

2 Research and Study on Desirable Patent Protection for New Areas (Network Trading)

Due to the rapid development of telecommunications technology symbolized by the Internet in recent years, digital information such as computer programs has come to be distributed or sold more directly to users via networks, without using the conventional physical distribution system.

However, some point out that it is difficult to provide sufficient protection to such online-traded computer programs under the current patent law that mainly assumes inventions to be "products."

Accordingly, we have extracted problems that arise in protecting online-traded computer programs under the patent law, and suggested the appropriate protection for inventions in these areas.

This paper is a summary of our study report: "Report of Research and Study on Desirable Patent Protection for New Areas (Network Trading)."

I Current Status and Problems Regarding the Protection of Computer Software-Related Patents

1 Current Status of the Protection of Computer Software-Related Patents

Since computer software-related technologies undergo rapid changes, the patent law needs to be interpreted in a flexible manner in order to provide appropriate protection. Therefore, the Japanese Patent Office (JPO) has revised its examination standards, etc. and expanded the scope of protection with regard to patents on computer software-related technologies in line with technological progress.

In the "Implementing Guidelines for Inventions in Specific Fields: Chapter 1 Computer Software-related Inventions" (hereinafter referred to as the "Implementing Guidelines") released in February 1997, a "computer-readable storage medium having a program recorded thereon" (hereinafter referred to as a "storage medium claim") was recognized as statutory subject matter, and thereby the scope of protection was expanded.

However, with the spread of the use of the Internet, computer programs have recently come to be distributed not only on storage media, but also via network transmission. It has been pointed out that the storage medium claim alone is not sufficient to protect patentees' rights on such distribution of computer programs.

Under these conditions, an application was filed claiming a "transmission medium that transmits programs," which regarded a transmission medium (communications lines such as optical fibers) to be similar to a storage medium and aimed at protecting online programs by patent. In response to this transmission medium claim, the JPO released the

"Examination Practice Concerning Claims of 'Transmission Media,' etc. in Computer Software-related Inventions," and indicated a policy to basically reject such claims.

On the other hand, the United States Patent and Trademark Office (USPTO) has started to approve not only storage medium claims, but also claims for protecting programs themselves. Thus, Japan should also take prompt measures to protect programs from the perspective of international harmonization.

2 Computer Programs and Product Inventions

Regarding statutory inventions, acts of working are stipulated respectively for the invention of a product, a process, and the process of manufacturing a product.

The Implementing Guidelines explain that a software-related invention can be expressed as the invention of a product (apparatus, system, storage medium) by specifying its function, while it can also be expressed as the invention of a process by specifying the chronological procedures involved. Although the Implementing Guidelines clearly state that a computer program can be protected as the invention of a product if the program is stored in a storage medium such as a CD-ROM, they also state that a claim directed to a computer program itself is against Section 36(6) (ii) of the Japanese Patent Law (JPL), because it is unclear whether the program falls under the invention of a product or that of a process.

If a computer program can be regarded as the invention of a product and if the transmission of the computer program falls under the working of the invention of a product provided under Section 2(3)(i) of the JPL, network trading of a computer program will be subject to patent protection.

Therefore, this research and study examines whether or not the network transmission of a computer program can be protected by a patent by considering the computer program as the invention of a product.

II Concept of a "Product" under Section 2 of the Japanese Patent Law

1 Concept of a "Product" under the Patent Law

(1) Significance of the Provision on the Concept of a "Product" under the Patent Law

This section examines the basic direction on how the concept of a "product" should be interpreted under the patent law by reviewing related issues.

In order to interpret the concept of a "product" under the patent law, it is practical to investigate the significance of the concept of a "product" under the patent law first, and then interpret the "product" in accordance with that objective. Accordingly, despite that civil law is the general statute of private law, it is not necessary to immediately follow the concept of "a product = a tangible object" provided under civil law. Also, standards applied under other legal domains, such as the ability to exclusively control or manage the object, should not be applied directly without sufficient deliberation. This is because each concept of a "product" is applied according to the objective of the respective law, and therefore, functions in a different way.

(2) "Product" Inventions

Examination on how the concept of a "product" is being used under the patent law reveals that the law provides two categories to inventions: "products" and "processes." Section 2(3) of the JPL classifies inventions into those of "products" and of "processes" to define acts of working for each type of invention.

First, the subsection provides that working of "product" inventions means "acts of manufacturing, using, assigning, leasing, importing or offering for assignment or lease of the product." Then, the subsection further divides "process" inventions into inventions of a process in the narrow sense and inventions of a process of manufacturing a product; it provides that the working of the former means "acts of using the process" and that of the latter means "acts of using, assigning, leasing, importing or offering for assignment or lease of the product manufactured by the process."

Thus, the patent law designates statutory

acts of working by using the concept of a "product."

Nevertheless, the patent law does not seem to give a clear explanation on the reasons for which the law divides inventions into the two groups: "products" and "processes." Some hold an opinion that the reason why the law provides multiple categories by which a single technical idea can be expressed is to protect inventions effectively. That is, while most inventions can be expressed as a "processes" in essence, it is difficult to define acts of infringement for the working of such inventions, which would be the "use" of the inventions. On the other hand, acts of infringement can be stipulated minutely for inventions expressed as "products" due to their higher sensibleness. Therefore, the category of "products" was established in addition to "processes" in order to provide for acts of infringement in relation with "products" as much as possible. As a result, patentees' subjects of enforcement would become clearer and the protection of inventions would become more effective.

(3) Issues Pertaining to Program Patents

The Implementing Guidelines approve inventions of programs in the form of storage medium claims. The issue presently under review is the question of whether or not to expand this scope and also approve "program signals" and "programs" themselves as claims.

If these were approved as inventions, it is necessary to indicate whether they should be categorized as "product" inventions, and in such a case, how the acts of working should be interpreted. First of all, the reasons for which storage medium claims had been regarded as "product" inventions in arguments so far shall be reviewed below.

It is possible to find some common factors among various reasons that justify the fact that program storage media should be categorized as "product" inventions.

(i) Programs as "parts" of computers: Relation with hardware resources that are "products"

One viewpoint is that program storage media are programs as "parts" of computers. According to this theory, "products" mentioned here refer to computers that are hardware resources and programs can be positioned as their parts. The software technology is included in "product" inventions by being associated with hardware resources that are "products," and becomes subject to protection under the patent law.

The Implementing Guidelines also use an expression "computer-readable storage medium." This part can be considered to express the mutual relationship that technical effect of

programs is demonstrated through computers which are hardware resources, since the technical effect of programs is only demonstrated by having them read by computers.

The above theories can be considered to presume the concept of "a product = a tangible object."

(ii) Tangibility and intangibility of "parts"

In this manner, programs are linked with "products" in that they demonstrate technical effects through hardware resources. Therefore, it is possible to derive an interpretation that, in order for a program to be a "product" invention, it only needs to be a "parts" of a computer, and the "parts" itself does not necessarily need to be a "product." As a matter of course, opinions have divided in the past arguments concerning the interpretation of this point. In short, there is an opinion that the "parts" needs to be a "a product = a tangible object" in order for a program storage medium to fall under a "product" invention, while there is also an opinion that the program, which is the "parts" itself, can be an intangible existence.

According to the former opinion, the "parts" itself needs to be a tangible object, because otherwise it would only be a kind of information and would merely constitute a process invention. This is a theory that, although it is possible to consider that the essential part of the invention is the program and that the program is a process related to operational procedures at a stage when the program is read from the storage medium and operates the computer, the program is considered as a "product" invention, because as long as the program is connected to a storage medium, which is a "physically sensible means," the program stored in it also falls under a "product."

On the other hand, the latter opinion states that because information in the form of programs has characteristics of "invisible parts" unlike the expression of ordinary information, programs only need to be "parts" that induce changes to computers, and the parts themselves do not need to be "tangible existences." There is also an opinion that if the reason for approval of storage medium claims was based on their "functionality and constitution of parts," "modes having functionality" such as program signals can also be interpreted as subjects of protection as "product" inventions.

(iii) Significance of "parts"

If programs, which are "parts," do not need to be "tangible existences" based on the latter opinion, it is necessary to think about the meaning of positioning programs as "parts." "Products" as in "product" inventions are not products = tangible objects/tangible existences,

but they can be regarded as a concept indicating their eligibility to be traded independently. This point can be considered as an aspect similar to "products" claimed by the theory supporting expanded interpretation of the concept of "products" under civil law.

(4) Identification of the Acts of Working Concerning Product Inventions

If programs were interpreted to fall under the category of "product" inventions on the assumption of the above review, there would be a need to examine how the acts of working the program should be identified. It would be required to specifically clarify what acts would fall under "manufacture," "use," "assignment" and "leasing" in trading of programs.

In identifying such acts, it is clear that the interpretation based on the concept "a product = a tangible object" does not adapt well regarding "programs" or "program signals" as mentioned earlier. As examined earlier, the concept of "a product = a tangible object" under civil law is a concept used to determine the object of ownership, and the concept of a "product" as in product inventions under the patent law has a different function from it.

Also, considering from what was examined regarding the characteristics of programs as "parts," if it was interpreted that programs themselves must be subject to trading as "parts" besides being related to hardware resources as "parts" of computers, "products" as in product inventions would mean something eligible to be subject to (infringements through) trading. Therefore, they would not have to be neither tangible objects nor tangible existences.

From this viewpoint, it would be appropriate to avoid applying the interpretation based on the concept "a product = a tangible object" linked with "ownership" under private law in studying "product" inventions or acts of working such inventions. For example, it is not exactly adequate to interpret "assignment" as a contract that causes transfer of ownership by only bearing in mind assignment of tangible objects; nor would it comply with the purpose for which the concept of a "product" was introduced under the patent law. On the contrary, it would be beneficial to determine what specifically fall under acts of "assignment" in actual situation of various trading by interpreting that even if the products were intangible existences, which would not be subject to ownership, they could be "assigned" if they were subject to trading as certain kinds of products.

III Acts of Working Concerning Computer Programs

1 Network Trading and Acts of Working Concerning Computer Programs

If computer program claims were considered as "product" claims and transmission fell under working of "product" inventions provided under Section 2(3)(i) of the JPL, patents claiming computer programs would have an effect on network trading.

This chapter examines the effect of patents claiming computer programs on network trading under the premises shown below.

(1) Premises

Actors

- Patentee (owning a patent comprising a program claim, a storage medium claim and a process claim)
- Manufacturer who creates the program concerned
- Program offerer who uploads the program concerned on a server and transmits the program concerned (provider or manufacturer)(*1)
- User who uses the program concerned as his/her business

Acts of working

(a) Before transmission

- The manufacturer creates the program and uploads it on its own server or a server owned by a provider.
- The program offerer proposes to sell the program on a Website.

(b) Transmission process

- The program offerer transmits the program through the network to the user. (From the user's standpoint, this is downloading of the program.)

(c) After receiving

- The user executes the program after storing it on a hard disk.

(2) Examination

(a) Before transmission

Since the manufacturer is creating the program, the act is interpreted as "manufacture" as in the working of a patent claiming a program. If the manufacturer produces products that have the program stored on a storage medium such as a CD-ROM, the act is interpreted as "manufacture" as in the working

of a patent claiming a storage medium. If the manufacturer uploads the program on a server, the act is also interpreted as "manufacture" as in the working of a patent claiming a storage medium, because a server is one kind of a storage medium. The question of whether the provider would be regarded, as an infringer in cases where the storage medium is an object owned by a provider is subject to discussion.

The question of whether the act would be interpreted as a "proposal of assignment" (or a "proposal of leasing") in cases where the provider announces to sell the program on the Website is subject to discussion.

(b) Transmission process

Since the storage medium is not transferred on the network in the program transmission process, the act is unlikely to be interpreted as "assignment" as in the working of a patent claiming a storage medium.

Opinions differed as follows regarding the question of whether transmission is interpreted as "assignment" as in the working of a patent claiming a program:

(Positive opinion)

When transmitting a program, one (or more) program(s) is reproduced from the master program stored in the server just before the transmission. This act can be interpreted as "manufacture" as in the working of a patent claiming a program. Furthermore, since the "manufactured" new program is transferred to the receiver, it can be interpreted that the program is "assigned" after being "manufactured."

Because an act can be interpreted as "assignment" as long as the economic value of the patented "product" is transferred, buying and selling of a program through a network can be interpreted as "assignment" of a program.

(Negative opinion)

In order for an act to be interpreted as "assignment," there must be transfer of possession. The act cannot be interpreted as "assignment" because the program remains on the server even after the transmission.

(c) After receiving

When the user downloads the program from the server and stores it in the user's own storage medium (hard disk, etc.), the act is interpreted as "manufacture" as in the working of a patent claiming a storage medium at the point when the

(*1) In cases where the manufacturer uploads the program on its own server, the manufacturer and the program offerer would be the same actor. There are also opinions that, in cases where the manufacturer uses a hosting service of a provider and uploads the program on the provider's server, the manufacturer would be the program offerer, and in cases where the provider is offered the master copy of the program by the manufacturer and serves as a content provider that conducts pay program download service as its own business, the provider would be the program offerer.

program is stored in the storage medium. Also, because a new program, which is separate from the program on the server, is produced on the user's storage medium, the act can also be interpreted as "manufacture" as in the working of a patent claiming a program.

In this case, the determination on whether the infringer is the program offerer or the user depends on whose intention it was to download the program. It can also be interpreted that the user and the program offerer jointly engaged in the manufacture.

When the user executes the program on a computer, the act is interpreted as "use" as in the working of a patent claiming a process. However, if the user "uses" the program not "for business" but for a private purpose, the user is not liable for an infringement.

Due to the above, acts before transmission in (a) and acts after receiving in (c) are subject to the effect of a patent claiming a storage medium since the program is stored in a storage medium. However, the presumptive provision under Section 102(1) of the JPL may not necessarily be applicable in cases where compensation for damage is demanded by regarding the storage of the program on the server as an act of infringement. It is unclear as to how much compensation for damage would be approved for a single act of storage on the server (storage medium), but if the effect of a patent was applied to transmission, it would be clear that compensation for damage will be granted for the number of times the program was transmitted (assigned).

2 Special Acts of Working Concerning Programs

(1) Where a Program Is Transmitted from the Program Offerer to the User as the Program Is Executed (e.g. Java(*2))

This type of transmission is not different from ordinary program downloading in that the program is transmitted and it is executed on a computer. Nevertheless, it is usually the case that the program is not saved on the user's computer and the program is deleted after having been used for a fixed number of times. Thus, the question on whether the act should be

interpreted as "assignment" or "leasing" is subject to discussion.

(2) Where the User Activates and Executes a Program Stored in a Server not on the User's Computer but on the Server (e.g. CGI(*3))

Since the user remotely uses the program stored in the server, no program transmission is involved. This act is interpreted as "use" by the user as in the working of a patent claiming a program (or a patent claiming a storage medium) or "lending" by the program offerer as in the working of a patent claiming a program (or a patent claiming a storage medium).

(3) Where the User Sends Data and Mission (program) to Multiple Servers and Receives Only the Processing Results (e.g. agents(*4))

Since it is the user that is executing the mission (program), it falls under "use" by the user as in the working of a patent claiming a program.

If the multiple servers are owned by a single offerer, it can also be considered to fall under "use" by the server offerer as in the working of a patent claiming a program. When there are multiple server offerers concerned and these offerers cannot find out how the execution results from their own servers are used in other servers later, it is difficult to interpret that they are jointly engaged in an infringement.

3 Other Perspectives

(1) Licensing in Trading

Trading of programs is interpreted as licensing of the right rather than selling and buying of the programs themselves. Program manufacturers distribute their programs in the form of program licensing. For example, software products for video games and PCs include a program licensing agreement in shrink wrapping, indicating that the agreement will be concluded if the wrapping is torn open. Also, charges on an as-used basis that are adopted on networks are interpreted as one kind of agreement. In this case, fees are charged according to the number of installations or the number of users based on the agreement.

In light of such situation of trading, it is regarded difficult to interpret the act as "assignment" as in the working of a patent.

(*2) A generic term used for the program language and technology for network use developed by US Sun Microsystems. JAVA programs can smoothly move between networks, so they can be used through networks only when they are needed.

(*3) Abbreviation of a Common Gateway Interface. The program is activated on the server and the processing results are returned to the user's browser.

(*4) As the word suggests, they are programs that function as "agents." It is a technology where the agent, being given a rough instruction, moves on the network by itself, and after obtaining the required results from the destination, brings back the processing results to the user's terminal.

(2) Issue Concerning Inventions of Program Manufacturing Processes and Programs Manufactured by Such Processes

If programs were considered as product inventions, inventions of processes to manufacture programs would be interpreted as "inventions of processes of manufacturing products" under Section 2(3)(iii) of the JPL. One conceivable example is an "automatic programming process" that manufacturers a "program" as an output of a specific process. In this case, the manufacture process itself, and the program, which is the outcome of the process, does not need to fall under an invention, characterize the invention.

In approving the program manufacturing process, there would be an issue that an "automatic programming process," which had been considered as a process invention (Section 2(3)(ii)), will come to be considered as an invention of a process of manufacturing a product. There is a concern that protection for the program could become excessive if the program that had not been protected become subject to the effect of a patent as the outcome of the manufacture process.

However, this issue had also occurred for patents claiming storage media, and it is not considered to serve as an obstruction to considering programs as "product" inventions provided under Section 2(3)(i) of the JPL.

IV Liabilities of Providers and Communication Carriers

1 Possibilities of Patent Infringements and Necessity for Indemnity

Operators generally referred to as providers are operators that provide Internet connection services. Usually, they also offer servers, etc. for establishing Websites in addition to mere connection services.

There would be an issue of whether a provider would be an infringer if a program infringing a patent were sold through the provider.

There is a possibility that, while the program creator who offered the program to the provider will be a patent infringer, the provider, too, will be held liable to a direct infringement. Even if the provider were not held liable to an infringement, the provider would have to disclose its communication logs to prove that the patented invention was not worked, but this would cause a problem from the viewpoint of protecting user privacy. It would also be a problem if the provider had to bear liability of the program

creator's illegal acts under the civil law.

2 Comparison with Warehousemen and Forwarding Agencies

Warehousemen who store patent infringing articles and forwarding agencies who forward patent infringing articles are not held liable to patent infringements because they are not working the patents. Since "storage" and "forwarding" of information could fall under "manufacture," "transmission," etc, of information in the field of info-communications, there would be a possibility that "warehouse" and "forwarding" operators in the cyber space would be recognized as working inventions. In cyber space, operators who store or forward information will directly store or forward information itself, so there is room for interpretation that they are working patented inventions.

Therefore, it has been pointed out that if the basic status of profits is not particularly different from ordinary forwarding agencies or warehousemen, it should be made clear that "warehouse" and "forwarding" operators in the cyber space will not be held liable to patent infringements for certain modes of acts.

3 Liabilities of Providers and Communication Carriers

In order for a provider to bear liability for damage, it is required to prove that the provider's act has been intentional or negligent. The provider's negligence would be presumed under Section 103 of the JPL, unless the provider proves lack of fault by its own.

In the United States, limitation of liability for providers is stipulated under the Digital Millennium Copyright Act. In Europe, a proposed EU Directive reports that limitation of legal liability for providers is required for avoiding legal instability and expanding e-commerce.

This issue can become subject to discussion also for the storage medium claim, but the issue becomes more salient when transmission of programs is included in acts of working.

4 Legal Issue

It is not only for patent infringements that the liabilities of providers and communication carriers become an issue. Similar issues arise also for copyrights, trademark rights, publicity, reputations, privacy, etc. For example, transmission of digital contents would involve copyright issues and a commercial Website

would involve issues of trademarks or service marks. In addition, if content shows a photograph of a celebrity or that harms the reputation of another party is disclosed on a Website, it would involve issues concerning publicity, reputation and privacy.

V Joint Direct Infringements

1 Mode of Patent Infringements that Had Been Assumed in the Past (Direct Infringements)

(1) "Product" Inventions

It falls under the working of a patented invention to assemble or complete a product by gathering parts or materials in one place (manufacture = a direct infringement). Therefore, normally, the manufacturer, which produced a patented invention, would be liable to an infringement.

Meanwhile, those offering the parts or materials are not considered to be working the patented invention and thus remain to be in a position of indirect infringers.

(2) "Process" Inventions

The conditions are basically the same as "product" inventions, but there are some differences in such cases as described below.

When Plant α of Company A, Plant β of Company B, and Plant γ of Company C are connected by pipes in a petrochemical complex, and the designated product is manufactured from raw materials by working the process in the above company order, the overall acts of Companies A, B and C can fall under the working of a "process" invention from an objective viewpoint.

In such a case, there would be room for an idea that Companies A, B and C are jointly working the patent right granted to a "process" invention (patented invention).

However, in the past, no active discussions had taken place from this viewpoint, and it is considered that in many cases, Companies A and B were considered as subcontractors to Company C, and Company C was held liable for an infringement.

2 Mode of "Joint Infringements" on Networks

When computers and communications are combined to transmit and process programs and data through networks, multiple legal entities would be involved in a single act of working of a

patented invention.

An example of such a case is where, with regard to a patent on a network system having Functions A, B and C, Company X installs a host computer having Functions A and B for processing programs, and multiple companies including Companies Y and Z install terminal devices connected to the host computer by communication lines to execute Function C on each terminal.

There would be an issue on whether Companies X, Y and Z should be held liable to a patent infringement even if they were only engaged in acts of working that fall under a part of constituent elements of the patented invention.

3 Examination

(1) Positive Standpoint

A single party does not always conduct a patent infringement, but it is quite possible that a patented invention is worked jointly by multiple parties in cases such as a network system. Under such circumstances, there would clearly be lack of balance if constitution of a patent infringement (direct infringement) were acknowledged when a single party works the invention, and a direct infringement is denied once multiple parties became involved.

As requirements for being liable to a joint infringement, Companies X, Y and Z should have the intention to jointly conduct the infringement act including an intention to play their respective roles, and also there must be a fact that they are jointly using the information system from an objective viewpoint. In other words, the companies do not need to recognize the existence of the patent right, but if they only lacked the recognition that their own processing is constituting a part of the entire information system, it would lack the precondition for acknowledging that the companies are jointly working the patented invention.

According to this idea, it would be possible to demand injunction or compensation for damage based on a patent infringement by accusing multiple parties who jointly worked the invention.

(2) Negative Standpoint

The Japanese Patent Law has not been established assuming joint infringements. Since the patent law provides that a party will only be liable to an indirect infringement if the party was only engaged in a part of an act of working, it would be improper to make a party liable to a direct infringement when the party is not liable

to an indirect infringement(*5).

VI Conclusion

Since computer software-related technology is a field undergoing rapid technological changes, a flexible interpretation of the patent law is required for providing appropriate protection. To this end, efforts have been made to provide better protection by revising examination guidelines, etc, according to technological progress concerning patents on computer software-related technology.

This research and study focuses on the possibilities and issues concerning protection of computer programs themselves under the current patent law (particularly on ① considering computer programs as "product" inventions under Section 2 of the JPL and ② considering transmission of computer programs as an act of working "product" inventions under the same section of the JPL in the case where computer programs were considered as "product" inventions).

The committee held for this research and study saw a consensus on the necessity to protect computer programs themselves by patents, and most part of the committee supported the opinion that such protection is possible under the interpretation of the current law. However, because protection of computer programs themselves as "product" inventions is a completely new mode of protection and there is hardly any precedents overseas concerning the working of computer programs themselves, some revealed doubts over providing such protection under the interpretation of the current patent law.

In the meantime, the major opinion, which stated that such interpretation is possible, was accompanied by the opinion that an implementation of a legislative measure should be considered in the future in order to avoid doubts concerning legal interpretations.

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(*5) When multifunctional processing is possible on separate Websites, the part, "only," of the requirements for an indirect infringement will not be satisfied.