Law Relating To Protection of Computer Software in Corporate World through Intellectual Property Rights: A Critical Analysis

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Abstract

The proliferation of computers throughout the business community is a well documented phenomenon. Within the span of a few years, computers have undergone a transformation from corporate status symbol to business necessity for medium and even small corporations. Computers not only open new vistas, but the underlying data and software have come to represent valuable business assets. A primary concern of businesses should be how best to protect this information and software against misappropriation. Patents, copyrights, trademarks, trade secrets, and as well as contractual licenses must be taken into account in the design of an optimal protection program. The relative advantages and disadvantages of these options will be explored below. Yet, it is important to understand that while broad conclusions can be drawn regarding the pros and cons of these three approaches, the particular approach adopted by an organization must be tailored to fit that organization's specific needs, based in large part upon the manner in which it exploits or utilizes software. Patents, copyrights and trade secrets each have their separate strengths and weaknesses as techniques for protecting proprietary software, as will become apparent from the following discussion.

KEYWORDS: Patents, software, innovation, copyright, business, trade secrets, licenses

I.   INTRODUCTION:

The rapid increase of computers throughout the business community is a well-documented phenomenon. Computers have tremendously improved the way businesses operate in their respective industries. Within the span of a few years, computers have undergone a transformation from corporate status symbol to business necessity for medium and even small corporations. Databases and software have become valuable business assets. The business practice has resulted in a new growth of software industry. Software industry develops. Programs for different business sectors for their internal use which consist of proprietary software as well as system devised by independent software designers.

Protection of information and software against misappropriation is a primary concern of business world. Initially, most software development was done "in house", the problem was often dealt with by maintaining the information as trade secrets and restricting access. Through physical security measures. These type of security measures has become obsolete by the development of business practices as the proprietary software industry. Due to the growth of software industry, there is need to protect software or computer programmers.

Software can be protected through different forms of intellectual property rights like; patents, copyrights and trade secrets, each form has its own strengths and weakness as a techniques for protecting proprietary software.

II.   What is computer software?

The phrase 'computer software' is commonly defined as a computer programs in the form of source code and object code. However, some authors define it as computer programs and ancillary materials. So that all of the following are included in the term 'computer software'

a. Computer programs
   Design materials, e.g., flowcharts, diagrams, specifications, etc.
b. Data bases
c. Information stored on computer media
   E.g.: conventional works such as literature, artistic works, music etc. store digitally.
d. Programming languages

Even though all of the above may form part of the common sense understanding of computer software, we need to define the term keeping in mind the intellectual property protection being afforded to it. Therefore, for the purpose of intellectual property protection, a workable definition would be to define software as a computer programs or a set of programs. All the above cannot be afforded intellectual property protection under the head 'computer software, only the computer programs are covered for the protection.[1]

Computer programs normally functions either in high level or assembly language.[2] Statements made in high level or assembly language is known as source code. A program made in high level or assembly language when translated to machine readable by language compiler program is known as object code.[3] Computer software is a generic name given for computer programs which directs the hardware in performing required tasks.

III.   WHY TO PROTECT COMPUTER SOFTWARE?

The software industry is one of the fastest growing industries since the last quarter of a century. It is a low-cost, intellect- intensive industry, with low barriers to entry. Technological developments have made the intellectual property protection of computer programs and those machine and processes that utilize them an important and also a controversial issue.[4]

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[1] PurvaChanda, *Protection of Software Under Intellectual Property Rights in* India (2003)2 Comp.Law Journal, p-53.

[2] Gopalakrishnan, *Intellectual Property and Criminal law 160* (1994) see also P. K. Pasricha, *A First Course in Computer Science* 11(1996)

[3] *Ibid*

[4] S K Verma, *I P Protection of software and software contracts in India: a Legal Quagmire*, Journal of IPRS Vol. 17, July 2012, p-284.

Software [5] has a market value. Computer software is subject to ferocious competition with a shorter life circle and is liable to be copied soon, as it is "read all on the face" technology. With the internet software is deliverable through the net anywhere in the world. Whereas in the past, software was often sold as an integral part of the computer system, today, software products are commonly marketed, sold or licensed, in the form of computer readable media for eg. Diskettes and CD-ROMS or directly over the internet. They are commercialized separately from the computer hardware. Software can be considered as hybrid variety of technology which is not solely a literary work but also possesses functionality. They can be regarded as both writings and machine simultaneously.[6]

The industrial development of software is much more difficult in this material world since it is quite expensive, time consuming and sometimes impossible for suppliers to differentiate their products from the competitors in terms of quality, capacity etc. Most commercial software products are the result of years of effort.[7]

IV. FORMS OF IP PROTECTION FOR COMPUTER SOFTWARE

Software is a code language which is capable of accomplishing a predetermined objective. It is a type of writing which itself is processed through a electronic network. There is divergence in views among various jurisdiction of the world as to what category of intellectual property may that is to be granted to protect computer software.

In considering the various forms of protection available to computer software, we can say that its modes of expression can be protected by copyright, the functioning implementation of software can be protected by patents and where the patent protection is unavailable or undesirable, and then the possibility of protecting functional aspects can be with trade secrets.

Protecting Software under Trade Secrets

Trade secret law protects the owners of certain information against its misappropriation. Others, who have not obtained the information by improper means, are free to use the information and associated ideas. Unlike copyright or patent, there is no limitation on its duration. Software can be protected under trade secret. Trade secrets offer great duration and it may therefore continue indefinitely as long as the secret is not revealed to the public. However, trade secrets are easily undermined and invalidated through reverse engineering, independent invention and inadequate diligence in maintaining that secret.[8] Trade secret protection of an invention does not provide the exclusive right to exclude third parties from making commercial use of it. A trade secret

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[5] Raymond E, *The Cathedral and The Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary O'Reilly Media*, Massachusells, USA) 1999.

[6] Shreya Matilal, I *P In Computer Software – Images, Objections and Future*, (Kolkata: Kamal Law house) 2004, p – 13.

[7] Samuel P, Davis R, Kapor M.D, and Reichman JH, *A Manifesto concerning the legal protection of Computer Programs,* (1994) 94 Column Law Rev. 2308.

[8] Cohen J E & Lemey Mark A, *Patent scope and innovation in the software industry*, California Law Review, 89 (1) (2001) 29–37.

is more difficult to enforce than a patent. The level of protection granted to trade secrets varies significantly from country to country, but is generally considered weak, particularly when compared with the protection granted by a patent. A trade secret may be patented by someone else who developed the relevant information by legitimate means.

The objective of trade secret is to keep innovations confidential, preventing competitors from learning those innovations. However, in case of software, it cannot be concealed from the competitors once the product comes in the market, as it can easily be copied and decoded.[9] Thus competitors can freely imitate the idea behind the software. Apart from the above, employee mobility between competing firms mitigates the problem of secrecy by allowing others to benefit from the programmer's general experience.[10] Hence, trade secrets are the weakest type of protection in the IPR system for software.

Protecting Software under Copyrights

Copyright is a form of protection provided to the authors of "original works of authorship" including literary, dramatic, musical, artistic, and certain other intellectual works, both published and unpublished. Copyright generally gives the owner the exclusive right – to reproduce the copyrighted work, to prepare derivative works, to distribute copies or phonorecords of the copyrighted work, to perform or to display the copyrighted work publicly. Copyright does not confer rights over ideas-only the expression of an idea is protected, not the underlying idea itself. A copyright holder (e.g., a software developer) might consider this to be a disadvantage, because his copyright will not preclude a competitor from creating a new work embodying the same idea, so long as the competitor does not incorporate copyrighted expression from the first program into the second program. A copyright protects an original work expressed in the tangible and fixed form in which it has been set down. It protects only the expression of the work, and not the idea underlying the work. [11] It does not insulate inventive ideas from infringement.[12]

There has been considerable disagreement over what features of a computer program are (or should be) copyrightable. The distinction between idea and expression can be very tricky to make, even for some traditional literary works like books and plays. For software, which is intrinsically functional, idea and expression are closely interwoven, even in theory. In practice, it is extremely difficult to separate which elements of a program are the expression and which are the underlying idea.[13]

Copyrights are stronger compared to trade secrets, but in the case of software, it does not provide any real protection as the core concept in the software is not protected by means of copyright. Also, software can be easily copied or decoded and with minor

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[9] Lemley M A & O'Brien D W, *Encouraging software reuse*, Stanford Law Review, 1997, p- 255-304.

[10] Anonymous, Computer *programs and proposed revisions of the patent and copyright laws*, Harvard Law Review, 81 (7) (1968) 1541-1557.

[11] *Supra* n-2

[12] Bender D, *Computer programs: Should they be patentable?* Columbia Law Review, 1968, 241-259.

[13] For example, the decision in Whelan Assoc. Inc. v. Jaslow Dental laboratories,. (797 F.~ 1222 (3rd Cir. 1986), cert. denied 107 S. ct. 877, 1987) held that the underlying purpose of a program is its "id-" and everything else is expression, given that more than one way to achieve the purpose is possible. Under this interpretation, virtually any elements of the program's structure, sequence, or organization would be considered copyrightable.

changes it can be reproduced and distributed without the consent of the original author since programs are easy to disguise and their format inexpensive to alter without affecting their substance.[14] Secondly, copyright is granted to an author, and in the case of software, many a times, the code may be written by many virtual programmers sitting in different geographical locations.

Protecting Software under Patents

A patent is a form of intellectual property[15] granted by the government in order to secure a legal protection for inventions by means of exclusive right for a limited period in exchange for the public disclosure of an invention.[16] Patents are also important for trade and industry worldwide as they attract foreign investment and ore rapid technology transfer.[17] Patents also promote innovation by disclosing an invention in public domain.[18] A patent, on the other hand, provides a secure protection than the copyright or trade secret, wherein the protection is determined by the scope of the patent and not how the competitor developed the product. It protects the "idea" or "functionality" of the software.

Software patents, [19]on the other hand are debatable as they are in their infancy[20] and some countries encourage them and have laws to protect them in one way or another, while there are many which do not. More than half of the 170+ countries in the world that grant patents, permit the patenting of software-related inventions, at least to some degree.[21] Software patents are used to protect the specific software code and/or routines that allow the software to perform certain unique functions. Patents, unlike trade secrets and copyright, provide protection against reverse-engineering, and prevent others from reproducing it.[22] Hence, patents hold the strongest relative protections for software.

[14] *Supra* n-3

[15] Intellectual property is divided into two categories: Industrial Property includes patents for inventions, trademarks, industrial designs and geographical indications….; What is Intellectual Property? WIPO Publication No. 450(E) ISBN978-92-805-1555-0

[16] *INTELLECTUAL PROPERTY HANDBOOK*; Chapter 2 - Fields of Intellectual Property Protection, Page 17, Section 2.1 and 2.5.

[17] *Patents And Innovation: Trends And Policy Challenges* - Organisation For Economic Co-Operation And Development, OECD 2004.

[18] …the competitors have an option to 'invent around' the patented product by conducting further research around to bring out a better invention, which may result in cheaper and better product. It paves the way for 2 healthy competitions among manufacturers that results in day-to-day improvement of technology. ; Manual of Patent Office Practice and Procedure – 2005, Patent office, India, also see Patents for software? European law and practice, European Patent Office, www.epo.org. also see Moser P, How do patent laws influence innovation? Evidence from Nineteenth-Century World's Fairs, *The American Economic Review*, 95 (4) (2005) 1214-1236, and also see, Walaski J, Software patents - Are they a help or hindrance to innovation? *IEE Engineering Management*, 2004, 42-43.

[19] A software patent has been defined by the Foundation for a Free Information Infrastructure (FFII) as being a "patent on any performance of a computer realized by means of a computer program"; http://en.wikipedia.org/wiki/Software patent (accessed on 12 May 2014).

[20] Arun K B R, *Issues of cyber laws and IPR in software industry and software process model,* International Journal of Computer Applications, 44 (16) (2012) 16-21.

[21] *Patentability of Software in India and US*, http://www.studymode.com/essays/Patentability-Of-Software-In-India-And-796372.html (accessed on 5 October 2013).

[22] Zekos G I, *Software patenting*, The Journal of World Intellectual Property, 9 (4) (2006) 426–444. See also McGowan M K, Stephens P & Gruber D, An exploration of the ideologies of software intellectual

As software are becoming more complex and sophisticated with value added features, companies and developers expect their work to be protected in the same way as any other product or service in the form of patents. This has led to the emergence of software patenting as a new field for protection. However, with the emergence of software patents, new challenges and problems have cropped up since defining software itself has become difficult, leading to confusion in law surrounding the patentability of software and computer related inventions.[23]The key points highlighted below have come to the fore and caused a concern for the software industry worldwide for patenting of its software.[24]

Software protection under Trademark

This form of protection provides the registrant broad powers of injunctive relief from those who use the 'brand name' without permission. However, it only protects against infringers marketing products under the same or a similar name. Trademark protection, however, will not stop the competitor who copies proprietary software and then markets it under a different label. 'Copying' of this type is very profitable because there is little investment necessary for the infringer beyond the cost of a computer, blank disks, and one legitimate copy of the program to be duplicated. Even if one were to seize and destroy the copier's inventory, it could easily be in business again almost immediately.[25]

Advantage of trademark protection is that it may be obtained for any product, based on its objectives merits such as originality and novelty. If other legal protection is lost then a business can protect its market position through the use of goods that will develop in a mark

Software protection through Shrink-Wrap Licenses

This form of protection requires the registrant to assert copyright rights after which the software product as unilaterally licensed by means of a conspicuous written disclosure printed upon a sealed envelope containing the software. Shrink-wrap agreements have much importance on the implementation of software licenses. A shrink-wrap agreement is simply a printed standardform agreement that is placed or printed on top of the package in which a computer program is marketed. A cellophane wrapper is placed around it - it is shrink-wrapped. Other terms used to describe this type of agreement are "box-top", "tear-me-open" or "blister-pack" agreements. They are used for mass-marketed software. The shrink-wrap agreement comes into effect when consumers

property: The impact on ethical decision making, *Journal of Business Ethics*, 73 (4) (2007) 409-424, and also see *Patentability of Software in India and US*, http://www.studymode.com/essays/Patentability-Of-Software- In-India-And-796372.html (accessed on 5 October 2013).

[23] Kristen O*, Debugging software's schemas*, The George Washington Law Review, 82 (1832) (2014) 1832-1857.

[24] Shabib Ahmed Shaikh and B. R. Londhe*, Intricacies of Software Protection: A Techno – Legal Review*, Journal of Intellectual Property Rights, Vol. 21, May 2016, p-159.

[25] Professor Robert H. Rines and Richard H. Bradford, Paul R. Burke, Mark C. Nelligan, Robert A. Parks, Scott L. Patashnick and James W. Rose, *COMPUTER SOFTWARE: A New Proposal for Intellectual Property Protection,* IDEA - The Journal of Law and Technology, vol.3, 1988-1989, p- 4.

break open the plastic shrink-wrap or install the software on their computers as assent to the terms of the license.[26]

The shrink-wrap agreement purports to create a license agreement between the buyer of the computer program and its producer. It grants the user a nonexclusive license to use, subject to certain limitations, the program and accompanying documentation. Sometimes it also states that the license does not constitute a sale: ownership of the program and the copyright in the program, the accompanying documentation, and any copy made by the user remain with the software developer or publisher. Typically, the relationship entered into for the acquisition of software is either a license, or a single payment for use in perpetuity: in both cases the ownership of the copyright is not transferred to the buyer.[27]

V.   Conclusion

IPR mechanism is considered necessary to encourage creativity, innovation and investment; at the same time it is also necessary to protect the economic interest of the owner. As already mentioned software may be reproduced at no cost, some means of restricting the free copying and redistribution of software work is necessary to preserve an investment in a software product.

Protection of software requires recognition that "software" is an expansive term that includes not only computer programs but also user manuals, user interfaces, and databases. Each form of software may find some protection in one or other forms. For instance, computer programs are patentable, subject to the requirements of patentability. While patent protection is the most difficult and costly to obtain, it provides the patent owner with the right to exclude others from making, using, or selling the invention. However, a patent does not automatically provide the right to use the software as it may be subject to preexisting rights. Also, obtaining a patent for a computer program involves the careful crafting of claims to define the limits of the programmer's invention. Programs and user manuals are clearly copyrightable subject matter. However, only the original aspects of a data base are copyrightable. Also, copyright does not protect against an independent creation of the work. Moreover, courts are split on the standard of proving nonliteral infringement.

Trade secret law is suitable for virtually any type of concrete information including each form of software. But, trade secret law does not protect against independent development or reverse engineering. Also, contracts relating to trade secrets, such as employee nondisclosure agreements, are subject to the nuances of each state's contract laws. Therefore, when a client approaches you with valuable software, you must first determine the extent and nature of the software. Next, you should determine the most appropriate form of protection. This will usually involve some use of all three forms: Non-disclosure agreements for key employees, copyrights for user manuals, and copyrights and patents for programs.

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[26] Tana Pistorius, Shrink-wrap and Click-wrap agreements: Can they be enforced?, 7 Juta's Business Law Review 79, p. 79 (1999)
[27] *Ibid*

On the other hand, Trademarks only protect software with its brand name and helps only while marketing software. Whereas, Software License Agreements have a unique position in our life. Each type has important role and almost every country implements at least the basics of laws of Software License Agreements. Software Law is a modern law institute and it is developing day by day. Producting new softwares, designing new software templates, preparing new contracts and licenses for softwares and such other facts affects the Software Law, and the patentees' and licensees' rights also influences softwares.