PROTECTION OF COMPUTER SOFTWARE IN THE INDONESIAN ECONOMIC DEVELOPMENT PERSPECTIVE (BETWEEN COPYRIGHT OR PATENTS)

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ABSTRACT

This study discusses the protection of computer software related to the use of economic rights through alternative patent protection because at present, based on positive Indonesian law, the protection of computer software is in the copyright law. The results of the study show that software protection through Indonesian Patent Laws creates procedural and material constraints (legal substance). Procedural constraints relate to the registration process, costs, and time needed to become a rights holder. While the legal substance constraints concerning software protection through patent law result in constraints to Indonesia's economic development in the field of investment, unfair business competition, hampering innovation and the development of science. Thus, with regard to economic development, computer software protection is more effective through the copyright law regime.

Keywords: Protection, Computer Software, Indonesian Economic Development

INTRODUCTION

The application of patent protection in software is actually according to its essence when the technology can be applied in industrial processes. Industrial processes require a formula or benchmark that can be easily duplicated[1] However, it still gives rise to pros and cons, for example there is an opinion that the software needs to be protected by copyright and there is an opinion precisely to the special patent regarding the formulation of the design of a program, which involves that in fact computer programs are developing in aspects of distribution, the intended use and intended purpose duplication. From the legal aspect, software has been considered as a type of object property such as tangible objects the other. Therefore software that is "owned" by someone cannot be used or utilized without permission from the owner[2].

Some countries in the United States, provide software protection and business methods through a patent regime. Patents for software were first granted in 1981 by the United States Patent Office through Patent No. 4,270,182 granted to Pal Asija for its invention, which was named "Swift-Answer"[3]. Since then the patent for the software has been granted or granted by the United States Patent Office. In 2007 nearly 39,000 patents for software had been granted by the United States Patent Office, if a computer program was operated with data, so the invention could be considered a process. Furthermore, if a patent claim for the software is filed in connection with the physical structure of the computer (hardware), then the invention can be categorized as a machine that can be granted a patent[5].

Law No. 28 of 2014 concerning Copyright (hereinafter referred to as copyright Law) does not use the term software[5], but mentions computer programs as one of the objects of copyright protection, as stipulated in Article 12 of the copyright Law. As such, computer programs cannot be protected by Law No. 13 of 2016 Concerning Patents That was confirmed

by Article 7 letter c of the Patent Law, which said "patents are not granted for inventions on theories and methods in the fields of science and mathematics."

This protection is in line with regulations in the European continent, software is considered not to be granted a patent, although some inventions that use software can still be protected by patents. But at this time, in line with the development of digital technology in several countries in Europe, thought arises to protect software in patent law. Furthermore there is also criticism of copyright in general that can be divided into two sides, namely the side which believes that the concept of copyright is never beneficial the public and always enriches some parties at the expense of creativity, and the side that believes that the concept of copyright must now be improved to fit the current conditions, namely the existence of a new information society[6].

Differences in thinking about the law to protect software within the framework of Intellectual Property (hereinafter referred to as IP), namely copyright or patent, result in the need to conduct a review of copyright law of Indonesia. This does not merely change the regime that protects the software, but also must pay attention to the broader interests in the framework of national economic development and international interests.

DISCUSSION

Definition and Scope of the Software

Software is a collection of commands made with a programming language that has the same unity so as to produce a program/application that has certain values and objectives or a collection of electronic data that is stored and regulated by a computer, electronic data stored by that computer can be in the form of programs or instructions will execute a command[7].

Software based on its distribution can be divided into several types, namely paid software, free or free software (Freeware, free software, shareware, adware)[8]. Paid software is software that is distributed for commercial purposes, every user who wants to use or get the software by buying or paying to the party that distributes it. users who use paid software are generally not permitted to distribute the software freely without the permission of the publisher. Examples of paid software for example are Microsoft Windows systems, Microsoft Office, Adobe Photoshop, and others. Freeware or free software is copyrighted computer software that is free to use without a time limit, different from shareware that requires users to pay (for example after a certain trial period or to obtain additional functions)[9].

Software forms are various[9] namely: Operating Systems (Operating System), Application Programs (Application Programs), Programming Languages (Programming Language), and Assist Programs (Utility). While the types of software are (1) Open source which is generally developed collaboratively and allows the source code of programming and how it works to be known by other parties and it is possible to correct the weaknesses of the software. (2). Close source published and distributed without source code. The source code of the program can be considered a company secret, so if another party wants to access it requires an agreement with the owner of the access code. (3). Free software is free software that is about the freedom of users to run, copy, distribute, study, change and improve software performance.

The term computer program is used by World Intellectual Property (WIPO), Copyright Treaty and An Agreement on Trade Related Intellectual Property Rights (TRIPs) and Copyright law According to WIPO, "For the purpose of the law: computer programs means a set of instructions capable, when incorporated in a machine-readable medium, of causing machines having information-processing capabilities to indicate, performance or archive a particular function, task or result ". Furthermore Article 4 of the WIPO says "Computer programs are protected as literary works[10] within the meaning of Article 2 of the Berne Convention. Such protection applies to computer programs, whatever may be the mode or form of their expression.

Article 10 TRIPs explains:

Computer programs, whether in source or object code, shall be protected as literary works under the Berne Convention (1971) Complilation of data or other material, whether in machine readable or other form, which by reason of selection or arrangement of their intellectual content creation shall be protected as such. Such protection, which shall not extend to the data or material itself, shall be without prejudice to any copyright subsisting in the data or material itself.

Literary works are works of creation, in addition to audivisuals, forms of words, numbers or symbols. Whereas Article 1 Number 9 of the Copyright Law says:

"A Computer Program is a set of instructions that is realized in the form of language, code, schema, or other forms, which when combined with media that can be read by a computer will be able to make the computer work to perform special functions or to achieve specific results, including preparation in design the instructions".

The Australian Copyright Act (Copyright Act 1968 (Cth)) defines:

"Computer program as an expression in any language, code or notation of a set of instructions (whether -with or without related information) is intended, either directly or after both of the following (a language statement, code, number part of a set of instructions): a. Conversion to another languange, code or notation; b. Reproduction in a different material from. To cause a device having digital information processing capabilities to perform a particular function[14].

In subsequent developments and in practice, especially among academics and commercials, the term "software" is often used. The WIPO website uses the terms "computer programs" and "software" together[12]. In this regard, WIPO has also identified that the materials included in computer software are supporting materials (flowcharts, written descriptions of programs); documentation about how to use the program (user's guide); sequence of orders (program listing) itself; and the look and field display of the program[13] Whereas 3 (three) essential stages in terms of protection of software, namely: protection of programming algorithms, protection of computer programs, and protection of program object code (object code)[17].

In the United States there are two forms of Copyright, the first concerning the protection of individuals who may be without publication. Both of which are published nationally with Trademark Copyright & registration at The Register of Copyright. In this case the United States is not subject to the Bern Convention for The Protection of Literary and Artistic Works even though it is part of The Universal Copyright Convention. This copyright is the same as patents under the authority of the federal government and with the Copyright Act 1996 has included an expansion to modern technology. The main problem faced is whether this includes protection that is published, marketed or not, whether that concerns what is written or not. The purpose of writing Writetings in a computer is to pour them into Magnetic Tape, paper tape, punce cards, discs or linguistic material that needs to be protected by crimes. Therefore, the formulation in Copyright The Law was signed in 1976 and took effect on January 1, 1998[18].

Britain already has a computer Act 1996, then with the help of the Whitford Comite, trying to revise the Copyright law especially those related to computer programs, the concentration of research directed at Literary Work, including cables and written compilations, and writing, including any form of notation, either by hand or printing when or with the same process, which in the computer industry relates to Puhnched Card, paper tape, magnetic tape or Disc[19].

Protection of Computer Software through Patent Law Compared to Copyright

Protection of inventions through patents must meet the requirements, which are new inventions[20], contain inventive steps, and can be applied in industry. With regard to computer programs, the requirements for "new inventions" & "containing inventive steps" are likely to be met, but they pose obstacles with regard to the "applicable in industry" conditions even though

they meet product requirements and process patents. This is because the object of patent protection on a computer program is related to things that are abstract or theoretical to run the hardware (hardware), so that according to the Indonesian patent law can not be granted a patent but protected through the Copyright regime.

Protection of computer programs through copyright does not require novelty, but must be original (original) meaning that the work itself is not an imitation. This is as regulated in Article [1] Paragraph [3] of the copyrights law which says "Creation is the result of every work of a Creator[21] that shows its authenticity in the fields of science, art, or literature". Furthermore the Creation is based on the ability of the mind, imagination, dexterity, skills, or expertise as outlined in a distinctive & personal form.

The "original" conditions in the copyright regime differ in meaning from the "new" in patent law. The term "original" means that it can not be new because the emphasis is not on imitation, so long as there is no imitation element even though it already exists (not new), it still gets protection. While the word "new" in the sense that there is no preceding element contains "original" (not the result of imitation) because if the creation of the imitation means it already exists before, so that means it is not new anymore. Thus, the "original" requirements in copyright law can result in the protection of more than one work even if there is an element of similarity or similarity, provided there is no evidence of imitation. Therefore, with regard to copyrighted works in the form of computer programs, to prove whether new computer programs are created independently or plagiarized, software companies usually put "hidden identifiers (hidden signs), such as misspellings or variables without meaning. So if there is a copy of a computer program, the hidden sign will appear and the plagiarist will not be able to claim that the computer program is an independent creation[21]. While the "new" requirement in patent law, it does not allow the protection of [2] (two) patents of the same/similar, because it means that the application for a second patent cannot be accepted in connection with the new requirements are not fulfilled.

Computer programs related to patents are algorithms or steps executed by computers. Algorithms are related to mathematics, so what is patented (Author: registered as a patent) are mathematical formulas. Despite that Act Indonesian patents cannot protect these objects, but if protected they can also cause obstacles because it means that to use mathematical formulas, you must ask permission or pay royalties to others, so that the development of science and innovation will actually be hampered. As an example of a patented mathematical formula (Author: registered as a patent is a data encryption algorithm known as RSA, which stands for the discoverers Rivest, Shamir & Adleman. RSA algorithm is used on web browsers (such as the Internet Explorer) and e-commerce server[1].

Another example of an algorithm patent is the Lempel-Ziv (LZW) algorithm which is an algorithm that is widely used for the process of reducing the size (compression) of images & files in general. For example, images that are widely used on sites with the "GIF" format use the Lempel-Ziv algorithm. Unisys as the patent holder has threatened websites and graphic software makers who use the GIF format to pay royalties. That is why today many graphics software programmers use other formats (such as the PNG format) to avoid this Lempel-Ziv patent matter[22].

Overseas, a software can be granted patent protection if the software has technical features to solve a technical problem, for example, the European Patent Office's appeal commission has provided patent protection for software that controls the distribution of circuits for X-ray machines so that the parameter pressure of the X-ray machine it is not excess. However, a software will only be given copyright protection if the software only functions as data processing and displays information only. The following are types of software that are only given copyright protection, that is software related to word processing, text processing, spell checking, & proof-reading. However, the weakness of software protection with copyright mechanisms is related to fair use (fair use), namely computer program users are permitted to duplicate computer programs that are purchased for personal gain without the need for

permission from the copyright holder of the computer program.[23] This mechanism can be misused to duplicate the software for distribution to other parties.

The advantage of software protection with a patent mechanism is that the software owner can act against anyone who creates software that has similarities to the patented software, even though the process of making the software is made independently and not plagiarizing. In addition, patent protection will provide software protection against reverse engineering (analyzing an existing product from other manufacturers as a basis for designing similar new products, by minimizing weaknesses and increasing the competitive advantage of its competitors). While protecting software through copyright Even though they have similarities, as long as it can be proven that there is no imitation element, then the copyrighted work is not a violation. Thus, according to copyright law it is possible for [2] (two) creations to be the same and each of them is protected by the original conditions (not the result of impersonation). That does not apply to patents because if there are the same patents, then those who are protected are the first registered patent (first ti file) while the second patent cannot be registered because it means the novelty element as a condition of the patent is not fulfilled because it already exists the first patent. Analysis of new creations that are similar in the copyright regime based on existing creations cannot be protected because it means that there is an imitation element (not original) from previous creations even though they are new, because the Copyright Act does not base on novelty aspects.

Patents are granted based on an application for registration by an inventor or other authorized party indicating that a patent is constitutionally constituted ie protection is granted if it has been registered at the Directorate General of Intellectual Property, the Ministry of Justice and Human Rights. Each Application for registration can only be submitted for one Invention or several Inventions that constitute an Invention unit by paying a fee.

Copyright applies automatically, so it does not require registration (declarative system)[23] but the creator can submit a registration application as proof that he is the copyright holder. Thus, to get legalization as a copyright holder for a computer program is easier and simpler and the cost efficiency (cheap) & time (fast) when compared through filing patents requires that you have to register first. Then the administrative inspection process and Substantive and patent applicants must pay an annual fee until the end of the protection period if the patent application is received.

The creation gets protection as long as it has been stated in real form (not an idea) and not the result of imitation (original), but the creator can register it as proof of ownership of his right. In practice, it is recommended for the owner, or creator of a computer program, to include copyright notices, specifically to get copyright protection worldwide[2]. Copyright notices are generally written in the format: @ Name of Copyright IPR Owner, the year the computer program was first published, All Reserved (eg @ Smith and Company, 2000, All Reserved). The Copyright Owner should display the copyright notice in a manner and at a place where the notice can be read easily by computer program users[24].

The implication for programmers with regard to copyright does not protect the basic idea is that it can avoid copyright infringement lawsuits if it takes the basic code of a computer program, and then creates new codes based on a flowchart that has been studied to produce a new computer program that functions the same as the program previous computers that have been reversed engineering. The new computer program as a result of this reversed engineering does not violate the copyright of the previous computer program[25].

If the Computer Program is protected under patent law, the protection period is 20 years, whereas, according to Article 30 letter a   Copyright Law[3] copyright in the creation of a Computer Program" is valid for 50 (fifty) years since it was first announced. Thus, protection through the copyright legal regime is more beneficial because of the long term. However, given the rapid development of computer programs, the protection period of [50] years since it was first announced was too long, it is not effective, and irrational because there can be a period of protection still exists but the object of the protection has expired technology[26].

The period of 50 years for a computer program has changed and modified, so that it is not impossible, the program that was announced 50 years ago is now no longer in use, even not known by the current generation of computer users. A concrete example is the Lotus 123 program which was more or less 10 years ago so dominated by users but now it is very rare for users who still use this program to run on their computers. Thus the purpose of limiting the period of protection for each copyrighted work including computers so that the work has a social function (limited monopoly), but related to a computer program, the goal is not achieved because the economic value of a program is only approximately 3 (three) years, after this time the program will continue to develop according to the needs of the community and new programs emerge so that the old program will automatically be abandoned[27].

The Copy right Law regulates the provisions that exclude acts of reproduction carried out limited by public libraries, scientific institutions, or educational and commercial documentation centers that are solely carried out for the purposes of their activities so that they are not considered as infringement of Copyright. However, this provision does not apply to computer programs, so that even for those purposes, limited reproduction of computer programs is still a violation. Thus, there is a lot of proliferation and publication without the right to computer programs, because the need is increasing but not followed by the ability to buy licenses at relatively expensive prices, so there is no other way to get programs at cheap prices other than by buying pirated program CDs[28].

Copyright infringement in the field of computers other than because of the multiplication and distribution without permission from the copyright holder there are also other reasons, namely if between two computer programs have the same Source Code. It is possible that there has been an impersonation of one of the computer programs, but how much is the similarity of the Source Code that is said to violate Copyright, Copyright Law does not provide criteria that quantitative nature of the similarity between the two computer programs. In practice it is usually explained in detail in the license agreement, for example the software may be installed on only one machine, prohibited from multiplying the software for any purpose (usually the user is given the opportunity to make one backup copy), and is prohibited from lending the software to others for any purpose [29].

Article 83 Paragraph (1) The Copyright Law requires the registration of copyright license agreements including computer programs to the Directorate General of Information Commission to have legal consequences on third parties. This is not synchronous with the declarative system (does not require registration) which is held in copyright. These provisions are more appropriate for patents and other types of IP, because patent protection systems are different, namely using constitutive systems (must register).

In connection with the piracy of computer programs, Law No. 28 of 2014 applies a complaint offense[30], meaning that the act can be processed there must be an element of complaints from those who feel disadvantaged, so that copyright infringement related to a computer program will make it difficult for the creator or right-holder because they must know in advance the existence of the violation then complained to the authorities. on the other hand, Law No. 13 of 2016 concerning Patents also raises complaint offenses. Therefore, in terms of types of offenses, software protection through copyright or patent is no different.[31]

Implications for Software Protection through Patents in the Economic Development Perspective

Indonesian Economic Development in the Field of Investment

Judging from the length of time (50 years) protection of Software with Copyright will have a good impact on the protection of Indonesian local softwares to continue to grow rapidly. In addition, software developers from abroad will be interested in registering software protection through Intellectual Property in Indonesia[25]. Furthermore, further implications will have an

impact on the progress of the Indonesian economy, so that it is expected that the emergence of Information Technology Industries such areas Silicon Valley in Indonesia[26]. Foreign investors not only bring funds but also technology, so that if the ownership of IPR technology gets a long protection, it will encourage his interest in investing as stipulated in Law No. 25 of 2007 concerning Investment[27]. This means the transition of computer program protection through patents has implications for investors' lack of interest to invest their capital because their technology must be registered first so that it requires a long process and expensive costs in addition to a shorter protection period. This can hamper the development of the national economy.

Unfair Competition

Patent to software is one of the topics of hot debate. Usually a computer program is only protected by copyright, but to further monopolize the ideas contained in it, the patent concept of software is introduced. There are several organizations in the US and Europe that are specialized in moving against patents on software. One of them is League for Programming Freedom (LPF) whose members are well-known programmers on the Internet such as Richard Stallmann (founder of the GNU movement) or Bruce Perens (one of the originators of Open Source Software). The concept of software patents is considered dangerous because this type of patent usually claims ownership of the algorithm. Even though the algorithm is generalized equivalent to a mathematical formula and there are specific algorithms for a particular programming problem. This can eventually hamper freedom to use algorithms and lead to unfair competition[27] which will hamper economic development.

Innovation & Development of Science & Technology

In America, software patents are rejected by many parties (especially experts, academics, in the field of computer science) because they will inhibit innovation. Fear of infringement on IC, especially software patents, has led companies and programmers to move from America to countries that do not protect software patents to conduct research, exploration, and develop new innovations. Some examples of software patents include:

The Lemp-Ziv algorithm which is the algorithm most widely used for compression (shrinking file size) of images or other data.

The RSA algorithm used for data encryption, for example when typing credit card numbers on websites that use SSL (usually marked by the use of HTTPS instead of HTTP). The experience of the United States in this software patent has bad implications for the software industry. For example, programmers in America cannot develop DVD-related software (for example a programmer wants to make a DVD player) because there is a certain part that is patented. The programmer must obtain a license first before he can create and distribute the software so that it does not violate the patent, so it is an obstacle in the development of a science and technology based economy.

CONCLUSION

Protection of Computer Programs in Indonesian Patent Laws creates procedural and material constraints (legal substance). Procedural constraints relate to the registration process, costs, and time needed to become a rights holder. While the legal substance constraints concern
The Protection of Computer Programs through Patent Law has implications for Indonesia's Economic Development Constraints in the field of Investment, unfair business competition, hindering innovation and the development of Science.

SUGGESTION

The Protection of Computer Programs in Indonesia's Positive Law is better to remain in the Copyright regime than through Patent Law. But related to the public interest, the application of the Open Source system to the Computer Program is still needed.

Amendments to Law No. 28 of 2014 concerning Copyright are required in relation to fair use, the length of the period of protection that is over protection, the requirement for registration of copyright licenses and strict regulation of the Open Source system.

ENDNOTES

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5. Software can be translated with software and software, therefore in this paper the original term is software
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8. ibid
9. Free tool developers often make freeware tools free to "donate to the community", but also still want to retain their rights as developers and have control over further development. Freeware is also defined as any program that is distributed free, at no additional cost. A prime example is the browser and mail client suite and Mozilla News, also distributed under the GPL (Free Software). Ibid.
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