

14 Research and Study on Standardization and Intellectual Property Rights

Technological standards are established mainly to protect public interest where the objective is to share technologies in order to promote their diffusion. On the other hand, intellectual property rights are established mainly to protect private interest where the objective is to allow exclusive rights on technologies in order to promote technological development. Therefore, technological standards and intellectual property rights essentially oppose to each other; thus, their adjustment measures become extremely important.

Based on this understanding, a research report have been prepared as a basic material for further research concerning the relationship between technical standards and intellectual property rights. That report is divided into the following parts: (1) recent situations within standardization bodies, (2) review of unofficial standards in patent pools and patent forums, (3) examination from the perspective of the Intellectual Property Rights Laws and the Anti-monopoly Law, and (4) the results of our research conducted in Europe and the U.S. This paper is a summary of the above-mentioned report.

I Introduction

Technical standards and intellectual property rights are fundamentally in conflict with each other and adjustments between the two have been discussed at length. Firstly, technical standards are established mainly to protect public interest by improving convertibility among technologies, promoting the spread of technologies and expanding relevant markets. However, intellectual property rights are established mainly to allow exclusive rights for technologies that meet the prescribed requirements, in order to promote technological development. Although the ultimate purpose is to promote the public interest of industrial development, the aspect of private interest is the primary emphasis in intellectual property rights.

In the past, the only standardization method used was the process conducted by official standardization bodies. However, methods initiated by the markets and users have recently emerged. The standardizing process initiated by the markets was established by groups of companies with the intention of encompassing technological results using their own standards, and the method of obtaining intellectual property rights for standards is effective for this type of standardizing process. The other standardizing process initiated by users has been established on the Internet by voluntary users.

Thus, the environment surrounding technical standards has changed, and it has become more difficult to solve problems relating to intellectual property rights due to such changes.

II Current Situation of Official Standards

1 Current Situation of ISO(*1)/IEC(*2)

(1) Two-dimensional Bar Code Standard DIS(*3) 16022 (Data Matrix)

When the U.S. suggested the Fast Track DIS vote on the two-dimensional bar code standard "Data Matrix Code", Japanese Company A, which had relevant patents, did not declare to license the technology (while the license for the patent related to "the Data Matrix Code." was declared)

Accordingly, Japan stated that it was a violation of ISO/IEC provisions that Company A, which was holder of patents that were proved relevant to the standard, had not submitted the statement related to those patents, and offered "a conditional opposition" to the Fast Track vote, setting the condition that this problem should be solved. The result of this vote showed 26 in favor, 1 against (Japan) and 2 waivers. In principle, the DIS should have been passed, but the DIS seems to be under consideration, as no notification of its passing has been given by the Office. This may be partly because patent issues have been put to the front.

(2) Contactless Proximity IC Card

In this case, Japanese Company B insisted that it would declare to refuse to license its own essential patent unless its specifications were accepted as an international standard. In response to this insistence by Company B, working group of Japan decided to try to include Company B's specifications in the standards, and

(*1) International Organization for Standardization

(*2) International Electrotechnical Commission

(*3) Draft International Standards

at the same time asked the Information Technology Standards Commission in Japan (the Japanese Office in correspondence with ISO/IEC JTC1(*4)) to consider solutions for the "patents and standards" problems.

Over the course of discussions on this matter, it is found that parties concerned made reference to former provisions and they were unaware of the existence of the revised provisions. Subsequently, the JTC1 general assembly resolved to thoroughly disseminate the existing ISO/IEC patent policy and its intention to all members.

Further, it was agreed that Company B's specification would be continually examined after a one-year delay. In addition, future policy on patent issues was discussed based on the revised provisions and policy for such issues was determined.

(3) International Standardization of Java

First, Sun Microsystems (Sun) sought to make Java an international standard and applied for the approval of PAS(*5) Submitter of ISO/IEC JTC1, which was approved. Then, Sun withdrew Java from the ISO/IEC JTC1 standardization process in order for it to be transferred to the process of the European standardization body ECMA(*6), since Sun was insisting on carrying out the maintenance of PAS, which had been approved as an international standard, in its own way, while JTC1 intended to do so in cooperation with the parties that had submitted PAS.

Then, Sun also withdrew Java from the ECMA process. According to the report, the reason for the withdrawal was that Sun persistently insisted on retaining its copyright while the ECMA's standardization policy would not admit the ownership of a copyright against the ECMA standard by the party that had submitted the draft standard.

Although a committee for considering Java standardization had already been established in ECMA, Sun requested its dissolution, and, consequently, the issue of whether standardization should proceed is to be discussed in a future general assembly.

This case is an example of a failed attempt to make the specification of a single company the international standard. Java must be internationally standardized for its own future,

and separate standardizing operations conducted by two groups should be avoided, in order not to go the way of the standardization of UNIX.

(4) Future Tasks

Future tasks have been extracted from the examples mentioned above as follows:

— In the case of a vote for drafted international standards, such drafts are often approved in spite of disapproval of countries that are likely to suffer from patent problems. If it is clear that patent problems can be expected in the future, the standardization bodies must take measures against these.

— Standardization bodies should seek more thorough dissemination of their patent policies and intentions to the parties concerned with standardizing process.

— At any stage in standardization, requisite measures should be tried and taken according to patent policies if the existence of any relevant patents is found.

— ISO/IEC must consider establishing additional provisions, such as a "General Patent Statement and Licensing Declaration" of ITU-T(*7).

— The prime object of the PAS system should be to include standards outside the ISO/IEC, and therefore, copyright issues should be dealt with flexibly.

2 ITU-T

The guideline for patent policy and the draft of program copyright policy, which have been recently prepared by ITU-T, will be explained below.

(1) Outline of the Guidelines Concerning ITU-T Patent Policy

(i) Objects (Chapter 1 of the guidelines)

The object of this guideline is to facilitate the understanding of the ITU-T patent policy and assist its actual application. Further, it is recommended that patents relevant to the drafted standard under development are identified at an early stage and that information is disclosed.

(ii) Background (Chapter 2)

ISO and ITU-T patent policies are consistent with those of the IEC, CEN(*8)/CENELEC(*9), ANSI(*10), IEEE(*11), and so on, in the respect that those policies restrict standardization

(*4) Joint Technical Committee 1

(*5) Publicly Available Specification

(*6) European Computer manufacture association

(*7) International Telecommunication Union-Telecommunication Standardization Sector

(*8) European Committee for Standardization

(*9) European Committee for Electrotechnical Standardization

(*10) American National Standards Institute

(*11) Institute of Electrical and Electronics Engineers

bodies' involvement in patent rights to a minimum level.

(iii) When patent information should be provided to ITU-T (Chapter 2, Section 4)

With respect to when patent information should be provided to ITU-T, it would be ideal for a company to include and identify, in every contribution paper, relevant patents or patent applications of its own or other companies, and it is required for that company to try its hardest to provide information. However, patent research is not an obligation.

(iv) General Patent Statement and Licensing Declaration (Chapter 2, Section 5)

When a company has submitted this statement, it would be less possible for such a company to refuse to license nondiscriminatingly, which would effectively reassure parties setting the standards. This is a voluntary and additional procedure, and conventional procedures can also be taken. Furthermore, this statement shall be effective only when a company's contribution paper which includes the company's own patents is introduced into a standard.

(v) Approval of new or revised drafts of standards (Chapter 3)

It is required that members, having determined that a drafted standard which is to be approved involves its own patents or another companies' patents, disclose such information to the Office no later than the due date for the scheduled approval of the drafted standard. However, such disclosure is not an obligation.

Further, such notifications shall be prepared in the typical format so that they can conveniently be inputted into the patent statement database, and include the expression "basis of reciprocity". Such measures are taken so that companies declaring to license nondiscriminatingly according to the patent policy can oppose other companies that do not grant licenses. In addition, any patentee that refuses to license nondiscriminatingly shall be obligated to give a technical explanation of the relationship between its patent and the drafted standard.

(vi) Operational method in the Study Group (SG) (Chapter 4)

The chairperson of the SG is required to make inquiries on the existence of any patents relevant to the drafted standard in the SG meeting and mention questions and answers on this matter in the book of minutes.

(vii) ITU-T's patent statement database (Chapter 5)

Information concerning the General Patent

Statement and Licensing Declaration shall be included in this database. However, the submission of patent information is not obligatory, and therefore, the accuracy or completeness of the database shall not be assured.

(viii) Patents found after standardization (Chapter 6)

When any relevant patent is found after standardization and its patentee does not agree to the granting of a non-discriminating license, the standard should be revised or abolished. When the Office receives a notification of refusal, the Office shall notify the SG of this immediately and the SG shall consider the action to be taken.

(ix) Patents retained by parties other than ITU-T participants (Chapter 7)

When it is found that a patent has been retained by a third party other than a ITU-T participant, such information shall be reported to the Office, which will then contact the third party and ask him to submit a General Statement and Licensing Declaration. The submitted statement shall be dealt with in the same manner as those submitted by members.

(2) Outline of the Draft of Program Copyright Policy

The first point of this draft is that the scope of the program involved in this policy shall be limited to those that have been prepared outside the ITU-T and then included in the standard without any revision.

The second point is that when the ITU-T standard includes any program for which copyrights exist, the choices listed as follows shall be offered to the copyright owner of the program: 1) to grant license of the program free of royalty, 2) to grant license of the program nondiscriminatingly and reasonably to the extent necessary for the implementation of the standard, 3) to choose neither of the above two cases (that is, the program shall not be included in the standard.)

The third point is that, although a program copyright is an aggregate of various rights, such as reproduction rights, usage rights, and alteration rights, it is not clear how to deal with which right; in other words, it remains unclear whether ITU-T participant can only read the program or can also sell products in which the program is incorporated.

(3) Remaining Tasks

The first problem is the risk of overlapping protection under a patent and protection under program copyrights. In the case of granting a patent for a newly invented algorithm, there are

two types of views on protection of the invention: firstly, that the patented invention should not have to be protected under program copyrights if protected under the patent policy. The second view is that, given that the costs for obtaining a patent for the invention are different from those for programming the invention, the invention should be protected under the patent and under program copyrights at the same time. However, based on the latter view, it would be possible to claim rights by programming an algorithm for which another company has obtained a patent, and program copyrights that provide global protection would possibly yield more benefits later.

The second problem is that, while it is impossible to claim rights by proposing an algorithm in writing, it will be more beneficial to submit the algorithm as a program, and therefore, more contribution papers for programs would be submitted. If it is necessary to select truly critical programs, the issue of who should have the responsibility for selection is foreseen to be a problem.

The third problem is related to the maintenance of a program: when it is essential to introduce a program into the standard, who should accept the responsibility of the maintenance of the standard? Further, if there are any bugs in the program, who should accept the responsibility for these and how?

III Consideration of Unofficial Standards

1 EIAJ's Trend Concerning Harmonization between Standardization and Intellectual Property Rights

The following is the outline of summary and main points of the guideline on dealing with cases where intellectual property rights and other rights are involved in the standardizing process. This guideline is prepared by EIAJ (Electronic Industries Association of Japan.)

(1) Forward

The object of this guideline is to detail basic matters for cases where intellectual property rights and other rights are involved in the provisions established in the EIAJ standards etc.

(2) Application of the Basic Guideline

This guideline shall be applied to all EIAJ standards etc. (standards, provisional standards, technical reports), and also applied to established EIAJ standards etc. on the occasion of review in principle.

(3) Scope of Intellectual Property Rights

Intellectual property rights shall include

patents, utility models, designs, trademarks and rights for layout-designs of integrated circuits which have already been established and for which applications are pending and disclosed, including those rights for which applications have not been disclosed in cases where applicants offer them voluntarily.

(4) How to Deal with Intellectual Property Rights and Other Rights

It is required that non-discriminating licenses on these rights should be granted free of royalty or under reasonable conditions, and standards etc. shall not be developed without granted licenses or submitted confirmation letters. However, in the case that a right holder has chosen to grant his license free of royalty or under non-discriminating reasonable conditions while another right holder has chosen to grant his license under conditions different from those chosen by the former, this situation shall not prevent the establishment of the conditions for the former different from those for other users. Further, EIAJ shall not provide any guarantee for this matter nor assume any responsibility for settlement of disputes and compensation related to the standards etc.

(5) Responsibility of Parties who Propose Standardization

Parties who propose standardization and who agree with the proposal and participate in the standardization proposing group shall submit confirmation letters if they retain intellectual property rights or other rights relevant to the matters included in the proposal. Where such parties have obtained information on other right holders relevant to the matters included in the proposal, they shall submit the information.

(6) Research on Intellectual Property Rights and Other Rights

According to the guideline of research on whether matters mentioned in the proposed draft standard fall under the scope of intellectual property rights and other rights, targets of research, times and commencement of research, and confidentiality on research shall be established. The targets of research include EIAJ member companies in principle, and other right holders may be included if they are identified.

(7) Procedures for Claiming Disclosure of Intellectual Property Rights and Other Rights

It is recommended that when a right holder is identified, a request to submit a confirmation letter to the right holder shall be obtained before the final draft standard is approved. However, when a right holder is identified in the research conducted upon proposing standardization, it would be desirable to obtain the confirmation letter before examination of the proposal for standardization.

When a confirmation letter stating that a license cannot be obtained free of royalty or under non-discriminating reasonable conditions is submitted or when no confirmation letter is submitted by a right holder, the standardization committee shall reconsider whether the standard etc. can be prepared without including the right and, if this is impossible, the committee shall suspend the standardizing operation.

Further, EIAJ shall never be liable for problems caused by the fact that no confirmation is submitted, and negotiations on licenses for royalty shall proceed between parties concerned.

(8) In the Case of Intellectual Property Rights and Other Rights Found after Standardization

If a relevant patent is found after standardization, it would be sufficient to request the right holder to submit a confirmation letter, and to supplement standards etc. with additional notes if the patentee agrees to grant a non-discriminating license. However, if the patentee refuses to do so, the standardization committee shall reconsider whether it is possible to revise the standard etc. without including the right and, if this is impossible, the committee shall abolish the standard etc. However, if the patentee is an EIAJ member company, the patentee shall be required to agree to grant a non-discriminating license.

(9) Additional Notes to the Standards etc.

If a relevant patent interferes with the standard etc., the number of the patent, the title of invention, the identification of the patentee, and whether the patent is licensed free of royalty or for royalty, etc. shall be specified. If the patent is licensed for royalty, the license negotiation shall be proceeded between the patentee and each licensee. EIAJ shall not provide any guarantee nor assume any responsibility for the matters mentioned in the additional notes.

2 MPEG2 Patent Pool

The MPEG2 picture compression standardization technology is standardization technology for compressing digitized moving pictures and audio signals efficiently and for transmitting, storing, and displaying them. The title, MPEG, derives from Moving Picture Expert Group, which is a joint expert committee of ISO/IEC.

(1) MPEG2 License Organization

As a number of patents are involved in the MPEG2 standard, the MPEG2 License Organization has been established to solve the problems of those patents with the package licensing method using a patent pool.

The final decision of the License

Organization is made by its decision-making agency composed of licensors. The Organization is established in the U. S. as an organization operating daily licensing services. MPEGLA (MPEG License Administrator) is granted licenses by the patentees for the patents included in the patent pool, and then grants sublicenses to licensees. MPEGLA collects license fees from the licensees and then distributes the collected amount to the licensors in a predetermined ratio after deducting necessary expenses.

(2) Patents that Can Be Included in the Patent Pool

Patents that can be included in the patent pool are those related to technologies essential to the MPEG2 standard and established as patents. "Essential" means that technical matters claimed in the patent are mentioned in the MPEG2 standard. A new patent offered by the patentee may be added into the patent pool if the patent is considered as an essential patent as a result of examination. In this case, however, the license fee shall remain fixed in principle.

(3) Reasonable Nature of Licensing by the MPEG2 Patent Pool

Before starting licensing services, MPEGLA obtained a judgment from both the U. S. Department of Justice and the Fair Trade Commission in Japan that the License Organization will not hamper competition since the License Organization is reasonable in terms of the following points:

— As substantially all the essential patents are included in the patent pool and these rights are licensed non-discriminatingly, it would be possible to manufacture and sell products utilizing the standard without concern for these patents.

— Licensees would not have to bear the burden of carrying out essential patent researches or negotiations with many patentees individually.

— Total license fees would be less than those of an aggregate of individual licenses granted by each patentee.

— Each licensor would gain income from license fees at a lower cost.

As an actual effect, since many licensors and licensees are involved in the patent pool, it would be difficult for other companies to enforce their rights outside the framework of the system.

3 Intellectual Property Management in Universities and Technical Standards - an Example of the MPEG2 Patent pool -

In Japan, a number of technology licensing organizations have been recently established to license inventions made in universities to industries. In the future, patents retained by these

institutions will be involved more frequently with technologies adopted as standards. Accordingly, the function of a university with respect to spread of technologies related to standards will be considered below, by giving the example of Columbia University in the above-mentioned MPEG2 patent pool.

(1) Establishment of MPEGLA

Though the MPEG2 standard was technologically perfect, there was a concern over whether the standard would spread throughout the world, given that relevant patents were retained by a number of companies. An informal working group for intellectual property was organized, which asked patent attorneys independent from these companies to carry out research on essential patents relevant to the MPEG2 standard. As a result of the research, it was found that organizations in Japan, Europe and the U. S. including Columbia University retained essential patents. Subsequently, these organizations carried out preparation for establishing MPEGLA.

Before the establishment of MPEGLA, a patent attorney who had been under contract with Columbia University for a long period at that time was recommended for drafting all the written contracts and rules necessary for the work, and the attorney was approved by all companies which participated in the preparation. These companies thought that if Columbia University, which had no interest in any businesses, led the work, a system satisfactory to all the rest would be created. This was probably the most effective reason for the companies, which were basically competitors, to unite with each other.

(2) Future Vision of MPEGLA

At present, MPEGLA has not only performed well in the MPEG2 but has expanded its operation to include patent pools for other standards. Though any of patents retained by Columbia University are not involved in those new pools, it seems that the framework of MPEGLA intellectual property management cannot be developed without invaluable contributions from Columbia University, especially from the technology licensing organization in it.

(3) Conclusion

It seems that non-profit organizations, which have characters different from those of competing companies, existed and acted as a key gravitational force among those companies, and this was an important factor for creating the patent pool and providing the package licenses.

If a university obtains patents for its inventions and licenses them, the university gains

license income, and moreover, could serve as a coordinator in the industries, making use of its nature as a non-profit organization, and act as a core for establishing infrastructures useful to society, having consequences for the public interest.

4 Settlement of Patent Problems Related to Technical Standards by Utilizing a "Forum" Method

(1) Definition of "Forum"

Forum licensing is a method for seeking to settle patent problems related to a technical standard pursuant to the provisions of "a forum" which has been established voluntarily by private companies and the like in order to lay down the technical standard and maintain the technical specification. Accordingly, ways of settlement used in the forum method cannot be decided automatically as in the case of a "patent pool", and there are various possible types of settlement according to the decided provisions of "the forum."

(2) Keys to Successful Settlement of Patent Problems by the "Forum" Method

A company retaining influential technologies in the area of a technical standard that is to be standardized is naturally unwilling to abandon its right to claim license fees based on its patents, and it is hard to convince a company to license its patents free of royalty unless the company can be convinced of the merits of doing so.

Further, in the case of laying down the standard in the "forum", the standard itself is often concealed as confidential information during the process and at the stage of licensing. Accordingly, if a company receives standard information containing other company's confidential information while considering whether or not to participate in the process for laying down the standard, the company might be suspected of appropriating the confidential information to its own use, which would possibly restrict free development of technologies.

Where such a situation is anticipated, companies retaining influential technologies may be unwilling to participate in the work of laying out standards.

When considering these possible difficulties, it seems more recommendable that a "forum" is organized after a framework of the standard is prepared by a few companies that retain certain major technologies, and then that framework of the standard will be further improved by each forum participant. Accordingly, the final form of the standard would be prefigured to some extent at the stage of organizing the "forum" and it would be easier to decide whether to agree with

a license free of royalty.

(3) Limitation of Settlement of Patent Problems by the "Forum" Method

In the "forum" licensing method, problems concerning patents that are retained by parties not participating in the "forum" cannot be settled. In addition, as patent problems to be solved in this method are often limited to those concerning patents essential to the standard, problems concerning patents which are not essential but useful to manufacture and sell products which comply with the standard still have to be solved by each company.

Furthermore, in the forum licensing method, license conditions vary depending on the spread of the technical standard. It can be said this form a sharp contrast to the fact that patent pools serve as a "market price setter" of the license fee for pooled technologies. Therefore, the license conditions in the forum licensing method cannot be clearly considered as the "market price" of the industry.

Moreover, in some cases, it takes a considerable amount of time to reach an agreement on license conditions and, as a result, the announcement of the technical standard may not be released at the most suitable time, thereby preventing the standard from spreading.

(4) Misunderstanding of Technical Standards

It is not the case that the mere fact of a standardization body deciding a technical standard means that it will be used widely in the market place. However, in many cases, the adoption of a technology as the standardized one is widely deemed as the equivalent to the market success. And, when an equally effective, alternative standard is proposed, it often result in keen competition or superiority between the two technical standards. In arguing the technical standards issue, there should be separate arguments for mandatory standards which are adopted as exclusive one according to administrative and safety regulation and for standards which are adopted voluntarily.

IV Applicability of Compulsory License System — from the Viewpoint of Intellectual Property Law —

Problems occur when a patentee of an essential patent indispensable to the standard does not accept the basic condition of standardization that "non-discriminating and reasonable license" should be granted. Accordingly, the issue of whether an arbitration decision of non-exclusive license (hereinafter called "compulsory license") pursuant to the Patent Law is applicable to intellectual property

rights included in the technical standards will be considered below.

1 Arbitration System

The purpose of the Patent Law is to contribute to the development of industry by promoting protection and utilization of inventions. To achieve this purpose, a patentee should work his invention by himself or have another person work the invention. Consequently, when the invention is not (sufficiently) worked, legal proceedings can be taken to ensure that the invention is sufficiently worked. In this respect, the Patent Law provides respectively for the case of non-working (Section 83), the case of dependent invention (Section 92) and the case of necessity for public interest (Section 93). Considering the problems involved in exercising patent rights in the context of standardization of patented inventions, the provisions of Section 83 and 92 would be less applicable. However, provision 93 stating "particularly necessary in the public interest" should be considered.

2 Criteria and Interpretation of Arbitration Decision Based on Section 93

Few suggestions are found with respect to the criteria of the compulsory license based on the provision 93 of the Patent Law. However, the "Foreign Investment Council (Gaishi-Singikai) Expert Committee Report" (March 15, 1968) suggests the framework of operation for a compulsory license and provides that a compulsory license shall be granted "when the patented invention is important and has direct relation to the people's living, including their life itself and health, or construction of public facilities" and "...when the national economy receives gross and adverse impact due to the monopoly of important patented inventions related to a process essential to producing a specific product or working a specific method."

Subsequently, the "Operational Criteria for Arbitration System" was published by the Ministry of International Trade and Industry in 1975. The criteria provides that a compulsory license shall be granted 1) when the patented invention is particularly necessary in the area directly related to the people's living, including protection of their life and property, construction of public facilities, and 2) when the sound development of the whole industry concerned is interrupted and the people's living will be substantially harmed unless a compulsory license is granted for the patented invention.

Since then, no official guideline has been

published and no arbitration decision has been made, which indicates a delay in dealing with this issue.

3 Suggestive Theory — Social Sector Theory —

The "social sector theory" is presented here as one of the theories in support of the compulsory license. According to this theory, when a patent, which is private property, is integrated into the standard, which is public property, the patent is transposed into the "social sector" and, consequently, exclusiveness of the patent is partly restricted. Further, in this theory, since derivative value derived from standardization is not intrinsic value originally based on the Patent Law, the derivative value can be discounted from the license fee which is considered at the fair level when the patent is integrated into the standard.

V From the Viewpoint of the Anti-Monopoly Law

1 Compulsory License Pursuant to the Anti-Monopoly Law

(1) Focus of Problems

This section focuses on the problem of dealing with cases where an intellectual property right exists for technology that has become a de facto standard and is therefore monopolized, or where an intellectual property right adhered to a technology that has been established as a standard prevents realization of the effects originally expected for the standard.

(2) Approach Pursuant to the Anti-Monopoly Law (Control of Refusal to Deal)

(i) Compulsory license pursuant to the Anti-Monopoly Law — Control of refusal to deal —

In Japan, this problem is discussed with respect to whether sole and unilateral refusal to license constitutes a violation of the Anti-Monopoly Law (the Anti-Trust Law), and in what cases, if ever, it does so. In this case, the theory that draws the most attention is the essential facility theory, which originated in the U. S.

According to this theory, the refusal to license constitutes a violation of the Anti-Trust Law (Anti-Monopoly Law) when the following four requirements are met: 1) the monopolist dominates essential facilities, 2) competitors cannot practically or reasonably create the same essential facilities, 3) competitors are refused to utilize the essential facilities, and 4) it is feasible to make the essential facilities available to competitors.

(ii) Development of the essential facility theory

It seems that, according to this theory, all intellectual property right problems related to standards can be solved. However, there is considerable controversy in the U. S. over the theory's validity and scope, and a conclusion cannot be drawn easily. Further, it is not correct to develop the controversy putting emphasis on the question itself of whether the essential facility theory should be adopted. Taking this theory literally, the regulatory scope would be expanded to such an extent that it would be necessary to develop other requirements to restrict such regulation. Otherwise, application of this theory could be restricted only by ad-hoc justification.

The issue to be considered first is "in what situation it would be illegal for a party with essential facilities to refuse deals solely and unilaterally?" Problems will occur in particular when adverse effect on competition are not so clear, for example when a party is prevented from developing its competitiveness only because the party is refused deals by the essential facilities owner. In such cases, whether the refusal to deal fall into the category of anti-competitive behaviours will depend on how we understand the very concept of "anti-competitive effect" and, in the course of this analysis, how and what effect we respect the most basic requirement of intellectual property rights. In this respect, it is possible to think that the regulatory scope for refusal to deal would be broadened when the monopoly of the intellectual property right is expanded due to standardization. In addition, refusal to deal is more likely to be considered unreasonable when further innovation is restricted by such monopoly. However, it cannot be denied that these judgements seem to depend on each circumstance. Should refusal to license be illegal, it would still be controvertible whether license without reasonable and non-discriminating conditions is immediately considered illegal. In this case, another problem that arises is on what occasion business justification would be accepted.

(3) Approach Pursuant to the Anti-Monopoly Law — compulsory license as a remedy by reference to the U. S. laws —

(i) Change of points of view — issue of the scope of illegal acts and issue of remedy —

With respect to the issue of compulsory license under the Anti-Monopoly Law (Anti-Trust Law), it is not sufficient to focus only on the issue of whether sole and unilateral refusal to license is illegal. The issue of compulsory license under the Anti-Monopoly Law or the Anti-Trust Law has two aspects: compulsory license as a

remedy and refusal to license as an illegal act. According to the tradition of continental laws, including Japanese laws, it is clear that remedies tend to be provided for as types of illegal act in question, and unless some measures are taken to overcome such problems, a compulsory license as a remedy would be enforced only insufficiently.

Consequently, it is necessary to place the emphasis again on the viewpoint of the compulsory license as a remedy against violation of the Anti-Monopoly Law.

(ii) Compulsory license as a remedy under the Anti-Trust Law

1) Compulsory license in its broad and narrow definitions

In the broad definition, a compulsory license refers to a license in all cases where granting a license for at least specific parties as a remedy is obligatory. In the narrow definition, it means a license as a remedy where it is obligatory to grant a license in general to diverse business operators that pay reasonable royalties. Granting a compulsory license in the narrow definition is the same as openly offering the standard technology. However, a compulsory license in the narrow definition is not always granted even though refusal to license is included under illegal acts, and the scope of illegal acts corresponds with remedies when not granting a license non-discriminatingly and reasonably itself constitutes a violation of the law. This is the reason the essential facility theory draws attention in Japan.

2) Japanese Law

Only limited opposition would be offered to the view that when a refusal to license is a part of an illegal act, for example, when one party refuses to license with the intention of making the other party accept any anti-competitive obligations or when a concerted refusal to deal is given, at least a compulsory license in the broad definition should be granted as a necessary measure taken to prevent the illegal act.

However, is it possible to grant a compulsory license as a measure necessary to eliminate the market power resulting from the illegal act (elimination measure)? Would this apply in the case of private monopolization? It is not impossible under interpretative theory but, in Japan, a causal relation is required between the illegal act and the market power to be eliminated. Therefore, it seems that such an elimination measure would be actually taken only when the monopoly power is expanded by acquirement and accumulation of patents. However, when several parties come together, forming a position to exclude other parties, it would be possible to grant a compulsory license

in order to eliminate the results of such an act. Further, in the case of business combination, there is a strong possibility that a compulsory license would be granted as a necessary measure to be taken in order to eliminate the market power (and the power to eliminate competition) resulting from such a combination.

(4) Further Problems to be Considered

The problem of a compulsory license as a remedy against violation of laws (civil remedies and the elimination measure), which has not often been discussed in the past, is presented above. It is difficult to design the compulsory license (both in the broad and narrow definition), regardless of whether it is a civil remedy or an elimination measure, but this problem cannot be avoided as injunctive proceedings against illegal acts are introduced. In addition to the issue, in which cases refusal to license is considered illegal, other issues should be further considered, such as in what cases the compulsory license is applicable as a remedy, and the kind of remedy that is appropriate in such cases.

2 Standardization and Competition

Traditionally, it seems that "promotion of competition" has not been taken into consideration in deciding the existence of rights or occurrence of infringements in the area of intellectual property rights. Accordingly, legal problems concerning standardization and competition will be considered below in the following three sections: acquirement of rights, organization and activities of standardization bodies, and enforcement of rights.

(1) Acquirement of Rights

Standard information is required to meet specific requirements to be legally protected as intellectual property. With respect to some of these requirements, a certain amount of attention seems to be paid to harm caused by monopoly or promotion of competition; for example, the requirements of novelty (Section 29 (1) of the Patent Law) and of inventive step (Section 29 (2) of the same law). Acquirement of intellectual property rights seems to cause problems under the Competition Law when 1) intellectual property rights are concentrated to create a higher entry barrier and to exclude actual and potential competitors, and 2) the company dominating the market enhances its market power.

(2) Organization and Activities of Standardization Bodies

Standardization initiated by a standardization body assumes a character conflicting with the idea of the Competition Law

because competitive companies, each of which should act independently by nature, are in collaboration in a standardization body. In this sense, the establishment of a standardization body itself can be an issue. One of the specific standardization activities carried out by such bodies is to introduce and promote new technologies. However, when such technology is adopted as a "standard," the standardization sometimes has an adverse impact on industrial development and technological improvement. This kind of situation can interfere with the basic principle of intellectual property rights and, therefore, it is necessary to carefully consider in standardization which technology is to be adopted at what point of time.

In this regard, competition among standardization bodies seems more favorable. From the viewpoint of original purpose and role of standardization, one can conclude that "one technical area, one standardization body" will be more appropriate solution. However, considering its adverse impact that the types, forms in use, prices, etc. of available technologies are limited, it is believed that in some cases the favorable situation for promotion of technological development and convenience for users would be when competition among several standardization bodies exists.

(3) Enforcement of Rights

An important aspect of intellectual property rights is intangibility. However, this causes difficulties in terms of determining the appropriate scope of protection for each technology and for information. Accordingly, it is important to determine or coordinate *ex post facto* the fundamental problem of intellectual property rights, namely, the problem of "the balance between monopoly and utilization."

Some of the concrete measure for *ex post* determination under the Intellectual Property Law are compulsory license, misuse, fair use, etc. The Competition Law plays a major role in such an *ex post* coordination system, and it can be said that activities related to intellectual property rights are evaluated and judged under the Competition Law by balancing the competition promoting effect and the competition preventing effect of such activities. In Japan, it is provided that the Competition Law shall not be applied to activities considered as enforcement of intellectual property rights in order to coordinate the Competition Law with the Intellectual Property Law.

VII Overseas Research

1 Research in the United States

(1) The Reaction of ANSI to the Consent Decree in the DELL Case.

At the conference for setting a standard for the VL bus in the U. S., an engineer from Dell Computers at the conference declared that Dell retained no patent relevant to the standard. However, after the standard was established, Dell reversed its attitude and published a letter stating that "the VL bus standard infringes our patents." In response, the FTC (the Federal Trade Commission) brought a suit against Dell, arguing that Dell's act was in violation of the FTC Act. Consequently, Dell accepted the consent decree by FTC and arbitration was concluded. This is the outline of the case.

In this consent decree, the FTC mentioned that "any company involved in standardization must make a search for its own patent portfolio." Subsequently, ANSI and a number of member companies discussed this matter with the FTC and gained the FTC's consent that it is impossible for a company having a large portfolio to always have proper knowledge on all of its own patents. When deciding whether to bring a suit against a company, the FTC recognizes the need to gauge accurately whether the company's representative is unaware of its patents or is abusing the system deliberately.

(2) Biotechnology and Standardization

Recently, interpretation of gene expression data using DNA chips has been actively carried out and a large number of companies are competing for marketing in the DNA chip markets. Consequently, DNA chips, which now have several kinds of formats, are expected to be standardized in the near future.

Affymetrix, Inc., which had retained the basic patents on DNA chips and distributed the devices, established a consortium with a company that had distributed another device, Molecular Dynamics. These two companies, which had led the DNA chip development, attempted to unify their standards in order to gain larger market share and have their own standard made the *de facto* standard. However, the number of companies joining this consortium has not increased, and in fact Affymetrix's share in the U.S. market has tended to decline. One of the causes of this decline in the market share is that the chips necessary for experiments, which are consumable supplies, are very expensive and cannot be recycled. Given these circumstances, Affymetrix's strategy has been to counterattack late entrants by bringing suits against them based on its own basic patents. However, the future of the DNA chip market is in chaos partly due to those suits, and there are expected to be future problems in the area of life science.

2 Research in European Countries

It is generally considered that the aim of the standardization bodies should be to prepare technical standards promptly, and that the bodies should not actively be involved in IPR issues. That is to say, the object of the standardization bodies is to prepare technical standards in order to provide opportunities for companies and others using those standards to make profits, and it is left to the discretion of each company whether to adopt those standards. This opinion seems to be based on the idea that, as each company decides whether to adopt a technical standard for the purpose of gaining profits, it should have individual responsibility for adopting the technical standard and also for dealing with IPR issues inevitably related to such adoption.

Further, considerable support is given to the idea that, when it is difficult to judge whether intellectual property rights are essential or whether license conditions are reasonable or otherwise, standardization bodies should not designate the policy but parties concerned should make such judgement in negotiations.

Reactions toward utilizing the arbitration system have generally been cautious. In Europe, there is an idea that it is extremely difficult to apply an arbitration decision to an intellectual property right only because the right is related to a technical standard. This idea also seems to be common in Japan at present. With respect to applicability of the Competition Law, opinions in Europe are not wholly negative, but are as cautious as those expressed toward the arbitration system.

VIII Conclusion

Various efforts to resolve problems concerning technical standards and intellectual property rights have been made. For example, international standardization bodies such as ISO, IEC, ITU, regional standardization bodies and national standardization bodies have discussed how to deal with patents and other rights. In terms of the general concept, as in the past, the standardization process cannot proceed unless right holders of essential patents or other rights grant non-discriminating licenses on such rights under the "(free of royalty or) fair and reasonable" conditions, and those bodies have improved procedures for operating the process.

However, there remain a lot of problems to be solved in actually promoting standardization

and for proceeding with negotiations on licenses on related patents. Areas still to be addressed are as follows:

— How to decide whether patents related to a standard are essential patents.

— How to deal with a case where a right holder refuses to license under the reasonable conditions and it is impossible to review technical matters included in the drafted standard.

— How to deal with a case where a right holder, who is identified after standardization, refuses to license under the reasonable conditions.

— Criteria for judging whether the license conditions are reasonable.

— Applicability of compulsory license.

In particular, when a number of rights are involved in a technical standard, accumulation of royalties for licenses on those rights, even where each royalty is small, would amount to an enormous sum. To deal with such problems, the patent pool method and the patent forum method have been tried.

In this research and study, the latest trends and issues are presented together with those issues and activities. Further, tasks which should be considered from the perspective of the Anti-Monopoly Law are set forth. In addition, this study indicates that a university can play a significant role as a coordinator among right holders with regard to standards according to the establishment of the TLO (Technology Licensing Organization) Law.

Another point that was addressed is the necessity to unify procedures and formats, which at present vary with each standardization body. For example, the General Patent Statement, which ITU has introduced, the typical format of the patent statement, the patent statement database, rules on handling program copyrights, etc. should be immediate targets. This necessity arises from the argument that ISO/IEC JTC1 often works together with ITU, and the difference in procedures and formats between both bodies results in inefficiency. Further, unification at the level of ISO or IEC and unification with national standardization bodies are worth considering.

Along with the development of globalization as symbolized by the Internet and WTO/TBT agreement, the cross-border application of technical standards will be further promoted. However, intellectual property rights are rights stipulated in each country's national legal system. Though it is not easy to solve the inconsistency and conflicts between technical standards and intellectual property rights,

parties concerned are required to make every effort to solve those problems on a continual basis. It is therefore necessary to continue research and studies on this issue in the future.

(Researcher: Masayuki Sano)

