



**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS  
COMPETITION COMMITTEE**

**DAF/COMP/WD(2009)75  
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**ROUNDTABLE ON COMPETITION, PATENTS AND INNOVATION**

**-- Note by the Delegation of Japan --**

*This note is submitted by the Delegation of Japan to the Competition Committee FOR DISCUSSION at its forthcoming meeting to be held on 9 - 11 June 2009.*

**JT03265601**

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## COMPETITION, PATENTS AND INNOVATION

### 1. Introduction

1. Achieving a dynamic economy and vigorous society through the strategic creation, protection and exploitation of intellectual property is the basic policy of the Japanese government. Since the goal of making Japan “an intellectual property-based nation” was announced through the formulation of the Intellectual Property Policy Outline in July 2002, several related policies have been implemented, including the enactment of the Intellectual Property Basic Act (November 2002), the inauguration of the Intellectual Property Strategy Headquarters (March 2003) and the formulation of the Intellectual Property Strategic Program (July 2003 and since then, formulated and published yearly until 2008 at the latest). Major achievements made so far include the establishment of the Intellectual Property High Court (April 2005) and the establishment of the Headquarters for Expeditious and Efficient Patent Examination (December 2005).

2. While the Japan Fair Trade Commission (JFTC) has appropriately taken action based on the Antimonopoly Act (“AMA”) when fair and free competition is restrained by any restrictions that deviate from the intent of the intellectual property systems, given the above situation, this contribution paper mainly introduces the activities the JFTC has taken concerning patents and innovation since the October 2006 OECD meeting of the Competition Committee.

### 2. Review of Japan’s Contribution Paper in October 2006 (DAF/COMP/WD(2006)47)

#### 2.1 *Hearing Decision against Microsoft Corporation*<sup>1</sup>

3. In this case, Microsoft Corporation did not accept the recommendation issued by the JFTC on 13 July 2004. Thereafter, the JFTC instructed the hearing examiner to conduct hearing procedures, and finally issued a hearing decision to order elimination measures on 16 September 2008.

##### 2.1.1 *Outline of the violation*

4. When executing licensing agreements for original equipment manufacturer (OEM) sales of the PC operating system (OS) named “Windows” and owned by Microsoft Corporation (“the Respondent”) (hereinafter referred to as “OEM sales agreement”), the Respondent forced licensed OEMs to execute agreements containing a clause according to which they agreed not to initiate any lawsuit against the Respondent or any other licensee arising out of any infringement of the patent rights for the relevant PC OS (hereinafter referred to as “Non-Assertion Provision”), and did business with OEMs on terms that unjustly restricted their business activities (an OEM sales agreement containing a Non-Assertion Provision that is executed through direct negotiations between the Respondent and an OEM is referred to as a “direct agreement”).

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<sup>1</sup> <http://www.jftc.go.jp/e-page/pressreleases/2008/September/080918.pdf>

5. These actions may adversely affect the fair competitive environment in the PC AV technology market<sup>2</sup> and tend to impede fair competition, fall within Section 13 (trading on restrictive terms) of the “Designation of Unfair Trade Practices”, and are in violation of the provisions of Article 19 of the AMA.

6. Besides, in the year 2000, the Windows series<sup>3</sup> represented 90% of all PC OSs worldwide and this percentage was increasing year after year. Therefore, it leads to the recognition that (1) obtaining a license for OEM sales of the latest version of the Windows series and (2) selling Windows-based PCs with the launch of the sales of the latest version of them was indispensable for OEMs in order to continue the business of manufacturing and selling PCs.

### 2.1.2 *Viewpoints concerning innovation*

7. Free competition can promote the emergence of new and better-performing products that have a wide variety of functions. The emergence of such products can invigorate economic activity as well as expand the range of consumers’ choice. Therefore, in order to maintain free competition that can promote the emergence of products with a wide variety of functions, it is critically important not to undermine the motivation for R&D by providing undertakings that have the capability of developing technologies with the incentives for R&D.

8. And in general, undermining the incentives of undertakings for technology R&D may inactivate the R&D activity in this technological field, and would be likely to bring stagnation in developing new or improved technology. In addition, in light of the existence of a lot of OEMs with influential AV technologies among the OEMs in Japan (15 manufacturers), if the incentives of PC AV technology R&D for OEMs with influential AV technologies are undermined and investments in the concerned technology are reduced, it is easily presumed that the emergence of new products, as well as new and improved technologies concerning PC AV technology, may likely be impeded<sup>4</sup>.

9. Regarding this case, in addition to its characteristics of licensing free-of-charge, the Non-Assertion Provision is applicable not only to licensed products but also to future products, is effective for quite a long period of time, and in line with the expansion of the functions of the Windows series, would cover a wide range of patent rights in the future subject to the free-of-charge license. For the following facts, it is recognized that OEMs were in a situation in which they had to develop PC AV technologies while recognizing the possibility that such technologies could be included in the Windows series, and therefore there was a high likelihood that the Non-Assertion Provision undermined the incentives of OEMs for PC AV technology R&D<sup>5</sup>.

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<sup>2</sup> Technology required to deliver functions enabling the user to see and hear digitized sounds or images on a PC.

<sup>3</sup> The Windows PC OS is generally referred to as the “Respondent’s product” or the “Windows series”.

<sup>4</sup> This is supported by the statement of a PC manufacturer, International Business Machines Corporation, that unquantifiable costs will be incurred by the decline of incentives for R&D because of the free licensing of the outcome of innovation under the Non-Assertion Provision, as well as by the statement of Hewlett Packard (HP) that it will stop innovating in the concerned business in the future unless it can obtain reasonable returns to its R&D investment (page 116 of the draft decision attached to Judgment No.13 of 2004).

<sup>5</sup> The Respondent deleted the Non-Assertion Provision from its direct agreements on or after August 1, 2004. However, even on or after August 1, the Non-Assertion Provision has a future effect and has continued to have effects on Windows series licensed on or after August 1 in respect of the functions and characteristics inherited from products licensed on or before July 31. Considering these situations, it was recognized that the deletion of the Non-Assertion Provision from the direct agreements did not

- Once a certain piece of technology related to the patent rights of an OEM was adopted in the Windows series, almost all PC users would be able to use the patent rights of the concerned OEM and it would become difficult for the OEM to recoup the investment in its technological development activities by licensing its PC AV technology to a third party.
- It would become difficult for the OEM to opt to differentiate its own products by not granting a license to any third party, but limiting the use of the PC AV technology only to its own products.
- As the technological information about the Windows series was not sufficiently disclosed, OEMs were uncertain about whether their patents were used in the Windows series, so that they could not make claims against the Respondent for any infringement of patent rights in agreement negotiations.
- The Respondent expanded and enhanced the AV functions of the Windows series, and several OEMs expressed their concerns about the effect of the Non-Assertion Provision on patent rights related to their PC AV technologies and requested that the Respondent delete the provision.

## **2.2 Ex-post Review of “Acquisition of the Stock of SANYO Electric Vending Machine Co., Ltd. by Fuji Electric Co., Ltd”<sup>6</sup>**

10. In the proposed acquisition plan, SANYO Electric Co., Ltd. would transfer all stocks of SANYO Electric Vending Machine Co., Ltd., a 100% subsidiary of the company, to Fuji Electric Co., Ltd. By acquiring said stocks, Fuji Electric Co., Ltd. would transform SANYO Electric Vending Machine Co., Ltd. into its subsidiary specialized in the manufacture and development of vending machines, and would consolidate its manufacturing operations. The JFTC indicated to the concerned companies (“parties”) that the acquisition would bring significant accumulation of technologies for manufacturing beverage vending machines inside the parties and raise competitive concerns. Then, the companies offered that if a competitor asked them to grant it a license of a certain technology for which they had patents, etc., they would not reject such a request and would grant the license under reasonable conditions. In conclusion, the JFTC replied to the parties that the acquisition of stocks would not violate any provisions of the AMA on condition that they would take the above-mentioned measures, etc.

11. For the purpose of further refining the review of business combinations, the JFTC published, “Report on the Ex-post Review of Business Combinations” (on 22 June 2007). In this report, the JFTC took up this case and published the results of a more detailed data analysis and an interview survey concerning the implementation of the remedy and its effects following the business combination.

### *2.2.1 Summary of the survey results*

12. Regarding the implementation of the remedy, competitors have not applied for licensing of the parties’ patent technologies. While the annual number of patent applications for vending machines has decreased since the business combination, users and competitors did not necessarily have the impression that the competition in technological development in the overall vending machine market has been impeded. One of the reasons cited for this is that the vending machine technology has basically matured and the R&Ds are centered on technological improvements. Therefore, even if a new technology is developed and a company obtains a patent for it, the same functionality can often be achieved by an

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immediately eliminate the likelihood that the incentives of OEMs for PC AV technology R&D was undermined or did not facilitate research and development activities related to PC AV technologies.

<sup>6</sup> Acquisition of the Stock of SANYO Electric Vending Machine Co., Ltd. by Fuji Electric Co., Ltd (<http://www.jftc.go.jp/e-page/pressreleases/2002/march/20020322vending.pdf>) .

alternative technology of another company without infringing the patent. Concerning patent applications, while the total number of applications has decreased, the ratio of the number of applications made by companies other than the parties is increasing. In addition, it is often the case that major beverage manufacturers, which are the main users of vending machines, place orders with multiple vending machine manufacturers for vending machines with the same specifications and the same method of operation. In such cases, they can exercise strong negotiating power to request manufacturers that developed certain technologies to disclose their patents to their competitors, backed by their purchasing power. Disclosure of technologies in such circumstances is considered to be a common practice in the industry.

13. However, it was suggested that (1) some competitors pointed out that they have difficulty evading patents owned by the parties in developing their technology for new products because of the emergence of a company holding a lot of patents as a result of the business combination; (2) there is the area of patents for large and medium size vending machines for drinking cups, where the grant of a license from the parties is likely to be indispensable for new entry; (3) there can be a change in the attitude of industry that has enabled quite a free access to patents reflecting the intention of large users, such as requiring compensation for covering the expenses of R&D in granting a use of a patent or seeking clear solutions on the patent issues in the form of cross-licensing. Considering these facts, in order to maintain the convenience of users and consumers, guaranteeing disclosure of patents by the parties subsequent to the business combination and towards the future and ensuring potential entry pressures through the implementation of the remedies may be considered to be necessary.

14. As points to be remembered in implementing remedies in future cases, the results of the ex-post study show the need for a detailed examination on whether the remedy is sufficient to eliminate concerns arising from the business combination and what kind of conditions for providing access to technology (such as compensation or period) should be appropriate. It is also vital to make it possible to review the conditions according to changes in the market environment, etc. While the remedy would be better implemented if a licensing agreement were concluded before the business combination, when the remedy is implemented after the business combination, it is critical to ensure that the remedy is properly publicized and a preliminary examination of potential candidates who may apply for licensing of the technology is conducted.

### **3. Competition Policy Research Center (CPRC) studies for patents and innovation**

15. The JFTC Competition Policy Research Center (CPRC) conducts collaborative research under the principle of “Tripartite Collaboration” between the JFTC staff, economists and jurists, for the purpose of reinforcing the theoretical foundation for planning, suggesting and evaluating competition policy. Collaborative research concerning patents and innovation is also conducted by the CPRC. Recent major research related to patents and innovation is as follows: (see the appendix)

- Quantitative Analysis on Competition, Innovation and Productivity
- Technology Standards and Competition Policy– Focusing on the Consortium Type Technology Standards
- Economic Analysis on Network Externalities and Switching Costs
- Quantitative Analysis on Competition, Innovation and Productivity – Analysis on Dynamics and Performance of Market Structure
- Trend Analysis of Biotechnology Patent Application in Japan – Competition and Cooperation between the Private Sector and the Public Sector

- Multiparty License and Competition Policy
- Innovation Competition and Antitrust Policy; Focusing on Merger Regulation

#### **4. Publication of “Guidelines on Standardization and Patent Pool Arrangements” (on 29 June 2005)**

16. In industries experiencing rapid innovation, such as the information and communication sector, it is common for competitors to jointly standardize specifications for new product interfaces and disseminate them in order to establish a market for new products with such standards and encourage expansion of the demand for the products (standardization activities). On the other hand, as a number of patents are granted regarding technologies for a standard and the complex management of patent rights relationships may impede the establishment of a market for new products with standards and the expansion of their demand, patent holders presently pool their patents and license them as a means of addressing these problems.

17. Given this situation, the JFTC formulated and published the “Guidelines on Standardization and Patent Pool Arrangements” on June 29, 2005.

18. The Guidelines were formulated to clarify the interpretations of the AMA with regard to (a) the standardization activities themselves<sup>7</sup>, and, after specifications are standardized by the activities, (b) activities to claim rights by patent holders of the standards<sup>8</sup> and (c) activities to organize and manage patent pools<sup>9</sup>. The Guidelines contribute to preventing violations of the AMA and further promoting standardization activities.

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<sup>7</sup> The standardization itself is not assumed to pose immediate concerns under the AMA. However, if the standardization activities restrict competition as follows, it may pose problems under the AMA:

1. Competitors jointly fix prices, etc of their products adopting the standards.
2. Competitors prohibit the development or the adoption of alternative standards.
3. Competitors share specifications and performances of new products to the extent they exceed the scope necessary for obtaining the benefits of standardization.
4. Competitors prevent the adoption of technical proposals from certain competitors or prevent revisions based on achievements by the improvement of technologies.
5. Competitors deliberately exclude certain competitors from participating in the standardization activities when the competitors are at risk of being excluded from the market without participation in the activities.

<sup>8</sup> If a patent holder, who has taken part in the standardization activities and is endeavoring to have its patented technologies adopted by the standards, refuses without justifiable ground to grant a license to those who want to adopt the standards after the formation and the diffusion of them, and makes it difficult for them to develop and produce the products with the standards, such a case may pose problems with the AMA.

<sup>9</sup> With regard to whether activities to pool patents for standards pose problems under the AMA or not, the effect on competition is assessed, on a case-by-case basis, by comprehensively considering market conditions, such as the prevalence of the standards and the position of the pool in the market related to the standards.

## 5. Formulating the Guidelines for the Use of Intellectual Property under the Antimonopoly Act (28 September 2007)

19. In July 1999, the JFTC formulated and published the “Guidelines for Patent and Know-how Licensing Agreements under the Antimonopoly Act”. In light of recent, intensified efforts toward the protection and the use of intellectual property, in order to provide more clarity on the ideas underlying the AMA in relation to the restriction of competition through the use of intellectual property, the JFTC formulated and published comprehensively revised guidelines, the “Guidelines for the Use of Intellectual Property under the Antimonopoly Act”<sup>10</sup> (“the IP guidelines”) in September 2007.

20. The IP guidelines are applicable to all intellectual property concerned with technology<sup>11</sup>. They also describe basic principles for crosscutting competition analysis by the identification of the market and by the effect of reducing competition<sup>12</sup>. In addition, they illustrate examples where restrictions may have major impacts on competition and where restrictions are deemed to have a minor effect in reducing competition<sup>13</sup>.

21. Moreover, from the viewpoints of private monopolization or unfair trade practices, the IP Guidelines provide the views on behaviors inhibiting the use of technology, limiting the scope of the use of technology and imposing conditions on the use of technology. From the viewpoint of unreasonable restraint of trade, they show the views on restrictive practices in a patent pool, multiple licensing and cross-licensing.

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<sup>10</sup> [http://www.jftc.go.jp/e-page/legislation/ama/070928\\_IP\\_Guideline.pdf](http://www.jftc.go.jp/e-page/legislation/ama/070928_IP_Guideline.pdf)

<sup>11</sup> As used in the IP Guidelines, “technology” refers to any technology protected under the Patent Act, the Utility Model Act, the Act Concerning the Circuit Layout of a Semiconductor Integrated Circuit, the Plant Variety Protection and Seed Act, the Copyright Act and the Design Act and to any technology protected as know-how.

<sup>12</sup> Whether or not restrictions pertaining to the use of technology reduces competition in the market is determined by fully considering the nature of the restrictions, how they are imposed, the use of the technology in the business activity and its influence on it, whether or not the parties pertaining to the restrictions are competitors in the market, their market positions, the overall competitive conditions that prevail in the markets (such as the number of companies competing with the parties concerned, the degree of market concentration, the characteristics and the degree of differentiation of the products involved, distribution channels and difficulty in entering the market), whether or not there are any reasonable grounds for imposing the restrictions, as well as the effects on incentives of research, development and licensing.

<sup>13</sup> The IP guidelines specify the principles of the so-called “safe harbor”, which determines, without investigating the specific form of the relevant restriction, that the effect in reducing competition is considered to be minor provided it meets certain criteria; e.g. (1) the product share is 20% or less in total, (2) there are at least 4 parties holding rights to alternative technologies (e.g. cases where the impact on the technology market is examined and the product share is unavailable). This is not applicable, however, to conduct of restricting selling prices, sales quantity, market share, sales territories or customers for the product incorporating the technology or to the conduct of restricting research and development activities or obliging undertakings to assign rights or grant exclusive licenses for improved technology.





## APPENDIX

## CPRC RESEARCH INVOLVING PATENTS AND INNOVATION

1. The JFTC Competition Policy Research Center (CPRC) conducts collaborative research based on the principle of a "Tripartite Collaboration" between JFTC staff, economists and jurists, with the aim of reinforcing the theoretical foundation for the planning, proposal and evaluation of competition policy. The results of this collaborative research are expected to contain policy implications rather than to remain purely scholarly research.
2. Within this collaborative research, the major research publications related to patents and innovation are as follows:

## Published reports

Reports and authors	
FY2005	<p><b>Quantitative Analysis on Competition, Innovation and Productivity</b>            Kazuyuki Motohashi (Associate Professor, Research Center for Advanced Science and Technology, University of Tokyo and CPRC Visiting Researcher)            Makoto Funakoshi (CPRC Researcher)            Akira Tohei (CPRC Researcher)</p>
	<p><b>Technology Standards and Competition Policy – Focusing on the Consortium Type Technology Standards</b>            Sadao Nagaoka ( Professor, Institute of Innovation Research, Hitotsubashi University and CPRC Chief Visiting Researcher)            Hiroko Yamane ( Professor, National Graduate Institute for Policy Studies)            Reiko Aoki (Associate Professor, Institute of Economic Research, Hitotsubashi University and Senior Lecturer, Department of Economics, University of Auckland)            Masako Wakui (Associate Professor, Osaka City University)</p>
	<p><b>Economic Analysis on Network Externalities and Switching Costs</b>            Tatsuo Tanaka ( Associate Professor, Faculty of Economics, Keio University and CPRC Visiting Researcher)            Yoshihito Yasaki (Research Associate, Research Center for Advanced Science and Technology, University of Tokyo and CPRC Visiting Researcher)            Reiko Murakami ( Lecturer, Faculty of Economics, Kinki University)            Hideyuki Shimozu (CPRC Researcher)</p>
FY2006	<p><b>Quantitative Analysis on Competition, Innovation and Productivity – Analysis on Dynamics and Performance of Market Structure</b>            Kazuyuki Motohashi ( Professor, School of Engineering, University of Tokyo and CPRC Visiting Researcher)            Makoto Funakoshi (CPRC Researcher)</p>
	<p><b>Trend Analysis of Biotechnology Patent Application in Japan – Competition and Cooperation between the Private and the Public Sectors</b>            Yosuke Okada (CPRC Chief Researcher and Professor, Graduate School of Economics, Hitotsubashi</p>

	University) Kenta Nakamura (Researcher, Japan Society for the Promotion of Science) Akira Tohei (Former CPRC Researcher)
	<b>Multiparty License and Competition Policy</b> Sadao Nagaoka ( Professor, Institute of Innovation Research, Hitotsubashi University and CPRC Chief Visiting Researcher) Masako Wakui ( Associate Professor, Graduate School of Law, Osaka City University) Ryushi Ito (Researcher, Institute of Intellectual Property)
FY2008	<b>Innovation Competition and Antitrust Policy; Focusing on Merger Regulation</b> Sadao Nagaoka ( Professor, Institute of Innovation Research, Hitotsubashi University and CPRC Chief Visiting Researcher) Masako Wakui (Associate Professor, Graduate School of Law, Osaka City University) Reiko Aoki (Professor, Institute of Economic Research, Hitotsubashi University) Ryushi Ito (Part-time Lecturer, Toyo University and Nihon University) Tomoyuki Shinbo (Lecturer, Faculty of Literature and Social Sciences, University of Yamagata)

## 1. Summary of the collaborative research

### 1.1 *Quantitative Analysis on Competition, Innovation and Productivity*

3. In this research project, the authors conducted a quantitative analysis on market competition, in particular, the relationships between market structure, productivity and innovation. Based on the econometric method, the authors analyzed the relationships using 1) market structure indexes, such as the Herfindahl index and the market share fluctuation index, to determine market competition conditions, 2) total factor productivity (hereafter referred to as “TFP”) to determine productivity and 3) research and development (R&D) expenses and number of patents owned to determine innovation.

4. First, the authors estimated the Cobb-Douglas production function at the corporate level based on the corporate data produced by combining the results of the “Survey on Concentration Ratios of Production and Shipment” conducted by the JFTC and those of the “Basic Survey of Business Structure and Activities” conducted by the Ministry of Economy, Trade and Industry (“METI”). Then, regarding the relationship between market competition and productivity, the authors conducted an econometric analysis of market structure and TFP growth, focusing on the intra-company incentive structure.

5. In addition, in order to better understand the mechanism through which market competition will contribute to TFP growth via various innovation efforts, including R&D, the authors analyzed the relationship between market competition and innovation efforts.

6. As a result of the analysis, a relationship was found between static market structure indexes, including the Herfindahl index, on the one side and production and innovation efforts on the other, but no clear conclusion was obtained for variability market structure indexes, including the market share fluctuation index. A positive relationship was found between market structure and innovation efforts when market competition was weak, and a negative relationship was found between market structure and innovation efforts when market competition was extremely strong.

### 1.2 *Technology Standards and Competition Policy – Focusing on the Consortium Type Technology Standards*

7. If each company that holds patents essential to a standard independently claims its respective rights, there is a danger that the diffusion of that standard may be retarded due to the excessive amount of royalties that would have to be paid for the standard. To cope with this problem, the concept of cooperation

among companies by means of a patent pool or the like is drawing attention. In addition, hold-up problems are caused by outsiders exercising their rights to essential patents for the standard after its diffusion.

8. The purposes of this research are (1) to study the actual processes through which the four important recent technology standards (including MPEG2 and DVD) have been formed; (2) to interview the competition policy authorities of the US and EU about their enforcement policies in relation to the patent pool or similar scheme, and (3) to analyze how the competition policy should be applied to consortium type technology standards (which require the cooperation of several companies holding patent rights), based on a survey of intellectual property policies of the standardization organizations in the US, European countries, and Japan.

9. Firstly, according to the study of the actual situation of MPEG2, DVD, and 3G, there are a large number of essential patents for these standards and therefore many companies hold them. The important factors to consider here are a number of technological elements contained in these standards, the participation of many companies in competition for research and development (R&D), the eagerness of companies to participate in preparing the standards (due to the bandwagon effect for compatibility standards), and the use of a continuation and division system for patent applications. Companies dedicated to R&D, as well as universities (such as Columbia University for MPEG2 and Qualcomm for 3G), also play important roles. The patent pools of MPEG2 and DVD commit to licensing under the RAND (Reasonable and Non-Discriminatory Licensing) conditions and have granted licenses to many companies. Secondly, the basic ideas of the US and the EU on the competition policy regarding patent pools that support standards, have converged as follows: (1) only those patents with high complementarity should be pooled and the patents in the pool that is dominant in the market should be limited to the essential ones (those which have no substitutes outside the pool); (2) a systematic mechanism for the objective evaluation of relations among patents is required; (3) cooperation among companies by means of the pool should be limited to the collective licensing for a bundle of complementary patents; (4) freedom of bypass needs to be assured; (5) grant-back request by the pool should be acceptable if only to request for non-exclusive license of the patents essential to the standard; (6) if the standard has the market power, an open license should be granted (“license under fair and non-discriminatory condition” in the case of the EU); and (7) if any legal objection (challenge) is made against the effectiveness of a patent, only counteraction taken by the concerned patent holder through refusal to grant a license should be acceptable. Furthermore, if any company participating in standardization withholds the disclosure of its patent in violation of the rules procedure of the standardization organization, knowing that its patent will be included in the standards as essential, and exercises its right after the standard has been diffused, such behavior will be regarded as anticompetitive. The two reasons for this being: first, this behavior distorts fair competition for the selection of standard technology; and second, such behavior of the company can force the companies adopting the standard to pay a higher royalty rate by holding them up *ex post*. The competition authority in the US intervenes in such cases and the EU also has a policy in place to impeach such companies as “patent ambush” cases. Thirdly, although standardization organizations are reviewing their intellectual property policies, in consideration of current situations such as the increasing importance of these rights and the emergence of competition law violation cases, such review processes are still being developed. Therefore, the following basic points remain unclear, even in the patent policies of public standardization organizations: (1) the RAND condition in terms of the clear definition of “reasonable” and “non-discriminatory”; (2) the disclosure policy for intellectual property rights, in terms of whether disclosure should be obliged at all and what contents of intellectual property rights should be disclosed or licensed (whether rights of pending patents should be included or not); and (3) the scope of the compliance obligation under the intellectual property policy, and penalties for breach of such an obligation. Clarification of whether the responsibility should be assumed by the company or the individuals who participated should also be made. When assuming the requirements for a “reasonable” price, such a price could be decided either through negotiations, at the stage where the companies using the standard have not

sunk their investment cost, or by considering the pricing of the standard as a whole. However, no organization has yet clarified such principles.

10. This research suggests the following points: (1) it is important in Japan to implement a competition policy by directing attention to the complementariness and substitutability of the pooled patents as well as the freedom of bypassing; (2) it is preferable from a competition policy perspective that the license conditions for a bundle of essential patents relevant to a technology standard are committed under the existence of competition among standards and before any investment is made by the users of the standard; (3) it is important to enhance the intellectual property policies of standardization organizations; (4) it is anticompetitive to withhold the disclosure of patents in violation of the disclosure rules of the standardization organization and to request a high royalty after the diffusion of the standard—clearly in violation of the patent policy of the organization; (5) it is important to establish a systematic mechanism for an objective evaluation of patents to see whether they are essential or complementary, so that the patent pool functions without impeding competition; and (6) it is favorable that the “Guidelines on Standardization and Patent Pool Arrangements” published by the JFTC in June 2005 clarified the basic idea under the Antimonopoly Act of (1) to (5) above. Further research extending the analysis in these guidelines is expected in the future.

### ***1.3 Economic Analysis on Network Externalities and Switching Costs***

11. The network externality works under the compatible interface. Accordingly, if the interface is incorporated into a product of a particular corporation, there will be a tendency toward monopolization by such a corporation, and competition could be impeded. It is difficult to make a conclusive judgment on the effect of switching costs on competition, but it tends to fix the shares and diminish competition.

12. When both the network externality and switching costs are too tough to overcome through technology innovation or other efforts made by companies, and they are thought to be impeding the competition (or they make entry to the market impossible), implementation of the competition policy should be considered. In other words, it would be helpful to address this issue with the following steps: (1) measure the effects of the network externality and the switching costs using a quantitative method; (2) compare them with the effect of technological innovations; and (3) consider the possible implementation of competition policy.

13. In this report, the authors actually verified three products (OS, IP telephones, and routers) through the above approach. As a result, it was suggested that, for OS, the network externality and the switching costs were too large to overcome with technological innovation and that these factors generated a barrier to entry. For IP telephones and routers, however, no evidence was found to support the fact that network externality or switching costs prevented competition.

14. In addition, based on the results of the analysis regarding the OS, the authors studied what kind of measures would be taken under the Antimonopoly Act (AMA) in different situations.

### ***1.4 Quantitative Analysis on Competition, Innovation and Productivity - Analysis on Dynamics and Performance of Market Structure-***

15. The collaborative research by the same authors in FY2004 ((2)1. above) pointed out that an analysis of the relation between the share fluctuation index and the life cycles of products that affect the dynamics of the market structure would be carried out in the future. This is because it is important to understand the product life cycles — from new development to maturing — and to consider their influence on the products composing the market when interpreting the indices that are related to the dynamics of the market structure such as the share fluctuation index. This research focuses on this point and conducts

quantitative analyses on the relation between competition, innovation, and productivity. As a theoretical framework for market structure dynamics, a theoretical model based on product life cycles is adopted.

16. Specifically, using the individual data sheets from the “Industrial Statistics Investigation,” which is a designated statistics that is managed by the METI, the authors calculated the share fluctuation indices using each item of detailed classification, for a period ranging from 1985 to 2003. The authors then quantitatively analyzed the relation between the index and the life cycle stage of each item. In addition, they tried to obtain some suggestions for utilizing the share fluctuation index in the competition policy, by analyzing the characteristics and determining factors of the index.

17. As a result of these analyses, the authors observed that the share fluctuation index in the early stage of the life cycle was larger than that which occurred in the stable growth stage. It was also found that the share fluctuation index in the declining stage was larger than that in the stable growth stage. Further, they listed the items that demonstrated large differences between their theoretical value derived from the regression analysis and their actual, measured value in the market start-up stage where potential concerns for a competition policy would be raised. It is necessary to analyze them in further detail to find out whether any problems actually emerged in the market competition, but the authors think that these results are quite significant because they present a method for using the share fluctuation index as an index for measuring market competition.

### ***1.5 Trend Analysis of Biotechnology Patent Application in Japan – Competition and Cooperation between the Private and the Public Sectors***

18. When trying to understand the actual situations of the technology market and the research and development (R&D) competition (or innovation market) underlying it, it is important to see how substituting and complementing relations between the public and private sectors actually work. In this report, the authors examined the difference of patent values, depending on the attributes of each applicant (corporation, university, government research institute etc.) or the combination of joint applicants for biotechnology patents with priority in Japan for a period from 1991 to 2002. They also examined the impact of the introduction of the pro-patent policy on public sectors—including acts such as the Act on the Promotion of Technology Transfer from Universities to Private Business Operators (Technology Licensing Organization (TLO) Act), and the Act on Special Measures for Industrial Revitalization (Japanese Bayh-Dole Act)—on the average value of patents, controlling the attributes of the applicants. The major results are as follows: (1) patents filed solely by the private sector are highly valued; (2) patents for which a private corporation is the first assignee and a government research institute is included as a co-assignee are highly valued; (3) government research institutes increasingly have higher patent values after the introduction of the pro-patent policy; and (4) there is no significant change in the average value of university patents before and after the introduction of the pro-patent policy. These results suggest that the Japanese pro-patent policy had different impacts on the trend of applications by researchers in government research institutes and that of applications by university researchers. For appropriate competition assessment without undermining the incentives of R&D, it is necessary to pay sufficient attention to the measures of collaboration among industry, universities, and the government as well as to the systematic and organizational characteristics that are relevant to universities and government research institutes.

### ***1.6 Multiparty License and Competition Policy***

19. The licensing of intellectual property rights has the effect of expanding market supply and increasing the profits of consumers because it promotes the utilization of the applicable technology and increases the profits obtained from research and development (R&D). When considering these points it is clear the licensing of intellectual property rights is “pro-competitive”. However, if the licensing agreement contains any clauses that restrict the behavior of the licensee (or the licensor depending on the case), there

is a danger that the market competition as a whole may be restricted (when compared with a situation where the licensing agreement is not executed) and the economic welfare may decline. Among various licensing agreements, cross-licensing agreements, where the companies are both licensors and licensees at the same time in the same market, may pose a danger that the mutual restriction of behavior in the market may restrain the competition and possibly increase company profits. In addition, when there are many license users, there are externalities among licensees and this makes it possible for the licensor to execute licensing agreements that restrict competition in the market—taking advantage of such externalities. This research refers to agreements where the behavior of more than one company could be constrained by restrictive clauses, as so-called “multiparty licensing agreements.”

20. Multiparty licensing agreements (e.g. Cross-licensing, patent pools) have become increasingly important due to the cumulative development of technology innovation in the information and communication field, an increased number of patents accompanying the enhancement of intellectual property rights, an increase of infringement lawsuit cases, and so on. In addition, cross-licensing agreements or non-assertion agreements between a dominant company in the market and a number of its OEM companies have caused disputes under the AMA. The purpose of this research is to identify how competition policy should approach multiparty licensing, based on the analyses of the actual situation of cross-licensing, economic theories, court precedents in the US, and legal theory from the viewpoint of international comparative laws.

21. This report summarizes the results of the three topics as follows:

22. Firstly, by focusing on the analysis of current cross-licensing agreements in Japan, the economic role of cross-licensing and the shape of competition policy are studied—mainly from an economic perspective.

23. Secondly, the authors comprehensively analyzed 40 court precedents relevant to cross-licensing, patent pool, standardization, and competition policy in the US and distilled the lessons.

24. Finally, based on the results of the above, regulations for licenses of intellectual property rights in Japan, the US, and EU countries are studied comparatively to identify proper approaches for future regulations in Japan. This research complements the studies already conducted in FY2005 ((2)2. above).

### ***1.7 Innovation Competition and Antitrust Policy; Focusing on Merger Regulation***

25. In this research project the authors have carried out the following three basic studies, so as to provide some basis for future antimonopoly policy formulation in Japan with respect to innovation competition in the sense of research and development (R&D) competition. Chapter 1 and 2 present the main findings on the merger review practices abroad, with a focus on the US. These chapters analyze the recent merger cases for which DOJ/FTC identified the potential adverse effects on the R&D and they also summarize the major findings of the information gathered and analyzed in the merger reviews of the US and Europe, based on interviews with competition authority officials. Chapter 3 surveys law journal papers and cases for a legal analysis of innovation competition and mergers in the US. Chapter 4 presents a case study on the effects of a merger on innovations using micro-data of patents.

26. The major thrusts of the findings are the following: (1) US antitrust authorities have identified adverse effects on R&D in about a quarter of the cases which they have challenged in recent years. In most of these cases, however, the antitrust authorities identified the adverse effects not only on R&D but also on manufacturing and sales; (2) Much less frequently the EU antitrust authority (DG COMP) has analyzed the impact of the mergers on the R&D; (3) The results of the survey of US legal literature suggest that significant pros and cons still exist as to whether antitrust authorities should intervene in merger cases due

to the negative effect on innovation competition; and (4) According to a case analysis conducted in this study, the micro data analysis of patents allows us to undertake specific investigations into the synergy effects of mergers, such as the emergence of post-merger joint research and its relationship with the relocation of researchers and the time elapsed after the merger.

27. This paragraph outlines the preliminary policy implications of this research. Firstly, the need to address innovation competition (R&D competition) for the competition authority in Japan would increase as the levels of the R&D and the intellectual property right protection are enhanced and industries with significant network externalities are developed. The relationship between R&D competition and the performance of R&D would, however, depend significantly on the appropriateness of the R&D and other factors, so that a structural analysis well-adapted to the case in hand is called for in the analysis of merger effects on innovation. Thus, it would be important to accumulate empirical research on the process of innovation competition, including analysis on using patent information. While this study focuses on horizontal mergers, the protection of innovation competition is also important for vertical mergers, joint research and monopolization cases, therefore extension of current research to these areas would also be important.