either having a total exclusion of patentability of computer software which may be detrimental to the producers thereof; or the total allowance of patentability for such inventions, thus opening up the possibility that the development of software and our economy will be stifled due to the existence of patent monopolies.¹²

1.3 Motivation for the study

With the growing use and creation of new technological hardware, computer software is only going to increase in numbers because it is only through computer software that computer hardware can be controlled. Software plays a central role in many undertakings in the world such as banking and payment systems, healthcare systems, space operations, airline and railway control systems as well as telecommunications, to name a few.¹³ This creates the need for producers of computer software to be protected by the law against any unlawful copying of their

⁹ Klopper & Van der Spuy (2012) 222.

¹⁰ ss25(3) of Act 57 of 1978; Klopper & Van der Spuy (2012) 230.

¹¹ Pistorius (1990) LLM 161; Koo *Subject-matter patentability and effective protection of computer programs* (PhD Dissertation 2002 University of Sheffield) 173; Kariyawasam *The WTO: Intellectual Property, E-commerce and the Internet (Vol II)* (2009) 290; Pouris & Pouris "Patents and Economic Development in South Africa: Managing Intellectual Property Rights" 2011 107 (11-12) *S Afri J Sci* 2; Ncube "Equitable Intellectual Property Protection of Computer Programs in South Africa: Proposals for Reform" 2012 3 *Stell LR* 451; Ncube "Software Patents" in Papadopoulos & Snail (2012) 132.

¹² *ibid.*

¹³ Alagar & Periyasamy *Specification of Software Systems* (2011) 3.

software inventions. This study is aimed at establishing clarity in Information and Communications Technology Law by investigating intellectual property rules regarding digital property.

The basis of legally protecting an invention goes hand in hand with the significance of researching the need, status and development of the legal protection afforded to creators of computer software. This right is based on the suggestion that the granting of an exclusive right to an inventor is a way of encouraging other inventors to be creative and innovative in their undertakings to create new technology.¹⁴

South African government agencies find themselves following contradictory approaches regarding the desirability of computer software patents.¹⁵ These circumstances amplify the urgent need for clarification of the legal uncertainty with which we are faced. In the same way an exclusive right over computer software may encourage innovativeness; the lack of such a right may discourage innovativeness.¹⁶ This is just one of the contradictory views and arguments which form the root cause of the legal uncertainty and the debate going on amongst lawyers and computer science industries in South Africa.

In our country, the lack of decisive case law on this topic amplifies the legal uncertainty and motivates the need for research with an aim to shed light on the direction which we ought to take. Software is seen as a global enterprise and an effective money-making tool in the modern world. Therefore, clarifying our law will assist our country to be steadfast in its participation in the world-wide computerized economy.¹⁷ Obtaining legal certainty in this realm will ensure that inventors' rights are securely protected without leaving room for doubt as to what the appropriate legal protection for their inventions is and to what extent their work is protected. Legal certainty will reduce the risks and costs which arise due to the uncertainty experienced by inventors regarding the extent and coverage available for the legal protection of their work.¹⁸ Therefore, a study such as this one is important in order to

¹⁴ Klopper & Van der Spuy (2012) 221.

¹⁵ De Villiers & Tshaya 2008 2 *JILT* 2.

¹⁶ *ibid.*

¹⁷ Pistorius (1990) LLM 1.

¹⁸ Bakker "Software Patents; IP or not IP?" 2007 6 (7) *ITWeb Brainstorm* 28.

lay out all the positive and negative factors which are important to consider in patenting computer software.

The digital revolution has put pressure on intellectual property systems to adapt to the emerging needs of software users and that of inventors. There is a need for intellectual property rights to be adaptable and to evolve along with technology.¹⁹ Developments experienced in the software industry have revealed that copyright law fails to meet the needs of software producers against the infringement of their intellectual property rights.²⁰ Consequently, the law must take steps to control and properly regulate the protection of computer software and set a clear-cut rule on whether computer software is indeed patentable or merely copyrightable. This study is aimed at revealing how the rules for the protection of computer software can be altered or implemented in better ways which can ensure that an equitable balance is maintained between producers' rights as well as the users' rights.²¹

1.4 Methodology and approach

A normative approach will be used for the collection, analysis and evaluation of information which forms part of this study. The law of inventions will be tested against the standards and facts which exist in the daily lives of producers and users of computer software. The test seeks to determine whether the current legal position fits well with the theory of what that law seeks to regulate. The important questions to ask in this approach are: 'what are the contents of the law?' and also, 'what should the law be?' The answers to such questions assist in establishing how our law exists today and how it may be flawed, whilst also revealing which arguments and suggestions in the computer software patent debate need to be given merit and implemented in order to reform the law on the legal protection of computer software.

A doctrinal approach is also essential for this study. This entails a critical analysis of legislative provisions in order to find the correct interpretation of the law in regards to the patentability of computer software. Therefore, the relevant statutory texts which deal with the legal protection of digital works have to be referred to in this study,

¹⁹ Kariyawasm (ed) (2009) 236.

²⁰ Ryan "To patent or not to patent?" 2001 118 (406) November *De Rebus* 25.

²¹ Ncube 2012 23 (3) *Stell LR* 438.

such as the Patents Act,²² and the Copyright Act.²³ English law will also be consulted for a comparative study since this jurisdiction has seen some developments in the law of inventions and the protection of computer software patents. Furthermore, a theoretical approach will also be used in this research. This entails a critical analysis of legal opinions; commentary and legal texts which will be read in line with the relevant legislative texts that form the basis of this study.

The abovementioned approaches will mostly be employed in the first and second chapters. An empirical study will feature in the third chapter of this dissertation. Many sources on the patentability of computer software will also be consulted. Some other sources from the computer science fields will be consulted but they will not be authoritative in reaching the final conclusion of this research. The aim of the empirical approach is to discover the legitimacy of the arguments which are held on both sides of the computer software debate. In addition, a comparative method is proposed for the fourth chapter to find out the different approaches used in the United Kingdom.

In all instances, the collection of information will take the form of a simple desktop research approach. In order to evaluate the sources, the validity of the presented arguments will be critically analysed to determine whether they can withstand the test of statutory interpretation. The aim is to also check whether the arguments go hand in hand with proposed solutions for reform and lastly, whether these proposals for reform are in line with the aim of legally protecting computer software.

1.5 Definition of computer and computer software

The term 'computer software' is used in this study to refer to computer programs. In our law, only the Copyright Act offers a definition for the term 'computer programs'. Section 1 of the Copyright Act defines a computer program as a set of instructions fixed or stored in any manner which, when used directly or indirectly in a computer, directs its operation to bring about a result which need not be correct.²⁴ Therefore, the technicalities involved in how precise and effective computer software is, will not

²² Patents Act 57 of 1978.

²³ Copyright Act 98 of 1978.

²⁴ s1 of Act 98 of 1978 read with *Haupt t/a Soft Copy v Brewers Marketing Intelligence (Pty) Ltd* 2006 4 SA 458 (SCA) par 24; *Klopper & Van der Spuy* (2012) 20.

form part of this study. Only the legal aspects regarding computer software protection will be considered herein.

1.6 Structure and overview of the study

The first chapter of this dissertation is the introduction to the study, which sets out the basis and motivation of the study. In chapter two, the statutory provisions regulating the protection of computer software will be covered. This will entail a study of the Patents Act and the Copyright Act. The third chapter forms the core of this study, wherein the conflicting views of authors and legal scholars will be discussed and tested against legal facts and legal rules. Chapter four will entail a comparative analysis pertaining to the legal protection of computer software in English law. This chapter will take the form of a study of the United Kingdom Patents Act of 1977,²⁵ and English case law in order to evaluate and determine whether the English law approach is appropriate for South African law to follow. The final chapter of the dissertation will provide recommendations for legal reform and ways to address the legal uncertainty revealed in our law. In addition, this chapter will provide a conclusion to the study, and also provide the author's final remarks regarding the computer software patent debate and how to put an end to this longstanding uncertainty in our law.

1.7 Limitations and delineation

This study will overlap into the sphere of intellectual property law even though it falls under the realm of Information and Communications Technology Law; which is intended to regulate the legal aspects relating to digital intellectual property. Copyright law will slightly inform part of the study in order to show how our law stands today regarding the legal protection of computer software. However this study is limited to exploring the legal protection of computer software mainly offered by patents with an aim to dissect the computer software patent debate and find the most legally valid argument for or against computer software patents.

²⁵ Patents Act of 1977 (Chapter 37).

Chapter 2: Statutory protection of computer software in South Africa

2.1 Introduction

In our law, the protection of computer software rests mainly two statutes, which are the Patents Act and the Copyright Act. Patents are aimed at protecting innovative ideas from imitation and unauthorised use; whereas copyright is meant to protect material forms of creative ideas against unauthorised use and unauthorised reproduction.¹

For a clear view of the two statutes, the contents and requirements for the protection of computer software by means of copyright and patents will be discussed in this chapter. Furthermore, the provisions of the two statutes which provide the scope of infringement and the remedies for infringement of patents and copyright will also be explored in this chapter. This will create a clear view of scope of protection offered under these two statutes and will appropriately contribute to the research in this study.

At first, the requirements of the Patents Act have to be analysed with specific reference to the definitions of the key terms found within the Act, because a patent may only be granted if it complies with the definitional requirements of the relevant statutory provisions. In addition, these requirements ought to be understood in order to test the validity of the arguments which legal scholars have come up with on behalf of and against computer software patents. This analysis is aimed at understanding the elements of the existing statutory protection and will eventually play a part in building a proper legal opinion regarding the patenting of computer software. This approach ought to render a comprehensive analysis of the foundational principles which form the basis of the research topic.

¹ Pistorius (1990) LLM 15; Klopper & Van der Spuy (2012) 7; Papadopoulos & Snail (2012) 137.



2.2 Requirements for patentability of inventions

Our law of inventions is regulated by the Patents Act. In section 25 thereof, the Patents Act sets out the requirements for an invention to be protected by means of a patent.

Section 25(1) of the Patents Act states the following:

“A patent may, subject to the provisions of this section, be granted for any new invention which involves an inventive step and which is capable of being used or applied in a trade or industry or agriculture.”

In the subsequent paragraphs, the meanings and scope of the phrases ‘new invention’, ‘inventive step’, and ‘use in a trade or industry or agriculture’ will be discussed.

2.2.1 Invention

The Patents Act states that an invention means ‘an invention for which a patent may be granted under section 25’.² In the latter section the Patents Act merely defines what an invention is not, using an exclusionary clause in section 25(2). The term invention generally refers to a contrivance created by thought or device;³ however in the Black’s Law dictionary, an invention is described as ‘a patentable device or process created through independent effort and characterized by an extraordinary degree of skill or ingenuity; a newly discovered art or operation’.⁴ Some authors define it as the product, process or creation of useful technology which contributes to existing knowledge in a particular industry and is aimed at solving a problem within that industry.⁵ Therefore, an invention is said to be something which is newly created and aimed at a useful contribution in the industry which it is intended to operate in. However, to be patentable, such an item would have to comply with the requirements of section 25(1) and not fall into the exclusions of sections 25(2) and 25(3) of the Patents Act.

² s1 of Act 57 of 1978; Steyn LAWSA (edJoubert) 20(1) (2010) par 150; Du Plessis (2011) 66; Ramsden *A Guide to Intellectual Property Law* (2011) 259.

³ Allen *The Concise Oxford Dictionary of Current English* (1991) 624; Dean & Dyer (2016) 241.

⁴ Garner (ed) *Black’s Law Dictionary* (2004) 843.

⁵ Klopper & Van der Spuy (2012) 231; Klopper *Law of Intellectual Property in South Africa* (2011) 271; Papadopoulos & Snail (2012) 125.



2.2.2 Novelty

In terms of section 25(5), an invention shall be deemed new if it does not form part of the state of the art immediately before the priority date of that invention. This means that an invention is deemed new only if it has never been previously made known to the public in any way possible.⁶ This principle is referred to as novelty; which is a broad requirement because it refers to the fact that the item in question must not be identical to anything presently forming part of the state of the art.⁷ The state of the art is anything which is made available to the public in any manner, contained in an application for a patent or used on a commercial scale in our country, even though secretly used.⁸ In other words, nothing must exist which can exclude the newness of the invention in order for it to satisfy the definition of a new invention in terms of the Act; thus a matter that is kept secret will not be part of the state of the art if it is not commercially used.⁹ Therefore, to establish whether a particular creation amounts to a new invention; the state of the art ought to be investigated on a global scale.

2.2.3 Inventiveness

An invention is said to be inventive if it is not obvious to a person skilled in that particular art,¹⁰ taking into account the state of the art immediately before the relevant date of that invention.¹¹ As such, the state of the art plays an integral part in determining what is obvious to a person who is skilled in a particular art. This suggests that anything which forms part of the state of the art is obvious to a person who is skilled in the art. That which does not form part of the state of the art ought to be tested for inventiveness through the eyes of a person who is skilled in the art, in order to determine whether it has an element of obviousness.

⁶ ss25(6) of Act 57 of 1978; Steyn LAWSA 20(1) par 151; Ramsden (2011) 257; Klopper & Van der Spuy (2012) 232; Papadopoulos & Snail (2012) 125; Van der Merwe (2016) 42; Dean & Dyer (2016) 245.

⁷ ss25(5) of Act 57 of 1978; Steyn LAWSA 20(1) par 151; Du Plessis (ed) (2011) 70; Klopper (2011) 280; Standard Bank of South Africa v 3MFuture Africa (Pty) Ltd 2013 JDR 2748 (SCA) par 8; Forster "The Final Word" March 2014 14 (2) *WP* 46; Dean & Dyer (2016) 245.

⁸ ss25(6), (7) & (8) of Act 57 of 1978; Pistorius (1990) LLM 156; Ramsden (2011) 257; Klopper & Van der Spuy (2012) 232.

⁹ Steyn LAWSA 20(1) 151; Du Plessis (ed) (2011) 71; Klopper & Van der Spuy (2012) 227.

¹⁰ s25(10) of Act 57 of 1978; Van der Merwe 'Cyberlaw: South Africa' in Dumortier *International Encyclopaedia of Laws: Cyber Law* (2010) Vol 6 67; Du Plessis (ed) (2011) 73; Ramsden (2011) 258; Klopper & Van der Spuy (2012) 228; Van der Merwe (2016) 42-43; Dean & Dyer (2016) 249.

¹¹ *ibid.*



The test of inventiveness has been developed in our courts and comprises of the following steps:¹²

Step 1: Examine the inventive step said to be involved in the subject-matter.

Step 2: Determine what the state of the art is at the relevant date.

Step 3: Analyse to what extent the inventive step goes beyond the state of the art.

Step 4: Find out whether the inventive step would have been obvious to the person skilled in the art having due regard to such development and difference.

Using the above formula, any case to be decided in accordance with the test drawn by the court ought to be decided with the support of expert evidence.¹³ This type of evidence is crucial to the fourth step of the test because an expert who is skilled in the relevant art has to rebut or attest to the inventiveness of the invention.¹⁴ One should be able to summarise inventiveness as follows: when an invention does not form part of the state of the art and is not obvious to a person who is skilled in the art at the relevant date, then the relevant subject-matter amounts to an invention for the purposes of the Patents Act.

2.2.4 Capable of use in a trade, industry or agriculture

This requirement focuses on the usefulness of the invention itself. This is referred to as the utility requirement.¹⁵ The invention has to be useful when it is applied to a trade, industry or agriculture. An invention must be operable or practicable in human activity where services are in exchange for any kind of payment in a particular area of productive labour in order to fulfil the utility requirement.¹⁶ This requirement implies that an invention should be capable of commercial use in order for a patent to be conferred to the creator thereof.

¹² Roman Roller CC and Another 1993 BP 397 p405B-406B; Ensign-Bickford (South Africa) (Pty) Ltd and Others v AECI Explosives and Chemicals Ltd 1999 (1) SA 70 (SCA) p80F; Blewett "Patent 'Obviousness' and Related Matters: Breaking New Ground" May 1999 *DR* 28; Steyn LAWSA 20(1) par 152; Klopper (2011) 283; Ramsden (2011) 260; Du Plessis (2011) 73; Ncube 2012 (3) *Stell LR* 445; Dean & Dyer (2016) 249.

¹³ Blewett May 1999 *DR* 29; Steyn LAWSA 20(1) par 152; Klopper & Van der Spuy (2012) 235.

¹⁴ *ibid.*

¹⁵ Klopper (2011) 289 at fn 1; Ramsden (2011) 262; Klopper & Van der Spuy (2012) 238; Van der Merwe (2016) 43; Dean & Dyer (2016) 252.

¹⁶ *ibid.*



2.3 Limitations on the scope of protection

On the basis of section 25(1) of the Patents Act it can be said that if computer software is inventive and new, being useful in a particular trade or industry then it should be patentable. However, sections 25(2)-(3) of the Patents Act consists of listed exclusions which may render computer software partially or completely ineligible for patent protection.

2.3.1 Exclusion of computer software

Sections 25(2)-(3) of the Patents Act place a conditional exclusion on the patenting of computer software. The provisions of sections 25(2)-(3) state the following:

- (2) (f) Anything which consists of [...] a program for a computer; 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.

Upon reading section 25(2) it seems that computer software is excluded from patent protection. However, when looking at subsection (3) it then appears that the exclusions in the Patents Act are not absolute. Stated in a positive way, the provision states that computer software may qualify as a patentable invention if the patent itself does not relate to the software as such. Therefore, the meaning of the phrase 'as such' ought to be investigated.

2.3.2 The meaning of 'as such' in terms of section 25(3) of the Patents Act

Some authors support the view that computer software is patentable only if it refers to a claim for a process for operating a computer which is under the control of particular computer software.¹⁷ This is because in that instance, the patent does not relate to the computer software as such and is not regarded as a claim for computer software in itself. Therefore, the patent protection is not conferred upon the computer software *per se*. Instead the software simply forms part of the computer for which a patent is granted and thus results in indirect protection over the software invention which the said computer consists of.¹⁸ On the basis of this interpretation, computer

¹⁷ Burrell *Burrell's South African Patent and Design Law* (3rd ed) (1999) par 1.26.1; Van der Merwe *Computers and the Law* (2000) 23; Dumortier, (2010) Vol 6 69.

¹⁸ *ibid.*



software should only be afforded patent protection when it forms part of computer hardware or a technical process. Therefore, software cannot be patented on its own but must be part of another system in order to qualify as an invention which is worthy of patent protection.¹⁹

Pistorius expressed some doubt regarding the aforementioned opinion on the basis that it would be senseless for the Patents Act to exclude the patenting of computer software but then allow it on the part of a computer which is programmed with computer software.²⁰ Circumventing the provisions of the Patents Act in this way could result in having a computer being protected by means of a patent on the basis of inventive software which controls that particular computer; while the main software invention for which protection is actually sought ends up being available to the public to exploit.²¹ Therefore, Pistorius implies that this approach can defeat the purpose of seeking patent protection over computer software in the first place.

The Patents Act does not define the phrase ‘as such’. According to the rules of interpretation of statutes, the ordinary meaning of the words can be used to establish meaning in the case where the Patents Act does not define a word used in its provisions.²² The phrase ‘as such’ means “the exact meaning of the word”.²³ Therefore, one can say that an invention that cannot be defined as computer software *per se* is patentable under the Patents Act if it complies with the rest of the requirements in section 25(1).

Legal uncertainty is perpetuated in the absence of case law which can clarify the meaning of this conditional exclusion. It has been suggested that the English law approach ought to inform the interpretation of section 25 in our courts.²⁴ This is because the Patents Act is based on the United Kingdom Patents Act of 1977 and the wording thereof is almost exactly the same.²⁵ According to their approach,

¹⁹ Steyn LAWSA 20(1) par 152; Klopper & Van der Spuy (2012) 230.

²⁰ Pistorius (1990) LLM 157.

²¹ *ibid.*

²² Botha *Statutory Interpretation: An introduction for Students* (5th ed) (2012) 111-112.

²³ Garner (2004) 10.

²⁴ De Villiers & Abramson “Patenting Computer Software: Part 1” 2006 6 (9) *WP* 15; Bakker 2007 6 *ITWeb Brainstorm* 27; Steyn LAWSA 20(1) 153; Forster 2014 14 (2) *WP* 46.

²⁵ *ibid.*



computer software is patentable if it has a ‘technical effect’²⁶- a phrase which has also raised questions in the United Kingdom and which will be delved into in the fourth chapter of this dissertation. Without positive national law, the meaning of the phrase ‘as such’ is left open for interpretation. A recent case regarding software patents, which will be discussed shortly, was heard by the Supreme Court of Appeal.

Standard Bank of South Africa v 3MFuture Africa (Pty) Ltd 2013 JDR 2748 (SCA)

Unfortunately the recent case of *Standard Bank of South Africa v 3MFuture Africa (Pty) Ltd*,²⁷ did not provide a positive step forward in clarifying the meaning of the provisions of the Patents Act. This case concerned a computer software invention named ‘Transaction Authorisation System’ which was designed to solve the problem of credit card fraud.²⁸ The inventor of the software had met with Standard Bank on a number of occasions to sell his invention but no deal was made.²⁹ Subsequently, Standard Bank teamed up with MTN Mobile to form a company which made use of software which the previous inventor felt was infringing upon his software, ‘Transaction Authorisation System’.³⁰ The inventor had transferred his patent rights in the invention over to 3MFuture, which thereafter instituted a patent infringement claim against Standard Bank and MTN.³¹ The defendants raised the point that the patent was invalid because the invention lacked novelty; the invention was not an inventive step and it comprised of a computer program or business method, and thus was excluded from the Patents Act.³² However, when the case was heard in court the plaintiff abandoned some of his claims which meant that the court *a quo* did not have to consider the legality of computer software patents.³³ Nonetheless the court *a quo* found that the invented software had been a new invention which comprised of an inventive step and held that the patent was thus infringed upon.³⁴

²⁶ Pistorius (1990) LLM 157; De Villiers & Abramson 2006 6 (9) *WP* 16; Steyn *LAWSA* 20(1) 153; Du Plessis (2011) 67.

²⁷ 2013 JDR 2748 (SCA).

²⁸ 2013 JDR 2748 (SCA) par 3; Forster 2014 14 (2) *WP* 46.

²⁹ Forster 2014 14 (2) *WP* 46.

³⁰ 2013 JDR 2748 (SCA) par 1; Forster 2014 14 (2) *WP* 46.

³¹ 2013 JDR 2748 (SCA) par 3; Forster 2014 14 (2) *WP* 46.

³² *ibid.*

³³ 2013 JDR 2748 (SCA) par 7; Ncube 2012 3 *Stell LR* 446; Forster 2014 14 (2) *WP* 46.

³⁴ 2013 JDR 2748 (SCA) par 4; Forster 2014 14 (2) *WP* 46.



However, when the case went on appeal, the Supreme Court of Appeal only dealt with the aspect of the requirement of novelty.³⁵ Nugent JA merely stated that where an invention comprised of a business method it may be revoked on those grounds.³⁶ Therefore, the Supreme Court of Appeal also did not lay down a specific decisive rule on whether computer software is patentable or not.³⁷ The Court upheld the appeal with costs and granted an order for the revocation of the patent on grounds that it was not a new invention and had been superseded by prior art.³⁸

In paragraph 7 of the judgement in the *3MFuture* case, Nugent JA expresses that a patent may be revoked on the grounds that it relates to a business method. One may construe the judge's expression as stating that a patent is also revocable on grounds that it has been granted in connection with computer software because both business methods and computer software are enlisted as excluded subject-matter and should thus be treated in the same manner. The judge's interpretation of the wording of the Act can mean that all matter which is excluded in the Patents Act forms basis for the invalidation of a patent. Nonetheless, there is still not a case in South African law which specifically deals with the patentability of computer software. These circumstances amplify the lack of clarity which we experience in this realm of law today. As Forster has noted, the *3MFuture* case could have been the decisive word which we had all hoped for but regrettably, the wait continues.³⁹

2.4 Content of patent rights

2.4.1 Holdership and duration of a patent

The legal holder of a patent is the inventor thereof, or the first person to apply for a patent in respect of a particular invention, provided that they meet all the requirements discussed above.⁴⁰ The holder is therefore regarded as a 'patentee' according to the Patents Act, which is defined as the person whose name is entered in the register as the name of the holder of a patent.⁴¹ A patent gives the patentee

³⁵ 2013 JDR 2748 (SCA) par 7; Forster 2014 14 (2) *WP* 46.

³⁶ 2013 JDR 2748 (SCA) par 7.

³⁷ Ncube 2012 3 *Stell LR* 446.

³⁸ 2013 JDR 2748 (SCA) par 31-32; Forster 2014 14 (2) *WP* 46.

³⁹ Forster 2014 14 (2) *WP* 47.

⁴⁰ s1 of Act 57 of 1978; Du Plessis (2011) 85; Klopper & Van der Spuy (2012) 233.

⁴¹ *ibid.*



the right to exclude others from using, making, exercising, disposing or offering to dispose of, or import that invention without a license so that the patentee can enjoy the whole profit and advantage resulting from that invention.⁴² Patent rights vest in the patentee for a period of 20 years, subject to prescribed annual renewal fees, and such a right is only enforceable within the Republic of South Africa.⁴³

2.4.2 Infringement of patent

Infringement of a patent does not include non-commercial use of the patented article which reasonably relates to obtaining, developing and submitting information required under any law regulating the manufacture, production, distribution, use or sale of any product.⁴⁴ The infringement of patent rights includes making, using, exercising, disposing or importing the patented subject.⁴⁵ The use or application of the patented material for its originally intended purpose, as well as other purposes that the inventor had not imagined without being authorised to do so amounts to infringement.⁴⁶ Furthermore, disposing or offering to dispose; selling, leasing, distributing, donating or importing such an article also amounts to infringement for purposes of the Patents Act.⁴⁷

2.4.3 Legal remedies

In the instances where infringement takes place, the plaintiff has the following remedies: an interdict; an order for declaration of rights; a claim to hand over any infringing material; an Anton Piller order as well as a delictual claim for damages and a damages claim calculated on the basis of reasonable royalties from both the seller and buyer of infringing goods in the case of a sale.⁴⁸ Patent protection gives a wide range of common law remedies for the inventor. The preceding discussion sets out the broad view of protection offered by a patent right to the holder thereof. However,

⁴² s45(1) of Act 57 of 1978; Klopper (2011) 298; Klopper & Van der Spuy (2012) 236.

⁴³ s46(1) of Act 57 of 1978; Steyn LAWSA 20(1) 176; Klopper & Van der Spuy (2012) 236-237.

⁴⁴ s69A(1) of Act 57 of 1978; Du Plessis (2011) 113; Steyn LAWSA 20(1) 186; Klopper (2011) 328.

⁴⁵ Steyn LAWSA 20(1) 186; Klopper (2011) 328-329; Klopper & Van der Spuy (2012) 245-246.

⁴⁶ *ibid.*

⁴⁷ Steyn LAWSA 20(1) 186; Klopper (2011) 328-329; Klopper & Van der Spuy (2012) 245-246; Dean & Dyer (2016) 273-274.

⁴⁸ s65(3) and (6) of Act 57 of 1978; Par Excellence Colour Printing (Pty) Ltd v Ronnie Cox Graphic Supplies 1983 1 SA 295 (A) p296B ; Steyn LAWSA 20(1) 189; Klopper (2011) 333-334; Klopper & Van der Spuy (2012) 255, 257.



these remedies are only available provided that the subject-matter is indeed patentable based on the satisfaction of statutory requirements.

A discussion of the requirements and scope of protection offered by copyright law will follow in order to give a clear view of the forms of protection offered to creators of computer software.

2.5 Protection of computer software under the Copyright Act

2.5.1 Requirements for copyright protection

The Copyright Act provides that for copyright to vest in the author of particular work the latter must satisfy the set requirements. The work must be original, reduced to material form, must not be contrary to public morals and it must fall under the specified list of works under section 2 of the Copyright Act.⁴⁹ The particular work found under section 2 must have an element of material alteration which is enough to make it an original work if it based on a pre-existing idea, but creativity is not a requirement.⁵⁰ This entails that the work must not be a substantial reproduction of another person's work and to establish whether it is not, the courts put focus on the quality rather than the quantity of the work.⁵¹ In addition, the work should not be merely a bare idea but must be in material form because in our law, copyright does not vest in mere ideas; thoughts or facts. This means that the work must be an idea that has been either written out, acted out or stored in some form.⁵²

The list of copyrightable works found in section 2 includes computer software. As such, any computer software which complies with this definition is eligible for copyright protection. However, it is important to note that items protected by copyright cannot be simultaneously protected by a patent in our law.⁵³ Therefore if computer software which is original and which is reduced to material form in the form

⁴⁹ ss2(1) of Act 98 of 1978; Du Plessis (2011) 224; Klopper & Van der Spuy (2012) 14; Papadopoulos & Snail (2012) 154.

⁵⁰ Haupt t/a Softcopy v Brewer's Market Intelligence supra par 24; Papadopoulos & Snail (2012) 155; Klopper & Van der Spuy (2012) 24.

⁵¹ Haupt t/a Softcopy v Brewer's Market Intelligence supra par 24; Papadopoulos & Snail (2012) 155; Klopper & Van der Spuy (2012) 24.

⁵² Galago Publishers (Pty) Ltd v Erasmus 1989 1 SA 276 (A) p284E; Klopper (2011) 378; Du Plessis (2011) 224; Klopper & Van der Spuy (2012) 14.

⁵³ Pistorius (1990) LLM 157.



of computer software falls under the definition of a computer program in terms of the Act, it shall be compliant with the Copyright Act and thus will be eligible for copyright protection.

2.5.2 Limitations on the scope of protection

The form of protection offered in terms of the Copyright Act is limited because it stipulates a particular definition which has an effect on the scope of protection offered by the Copyright Act. The first limitation is within the definition of a computer program. Section 1 stipulates that a computer programme is ‘a set of instructions fixed or stored in any many and which, when used directly or indirectly in a computer, directs its operation to bring about a result’. According to our courts, the result needn’t be correct.⁵⁴ Therefore the software must yield a result and not merely be aimed at the collection of data such as a database, for example, would do. Our courts have taken a lenient approach in allowing even software that produces an incorrect result to be copyrightable. Furthermore, the kind of instructions which the software intends on sending to the hardware must be stored and used in a computer. In other words, if not to be used in a computer then the software, itself, is not computer software to be protected under the Copyright Act. Also, if the instructions are not stored or held in a form of storage then the software cannot be regarded as copyrightable since then it would also not be reduced to material form as the Copyright Act requires it to be.

2.5.3 Content of copyright

2.5.3.1 Holdership and duration of copyright

For purposes of computer software, the holder of copyright is the person who exercise control over the making of computer software or acts as the commissioner thereof, even though the author of the software may be an independent contractor.⁵⁵

A person exercises control over the making of computer software if he or she directs controls the manner in which the software developer will achieve the expected

⁵⁴ Haupt t/a Softcopy v Brewer’s Market Intelligence supra par 23; Klopper & Van der Spuy (2012) 20; Papadopoulos & Snail (2012) 147.

⁵⁵ s1 of Act 98 of 1978; Haupt t/a Softcopy v Brewer’s Market Intelligence supra par 41; Tong “Copyright protection for computer programs in South Africa: Aspects of *sui generis* categorization” 2009 12 (4) *JWIP* 274; Papadopoulos & Snail (2012) 150.



outcome.⁵⁶ The holder of copyright in computer software is vested with an exclusive right to reproduce the software; publish, perform and broadcast the software and also make an adaptation thereof or cause it to be transmitted in a diffusion service. Additionally, the holder can engage in letting, trading, copying or disposing thereof in any way within the country.⁵⁷ This exclusive right lasts for a period of 50 years calculated from the end of the year in which the software was released to the public, or if not published, from the date of production.⁵⁸ During this period a holder of copyright may raise a claim against any parties who partake in any one of the acts of infringement discussed in the next paragraph.

2.5.3.2 Infringement of copyright

Copyright is directly infringed by any unauthorised party who either exercises the holder's entitlements himself or causes someone else to do so. Copyright is also indirectly infringed when anyone who sells, lets or trades a copyrighted work without a license, and also knowingly imports a copyrighted work for other purposes except domestic use, resulting in the prejudice of the author of the work.⁵⁹ In the case of a computer program, any one of the aforementioned acts as well as the act of acquiring an article which relates to copyrighted computer software in the country amounts to infringement of copyright.⁶⁰ However, in reading the Copyright Act as a whole, it suffices to say that infringement can only be said to have taken place if the indirectly infringing acts are carried out in relation to a substantial part of the protected work.⁶¹ However, copyright does not exclude independent development of similar work and therefore other software which is similar but amounts to an independent creation will escape the finding of infringement in our law.⁶²

⁵⁶ Haupt t/a Softcopy v Brewer's Market Intelligence supra par 41; Tong 2009 12 (4) *JWIP* 275.

⁵⁷ s11B of Act 98 of 1978; Copeling LAWSA (edSmith) 5(2) (2004) par 5; Klopper & Van der Spuy (2012) 35; Papadopoulos & Snail (2012) 147.

⁵⁸ s3(2)(b) of Act 98 of 1978; Tong 2009 12(4) *JWIP* 280; Klopper & Van der Spuy (2012) 36; Papadopoulos & Snail (2012) 158.

⁵⁹ ss23(1)-(2) of Act 98 of 1978; Copeling LAWSA 5(2) par 24; Tong 2009 12 (4) *JWIP* 284; Klopper & Van der Spuy (2012) 36-40.

⁶⁰ ss23(2) of Act 98 of 1978; Klopper in Papadopoulos & Snail (2012).

⁶¹ ss1(2A) of Act 98 of 1978; Tong 2009 12 (4) *JWIP* 284.

⁶² Galago Publishers (Pty) Ltd v Erasmus supra p277E; Jacana Education (Pty) Ltd v Frandsen Publishers (Pty) Ltd 1998 2 SA 965 (SCA) p974A; Copeling LAWSA 5(2) par 33; Tong 2009 12 (4) *JWIP* 284.



2.5.3.3 Legal remedies

The holder of copyright has both civil and criminal remedies at his or her disposal. The civil remedies include a claim for the surrender of infringing material, damages in the form of patrimonial loss, an interdict to stop the infringing activity, damages calculated on the basis of reasonable royalty; Anton Piller order and other common law remedies.⁶³ Furthermore, for copyright infringement; one can face criminal charges on the basis of section 27 of the Copyright Act which criminalises certain acts of copyright infringement and prescribes penalties for fines between R5000-R10 000 and imprisonment for a period of 3-5 years.⁶⁴ At first sight, copyright therefore has much broader remedies than those embodied under patent law but there is nothing to say that one cannot use any of the principles of criminal law to pursue a patent infringement claim as in the case of an infringing act such as hacking computer software in order to use or reproduce it.

2.6 Conclusion

As illustrated above, it is clear that computer software is indeed protectable as intellectual property in South African law, but not without limitations, scrutiny and legal uncertainty in some respects. This is what spurs on the computer software patent debate today. Legal scholars are torn on the matter and some find copyright to be sufficient to protect computer software whilst others seek patent law to be clarified for the purposes of allowing computer software patents. Seeing that the Copyright Act offers clear protection of software, one can wonder why the position regarding patents has stirred up issues in our law. The above presentation of the law will inform the discussion of the computer software patent debate and clarify the grounds on which legal scholars have set their views regarding computer software patents. In the next chapter, the views expressed on part of software patents and copyright protection of software as well as against each of these forms of protection will each be investigated.

⁶³ s24 of Act 98 of 1978; Tong 2009 12 (4) *JWIP* 290; Klopper & Van der Spuy (2012) 45; Papadopoulos & Snail (2012) 163.

⁶⁴ s27(1)–(6) of Act 98 of 1978; Tong 1009 12 (4) *JWIP* 290-291; Klopper & Van der Spuy (2012) 45.

Chapter 3: Dissecting the computer software patent debate

3.1 Introduction

Earlier writers have supported the view that only the functional aspect of computer software is patentable.¹ According to this opinion, computer software contains a mixture of intellectual property because computer software code falls within copyright law protection, while the hardware in which the computer software is embodied is said to be the one worthy of a patent as it is capable of operating in a new, technical manner.² An analysis of the layout of the Patents Act reveals that computer software may be patented if the claim for a patent does not refer to the software in itself.³ Even so, the computer software patent debate is still heated amongst a global widespread of interested parties, and mainly legal scholars.

The basis of the computer software patent debate can be summed up as follows:⁴

“[...] at the same time as there has been a growing number of countries that expressly or indirectly exclude computer programs (as such) from patentable subject-matter, there is also a growing consensus that although computer programs should be treated as excluded subject-matter, this is not necessarily the case where an invention, viewed as a whole, happens to include a computer program.”

In the quote above, Sherman clearly indicates how computer software is now increasingly being considered as worthy of patent protection, despite the traditional view that computer software is not patentable, as it is embodied in our law under the Patents Act. Since it is challenging to actually choose one side of the debate without being discouraged by the disadvantages of the chosen option; all the important legal and economic issues surrounding computer software patents ought to be investigated in order to make a sound proposal on how to establish legal certainty in our law.

¹ Pistorius (1990) LLM 158.

² *ibid.*

³ Burrell par 1.26.1; Van der Merwe (2000) 23; Dumortier, (2010) Volume 6 69.

⁴ Sherman *Computer programs as exclude patentable subject-matter* WIPO SCP/15/3 ANNEX II.



In attempting to address the computer software patent uncertainty, it is imperative to understand the arguments set for and against software patents. This chapter contains an overview of the different opinions and arguments that legal scholars and a few other writers have contributed to the debate. The opinions of international writers are also worth discussing because some of their views have been relied on by South African writers to discourage computer software patenting in our country. This approach helps to understand how we can strike a balance between the opposing views raised in this debate, while ensuring that we provide all interested parties with fair law. The technique used in this chapter takes the form of theoretical testing, debunking or proving the different arguments set forth. This approach will be used to lay a foundation for chapter five which will deal with how the software patent debate can be balanced to come up with a sound and equitable proposal for legislative reform regarding the protection of computer software.

3.2 Advocating for and against computer software patents

It seems that two schools of thought, across diverse professions, have emerged with regards to the topic of software patenting. The schools consist of the following main groups, namely, the people who advocate for economic growth and those who advocate for the equal protection of rights regarding the protection of computer software. Pouris & Pouris summarise and describe the two sides of the debate as follows:⁵

“The legal approach addresses issues of fairness and of balance of rights, of internal consistency of the system and of consistency of patent law with other bodies of legislation. The economic approach, on the other hand, is utilitarian in nature, in the sense that the main focus is on the costs and benefits accruing to society (or to a particular group in society) from the functioning of the IPRs system. The economic approach does not see IPRs as a ‘natural right’ that the inventor should have but as a ‘policy instrument’ that the government should adopt in order to maximise the interests of society.”

An array of arguments depicting the described division will be laid out. The golden thread which runs through these arguments is the issue of fair protection of rights and economic development. These two main pillars that have shaped the views of various authors who advocate for and against computer software patenting and they

⁵ Pouris & Pouris (2011) 107 (11-12) *S Afri J Sci* 2.



tend to clash and overlap, warranting thorough discussion in order to establish a balance in the debate.

3.2.1 Statutory hurdles

An argument that has been raised against patenting of computer software rests on the statutory hurdles created by the wording of the Patents Act. It seems computer software is conditionally excluded from patentability; but even if it were to pass the conditional exclusion, there would be difficulty in having the software completely satisfy the rest of the statutory requirements. The argument about the confusing wording in the Patents Act calls for authoritative clarification either by means of legislative reform or by way of a judicial decision from a superior court. Assuming that legal certainty would be established by the legislature by way of removing the conditional exclusion of software patents, it is suggested that software patents could still be challenged on the basis of other basic requirements and further listed exclusions of the Patents Act.⁶

3.2.1.1 Inability to determine the presence of novelty

It is said that absolute novelty cannot be present in a computer program because many software programs are created yearly. As a result, new software would almost always be barred by pre-existing state of the art from satisfying the statutory requirement of absolute novelty.⁷ Due to the lack of an examination system in our law, the South African Patent Office (SAPO) may not be able to establish whether computer software, over which a patent is sought, actually forms part of the state of the art on the priority date.⁸ The registration system does not facilitate an examination of compliance with the validity requirements of the Patents Act. Therefore, in filing a patent application one can easily register a patent which infringes on a pre-existing patent. A lack of skill and knowledge on part of SAPO employees also plays a role in amplifying the inadequacies that can be found in our patent system. Those who undertake the registration of the relevant patent can find

⁶ Bakker 2007 6 (7) *ITWeb Brainstorm* 28; De Villiers "Argument about the validity of software patent" 2007 7 (5) *WP* 25; De Villiers & Tshaya 2008 2 *JILT* 13; Papadopoulos & Snail (2012) 131.

⁷ Pistorius (1990) LLM 159; Joliffe "The word-processing patent— a sceptical view from a person having ordinary skill in the art" 2005 (35) *SACJ* 7; Papadopoulos & Snail (eds) (2012) 132.

⁸ Pistorius (1990) LLM 159; Joliffe 2005 (35) *SACJ* 7; Papadopoulos & Snail (2012) 132; Muhlberg "An Examination of Patents" 2014 14 (10) *WP* 54.



themselves unable to notice that the invention lacks inventiveness due to their own lack of skill as well.⁹

3.2.1.2 Inventiveness in view of the person skilled in the art

Alternatively, should we overcome the problems that come with the inability to determine novelty; extensive research has revealed that computer software is usually obvious to the person skilled in the art,¹⁰ and possibly prevents computer software from being eligible for a patent even if it weren't under the exclusions listed in section 25(2) of the Patents Act. Be that as it may, software patents should not be totally excluded from patent protection because it would not seem fair for computer software to be robbed the opportunity of patent protection despite the fact that it could have the ability to fulfil the basic requirements of the Patents Act. Just because most computer software fails to fulfil these requirements does not warrant that well designed and inventive software should suffer the same fate as software which is not inventive, merely because of a total exclusion.

3.2.1.3 Lack of industrial application

Furthermore, computer software is rarely used in industrial application due to the common purpose which software is intended for, namely graphic designs, word processing and gaming, among others.¹¹ Nevertheless, software that is not intended for these mentioned fields should not be denied legal protection as that would not be in line with the principles of fairness.

3.2.1.4 Additional non-patentable subject-matter

Computer software patents may also be challenged on the basis that they fall under one of the other listed exclusions which may include a scientific theory, a mathematical theory or a method for performing a mental act.¹² Proponents of this argument have submitted that the abstract nature of computer software renders it unfit for patent protection.¹³ It is argued that patenting software is equivalent to patenting math—something that should be left in the public domain for all parties to

⁹ Bakker 2007 6 (7) *ITWeb Brainstorm* 28; De Villiers 2007 7 (5) *WP* 25; De Villiers & Tshaya 2008 2 *JILT* 13; Papadopoulos & Snail (2012) 131.

¹⁰ *ibid.*

¹¹ Pistorius (1990) LLM 160.

¹² Pistorius (1990) LLM 130.

¹³ Papadopoulos & Snail (2012) 131.



exploit.¹⁴ There is a counter argument supportive of the view that, despite its abstract nature, software ought to be patented. The view rests on the point of restrictive allowance; stating that only software with a physical effect should be patented and that pure software found on general-purpose machines must not be patented.¹⁵ Therefore, purely mathematical and scientifically engineered software ought not to be patented according to this view. Even so, the principle of fairness grants that computer software should rather be treated on a case-by-case basis because it would not seem fair for any software to be excluded even though the inventor thereof can effectively prove that such software is not a mental act, neither a method for doing business, nor a mathematical theory.

3.2.2 Technological and international developments

The following ideas have been rendered by other writers; the complex nature of information systems, the successive generations and principles of programming, the developed programming languages and various basic paradigms of programming suggest that the resulting programs are a product of engineering rather than literature.¹⁶ The view is that technological advancements call for statutory inclusion of software patents.¹⁷ According to this argument, software ought to be protected by means of patents instead of copyright. It is suggested that patent laws be revised or interpreted and applied in a way that would accommodate computer software patents because the evolution of a new economy has created the need for intellectual property laws to be adapted to the new emerging of rights of inventors.¹⁸ It seems only fair that if computer software complies with all the requirements for a patent then surely it should enjoy patent protection.¹⁹

¹⁴ Papadopoulos & Snail (2012) 131.

¹⁵ Otter 'Software patents are a threat to programmers, says guru' 19 June 2001 Tectonic http://www.itweb.co.za/index.php?option=com_content&view=article&id=95319 accessed on 1 March 2016.

¹⁶ Ryan 2001 (Nov) *De Rebus* 24; Rahamim "Internet & E-commerce Patents" in Buys & Cronje (eds) *Cyberlaw @ SA II: The law of the internet in South Africa (2nd ed)* (2004) 74; De Villiers 2007 7 (5) *WP* 26.

¹⁷ Papadopoulos & Snail (2012) 131.

¹⁸ Ryan 2001 (Nov) *De Rebus* 24; De Villiers & Tshaya 2008 2 *JILT* 17; Kariyawasam (2009) 236; Van der Merwe *et al*, (2016) 61.

¹⁹ González "The software patent debate" 2006 1 (3) *JIPLP* 202.



3.2.2.1 International trends point towards a software patent future

A relevant fact which can be raised to support the view that patent laws must be revised to allow for computer software patents is the fact that our major trading partners such as Japan, United States of America and the European Community are allowing the granting of software patents.²⁰ In view of that point, should a South African company want to conduct business with an American company for instance, a patent would be required as a defensive mechanism or as part of a licensing scheme.²¹ To the contrary, it can be argued that despite the trend that developed countries are allowing software patents, South Africa should not follow suit because our legal systems differ in nature and what works for another country may not work for us due this difference. In addition, South Africa may not have the funds and the availability of skilled persons in order to facilitate this kind of legal reform and in turn compete on an international level.

Caution must be exercised in suggesting that South Africa should follow international trends set by well-developed countries because the evolution of technology is causing what was previously uncommon to become more common and accessible. For instance, people can learn to write code using numerous sites;²² and having that as a foundation, a larger group of the public is able to come up with new ideas on how to write and invent software. Writing code is not becoming any less common and it is making software increasingly available to society.²³ Developments such as these bring about the possibility of that we may experience proliferation of patents if software patenting becomes completely accepted in our law.²⁴ The latter is discussed in depth later under paragraph 3.2.5.1.

3.2.2.2 Influences of international law

It is acknowledged that South Africa is a signatory to the Agreement on the Trade Related Aspects of Intellectual Property Rights (hereinafter 'TRIPS Agreement').²⁵

²⁰ Ryan 2001 (Nov) *De Rebus* 24; Buys & Cronje (2004) 75; De Villiers & Abramson 2006 6 (9) *WP* 15; De Villiers & Tshaya 2008 2 *JILT* 12.

²¹ De Villiers & Abramson "Patenting computer software-related and business method inventions: Part 2" 2006 6 (10) *WP* 39.

²² See KhanAcademy available at <http://www.khanacademy.org/computing/computer-programming>.

²³ Papadopoulos & Snail (2012) 123.

²⁴ Papadopoulos & Snail (2012) 131.

²⁵ Agreement on the Trade-related Aspects of Intellectual Property Rights (TRIPS Agreement) available at http://www.wto.org/english/docs_e/legal_e/27-trips.pdf.



This raises the consequence that our laws should be in line with the contents of this agreement. Article 27(1) of TRIPS Agreement states that patents shall be available for any inventions which are products or processes in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.²⁶ According to TRIPS Agreement, patents shall be available and enjoyable without discrimination as to the field of technology in which an invention is produced.²⁷ On the basis of international law, it may be arguable that the Patents Act should expressly allow software patents in all instances where software is proven to be inventive. Software should not be denied the protection of a patent if it is proven to fulfil the validity requirements of the Patents Act.

However, this argument does not hold strong when considering that this international instrument does not state a definition for the term 'invention' and thus leaves it up to the member state to decide whether computer software is patentable or not.²⁸ A member state has the discretion to exclude computer software from the scope and definition of an invention within its own jurisdiction and thus effectively exclude software patents despite having consented to the TRIPS Agreement.²⁹ Despite the loopholes revealed by an analysis of the application of the TRIPS Agreement which member states can use to escape its obligations, the South African government is determined to comply with the mandatory provisions of TRIPS Agreement and align itself with other developing countries by way of patent reform.³⁰

3.2.2.3 The impact of the Constitution

In terms of section 233 of the Constitution of the Republic of South Africa, 1996,³¹ when interpreting legislation, the courts must give preference to any reasonable interpretation which is consistent with international law over any interpretation that would otherwise be inconsistent with international law. Therefore, the view that we ought to comply with the principles of the TRIPS agreement may probably be upheld in a court of law. To grant a patent over computer software that consists of an

²⁶ Ryan 2001 (Nov) *De Rebus* 26; Buys & Cronje (2004) 75-76; Ncube 2013 *Stell LR* 456.

²⁷ Article 27(1) of the TRIPS Agreement.

²⁸ Kariyawasam (2009) 290; Pouris & Pouris (2011) 107 (11-12) *S Afri J Sci* 6.

²⁹ Kariyawasam (2009) 290.

³⁰ Draft National Policy on Intellectual Property: A Policy Framework GN R918 in GG36816 issued by the Department of Trade and Industry dated 4 September 2013; Ncube 2013 *Stell LR* 456.

³¹ Dugard *International Law: A South African Perspective* (4th ed) (2011) 50.



invention by the true definition of an invention in terms of the Patents Act would seem as the correct approach to adopt as it would be in line with international and constitutional law standards. The international law approach is in line with the argument that South Africa should follow the international trend of software patenting.

3.2.3 Adopting change calls for adaptation to facilitate change

In South Africa, we use a registration system instead of an examination system for the process of issuing patents.³² As a result, patents are possibly granted over inventions which may not withstand the tests of the courts if patent holders were to attempt to enforce their rights or have their patents challenged on the basis of validity.³³ Therefore, if our patent system were to allow software patents, the method used for granting patents would also have to be tailored to suit the sensitivity of the proposed approach of patenting computer software. It is the author's view that such tailoring would have to provide ways in which we can avoid the risk of allowing poor software patents from getting into the patent system, and thus ensure that only deserving inventors are rewarded for the inventive intellectual efforts which they would have invest in their works.

3.2.3.1 Problems with the registrations system

An important point to note is that the procedure for granting a patent by way of a registration system does not go hand in hand with requirement under section 25(10) of the Patents Act.³⁴ Section 25(10) requires that an invention must not be obvious to a person skilled in the art for it to fulfil the requirement inventiveness. Without examining the patent, it should be difficult to establish that the invention is obvious to the person who is reasonably skilled in the relevant art. The granting of a patent without examination cannot possibly satisfy this requirement and therefore runs the risk of being revoked in the face of a legal challenge on the grounds of validity. In the meantime, it is unsatisfactory that patents which have been granted in respect of

³² Klopper & Van der Spuy (2011) 245; Muhlberg 2014 14 (10) *WP* 54.

³³ Ryan 2001 (Nov) *De Rebus* 26; De Villiers & Abramson 2006 6(10) 38; De Villiers & Tshaya 2008 2 *JILT* 12; Papadopoulos & Snail (2012) 131; Muhlberg 2014 14 (10) *WP* 54.

³⁴ Joliffe 2005 35 *SACJ* 6.



weak inventions remain protected in the patent system, barricading entry into the computer software industry.³⁵

3.2.3.2 Removing the disparities in the registration system of patents

Due to the registration system which is currently being used in our country, many authors have relied on the SAPO's inability to carry out meticulous examination of patents and checking of software patents to advocate against the patenting of computer software.³⁶ At first hand, it seems right to suggest that a system of examining patents should be introduced into our law in order to fix this problem. However, it has also been noted that the SAPO employees lack of skills to carry out this kind of substantive examination and search through the whole state of the art.³⁷ In addition, Ncube makes a point that software patents are better handled by means of litigation because merely introducing substantive examination will give rise to problems regarding the establishment of existing prior art.³⁸ Instead, litigation may give rise to a better examination of prior art because industry rivals are more knowledgeable in this area and would have the means of producing such evidence in court in order to prevent the issuing of an invalid patent.³⁹

Ncube's argument is defeated in the face of the issues experienced by small businesses. One of the reasons why software patents are not appreciated is because of the high costs and time consumption they bring specifically into the small business' experience. To expect the minority groups in the industry to fend for themselves in court is not in line with the principles of fairness and simply adds a heavy burden on their pursuit to acquire intellectual property. The legal system owes it to all persons, natural and juristic, to grant fair protection of rights by means of legislation. Substantive examination mechanisms should not be shied away from merely because they may seem ineffective in the long run. In implementing the

³⁵ Papadopoulos & Snail (2012) 131; Muhlberg 2014 14 (10) *WP* 54.

³⁶ Buys & Cronje (2004) 76; De Villiers 2007 7(5) *WP* 25; Muhlberg 2014 (10) *WP* 54; Mgbeoji "African patent offices not fit for purpose" in De Beer *Innovation and Intellectual Property: Collaborative Dynamics in Africa* (2014) 238-239.

³⁷ Papadopoulos & Snail (2012) 131.

³⁸ Papadopoulos & Snail (2012) 131.

³⁹ *ibid.*



substantive examination system, the government would have to ensure that resources are put in place to facilitate the effectiveness of such a system. Furthermore, litigation should only be used as a last resort to fend for the rights individuals and not as a point of departure because that would open up the flood gates to litigation. Such a consequence would be caused by parties who would opt to use litigation as a means to delay the granting of a patent on the basis that they can produce evidence to prove that a patent claim lacks novelty and thus calls for further substantive examination.

This flood gates argument holds the same for suggestions that have been made regarding adding a requirement of public disclosure to allow the public to object to a patent application.⁴⁰ Such a public comment mechanism would call for a restricted application and regulation of time periods for the public to comment; as well as a moratorium on the applications relating to any patents which refer to an article that is exactly the same as that put up for public comment at that point in time. The reason behind these types of restrictions would be to allow a fair procedure if the system of public comment were to be implemented.

3.2.4 Time and financial encumbrances that come with software patents

Computer software patents are time-consuming due to the excessive amount of adherence to prescribed formalities which they require.⁴¹ For example, the patentee has to take the necessary care to frame their patent application correctly by taking into consideration the experiences and grounds for rejection that have come up in other jurisdictions as well as others that have similar laws.⁴² In lodging a software patent application, research is a key tool to use to ensure success, of the application but it takes time and money to carry out.⁴³ Computer software patents are further shunned on the basis that patents are expensive to acquire due to the process of drafting, filing, maintaining and defending of a patent claim.⁴⁴

⁴⁰ Muhlberg (2012) 14 (11) *WP* 55.

⁴¹ Pistorius (1990) LLM 160; Van der Merwe *LAWSA* 5(3) (1998) par 5; Buys & Cronje (2004) 74; Ncube 2012 3 *Stell LR* 453; Van der Merwe (2016) 61.

⁴² De Villiers & Tshaya 2008 2 *JILT* 13.

⁴³ Pistorius (1990) LLM 160; Van der Merwe *LAWSA* 5(3) par 5; Ncube 2012 3 *Stell LR* 453.

⁴⁴ Pistorius (1990) LLM 160; Van der Merwe *LAWSA* 5(3) par 5; Koo (2002) PhD 171; Papadopoulos & Snail (2012) 131.



Before instituting a patent application, it is wise to determine whether a patent is indeed worth pursuing for purposes of protecting computer software.⁴⁵ This is important because by its nature, software is hardly ever truly new and created from scratch.⁴⁶ It is the kind of technology which builds on many other components of pre-existing software in order to come up with a new invention. It is merely the improvement of existing software products.⁴⁷ Therefore, some computer software may not actually qualify as inventions and thus are not worth the efforts of pursuing a patent application for.

3.2.4.1 The effect of software patents on small businesses

One point of relevance in the financial burden argument is that small business will find it difficult to compete against large companies if software is widely patented. This is undesirable and seems unfair when considering that small start-ups and academic researchers are typically the source of new software ideas.⁴⁸ Only large companies can afford to patent their ideas and in turn have the ability to stop small businesses from independently developing the same ideas.⁴⁹

In rebuttal, we ought to keep in mind that South Africa uses a registration system for issuing of patents.⁵⁰ As such, it is arguable that South African patents are not as expensive as in other jurisdictions because applicants need not pay examination fees to the patent office.⁵¹ At first sight, it seems good that patents in our country are relatively cheap; however, our system has disadvantages for South African software developers because they have to spend a lot of money in acquiring patents abroad, since patent protection is limited by territory and jurisdiction.⁵² Meanwhile, foreign software developers can acquire software patents for lesser amounts in South Africa, causing an imbalance in our economy because foreign investors get the most benefit

⁴⁵ Van der Merwe (2000) 23.

⁴⁶ Kariyawasam (2009) 267.

⁴⁷ Kariyawasam (2009) 267.

⁴⁸ Machanick "Why software patents are evil" 2001 (August) *Elektron* 12; Koo (2002) PhD 171; Bessen & Hunt "Chapter 14: The software patent experiment" in *Patents, Innovation and Economic Performance: OECD Conference Proceedings* (2004) 251; Joliffe 2005 (35) *SACJ* 4; Ncube 2012 3 *Stell LR* 453-454; Papadopoulos & Snail (2012) 132.

⁴⁹ Machanick 2001 (August) *Elektron* 12; Koo (2002) PhD 171; González 2006 1 (3) *JILPLP* 203.

⁵⁰ Buys & Cronje (2004) 76; De Villiers 2007 7 (5) *WP* 25; Muhlberg 2014 (10) *WP* 54.

⁵¹ De Villiers & Tshaya 2008 2 *JILT* 12; Pouris & Pouris 2011 107 (11-12) *S Afri J Sci* 6.

⁵² Klopper & Van der Spuy (2012) 242.



from our patent system.⁵³ Therefore, foreign patentees are effectively well protected by our law and derive a cheaper form of protection in our country and which is more lenient, given the fact that we merely register patent rights and do not examine them for validity. This state of affairs leaves South African investors at risk of disclosing their inventions to the international community as a consequence of only patenting their software locally in order to avoid the expense of patenting internationally.⁵⁴ In addition, larger companies have an edge here yet again, in that only they have the financial power to patent inventions abroad.

3.2.4.2 The effect of software patents on end-users

Furthermore, the financial burden involved in acquiring patents has an impact mainly on computer software end-users because software inventors need to recoup the money which they invest in creating and protecting computer software.⁵⁵ Ncube raises the point that programming inefficiencies, shrinking commons, and patent thickets result in fewer and possibly incompatible expensive computer software programs.⁵⁶

Pistorius holds the view that computer programs which are new, inventive, which bear high commercial value and can be applied in an industry should be patented only if they will be used for more than five years with a set of specific hardware.⁵⁷ It is under these circumstances that a computer software patent seems worth the effort and money, keeping in mind the legal and practical difficulties that patents give rise to in practice.⁵⁸ However, it is arguable that focus must be placed on the extent to which software displays uniqueness and not on the amount of labour invested in the creation of the particular software.⁵⁹ It seems this point argues for a restrictive allowance of software patents, in that we ought to only look at the subject-matter itself instead of the surrounding and prevailing circumstances involved in the creation of software so as to determine whether the software is indeed patentable. This

⁵³ Pouris & Pouris 2011 107 (11-12) *S Afri J Sci* 6-7.

⁵⁴ Pouris & Pouris 2011 107 (11-12) *S Afri J Sci* 6-7; Klopper & Van der Spuy (2012) 242.

⁵⁵ Ncube 2012 3 *Stell LR* 453.

⁵⁶ Ncube 2012 3 *Stell LR* 453.

⁵⁷ Pistorius (1990) LLM 161.

⁵⁸ Pistorius (1990) LLM 161.

⁵⁹ Klemens *Math you can't use: patents, copyright and software* (2006) 104.



suggestion is aimed at ensuring that software is not unduly granted patent protection.

The restrictive allowance of software patents may properly cater for the end-users of computer software. If they are to pay large amounts of money to gain use of the software, then surely the patented article ought to allow the end-user the benefit of compatibility with other devices which he or she may already have. In addition, such a product would have to be inventive indeed and worth spending a lot of money on from the perspective of the end-user.

3.2.5 The weight of software patents on innovation

One of the major arguments at the core of the computer software patent debate is the question of whether software patents facilitate or stifle innovation.⁶⁰ It is said that when people are denied the right to copy the technological inventions of others they are forced to be innovative and come up with an improved and advanced discovery of their own which supersedes the inventiveness of existing technology.⁶¹ Supporters of software patents maintain that software patents bring reason for investors to put their resources into new and existing companies and for new players of the software industry to invest in research and development.⁶²

Furthermore, a patent claim discloses the code which the computer software is written in and therefore provides an easy way to work with the software and provides knowledge to other software developers in the market.⁶³ In this way, transparency can be established in the software industry and more compatible software can easily be created to fit the operability of the pre-existing software, to the advantage of the end user of software. In this way, clients can use the patented software along with other compatible software to their benefit and fulfilment and thus receive an incentive from the computer software being patented.⁶⁴

⁶⁰ Ryan 2001 (Nov) *De Rebus* 26; De Villiers 2007 7 (5) *WP* 26.

⁶¹ Ryan 2001 (Nov) *De Rebus* 26; Koo (2002) PhD 168; Dutfield & Suthersanen *Global Intellectual Property Law* (2008) 110.

⁶² Koo (2002) PhD 168; Buys & Cronje (2004) 74; Bessen & Hunt (2004) 253-254; Kariyawasam (2009) 236; Papadopoulos & Snail (2012) 132.

⁶³ González 2006 1 (3) *JIPLP* 202-203; Papadopoulos & Snail (2012) 131.

⁶⁴ González 2006 1 (3) *JIPLP* 203; Papadopoulos & Snail (2012) 131.



In contrast, software patents may bring about the rise of software programmers keeping their programming codes confidential and thus hindering with innovation by not sharing any new knowledge in their industry.⁶⁵ This would be a consequence of the reality that in order to ensure the grant of patent protection over any invention, the relevant subject-matter must not have been made available to the public in any manner except if used in secret.⁶⁶ Therefore the opinion put forth is that, if computer software is excluded from patentability, people would be encouraged to innovate and the software market would neither stand still nor fall apart.⁶⁷ On the other hand, if many more inventors are encouraged to write code for computer software, it brings about the result that inventors may not receive an incentive for the money which they may have invested in the research and development involved in inventing computer software.⁶⁸

3.2.5.1 Proliferation of patents and greater risk of involuntary infringement

Despite the fact that some advocates of computer software patents argue that small businesses can raise profits by gaining software patent and licensing them out; it can be argued that software patenting could cause small businesses to be at a higher risk of violating any one of the larger company's patents.⁶⁹ If software patents are allowed, large companies may patent many small ideas which in turn will cause small businesses to license the use of those inventions from the large companies or alternatively come up with better software.⁷⁰

Let us consider an example of a small company attempting to litigate software patent infringement against a large company which has a huge patent portfolio covering small software inventions. The large company can use one of their own patent rights to corner small businesses into a cross license agreement on the basis that the small

⁶⁵ Koo (2002) PhD 173; Kariyawasam (2009) 290; Pouris & Pouris (2011) 107 (11-12) *S Afri J Sci* 2; Ncube 2012 3 *Stell LR* 451; Papadopoulos & Snail (2012) 132.

⁶⁶ Steyn LAWSA 20(1) (2010) par 151; Du Plessis (ed) (2011) 71; Klopper & Van der Spuy (2012) 227.

⁶⁷ Klemens (2006) 159; Ncube 2012 3 *Stell LR* 451.

⁶⁸ González 2006 1(3) *JIPLP* 203; Pouris & Pouris 2011 107 (11-12) *S Afri J Sci* 5-6.

⁶⁹ Otter 2001 *Tectonic* 1; Koo (2002) PhD 168; González 2006 1 (3) *JIPLP* 205-206; Pouris & Pouris 2011 107 (11-12) *S Afri J Sci* 5-6; Ncube 2012 3 *Stell LR* 452-453.

⁷⁰ González 2006 1 (3) *JIPLP* 203; Kariyawasam (2009) 290; Ncube 2012 3 *Stell LR* 453; Papadopoulos & Snail (2012) 132.



company is infringing on one of their patent rights over a specific idea.⁷¹ This practise, often referred to as patent thickening,⁷² will result in a build-up of barriers in the software industry, leaving the large players to monopolise therein and smaller players to remain outside of the game having to pay exorbitant amounts in terms of computer software license agreements.⁷³ The preceding argument supports the view that granting computer software patents will stifle innovation and foster monopolies that hoard scientific discoveries to the disadvantage of society as a whole.⁷⁴ In this instance, hoarding can take the form of a company holding a patent that bears no relation to the goods and services which that company deals in.⁷⁵ This hoarding system can stifle innovation as a number of inventors may shy away from the software industry because it is burdened by legal uncertainty coupled with high costs expended on frivolous litigation and burdensome acquisition of patents.⁷⁶

3.2.5.2 The uninventive nature of computer software

Computer software inventions usually comprise of an accumulation and re-invention of existing software because programmers rely on existing code and solutions to create new software programs.⁷⁷ This practise creates patent thickets i.e. the dense undergrowth of interrelated patents which cause researchers to work hard in ensuring that their creations are not infringing on pre-existing software.⁷⁸ Patent thickets can result in many patents being granted to inventors over one invention and thus can bring about the situation that new inventors have to get a license from all the relevant patent holders in order to ensure that they are not infringing upon an existing patent.⁷⁹ This may well discourage small players in the software industry when they have to sit down and come up with ideas for new software and in turn slowly stifle innovation.

⁷¹ Koo (2002) PhD 171; González 2006 1 (3) *JIPLP* 205-206.

⁷² Buys & Cronje (2004) 74; Bessen & Hunt (2004) 257; Joliffe 2005 35 *SACJ* 4; González 2006 1 (3) *JIPLP* 204.

⁷³ Otter 2001 *Tectonic* 1; Koo (2002) PhD 168; González 2006 1(3) *JIPLP* 205-206; Ncube 2012 3 *Stell LR* 452-453.

⁷⁴ Machanick 2001 (August) *Elektron* 12; Ryan 2001 (Nov) *De Rebus* 26.

⁷⁵ Bakker 2007 6 (7) *WP* 29.

⁷⁶ Papadopoulos & Snail (2012) 132.

⁷⁷ Koo (2002) PhD 169; Klemens (2006) 158; De Villiers 2007 7 (5) *WP* 26; Ncube 2012 3 *Stell LR* 452.

⁷⁸ González 2006 1 (3) *JIPLP* 204; Ncube 2012 3 *Stell LR* 451; Papadopoulos & Snail (2012) 131.

⁷⁹ González 2006 1 (3) *JIPLP* 204; Ncube 2012 3 *Stell LR* 451-452.



Therefore, if cumulative software patents were allowed, it would negatively affect innovation because inventors would flood the system with software that does not show an inventive step and therefore end up creating monopolies in respect of subject-matter which does not make a substantial contribution to the state of the art. Needless to say, if cumulative software were to find favour in patent protection it would cause almost any software inventor to involuntarily infringe upon existing patent rights merely because they used similar code to come up with a new software program.⁸⁰ In addition, the increase of software patents would mean that newer entrants have to incur license fees in order to use software that has been spawned off of pre-existing art, and to avoid infringing on another inventor's patent rights.⁸¹ Similarly, it would not be in line with the goals of a patent system to allow the patenting of inventions which lack novelty, when in fact patents are aimed at protecting an innovative contribution to the state of the art.⁸²

3.2.6 The strength of patent protection

Patent protection is strong in nature as it provides inventors with a monopoly over their invention.⁸³ Copyright protection does not preclude the public from creating a different program based on the same ideas and functionality of the original invention.⁸⁴ Patent protection would only cover over the functional inter-relation between the components of the system.⁸⁵ This will result in one form of protection for all the parts and stages involved in computer software to require a patent.⁸⁶ On the other hand, patent protection prohibits the independent development of software which is based on the same ideas as the original software.⁸⁷ It follows then that the inventor's competitors would not be able to independently create and mimic the protected functionality without a license no matter how original their subsequent creation would be. It seems clear then that only a new technical development which

⁸⁰ Joliffe 2005 35 *SACJ* 4; Klemens (2006) 158; Kariyawasam (2009) 290; Ncube 2012 3 *Stell LR* 452.

⁸¹ Koo (2002) PhD 170.

⁸² Koo (2002) PhD 169.

⁸³ Pistorius (1990) LLM 6, 161; Van der Merwe *LAWSA* 5(3) par 5; Klemens (2006) 160; Kariyawasam (2009) 290; Pouris & Pouris 2011 107 (11-12) *S Afri J Sci* 7; Stockl *Aspects of the Registration of Software as Patents* (LLM Dissertation 2012 UJ) 13.

⁸⁴ Ryan 2001 (Nov) *De Rebus* 24.

⁸⁵ *ibid.*

⁸⁶ *ibid.*

⁸⁷ Koo (2002) PhD 167; Klemens (2006) 158.



supersedes the inventiveness of a protected invention will be free from patent infringement claims. Therefore, patent protection seems to address the core of what actually requires legal protection when it comes to computer software.

3.2.6.1 Lack of protection for the behaviour of computer software

A weakness is revealed in patent protection, in that it does not cover over the behaviour of the patented subject-matter.⁸⁸ Therefore, software which finds its major value in the results which it produces cannot be adequately protected by a patent because another inventor can come up with another inventive method to achieve the same result as that achieved by the patented software.⁸⁹ However, correcting this flaw in patent protection would create an anti-competitive form of intellectual property protection seeing that software developers would be restricted from improving on existing software merely because their inventions achieve a result that can be achieved using an existing invention.⁹⁰

3.2.7 Analysing risky suggestions

In a number of articles, De Villiers has suggested that it is wise to apply for software patent protection despite the existing legal uncertainty.⁹¹ He suggests that is better to have patent protection over one's software now than to try and catch up later when the courts finally decide on the matter. The fruits of his reasoning may only be tested one day when our courts will be faced with the question of computer software patentability, and if the courts in fact adopt the English law approach on the matter. There are reasons that warrant criticism of De Villiers' suggestions.

The first point of critique lies in the reality that in the past, the European and English courts have also had trouble and contradicted one another in defining the scope of protection granted over computer software.⁹² The second point is that the general rule to the interpretation of statutes provides that a statute is not to be interpreted as having retrospective effect, unless there is an express provision to that effect or if it

⁸⁸ Koo (2002) PhD 168.

⁸⁹ Koo (2002) PhD 168.

⁹⁰ Koo (2002) PhD 168.

⁹¹ De Villiers & Abramson 2006 6 (10) *WP* 39; De Villiers & Abramson 2006 6(9) *WP* 15; De Villiers 2007 7 (5) *WP* 26; De Villiers & Tshaya 2008 2 *JILT* 12.

⁹² Bainbridge *Legal Protection of Computer Software* (2008) 309.



is unavoidable due to the kind of language used in the provisions of that statute.⁹³ As such, if software is not declared patentable it would create the situation that we find a number of companies having patent rights over software which could have possibly not deserved that form of protection; whilst new entry software programmers would be barred from receiving the same protection, due to a total legislative exclusion thereof that would not have retrospective application. The prospects of revoking erroneously granted patents would rest on the operation of section 61 of the Patents Act and would require the commissioner's discretion to decide on the revocation.

Taking up the suggestion of patenting 'just in case' will cause a flood of possibly invalid patents and indeed stifle innovation because undeserving works would be protected by means of patents and thus cause barriers to entry in the software industry and in turn, it will result in an uncompetitive market in the industry.

3.3 Advocating for and against copyright protection of computer software

In advocating for and against software patents, some authors have come up with the tendency of advocating for and against copyright protection of software patents,⁹⁴ and therefore, call for a discussion of copyright law. If the Patents Act were to be amended to remove the exclusion of software patents, then it would possibly mean that those who invent software would have to choose between opting for copyright protection or opting for patent protection because these two systems of intellectual property do not protect the same element of intellectual property.⁹⁵ In order to establish a proper balance in the software patent debate, it is important to outline the points raised against copyright protection of software and those which suggest copyright protection for computer software.

⁹³ Bracher "The rule regarding retrospectivity of statutes" *Financial institutions legal snapshot* <http://www.financialinstitutionslegalsnapshot.com/2014/08/the-rule-regarding-retrospectivity-of-statutes/> (accessed on 18 October 2016).

⁹⁴ Sheppard 'Patent Protection-Sheppard Responds' 2001 (July) *De Rebus* 3; Koo (2002) PhD 175, 177; Joliffe 2005 35 *SACJ* 5; Klemens (2006) 137; De Villiers & Tshaya 2008 2 *JILT* 4; Ncube 2012 3 *Stell LR* 453.

⁹⁵ Klopper & Van der Spuy (2012) 3.



3.3.1 The basis for copyright protection of computer software

A vast group of legal scholars submit that the way in which computer software is embodied automatically calls for protection under copyright law because software can be seen as an art.⁹⁶ This view has found support from the legislature by adding computer programs to copyrightable works under section 2 of the Copyright Act. Copyright grants the author of a computer program protection against the actual copying of the method of expression used by the author and also provides for protection against the cloning of computer programs.⁹⁷ It must be noted that only computer software that complies with the definition of a computer program will be protectable in terms of the Copyright Act. In terms of the statutory definition, computer software is a set of instructions fixed or stored in any manner and which, when used directly or indirectly in a computer directs its operation to bring about a result whether the result is correct or not.⁹⁸ As a consequence, if computer software is not embodied as a set of instructions, does not bring about a certain result or is not stored in any manner, then it cannot be protected as copyrightable subject-matter.

3.3.2 Copyright is not restricted by the principle of territoriality

Copyright has been seen as a more suitable form of protecting computer software because it is easier, faster and affordable to acquire and retain while it also allows for cross-border protection of intellectual property.⁹⁹ Copyright vests in a creation without the need to register the right whereas patents require a process of approval and award before the right is conferred upon the inventor.¹⁰⁰ Due to the constitution of the Berne Convention,¹⁰¹ copyright does not call for application procedures from the individual countries in which one may seek legal protection.¹⁰²

⁹⁶ Pistorius (1990) LLM 158, 161; Van der Merwe LAWSA 5(3) par 6; González 2006 1 (3) *JILPLP* 196; Bakker 2007 6 (7) *ITWeb Brainstorm* 29; Papadopoulos & Snail (2012) 132.

⁹⁷ Pistorius (1990) LLM 6; Ryan 2001 (Nov) *De Rebus* 24; Klemens (2006) 137; De Villiers & Tshaya 2008 2 *JILT* 4.

⁹⁸ s1 of Act 98 of 1978; Papadopoulos & Snail (2012) 147.

⁹⁹ Koo (2002) PhD 166, 176; Joliffe 2005 (35) *SACJ* 5; Klemens (2006) 137.

¹⁰⁰ Sheppard 2001 (July) *De Rebus* 3; Joliffe 2005 35 *SACJ* 5; Klemens (2006) 137; De Villiers & Tshaya 2008 2 *JILT* 4.

¹⁰¹ Berne Convention for the protection of Literary and Artistic works of 9 September 1886 accessible at http://www.wipo.int/wipolex/en/treaties/text.jsp?file_id=283693.

¹⁰² Kariyawasam (2009) 290.



Therefore, since copyright is not subject to the principle of territoriality and allows the protected work to enjoy protection on an international plane; software protected under copyright is not to be copied anywhere in the member state countries. Contrariwise, patents are only valid within the jurisdiction in which they are awarded and there is no international patent office that grants patents.¹⁰³ As a consequence, in order secure international patent protection of an invention, an application must be lodged in each jurisdiction's patent office and be awarded on the basis of the relevant office's requirements, which is a burdensome process.

Nevertheless, one must understand that although copyright protection spans over cross-border boundaries, it may still prove to be ineffective. If an item that is subject to copyright in South Africa is used in another country in such a manner that infringes the entitlements of the holder, the latter may not necessarily have the financial means to remedy that infringement.¹⁰⁴ For instance, a small time business man in South Africa will find it financially burdensome to institute a claim in a court of law situated in America. As a consequence, copyright protection would prove to be inadequate to protect the needs of small business in the same way that patents have been argued to be ineffective on account of the financial burdens which they give rise to.

3.3.3 Prolonged protection barriers

What further strengthens copyright protection is that it lasts for a period of 50 years, which is gives the author of computer software an incentive and legal protection that lasts for a long time.¹⁰⁵ In contrast, patents are only granted for a period of 20 years.¹⁰⁶ Viewed from the position of the software inventor, a period of 50 years' protection is an attractive reason to opt for copyright protection. However, this time period is arbitrary on end-users' rights seeing that they have to purchase the protected item for half of a century whenever they want the legal right to exploit the relevant work. Even though technological developments occur with the coming in of young inventors, a copyrighted item would still be a barrier to those who want to use the item for which legal protection would probably not still be relevant at a later

¹⁰³ Joliffe 2005(35) SACJ 5; Singh *Cyberlaws* (4th ed) (2011) 76; Dean & Dyer (2016) 239.

¹⁰⁴ Buys & Cronje (2004) 76; Ncube 2013 3 *Stell LR* 446.

¹⁰⁵ ss3(2)(b) of Act 98 of 1978; Klopper & Van der Spuy (2011) 36; Stockl (2012) LLM 13.

¹⁰⁶ ss39(5) of Act 57 of 1978; Pistorius (1990) LLM 6, 161; Van der Merwe *LAWSA* 5(3) par 5.



stage. Therefore, the time period stated for patent protection seems better than that for copyright protection. However the period for patents is also arbitrary taking into account the fact that computer software is commonly replaced by better software in a short period of time. Therefore, both time periods for patent and copyright protection are all in all too long for the protection of computer software, taking into account its nature as well as the speed at which it develops.¹⁰⁷

3.3.4 Burden of proof restrictions

Important points have been raised to justify why copyright protection is not suitable for the legal protection of computer software. When it comes to an infringement claim regarding computer software, difficulties arise in proving who the owner of copyright is and whether a substantial portion of the work has been copied.¹⁰⁸ This onerous burden of proof is a consequence of the fact that registration is not a prerequisite for copyright protection to subsist in a particular work. A right which is not listed on record is not as easy to prove as one that is issued on record.

In this area, patent rights seem to offer better processes for litigation and particularly, proving the claimed rights of the plaintiff. The registration system of patents provides better security for inventors as they have the advantage of referring to the patent registry in order to assert their rights. However, problems arise in the case where an inventor would be faced with the need to defend a claim against the validity of a computer software patent. Patent claims are usually drafted in vague terms.¹⁰⁹ It would seem highly onerous for the inventor to have to prove that his or her software satisfies the requirements of the Patents Act *ex post facto* the registration of a patent in order to defend the revocation thereof.¹¹⁰ Therefore, it seems that in the pursuit to protect intellectual property, litigation costs are hard to do away with due to the very nature of litigation and the nature of computer software patents.

¹⁰⁷ Papadopoulos & Snail (2012) 132.

¹⁰⁸ Sheppard 2001 (July) *De Rebus* 3; Ncube 2012 3 *Stell LR* 453.

¹⁰⁹ Papadopoulos & Snail (2012) 132.

¹¹⁰ *ibid.*



3.3.5 Limited scope of protection

Unlike patents, copyright protection does not exclude the independent creation of work that is based on the underlying ideas of pre-existing computer software.¹¹¹ Only the material form of the embodied property is protectable under copyright and every other stage of developing that work is left to pursue protection under other categories of copyrightable works and forms of intellectual property.¹¹² Copyright fails to protect a computer program as a whole, that is, all the components which make up the program. Copyright protects computer software against slavish copying of the material form of the idea embodied in the software.¹¹³ The subject-matter of copyright is thus the software program itself; and not the ideas, features and processes which the software encapsulates.¹¹⁴ This is a limitation on the scope of protection offered by copyright in that, when litigating on the basis of a copyright infringement claim, if it is not the material aspect of the software that has been copied, copyright protection cannot apply.

Therefore, the court may only deal with the literal aspects of the software and all the ideas and features of the software which may have been copied are left vulnerable without protection and subject to irremediable infringement.¹¹⁵ In a case where the inventor has protected the features and ideas of his creation in terms of other intellectual property regimes, it makes copyright to be an inadequate form of protection as it needs the other pillars of intellectual property to support the scope of its protection over the relevant software invention.¹¹⁶ Competitors are only liable for use and reproduction of the final software product but are not excluded from using the algorithms and code that can be found in software.¹¹⁷ Therefore a competitor can successfully escape a copyright infringement claim if he or she comes up with a new way to use existing code.

¹¹¹ Pistorius (1990) LLM 6; Ryan 2001 (Nov) De Rebus 24; Van der Merwe LAWSA 5(3) par 9; Koo (2002) PhD 177; Kariyawasam (2009) 269.

¹¹² Van der Merwe LAWSA 5(3) par 8; Koo 175; De Villiers & Tshaya 2008 2 *JILT* 4.

¹¹³ Koo (2002) PhD 175; Dean & Dyer (2016) 242.

¹¹⁴ Koo (2002) PhD 167; Dean & Dyer (2016) 7; Pienaar "Patents crucial for app developers" 2016 TechCentral <http://www.techcentral.co.za/patents-crucial-for-mobile-apps/47733/> (accessed on 4 May 2016).

¹¹⁵ González 2006 1 (3) *JIPLP* 197.

¹¹⁶ Bakker 2007 6 (7) *ITWeb Brainstorm*; González 2006 1 (3) *JIPLP* 197.

¹¹⁷ Koo (2002) PhD 175, 177.



3.4 Balancing the debate

3.4.1 The current legal position

The real evidence of whether any strength can be found in patent protection can only be tested in a court of law when software patents are legally challenged. We never know which route the South African courts will take. The assumption that they may follow the approach of the English courts is based on merit. Whether the English law approach is a good option for South Africa remains to be analysed, tested and proven in the following chapters.

It can be summarily concluded that computer software is patentable in our law despite the existence of opposing opinions.¹¹⁸ Computer software is only conditionally excluded from the scope of the Patents Act. The following example may be presented to illustrate the possibility of a software patent: a vehicle which performs in a new inventive manner due to artificial intelligence software may be eligible for a patent. In this case the patent would be granted over the car itself, thus the hardware instead of the software; bearing in mind that such a patent would be conferred as a consequence of the artificial intelligence software because if the software did not cause the innovative functioning of the hardware, an inventive step would not exist in regards to the particular vehicle. A claim may only be made over the hardware and not the software itself; however, the software would be the reason for the inventiveness vested in the particular vehicle. This conclusion remains unsatisfactory because the software itself is not awarded protection that context but the computer hardware instead.

3.4.2 The computer software patent debate: A double-edged sword?

The computer software patent debate has indeed divided people into groups —those cheering for them, those who stand against them and those who ultimately remain firm on copyright being the appropriate mechanism to protect computer software. In conclusion, a summary of the main points of arguments is provided.

Computer software is abstract in nature and is therefore regarded as unsuitable for patent protection. Computer software patents give rise to patent thicketing and

¹¹⁸ De Villiers 2007 7 (5) *WP* 25-26; De Villiers & Tshaya 2008 2 *JILT* 12; Papadopoulos & Snail (2012) 131.



monopolies due to the arbitrary time periods for which patents are granted. Patent thicketing will result in the preclusion of independent development of computer software. Computer software patents are therefore anti-competitive. Computer software patents result in a lack of economic growth and availability of information in the public domain. The economy will suffer a great loss and stagnation at the cost of poor quality software patents. The registration system of patents in our country seems to have shortcoming and results in invalid and poor patents being unnecessarily issued. In addition, patent claims are usually drafted in vague language,¹¹⁹ and therefore are subject to restrictions by the principle of territoriality. Patents bring about heavy costs on inventors having to secure patents internationally. Software patents would not be fruitful for small businesses, which are seemingly the power house of software inventions.

Similarly, there are arguments which promote the idea of patenting software in our country and which are worth noting. South African patents are generally cheap due to the registration system of patents that does not come with the costs of substantive examination. Software patent will encourage direct foreign investment and innovation in our country and thus act as a driving tool for economic growth. Software patents would allow access to information for the public, specifically on new ways on how to use code to achieve better results and solve existing problems. Unlike copyright, patents protect the bare idea of the invention and prevent other parties from exploiting the exact same idea without a license; and if properly secured, software patents can prove to be a fruitful venture for small businesses.

3.5 Conclusion

The abovementioned issues form the basis of the computer software patent debate. As can be seen from the way these points are structured, the arguments usually reflect two sides of the same argument. Recommendations on how to address these problems will be presented in the final chapter of this dissertation. At first, a comparative analysis is necessary to see how a similar jurisdiction has dealt with and balanced out the arguments surrounding software patents.

¹¹⁹ Papadopoulos & Snail (2012) 132.

Chapter 4: Comparative analysis: The English law approach to software patents

4.1 Introduction

4.1.1 Rationale for comparative study on English law

Our legal system made up of different European legal traditions, because some of our legal principles have been inherited from the English common law. As a consequence, English law has a persuasive influence in our law.¹ In fact, the South African Patents Act 57 of 1978, which follows the 1977 British Patents Act format, was shaped on the basis of the European Patent Convention (EPC).²

Therefore, the research topic underhand should be analysed in view of English Law in order to see the likely route which South African courts will take when eventually faced with the question of whether computer software is indeed patentable under our law. Furthermore, this comparative study is aimed at using the English approach as a guideline for the recommendations on whether we should allow or exclude computer software patents. The English law has gone under a lot of judicial analysis and their method of dealing with software patent applications has gradually been developed by the courts. For purposes of properly disclosing this development, this chapter will show an array of legislative framework and case law from English law.

4.1.2 The probable impact of 'Brexit'

The legislation regarding patents in the United Kingdom (UK) comprises of the Patents Act of 1977 (hereinafter 'the Act of 1977'), the Patents Act of 2004, subordinate legislation issued thereunder as well as international conventions and treaties which it gives effect to. The Patents Act does not an isolated code because it only gives the basis of patent regulation and must be understood in reference to

¹ Kleyn & Viljoen *Beginner's guide for law students (4th ed)* (2010) 32; Meintjies-Van der Walt *Introduction to South African Law: Fresh Perspectives* (2011) 18.

² European Patent Convention (EPC) available at <http://www.epo.org/law-practice/legal-texts/html/epc/1973/e/ma1.html> accessed on 29 July 2016; Van der Merwe in Klopper (2011) 268.



case law decisions under earlier statutes, rules of practice and certain agreements under European and international law.³ Therefore, a synopsis of case decisions and commentary regarding the patentability of computer software will form part of this discussion.

Under normal circumstances, the national law would apply to a European patent in the UK as if it were a patent issued in terms of the Act of 1977.⁴ At present, the Act of 1977 corresponds with the EPC provisions. However, the legal position of the UK has to be observed while keeping in mind the changes that the country may go through if 'Brexit' were to take place.

The term 'Brexit' is used to refer to the proposed decision of the UK to cease its membership in the EU. If upheld, this decision may possibly affect the application of the terms of the agreements existing between the UK and the EU. A relevant example of the far-reaching effects of 'Brexit' concerns territorial definitions as included in intellectual property licensing agreements.⁵ As a result, UK nationals are faced with questions about what will happen to the computer software industry regarding intellectual property protection thereof. The UK would be in a position to decide which laws that are influenced by the EU may be kept or done away with,⁶ a decision that can easily be influenced by politics.

Nonetheless, patent law may have a chance of escaping extensive policy changes despite the fact that the EPC has had a very large influence on the drafting of the Act of 1977. In addition to that, the Patents Act of 2004 was enacted to introduce some procedural changes to the Act of 1977 in order to make way for the ratification of the EPC.⁷ In light of the uncertainties that come with the proposal of 'Brexit', it seems wise to only discuss the Act of 1977, without looking at the influence of EU laws for purposes of this study.

³ Thompson *Halsbury's Laws of England* (edMachell) 79 (2014) par 304.

⁴ ss78(1)-(2) of Patents Act 1977; Dowie-Whybrow *Core Statutes on Intellectual Property Law* (2011) 293; Thompson *Halsbury's Laws of England* 79 (2014) par 652.

⁵ Allen & Overy LLP *A lawyer's View on Brexit* Allen & Overy Global Law Intelligence Unit http://www.allenoverly.com/SiteCollectionDocuments/A_fresh_view_on_Brexit.pdf 2 (accessed on 5 February 2016).

⁶ Allen & Overy LLP (2016) 8.

⁷ Lloyd *International Encyclopaedia of Laws: Cyber Law* (edDurmotier) 6 (updated 2014) par 269.



4.2 The Patents Act of 1977

4.2.1 Requirements for patentability

Section 1 of the Act of 1977 provides that a patent may be granted for a patentable invention which is new, involves an inventive step, is capable of industrial application and does not fall under the specified list of exclusions.⁸ Most of the requirements for patents in the 1977 Act are similar if not exactly the same as in the South African Patents Act 57 of 1978. Therefore only a brief summary of the 1977 Act will suffice.

4.2.1.1 Invention must be new

An invention is taken to be new if it does not form part of the state of the art; which is all matter which has been made available to the public anywhere in written or oral form or by use in any form.⁹ If the patentee or any other person uses the invention in secret it does not form part of the state of the art.¹⁰ The courts determine the issue of novelty on the basis of national judicial precedence but also rely on European Patent Office (EPO) decisions as well as that of member state of the EPC as persuasive authority.¹¹

4.2.1.2 Invention must be an inventive step

An invention is not patentable if it is obvious to a person who is skilled in the relevant art; having regard to any product, processes or information available to the public by written or oral description or by any use anywhere in the UK or elsewhere.¹² The concept of obviousness is not a clear-cut fact but is rather one which requires investigation. The courts are allowed to make reference to decided cases in order to determine obviousness and establish whether the person in the relevant art may find that the subject-matter is obvious in nature. As a result, a four-staged test has been formulated to determine obviousness:¹³

⁸ ss1(1)(a)–(d) of Act 1977; Dowie-Whybrow (2011) 252; Lloyd 6 par 290.

⁹ ss2(1)-(2) of Act 1977; Wilson *International Patent Litigation: Developing an Effective Strategy* (2009) 258; Dowie-Whybrow (2011) 252; Thompson *Halsbury's Laws of England* 79 (2014) par 434.

¹⁰ Thompson *Halsbury's laws of England* 79 (2014) par 434 & 513.

¹¹ Thompson *Halsbury's laws of England* 79 (2014) par 436.

¹² ss1(1)(b) & s3 of Act 1977; Wilson (2009) 259; Dowie-Whybrow (2011) 253; Thompson *Halsbury's Laws of England* 79 (2014) par 451.

¹³ *Pozzoli SPA v BDMO SA and Others* [2007] EWCA Civ 588 CA par 14; Wilson (2009) 259; Thompson *Halsbury's laws of England* 79 (2014) par 454.



- Step 1: Identify the notional person skilled in the art and the common general knowledge of such a person.
- Step 2: Identify the inventive concept of the claim in question or if not able to do so, construe it.
- Step 3: Identify if any differences existing between the state of the art and the inventive concept of the claim identified or construed in step 2.
- Step 4: Identify if viewed without any knowledge of the alleged invention, those differences identified in step 3 would have been obvious to a person skilled in the art or whether they require a degree of invention.

Therefore the courts will have a look at the uninventive person who is skilled in the art and has common general knowledge of that specific art.¹⁴ However, the outcome of the assessment of inventiveness depends on the circumstances of each case, following the mechanism that has crystallised in English law as briefly outlined above.

4.2.1.3 Invention must be capable of industrial application

An invention is capable of industrial application if it can be made or used in any kind of industry, including agriculture.¹⁵ Therefore the invention must involve some form of physical human act that is technical in nature.¹⁶

4.2.2 Examination of patent

For the granting of a patent, an examination system is in place and briefly takes the following procedure:¹⁷ Firstly, the patent application undergoes preliminary examination in order to ensure that it complies with legislative formalities. The results of preliminary examination, though not final, are then issued to the applicant and comptroller of patents. If no withdrawal is sought after the preliminary report, the application is forwarded for substantive examination where a decision to grant or refuse to grant a patent is made. Thereafter the applicant is given the opportunity to self-examine and amend the application to challenge the examiner's objections.¹⁸

¹⁴ Thompson *Halsbury's Laws of England* 79 (2014) par 455-459.

¹⁵ s4 of Act 1977; Dowie-Whybrow (2011) 253; Thompson *Halsbury's Laws of England* 79 (2014) par 487.

¹⁶ Abramson & De Villiers 2006 6 (10) *WP* 38; Cole *CIPA Guide to the Patents Act* (2011) 162.

¹⁷ s17-19 of Act 1977; Lloyd *International Encyclopaedia of Laws: Cyber Law* 6 par 276-281.

¹⁸ *ibid.*



4.2.3 Content of patent rights

A patent is granted to the inventor - the actual devisor of an invention;¹⁹ or the person who makes an application for an invention to be patented, subject to an agreement with the inventor.²⁰ The patent is then valid for 20 years from the date on which the application was instituted with the UK Intellectual Property Office (UKIPO). Initially the patent only lasts for 4 years followed by annual applications and is subject to the payment of renewal fees.²¹ However, not all patents remain in force for 20 years. Due to development of newer technologies and the use of an invention becoming limited over time, patents usually last for only 8 years on average.²² The effect of the patent is that it gives the holder thereof the right to hold the patent as personal property.²³ This gives the patentee the right to assign or mortgage any rights under the patent, grant a license in respect of the patented invention and to exercise any other rights that are attached to personal property.²⁴

For purposes of this comparative analysis, the scope of infringement and remedies afforded the holder of patent rights will not be discussed. It does not have a bearing on the question of whether we are to follow the approach used in this system in relation to infringement of rights and remedies. For our purposes, the aim is to discover a route that South African intellectual property law should follow, or otherwise avoid in regards to the mere patenting of computer software. Therefore, the English law may only inform our law thus far. In subsequent paragraphs, the limitations found in the scope of protection offered by the 1977 Act will be discussed. The statutory exclusion of computer software patents, as well as the English courts' approach will be a main point of focus hereafter.

¹⁹ ss7(3) of Act; Dowie-Whybrow (2011) 255.

²⁰ ss7(2)(a)-(c) of Act 1977; Thompson *Halsbury's Laws of England* 79 (2014) par 301 & 306.

²¹ ss25(1) & (3) of Act 1977; Dowie-Whybrow (2011) 267; Thompson *Halsbury's Laws of England* 79 (2014) par 338; Lloyd *International Encyclopaedia of Laws: Cyber Law* 6 par 282.

²² Lloyd *International Encyclopaedia of Laws: Cyber Law* 6 par 269.

²³ ss30(1) of Act 1977; Dowie-Whybrow (2011) 269; Thompson *Halsbury's Laws of England* 80 (2013) par 822 read with Thompson 79 (2014) par 359.

²⁴ *ibid.*



4.3 Limitations on the scope of patentable subject-matter

Computer software forms part of the listed exclusions, but only to the extent that an invention relates to the computer software as such.²⁵ This calls for a judicial decision of whether or not an invention which comprises of computer software actually relates to the software 'as such'. For instance, a patent claim which refers to a basic computer that is programmed with novel computer software will not be eligible for a patent because it would fall under the excluded subject-matter.²⁶ Moreover, applications for patenting computer software are also susceptible to challenges on other listed grounds of exclusion under the Act of 1977. Such grounds include the fact that software is a mathematical method, a method of doing business, the presentation of information and a method of performing a mental act; which are all excluded from patentability under the Patents Act.²⁷

The fact that novelty lies in the computer software alone is the very reason why the whole invention will be excluded from patentability. As a way of resolving this challenge, the approach adopted is to require that a computer software invention make a technical contribution to the already known art.²⁸ This approach therefore raises the question of whether the mere capability to bring about a technical effect can rule out the exclusion of computer software patents. In order to understand and fully grasp this approach, the relevant case law and commentary thereon has to be analysed.

4.3.1 The English judicial approach to computer software patents

Due to the conditional language embodied in the statutory exclusion of computer software, such patent claims have been subject of litigation. In this overview, a selection of case law principles developed during the past decade will be discussed. The main question which forms the crux of these disputes is usually the requirement

²⁵ s1(2)(c) of Act 1977; Wilson (2009) 261; Ncube 'Software Patents' in Papadopoulos & Snail (eds) *Cyberlaw @ SA III: The Law of the Internet* (2012) 128.

²⁶ Astron Clinica Ltd Comptroller General of Patents, Designs and Trademarks [2008] 2 All E.R. 742-743; Thompson *Halsbury's Laws of England* 79 (2014) par 430; Lloyd *International Encyclopedia of Laws* 6 par 287.

²⁷ Lloyd *International Encyclopedia of Laws* 6 par 296.

²⁸ Papadopoulos & Snail (2012) 130; Lloyd *International Encyclopedia of Laws* 6 par 296.



developed by the courts to establish whether an invention makes a technical contribution, in the case where such an invention falls under the listed exclusions.²⁹

Aerotel Ltd v Telco Holdings Ltd and Maccrosan's Patent Application
[2006] EWCA Civ 1371

As a starting point, the case of *Aerotel Ltd v Telco Holdings Ltd and Maccrosan's Patent Application*,³⁰ is of key reference. This case was decided upon the language construed in the EPC because the wording of the Act of 1977 holds the same meaning as that in the EPC.³¹ The Court of Appeal adopted a test to assess whether the subject-matter of the claim can make a technical contribution. The court in *Aerotel* established that in applying the technical effects approach, the court must establish whether the invention makes a technical contribution to the already known art.³² If it does not make such a contribution then it falls to be excluded from patentability. This test must be applied by following the four steps of the test developed by the court, which can be summarised as follows:³³

Step 1: The court must interpret the patent claim.

Step 2: The court must identify the contribution the invention renders.

Step 3: Determine whether the contribution falls solely under the excluded subject-matter.

Step 4: Check whether the actual or alleged contribution is indeed technical in nature.

Therefore if there is a contribution which is technical, the courts will allow the patent on the grounds that it is not a patent for computer software 'as such'. In the process of applying this test, the courts have developed principles and guidelines for the decision of whether an invention indeed makes a technical contribution.³⁴ The guidelines adopted by the English courts will be briefly discussed in subsequent paragraphs.

²⁹ Wilson (2009) 261; De Beer "Software patents in South Africa – To be or not to be?" accessed at <http://www.bowman.co.za/News-Blog/Blog/software-patents-south-africa> on 4 May 2016.

³⁰ *Aerotel Ltd v Telco Holdings Ltd and Maccrosan's Patent Application* [2006] EWCA Civ 1371.

³¹ [2006] EWCA Civ 1371 supra par 6.

³² [2006] EWCA Civ 1371 supra par 26; Cole (2011) 14; Bainbridge (2008) 309; Papadopoulos & Snail (2012) 130.

³³ [2006] EWCA Civ 1371 supra par 42-46; Wilson (2009) 261; Cole (2011) 15; Papadopoulos & Snail (2012) 130; Ncube 2012 (3) *Stell LR* 447.

³⁴ [2006] EWCA Civ 1371 supra par 42-46; Papadopoulos & Snail (2012) 130; Thompson *Halsbury's Laws of England* 79 (2014) par 431; Van der Merwe *et al*, (2016) 54.



Symbian Ltd v Comptroller General of Patents [2009] R.P.C 1 par 52

In *Symbian Ltd v Comptroller General of Patents* the judge pointed out that indeed there is no clear rule regarding the patenting of computer software and thus each case must be decided on the basis of prevailing facts and circumstances.³⁵ In order to decide whether an invention can escape the statutory exclusion, the courts look at the material aspects of its purpose instead of its form, and give merit to what the invention can do instead of where it is situated and how it looks. The *Symbian* case demonstrates this as the court further developed the test and re-affirmed it by stating that whether the technical innovation exists within or outside the computer hardware is of no consequence.³⁶ Based on this judgement, the court accepted that computer software which is not found inside a computer can still be awarded patent protection provided that it makes a technical effect. Therefore, software need not be embodied in computer hardware in order to be considered an invention which is worthy of patent protection.

AT&T Knowledge Ventures LP and CVON Innovations v Comptroller General of Patents Designs and Trade Marks [2009] EWHC 343 (Pat)

In *AT&T Knowledge Ventures LP and CVON Innovations Ltd v Comptroller General of Patents Designs and Trade Marks*³⁷ the High Court found the test from *Aerotel* to be useful. This led the court to decide that software which gives technical support to computer hardware does not necessarily have a technical effect. Accordingly, software which renders assistance to the way in which a computer already functions cannot be said to have a technical effect. This is because it does not make the hardware work in a new way but merely causes the hardware to operate in its pre-existing manner with the support of a new feature.³⁸ Therefore, according to the court in the *AT & T* case, if a technical problem which subsists in the hardware is not being resolved by the invented software then the latter is not making a technical contribution in that it does not transform the existing hardware, but merely acts in supportive capacity.

³⁵ *Symbian Ltd v Comptroller General of Patents* [2009] R.P.C 1 par 52.

³⁶ [2009] R.P.C 1 supra par 55; Cole (2011) 17, 23.

³⁷ *AT & T Knowledge Ventures LP and CVON Innovations v Comptroller General of Patents Designs and Trade Marks* [2009] EWHC 343 (Pat).

³⁸ [2009] EWHC 343 (Pat) supra par 57; Cole (2011) 25.



Halliburton Energy Services Inc's Patent Application [2011] EWHC 2508 (Pat)

The approach adopted in the *AT & T* case was later confirmed in the case of *Halliburton Energy Services Inc's Patent Application* where the court found that when software solves a technical problem it may qualify for patent protection because the claim relates to the protection of the hardware in which the technical contribution is being made manifest.³⁹ This judgement suggests that the patent protection effectively rests in the hardware and not the software. The problem with this view is that it suggests that only software which makes a technical contribution in computer hardware may be patented. This position contradicts the views expressed in the *Symbian* case.⁴⁰

HTC Europe Co Ltd v Apple Inc [2013] EWCA Civ 451

In a recent case, the court in *HTC Europe Co Ltd v Apple Inc*⁴¹ re-affirmed the principles which were used to decide the previously mentioned cases. The court followed the four-staged test from *Aerotel* and found that the judge in the *court a quo* had erred in finding that a method for handling multiple touch events on computer devices with touch-sensitive screens was excluded from patentability.⁴² This decision was based on the fact that the method addressed a technical problem and caused the devices to operate in an improved way, although the solution was embodied in software.⁴³ The court decided that a patentable invention did not fall into the exclusionary provision merely because a computer program was used to implement it.⁴⁴ The court focused its analysis on the question of what the invention contributed to, despite its embodiment being in computer software. The court found that the invention will form part of the excluded matter if a technical contribution is made only towards computer software. For the invention to be patentable there ought to be a technical contribution towards computer hardware too, whether or not the invention itself is found with the hardware or the software.⁴⁵ This approach confirms what the courts decided in the *Symbian* and *AT & T* cases, that the software invention must

³⁹ *Halliburton Energy Services Inc's Patent Application [2011] EWHC 2508 (Pat)* par 37.

⁴⁰ [2009] R.P.C 1 supra par 55.

⁴¹ *HTC Europe Co Ltd v Apple Inc [2013] EWCA Civ 451*.

⁴² [2013] EWCA Civ 451 supra par 152.

⁴³ [2013] EWCA Civ 451 supra par 154(iv).

⁴⁴ [2013] EWCA Civ supra par 142.

⁴⁵ [2013] ECWA Civ supra par 154(i)-(iv).



cause the hardware to operate in a new way by solving a technical problem therein, whether existing within or outside the computer hardware.⁴⁶

4.4 Conclusion

In English law, software patents are not completely excluded but instead go through a test of broader requirements. An analysis of the English law aspects regarding software patents reveals that computer software is patentable only if it complies with the requirements of the Act of 1977 in the first place. In addition to satisfying the statutory requirements, to escape the statutory exclusions under section 1(2)(c) of the 1977 Act, the relevant computer software must produce a technical effect. This calls for judicial evaluation on the basis of the crystallised principles and guidelines for determining whether a technical effect is indeed existent. The question of whether a technical effect is produced by that software will depend on the facts of each case, taking into consideration the principles that were developed by the courts. Therefore computer software must be capable of causing the computer to behave in a new manner, thus causing the hardware to solve a technical problem in order for it to be considered to be making a technical contribution. Whether the invention exists inside or outside the computer hardware does not have a bearing on the decision.⁴⁷

As a result of these developments over the past decade, software patents can be said to be conditionally allowable in English law. This allowance is based on a long process of verifying whether the computer software invention is deserving of protection and not totally excludable from the scope of the 1977 Act. Furthermore, patents are found to have a shorter lifespan than the statutory grant of 20 years. In the current state of affairs where technology evolves on a continual basis, it is more likely that software patents will not produce monopolies as software developers begin to outdo one another and introduce more innovative ways to control computer hardware. This will result in reduced patent ticketing and increased innovation in the country. In addition to that, the examination system which is in place provides for better control of the quality of inventions over which patents are granted. The

⁴⁶ [2006] EWCA Civ 1371 supra par 42-46; [2009] R.P.C 1 supra par 52; [2009] EWHC 343 (Pat) supra par 57; [2013] EWCA Civ 451 supra par 152.

⁴⁷ [2006] EWCA Civ 1371 supra par 42-46; [2009] R.P.C 1 supra par 52; [2009] EWHC 343 (Pat) supra par 57; [2013] EWCA Civ 451 supra par 152.



cumulative evaluations that these computer software patents go through can be a good method for a country like South Africa to adopt in dealing with computer software patents.

Chapter 5: Recommendations and conclusion

5.1 Introduction

The computer software patent debate is indeed duplicitous. De Beer has properly juxtaposed the most suitable decision that one can make regarding the patentability of computer software. In his article, De Beer writes:

“Software should not be patentable where there is no technological innovation, and technological innovations should not cease to be patentable merely because the innovation lies in software.”¹

This statement sums up why it is so difficult to have a final word on the patentability of computer software. Patents are issued to protect and facilitate fair innovation and novel solutions to problems. Therefore, issuing a patent for software which is merely a reproduction of another piece of software goes against the underlying principles of patent protection. On the other hand, innovative and novel computer software should not all be excluded from patent protection as this results in prejudice towards inventors who happen to work in the software industry and produce technological innovations.

It is said that intellectual property law is aimed at a three tiered goal, which includes providing equitable protection for worthy works in all industries; to achieve fairness on the part of the creator, user and the interests of society and finally, to contribute to the country’s efforts in developing the economy.² While keeping these goals in mind, a few suggestions and recommendations submitted by legal scholars will be discussed in this chapter. These will be provided with the view to shape legal certainty in the law of patents as well as regarding the legal protection of computer software. At first, the South African approach to this topic will be briefly restated. Thereafter, some reflections on the English law approach will be shared in a suggestion of whether or not this approach is suitable for South African law. Finally,

¹ Bowman Gilfillan ‘Software patents in South Africa - To be or not to be?’ 20 June 2011 <http://www.bowman.co.za/News-Blog/Blog/software-patents-south-africa> (accessed 4 May 2016).

² Ncube “Harnessing intellectual property for development: some thoughts on an appropriate theoretical framework” 2013 16 (4) *PELJ* 369.



some of the author's own views regarding the best way forward, on the basis of the previous chapters, will be expressed in this concluding chapter.

5.2 The way forward: recommendations from legal scholars

It must be noted that the best solution to harmonise the computer software patent debate is to find a solution that will effectively offer a cheaper solution for the process of obtaining legal protection of software; a solution which contributes to innovation and boosts the economy in a positive way; one which is speedy and easy to undertake and provides concrete legal protection, and which is in line with the international laws and trends.

5.2.1 The meaning for the wording of the Patents Act 57 of 1978

In South Africa, it is clear that computer software is not patentable in isolation.³ Nonetheless, it is not certain when computer software can be said to not be computer software as such. The correct legal interpretation of section 25(2)(f) read in line with section 25(3) of the Patents Act is yet to be established either by means of a case decision or by legislative amendment. However, both these steps take time and effort. In the meantime, there seems to be a growing consensus that computer software should only be patented if it forms part of a larger process and has a technical effect.⁴ On the other hand, Pistorius rightly states that computer software is a complex combination of hybrid intellectual property rights.⁵ Rahamim agrees with Pistorius, in that the organisation and manner of an idea and operation of computer software is patentable if it satisfies all the requirements of the Patents Act; while the physical embodiment and expression of the computer code used in the software is protectable under the Copyright Act.⁶ This interpretation suggests that an inventor should pursue both copyright and patent protection for his or her computer software. This state of affairs seems to amplify the financial burdens and time constraints which come with software patents and thus defeats the purpose of this study; which is to come up with a much cheaper solution to the problem.

³ ss25(3) of Act 57 of 1978; Lloyd *International Encyclopaedia of Laws* 6 (updated 2014) par 295.

⁴ Pistorius (1990) LLM 161; Van der Merwe *et al*, (2016) 61.

⁵ Pistorius (1990) LLM 158.

⁶ Pistorius (1990) LLM 158; Buys & Cronje (eds) (2004) 74.

5.2.2 Adopting Free Open Source Software

Ncube has established that some authors, as well as the government, support the view that best solution to adopt is to use what is now commonly referred to as Free and Open Source Software (FOSS).⁷ This view seems correct as it addresses the negative effects of providing broad protection over computer software. The use of FOSS has its benefits in that it encourages free access to software and contributes to providing for the growing needs of disadvantaged computer software users. The only problem in adopting an entirely FOSS-filled system is that it does not cater for the rights of computer software inventors as it allows for the free use and exploitation of their hard work and mental skills. To the contrary, FOSS encourages and facilitates free access to knowledge and therefore finds favour from numerous role players because it is in line with the goals of present day South Africa.

5.2.3 Adopting *sui generis* legal protection

A number of attempts have been made to recommend a *sui generis* form of protection for computer software.⁸ However, this has been met by the deterrent that such an approach will cause other industrial sectors to also demand their own *sui generis* laws.⁹ Moreover, it is suggested that the adoption of a *sui generis* system for legal protection of computer software will compromise South Africa's compliance with its obligations under the TRIPS Agreement.¹⁰ Therefore, it is clear that a *sui generis* regime is disadvantageous for the South African legal system.

5.2.4 Creating a World Patent System (WPS)

Certain scholars and state have expressed the need for the creation of World Patent System (WPS).¹¹ This suggestion was rejected by the Department of Trade and Industry in a policy framework document published in the year 2013 because of the difficulties it would give rise to in regards to consistency in the applications of the

⁷ Papadopoulos & Snail (eds) (2012) 132.

⁸ Ncube 2012 3 *Stell LR* 455; Muhlberg 2014 (10) *WP* 55.

⁹ *ibid.*

¹⁰ Agreement on the Trade-related Aspects of Intellectual Property Rights available at http://www.wto.org/english/docs_e/legal_e/27-trips.pdf.; Ryan "To patent, or not to patent?" 2001 (Nov) *De Rebus* 26; Ncube 2012 3 *Stell LR* 456.

¹¹ Koo (2002) PhD 279.



proposed unitary laws; in addition, it is believed that the harmonisation of patent laws would can override the application of the TRIPS Agreement in our law.¹²

5.2.5 Adopting pre-patent grant opposition provisions

There is also the suggestion that the Patents Act ought to make provision for the pre-patent grant opposition proceedings.¹³ These suggestions seem laudable at first sight; however, when one considers the expense that comes with pre-patent grant proceedings and having to investigate the existing state of the art it becomes clear that the aim of finding a cheaper solution for the legal protection of computer software would be defeated by the implementation of this suggestion. Even though one could consider a less expensive option such as putting up a public notice of a computer software patent application and allowing for public objection thereof; such a recommendation could probably prove ineffective in practice because the parties who object would still have to run the expense of showing a legitimate purpose in order for their objection to be upheld.

5.2.6 Adoption of reverse engineering provisions

Ncube further offers the suggestion that the Patents Act ought to make provision for reverse engineering provisions.¹⁴ Reverse engineering refers to the act of basically dismantling one's work to study its components and then creating something which is similar to that work.¹⁵ In addition, adopting reverse engineering principles in the Patents Act would not address the existing legal uncertainty as a whole. This inclusion would not be able to assist in establishing whether computer software is in fact patentable and only serves as a measure which ought to be considered for implementation once the problems which are brought about by the wording of the Patents Act are sorted out. Furthermore, implementing reverse engineering provisions would likely have a negative impact on rights of inventors seeing that it allows for the production of a probably cheaper but also efficient counterfeit of their patented invention. Therefore, this solution does not offer an immediate solution to

¹² GN R918 in GG36816 dated 4 September 2013.

¹³ Ncube 2012 3 *Stell LR* 460; Muhlberg 2014 14 (10) *WP* 55.

¹⁴ Ncube 2012 3 *Stell LR* 460.

¹⁵ Klopper & Van der Spuy (2012); Dean & Dyer (2016) 49.



the computer software patent debate and the current legal uncertainty which we face today.

5.3 The way forward: recommendations based on this study

Based on the aforementioned principles, discrepancies and recommendations, it would seem best to adopt an approach which can easily be fitted to the existing legal framework which we have in South Africa. The following suggestions ought to be read as a whole and in support of one another, as though presenting a complete model of reform and amendment to the legal protection of computer software.

5.3.1 An exception to the general rule under the Copyright Act 98 of 1978

Seeing that the Copyright Act provides for different specified rights and entitlements regarding specified types of works; the protection of computer programs can be amended to suit the nature of this kind of work. The extent of protection that copyright offers over computer software should be broadened to exclude the independent creation of copyrighted computer software. Therefore, registration of a right in terms of the Copyright Act will be theoretically tested against existing computer software. Therefore; an exception to the general rule ought to be inserted in order to allow for copyright protection to cater for the needs of deserving computer inventors. This amendment would have to be subject to the certain limitations which are discussed in subsequent paragraphs.

5.3.2 Amendment of statutory time periods

The time period granted for patent protection and copyright protection ought to be reduced with specific regard to the provisions of computer software, in order to suit the nature of computer software as well. It was emphasised in chapter three that the emerging world presents us with the situation where existing computer software tends to be superseded by new and inventive software, which in turn causes a patent to automatically lapse prior to its expiry time. Therefore, since the outcomes of the growing environment necessitate a shorter time period of protection, legislation ought to adapt to the growing needs and developments which are present in the modern world. Such an amendment may defuse patent thicketing and patent monopolies by creating the possibility that the lifespan of a software patent would be shortened and thus allow for equal opportunity to recreate similar software for the



free consumption of all users. In addition to reducing the statutory time periods, the lapsing of patent and copyright protection ought to be triggered by the coming into existence of a work which outshines the prior art, thus boosting the end goal of creating a world in which software is widely available at lower, or no cost.

5.3.3 Adaptation to international law and foreign law

5.3.3.1 Expunging the listed exclusions

The legislature ought to ratify the TRIPS Agreement and establish a general provision for the patenting of any invention which is new, provides an inventive step and which can be applied in a trade, industry or agriculture. Instead of maintaining a list of excluded works, the legislature ought to provide for general requirements which will be used to test every patent application on the basis of the content of the invention in each case. This will provide recognition for the emerging needs of people and inventors. What was previously considered as commodities worthy of patent protection has evolved to include computer software; considering the mobile world we live in where the use of mobile applications is becoming more and more convenient for purposes of fun, learning, utility, shopping, and transport, among others.

5.3.3.2 Adopting the English law approach

In chapter four of this study, an overview of the English law approach to software patents revealed that the legal position in that jurisdiction is somewhat certain and patent laws are consistently applied by the courts. In adopting such measures, the South African system would have to tailor English law practices to suit the South African legal system and the needs of the people which it aims to protect.

a) Examination system

In granting patents, the comptroller of patents carries out an examination of the application in which a patent is sought. In South Africa, although it would cost the government money to change to an examination system of patents as this would have to be done by hiring more skilled and qualified persons to examine computer software patent application; an examination system would assist in ensuring that weak patents are not carelessly allowed in our country.



b) The ‘technical effect’ test

The English courts have determined that the phrase ‘as such’ refers to the fact that software ought to have a technical effect. The test employed by the English courts in order to sever the weak computer software patents from the strong ones seems to be an equitable and effective tool. In this way, only software which has a technical effect (performs in a new way and solves an existing problem) and complies with the requirements of an invention, novelty and utility can be granted patent protection. This way, a proper balance is maintained in protecting the rights of the skilled and genius inventors who contribute to innovation, whilst ensuring that the less skilled inventors are not unduly granted patents, but in the meantime remain encouraged to work harder in order to one day be granted a patent upon inventing computer software that has a technical effect and which undoubtedly contributes to innovation. This allows for objective fairness as each invention is granted protection on the basis of its merits.

5.3.4 Balancing out a three-tiered approach:

The protection of computer software ought to meet the three goals of the intellectual property regime. In the first place, as stated above, the law should allow for the patenting of computer software which has a technical effect and which is new, inventive and capable of commercial utility. Therefore computer software must be capable of causing the computer to behave in a new manner, thus causing the hardware to solve a technical problem in order for it to be considered to be making a technical contribution. This will establish fairness and provide a standard of equity for the inventor of new software which completely complies with the Patents Act.

Secondly, computer software which is spawned on existing innovative software should be made accessible as FOSS. In this way, only the first software invention of each kind is afforded computer protection while all others which are based on the same idea are freely accessible to end users to use as long as they do not supersede the initial invention in creativity and originality. Should subsequent software supersede the pre-existing software, then the latter ought to become available as FOSS and lose its protection on grounds that a newer invention has come into existence and proves to be of more value and contributes more innovation



to the economy. In this way, fairness is offered to society and end-users to always have competent computer software available to them both for sale and as FOSS.

Lastly, the aforementioned suggestions can effectively work in conjunction to the benefit of the industry and all players within the software industry. Small business owners may not worry about dominant companies registering frivolous patents and causing patent thicketing with their large patent portfolios. In addition, if all inventors are treated on a first come basis, subject to a technical effects requirement; equity can be maintained in the software industry and not only large companies may prosper due to the allowance of computer software patents.

5.4 Final remarks

The computer software patent debate is indeed like a double-edged sword. The issues to consider in the patenting of software are double-sided because, as displayed in chapter three, the arguments which support and oppose software patents are commonly based on the same principles. Legal scholars have relied on two sides of the same aspect to oppose each other's views and no argument goes without its own pros and cons. It is this very kind of double-sidedness which separates the economist-lawyers from the rights-movement-lawyers. This indeed makes it difficult to choose a side and thus leaves us having to synchronize the law as it stands today, while we await legislative amendment and decisive case law.

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