Final Report

RESEARCH ON PATENT ACTIVITIES FOR THE PURPOSE OF STRENGTHENING PATENT ACTIVITIES IN VIETNAMESE ENTERPRISES

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I. Introduction

1.1. Background

Patent right is a type of intellectual property rights. Patent can significantly contribute to the creation of high added value and enhancement of enterprises’ value and help enterprises to establish and strengthen their position on the market. In addition, patent activities are a good way to improve the product’s quality, productivity and reduce product’s cost. Because of their importance, patents now have more respect than ever before. In recent years, there are more than 300,000 patent applications filed with United States Patent and Trademark Office (USPTO) each year\(^1\) and in Japan, there are more than 400,000 new patent applications each year.\(^2\)

Intangible asset value for technology-based companies has grown from 38 percent of company’s market capitalization in 1982 to 62 percent in 1995. In many emerging industries and technologies, patent values have soared 20- to 50-fold in just the past several years. Much of fluctuation in share value of these companies is linked to increase or decrease of these patent values. Today, the American corporate value owned by shareholders is based more on patents and intangible assets than it is on money and hard assets combined. In fact, the leading, publicly traded high-technology companies can attribute more than 85 percent of their market value to intangible assets – not to facilities, machinery, inventory or other tangible assets as was the standard 20 years ago and in many respects, patents even was considered to have replaced money as the primary instrument of commerce.\(^3\) In United States, compensation for damages totaling 873 million dollars was approved in a patent infringement lawsuit concerning an instant camera in 1992 meanwhile in Japan, damage of 25 million dollars were awarded in a patent infringement lawsuit concerning a drug for gastric ulcers in October 1998.\(^4\)

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Above all other types of intellectual property right such as rights relating to trademark, industrial design or copyright, patent rights create the strongest protection for technical ideas. With a patent, the patent owners will have an exclusive right to an invention during the time period of 20 years, therefore they can monopolize the market, move ahead their rivals on nowadays intensively competitive market, and use the benefit of monopoly for further development.

At the time being, while the pro-patent policies are being implemented in several developed countries in the world such as United States and Japan, the role of patent activity to the whole activities of enterprises is becoming more and more important. In that context, the awareness of patent rights and patent activities as well as their development should be more emphasized and strengthened in enterprises.

1.2. Patent System in Vietnam

The patent system of the united Socialist Republic of Vietnam can be considered to start up officially in 1981 with the enactment of “Decree No. 31/CP of the Government on Innovation, Technical Improvement, Manufacturing Rationalization and Invention” on January 23, 1981. In this Decree, in addition to provisions on rewarding for innovations activities, the protection of inventions, the most important industrial property (IP) subject matter, was mentioned for the first time. This Decree also created the basis for the establishment of Invention Office, now is National Office of Intellectual Property of Vietnam (NOIP), the competent state authority responsible for establishment of IP rights and other related activities, on July 29, 1982. The first patent for invention was issued in Vietnam on 11th April of 1984. Afterward, “Decree No. 200/HDBT of the Council of Ministers on Utility Solution” was enacted on December 28, 1988. In accordance with these decrees, inventions and utility solutions were protected in two forms, “Inventor Certificate” for domestic inventors and patent for overseas entities. These regulations reflected the centrally planned economy of Vietnam at that time.

In centrally planned economy, most of Vietnamese enterprises were under public (state) ownership and innovation activities were primarily encouraged by many state and public organizations. When obtaining an Inventor Certificate, the inventors were awarded but the incentives often were not high and incentives are not the major motive for innovating.
In 1986, Doi Moi (Renovation) policy was started in Vietnam with one main purpose as to transit economic system of Vietnam from the centrally planned economy to market economy. In order to support this policy, the “Ordinance on Protection of Industrial Property” was enacted on February 11, 1989. According to this Ordinance, there was a big change in the principle of invention and utility solution protection, which is the revocation of Inventor Certificate and invention and utility solution were protected in only one form of patent for invention or utility solution, in which invention had the term of protection of 15 years from priority date and utility solution had the term of protection of 6 years from priority date. The first patent for utility solution was issued in Vietnam on September 24, 1989.


In 1995, Vietnam filed the application for joining World Trade Organization (WTO). Among various requirements for joining WTO, the requirements on intellectual property system have a very important role. For the purpose of strengthening intellectual property system towards fulfilling the requirements of WTO-TRIPS Agreement, the Ordinance on Protection of Industrial Property was replaced by corresponding provisions (61 articles concerning intellectual property rights) on intellectual property rights in Civil Code of Socialist Republic of Vietnam passed by the National Assembly on October 28, 1995 (Part VI: “Intellectual Property Rights and Technology Transfer”) and other related “sub-law” documents. With the inclusion of intellectual property rights in the Civil Code, the intellectual property rights were recognized as a type of civil rights, like other ownership rights, and these rights were recognized by the National Assembly-the sovereign authority in Vietnam. Among various sub-law documents, one of most important sub-law documents is “Decree No. 63/CP (October 24, 1996) of the Government on Detailed Regulations Concerning Industrial Property” which is amended and supplemented by “Decree No. 06/2001/ND-CP of February 01, 2001 of the Government”. This Decree provided in details necessary procedures for filing IP applications, registration of IP rights and other related procedures. According to this Decree, the term of protection for inventions and utility solutions have been changed to 20 years for inventions and 10 years for utility solutions, both from the filing date.
In 2003, the patent system in Vietnam was further fostered with the enactment of “Circular No. 30/2003/TT-BKHCN of Ministry of Science and Technology on the Procedures for Establishment of Industrial Property Rights to Invention and Utility Solution” on November 5, 2003. According this circular, all procedures relating to the establishment of patent rights to invention and utility solution including filing patent applications, formality and substantive requirement of patent applications, publication, formality and substantive examination, opposition and appeal, and other related procedures, were clarified towards simplification of administrative procedures and facilitation for applicants.

Currently, for the purpose of further strengthening intellectual property system in Vietnam towards absolutely fulfilling the WTO-TRIPS requirements, the Intellectual Property Law of Vietnam, which covers all intellectual property subject matters, is being drafted.

1.3. Patent Activities in Vietnamese Enterprises

In recent years, due to the development of market economy, the growth of foreign investment and the tendency of international economic integration, the importance of IP rights has been recognized in Vietnam by the government, public and business sector. IP activities now are playing more important roles in the whole activities of enterprises. However, many Vietnamese enterprises do not highly appreciate the role of patent in their whole activities and therefore the advantages of patent activities were not taken very well. Many executives of enterprises think that patent activities are the businesses of large foreign firms and their interest in intellectual property issues often focuses on trademark. In my opinion, this situation is relatively common in enterprises in developing countries, where the knowledge and experience of patent activities are not high, the enforcement of patent rights is not very effective and majority of enterprises are small or medium-sized enterprises (SMEs). SMEs often do not have enough experience and expertise in some specific matters relating to patent such as international patenting, patent licensing or dealing with patent disputes. They also do not have big financial strength and they often want to earn profit as soon as possible in the course of activities while patent activities are complicated, time-consuming and costly businesses. On the other hand, another main reason for this problem is SMEs have many difficulties in the commercial exploitation of patent, the final

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5 All viewpoints expressed in this research are researcher’s and not those of his organization
goal of patent activity in enterprise. It is relatively popular that they cannot earn the return for their investment on R&D activity as well as patent activity. There is a risk of wasting money on patent activity and the easiest way of doing herein is skipping it and don’t pay for it. From this fact, ones can understand why it is not very easy to persuade enterprises in developing countries about the significance of patent activities. This obstacle even is present in many large companies in developed countries. About more than 90% of patents in all over the world are not successfully exploited. In practice, in order to obtain the benefit of patent rights, patent activities must be organized, operated and managed properly under a wise and comprehensive strategy. Another essential factor is that patent activities must be engaged closely and properly with other activities of enterprises such as R&D activities, manufacturing activities, sales/marketing activities, human resource activities and thereby effectively support such activities.

The above situation of patent activities in Vietnam was partly reflected by small number of domestic patent applications filed with NOIP and low patentability of domestic applications as shown below in the Table 1.6

<table>
<thead>
<tr>
<th>Year</th>
<th>Vietnamese</th>
<th>Foreigners</th>
<th>Total**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995*</td>
<td>23 (3%)</td>
<td>659 (97%)</td>
<td>305 (3.4%)</td>
</tr>
<tr>
<td>1996*</td>
<td>37 (4%)</td>
<td>971 (96%)</td>
<td>69 (6%)</td>
</tr>
<tr>
<td>1997*</td>
<td>30 (2%)</td>
<td>1,234 (98%)</td>
<td>1,142 (94%)</td>
</tr>
<tr>
<td>1998*</td>
<td>25 (2%)</td>
<td>1,080 (98%)</td>
<td>1,234 (96%)</td>
</tr>
<tr>
<td>1999*</td>
<td>35 (3%)</td>
<td>1,107 (97%)</td>
<td>1,205 (97%)</td>
</tr>
<tr>
<td>2000*</td>
<td>34 (3%)</td>
<td>1,205 (97%)</td>
<td>305 (3.4%)</td>
</tr>
<tr>
<td>2001*</td>
<td>52 (4%)</td>
<td>1,234 (96%)</td>
<td>69 (6%)</td>
</tr>
<tr>
<td>2002*</td>
<td>69 (6%)</td>
<td>1,142 (94%)</td>
<td>1,142 (94%)</td>
</tr>
</tbody>
</table>

Note: *p<1%, **p<0.1%.

In summary, in the period of 1995-2002, the number of invention applications filed by domestic applicants was 305 (app. 3.4%) in total of 8937 invention applications was filed with NOIP and there were only 51 (app. 1.4%) patents for invention granted to domestic applicants in total of 3068 patents for invention granted (for more details, see Figure 1 and 2 below). One of reasons for this low patentability of domestic patent applications may be explained by the fact that many inventors in Vietnam do not pay much attention to patent information and therefore they cannot carry out prior art search on patent information effectively. This negative situation was not changed too much even in the year of 2004. In 2004, the number of invention application file by domestic applicants was 103 (app. 7.2%) in total of 1431 invention applications filed with NOIP and there were 22 (app. 3.2%) patents for invention issued to domestic applicants in total of 698 patents for invention issued.

In terms of licensing activity, the situation of patent licensing activity is presented in Table 2 below.

Table 2. The Situation of Patent Licensing Activity in the Period of 1995-2004

<table>
<thead>
<tr>
<th>Year</th>
<th>Vietnamese-Vietnamese</th>
<th>Vietnamese-Foreigners</th>
<th>Foreigners-Vietnamese</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>6 Patents for Utility Solution</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1996</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1997</td>
<td>1 Patents for Invention</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1998</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1999</td>
<td>1 Patents for Invention</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2000</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2001</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2002</td>
<td>1 Patents for Invention</td>
<td>-</td>
<td>9 Patents for Invention</td>
</tr>
<tr>
<td>2003</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2004</td>
<td>-</td>
<td>-</td>
<td>10 Patents for Invention</td>
</tr>
<tr>
<td>Total</td>
<td>6 Patents for Utility Solution</td>
<td>3 Patents for Invention</td>
<td>19 Patents for Invention</td>
</tr>
</tbody>
</table>
As can be seen from Table 2, in the period of 1995-2004, there are only 9 license contracts concluded between Vietnamese parties (6 patents for utility solution and 3 patents for invention) while there are 19 patent licenses were transferred from foreign parties to Vietnamese parties and it is noticeable that all of them were transferred from foreign companies to their own joint venture companies or subsidiary companies in Vietnam. This fact showed that Vietnamese enterprises did not participate actively in technology transfers and licensing activities.

In order to further strengthen intellectual property activities of Vietnamese enterprises, on April 4, 2005, the Prime Minister Phan Van Khai signed Decision No. 68/2005/QD to approve “Program of Supporting Enterprises in the Development of Intellectual Properties” for the period of 2005-2010. The main purposes of this program are improving the awareness of intellectual property right protection of Vietnamese enterprises, thereby making them more proactive in establishing, exploiting, protecting and developing their intellectual properties; and supporting Vietnamese enterprises to enhance their competitive capacity through intellectual property activities, in which enterprises having strategic products and exporting potentiality will be prioritized. The main contents of this program are organizing and fostering intellectual property education, dissemination and training; supporting enterprises to organize and operate intellectual property activities; supporting enterprises to establish, exploit and develop intellectual properties both in Vietnam and overseas; and supporting enterprises to utilize and exploit intellectual property information. In this Program, Ministry of Science and Technology is entrusted to play central role in cooperation with other organizations such as Ministry of Industry, Ministry of Finance, Ministry of Trade, Ministry of Culture and Information, Vietnam Chamber of Commerce and Industry, etc.

1.4. Objectives

As discussed above, in comparison with other kinds of intellectual property activities, patent activity tends to be least emphasized by many Vietnamese enterprises. Therefore, in order to obtain the purpose of supporting and developing intellectual asset of Vietnamese enterprises, the strengthening of patent activities in Vietnamese enterprises should be considered as the most important factor. For this purpose, the contents of patent activity, i.e. all activities regarding how to
establish, utilize, develop and manage patent rights in an enterprise should be clarified, thereby various practical measures for strengthening patent activities in Vietnamese enterprises can be found and recommended.

In addition, because patent activities themselves are very complex and broad concept, so it may not be covered in a research conducted in 6 months. That’s why in the context of this research, I only focus on the contents of patent activity that are considered practical and applicable for Vietnamese enterprises at the time being, according to my viewpoint.

1.5. Methodologies

This research is conducted by way of collecting knowledge, information and actual data and information on patent activities, then making analyses of collected information and data for the purpose of strengthening patent activities in Vietnamese enterprises.

More specifically, as explained above, only contents of patent activity that are considered practical and applicable for Vietnamese enterprises, according to researcher’s viewpoint, will be examined in this research. Other contents of patent activity that are considered difficult to apply for Vietnamese enterprises are less emphasized or even omitted.

In addition, in order to enhance the persuasiveness of this research, a case study on patent activities of Japanese enterprises based on a questionnaire survey was conducted. After all, based on the analyses of collected data, some conclusions and recommendations for patent activities in Vietnamese enterprises will be provided.

II. General Concepts of Patent and Patent Activities

This Chapter will provide some general concepts of patent and patent activities. It forms the basis for making analyses on the main contents of patent activity of enterprises in reference to patent activities of Vietnamese enterprises in Chapter III.
2.1. Patent

Patent is an exclusive right granted to an inventor (or patentee) for an invention\(^7\), which is a product or process. This exclusive right is conferred for the purpose of compensating the inventor’s expenditure for the invention and encouraging the disclosure of technical information as well as further technological creation.

In general, in order to be protected by a patent, an invention must fulfill three criteria. Such criteria include novelty, i.e. invention must show at least one new technical feature which is not known in the prior art; inventive step, i.e. it could not be anticipated by a person with average knowledge of a certain technical field; and industrially applicability.\(^8\)

A patent provides protection for the invention to the owner of the patent. The protection is granted for a limited period, generally 20 years from the date of filing patent application. “Patent protection means that the invention cannot be commercially made, used, distributed or sold without the patent owner’s consent”.\(^9\)

A patent is granted by a national patent office or a regional patent office. “The WIPO-administered Patent Cooperation Treaty (PCT) provides for the filing of a single international patent application which has the same effect as national applications filed in the designated countries”.\(^10\)

In order to get a patent for an invention\(^11\), a patent application must be filed with national or regional patent office. Once an invention is made, it is important to file a patent application as soon as possible because in most countries in the world, patent right are granted to the person who has file first with patent office, not to first make the invention. This is called the “First-to-File” system. On the other hand, there is another system under which a patent is granted to the person who

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\(^7\) In a number of countries, patent is also granted for utility solution or utility model but with a shorter protection term, normally 10 years.

\(^8\) As stipulated in Article 782 of Civil Code of Socialist Republic of Vietnam, 1995, “An invention is a technological concept that is distinguished by being a world-wide novelty in terms of technological development and by being not obvious. It is applicable to various social and economic fields” while “An utility solution is a technological solution that is new in terms of the present technological development in the world and that is applicable in various economic and social field”.


\(^11\) Hereafter in this Report, the mention of invention also implies utility model/utility solution, if appropriate.
first made the invention, which is called “First-to-Invent” system. The United States currently may be the only country in the world using First-to-Invent System, but this system may be changed to First-to-File system in near future.\textsuperscript{12}

The patent application generally contains a request for patent and specification consisting of description, claims and visual material such as drawings or diagrams (if necessary) in order to better describe the invention. Claim(s) are the most important part of patent specification. It contains information, which determines the scope of protection sought by the applicant.

Patent owner has the right to exclude others from utilizing (working) the invention during the period of protection. By securing a fixed period of exclusive right for invention, patent rights may provide economic incentives for R&D activities through the commercial exploitation of patented invention. In addition, patents can also create value by generating licensing fees and royalties.

In return for the exclusive right to commercial exploitation of patented invention, the patent owners are obliged to publicly disclose technological information on their invention. In this way, patents provide valuable technological information for further development and prevent overlaps of research and investment into same technical solution. The patent system is very well organized in this matter because in order to obtain a patent, the inventor has to file a patent application which describe in detail the invention in such a way that a person skilled in the art will be able to carry out the invention from the description in the patent application and normally the patent application will be published 18 months after the filing date. In this regard, the monopolies created by a patent are considered the compensation for private technological information disclosure. “From the user’s viewpoint, patent system can be seen as a trade between the inventor and society, whereby society receives detailed information about the invention and inventor is given the right to forbid others to produce and market the patented invention for certain period of time”.\textsuperscript{13}

In such a way, patent system allows the patent owner(s) a limited period to monopolize the market. When new technologies are protected as patent rights,\textsuperscript{12} Under the Bill H.R. 2785 as introduced on June 8, 2005, the U.S. patent system is changed from “First-to-Invent” system to “First-to-File” system.\textsuperscript{13} See: Peter Cordsen, Topic 5: The Role of the IPR in the Promotion of Competitiveness and Development of Enterprises, WIPO National Seminar for Small and Medium Enterprises on Intellectual Property and the TRIPS Agreement, Hanoi 1998, p. 2.
efforts and investment for the development will be rewarded and patent system provides incentives for further development. Therefore, patent system encourages new technological creation and promotes investment and technology transfer.

If the patent system did not exist, new developed technology would be concealed and never distributed to the public, otherwise a third party would exploit the invention free of charge. In such a case, the development of technology would be slowed down dramatically. In this regards, the patent system not only brings the benefit to inventor who developed a new technology, but also providing others the opportunities of knowing and using that technology, therefore further promoting the development of new technology.

A third party commercially exploit the patented invention without authorization is deemed as infringing upon patent rights, in which case the right holder can seek protection under the law including the right to require a recovery of damage caused by the infringement.

There are various methods to use patent rights such as self-exploitation, assignment to sale or transfer, or licensing to grant to exploit patent rights and generally patents are used in different ways across different technologies. It is very important to choose good methods in order to use patent rights effectively. In nature, patents are not rewards and patents itself do not contain any judgment as to the economic relevance of inventions. Patent ownership itself does not give the patent owner the right to make, use, sell or import the invention, but instead gives the patent owner the right to exclude others from practicing these activities. Actually, most patented inventions are economically irrelevant, since most remain unexploited and therefore never reach the market. From that point, effective commercial exploitation of patented inventions seems to be a rather complicated work.

In other way, the patent system allows anyone to freely use invention after the expiration of patent term. At the end of term of protection, patent owner loses the monopolistic right and the invention belongs to public for anyone to exploit. It means that once a patent expires, invention enters the public domain and becomes available to commercial exploitation by others. In summary, patent system promotes the circulation of technology by providing incentives for business innovation and clarifying rights to established technologies. In this regard, one purpose of patent system is to encourage the creation of technologies by means of
publication of technological information. Benefits of publication of patent information for the development of technologies include the stimulation of new ideas and reduce redundancy in R&D investment by other entities.14

Based on the right to exclude others from manufacturing, using and selling products that fall under the scope of patents, patents can be the basis to protect enterprise’s sales and assets. This basis also represents a popular means of generating additional revenue, especially through licensing activities. Enterprises always obtain patents for newly developed technologies to sell goods and obtain income from patent rights. These earnings are then invested into research and development to further develop new technologies to be registered as patents. This is the intellectual creation cycle,15 where R&D activities create new technologies, in turn through patent activities, these technologies are protected under patent protection system and after all, the exclusive rights created by patents are utilized through various other activities such as manufacturing activities or licensing activities to earn the return for further development.

In an enterprise, “patents can function in a very real and potent manner as market protectors, revenue producers, value creators, employee work incentives, competitor monitors, barter chattel – tradable on their face and a measure of value”.16 Enterprises often try to retain competitive advantage through the use of patents and patent system offer a number of potential benefits for promoting the competitiveness and development for enterprises. Patents can be used either defensively or offensively even if they are weak or untested. In addition to direct ways of patent utilization such as prevention of copying or earning licensing revenue, patent can be used in some other less direct ways. Developing new ideas and patenting it is truly a good way for enterprises to create high added value, gain new profits and secure the growth of enterprises.

2.2. Patent Activities

The benefit of patent system is realized through patent activities, and by means of patent activities, the value of intangible asset is transformed into the value of tangible assets. Without patent activities, the benefit of patent system may not be

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16 See: Andy Gibbs and Bob DeMatteis, Supra Note 3, p. xvii.
obtained. It is the significance of patent activities. In the era of knowledge-based economy, patent activities indispensably are playing a more central role in many enterprises and patent activities were considered as a key measure to maintain competitive advantages and a powerful tool for creating high added value. Through patent activities, added value is created by means of protection of technology created in research and development activities along with products based on that technology.

In enterprises, patent activities is general term used to refer various activities relating to establishment, protection, utilization and development of patent rights and patent system, and therefore they may include establishment of patent rights, protection and enforcement of patent rights, patent licensing, planning patent strategy, dealing with patent disputes and the likes.

In business management aspect, now there is a tendency of changing enterprise management completely devoted to production to a system focused on IP matters in general or patent matters in particular. Therefore, patent activities are playing a more central role and having bigger influences on other activities of enterprise. This change may be explained as a result of pro-patent policies have been implemented in the U.S. since early 1980s, in which the strengthening of IP protection and enforcement is considered as key measures to recover and enhance competition capacity of U.S. economy and U.S. enterprises. Examples of pro-patent policies implemented in the U.S. in the 1980s include the establishment of the Court of Appeals for the Federal Circuit to specialize in appeals concerning patent infringement, and the extension of patent protections in the fields of biotechnology and software. Such extension and strengthening of patent rights is considered to have stimulated business innovation, leading to enhancing competition capacity of U.S. enterprises seen today, especially in field of new technologies such as biotechnology, information technology and e-commerce.17

The role of patent activities tends to be less emphasized by enterprises in developing countries. This fact gives them many difficulties when doing business in developed countries where IP/patent rights are being highly appreciated and paid much attention. For solving this problem, there is no way other than further strengthening of their competency in patent activities. In this way, it is believed that patent activities may give a significant contribution to their business success.

17 See: Kazuyuki Motohashi, Supra Note 14, p. 2.
in international market. Accomplishing this work properly will generate many advantages for enterprises in participating in international market under the globalization and international economic integration situation.

III. Contents of Patent Activities in Reference to Current Situation of Vietnamese Enterprises

In this Chapter, the some main contents of patent activities will be reviewed and analyzed. As explained above, for the purpose of strengthening patent activities in Vietnam enterprise, such analyses will be made only on the contents of patent activity that are considered practical and applicable for Vietnamese enterprises, under the viewpoints of researcher. Such contents include the role and organization of patent department in enterprise, establishment of patent right, utilization of patent right, patent strategy, patent tactics, patent licensing, patent disputes and encouragement of patent.

The analyses in this Chapter will be supported by a case study on patent activities of Japanese enterprises presented in Chapter IV.

3.1. Patent Department

Patent activities in enterprises cannot be done and managed effectively without staffs engaged in patent activities and normally they are gathered in patent department. Most of Vietnamese enterprises don’t have their own intellectual property or patent department. Therefore, patent activities commonly were conducted via patent attorneys. Vietnamese enterprises tend to rely too much on professional patent attorney in IP law firms in patent activities while in practice, it is observed that the role of patent attorneys sometimes is relatively limited in some aspects of patent activities, for example in setting up patent strategy of the enterprises. This problem also may result in many difficulties for Vietnamese enterprises in improving their expertise and experience in patent issues as well as in developing their own patent system and patent strategy that are really appropriate for their own conditions. This fact helps to explain partly why patent system could not be utilized efficiently in Vietnamese enterprises.

Dealing with this problem, the development of human resource for patent activities and establishment of patent department are very important measures that should be taken into account.
3.1.1. Roles of Patent Department

The patent department plays the role to organize, operate, develop and manage all patent activities of enterprises. In enterprises, patent department may have many functions, for example planning and implementing enterprise’s strategy and policies on patents, planning patent strategy and tactics, giving advice concerning patent activities, encouragement of invention or providing and managing patent information.

Actions of patent department must have close linkage with actions of other department under the overall business strategy of enterprise. For example, patent policies should be based on business strategies and R&D strategies of enterprise, the exercise of patent rights should be linked with engineering/manufacturing sections and legislative department, patent licensing should be done in cooperation with manufacturing and engineering sections, marketing department, financial department, etc.

3.1.2. Organizations of Patent Department

In general, the organization of patent department depends on the sized and capabilities of an enterprise in patent activities, its business and patent strategy and policies. There is not a fixed model for organizational structure of patent department in enterprises and it may be better if patent department is organized flexibly in such a way that it can fully accomplish its role and functions and gives the best contribution to patent activities in the enterprise.

The establishment of an independent patent department is good possibility, especially in large companies, but it should not be understood to be indispensable, particularly in case of SMEs. Alternatively, patent department can be incorporated in other department and it is necessary that there are at least some staffs in charge of patent activities in such department. As described below, there are some common samples of organization of patent department, but they are not understood as limitations.

(a) Independent organizational system

15 The systems (a), (b) and (c) were mentioned by Sadao Matsumura, Patent Management in Enterprises, IPR Training Textbooks 2004 (CD-ROM), Japan Patent Office, Asia-Pacific Industrial Property Center, JIII, 2004, p. 6-15 while system (d) is suggested by the researcher.
In this system, patent department is an independent and professional department. This system has advantages that it allows patent department to engage actively in their work, many problems concerning patent activities can be analyzed in-depth and therefore better solutions for patent issues can be found. Otherwise, this system will make enterprises less dependent on patent attorneys. Working in this system also helps the staffs in patent department improve their skills and expertise in patent activities rapidly. However, this system has some disadvantages that it may need more knowledge, finance and interest for patent activities and many Vietnamese enterprises may not fulfill these requirements. In my viewpoint, it is better if this system is applied for big enterprises and enterprises working in technological fields that patents have very big impact like pharmaceuticals and electronics.

(b) Legally oriented system

In this system, a legal department and a patent department are combined in only one department. The staffs in this system sometimes can involve both in patent activities and other legal activities. However, this system has some disadvantages. For example, it is not a professional system, so the importance of patent activities may be underestimated and the possibilities of improving skills and expertise in patent activities of staffs in charge of patent activities may be decreased.

In contrast, ones also can find some advantages in this system. In this system, people can frequently update changes in legal systems concerning patent (those always happen in countries that are developing their patent system) and deal with patent disputes effectively. In case of current situation of Vietnam enterprises, this system seems to be relatively effective because it can takes the advantages of existing IP knowledge of staffs in legal department who are relatively familiar with IP matters.  

(c) Technology oriented system

In this system, technology administration departments and the patent department are combined in only one department. This type of organization has advantages that it creates a close and strong relationship with R&D activities and staffs

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19 Recently in Vietnam, the intellectual property has been educated in some universities and colleges as a voluntary and optional subject with the total time period of about 600 sections, each section lasts 45 minutes. In Department of Information - Library Science of Hanoi National University of Social Science and Humanities, intellectual property was introduced as an official subject with total time period of 30 sections.
involve in R&D activities can be an practitioner in patent activities. In this regard, patent activities will provide patent information for R&D activities in an active and effective way and R&D can gain the much benefit from this system. This system also can provide good solutions and ideas in dealing with the patent rights of other companies as well as other problems arising in the course of patenting, patent appeal and opposition. In addition, people have certain technical knowledge will solve technical problems of patent activities such as patent information search more effectively. This system may be well applicable for R&D intensive enterprises, universities and research institutes. In this system, once again, there appears one obstacle concerning the expertise and skills of technical staffs in patent and other legal issues.

(d) Market oriented system

In this system, marketing department and patent department are combined in only one department and people in charge of marketing activities may also involve in patent activities. This system seems to be very attractive because actually patent as well as patent information are a very effective tool for marketing. Apart from disadvantages of non-professional system such as problem concerning patent and legal expertise, this system has an advantage that patent activities will have close linkage with marketing activities such as market survey, new product launch and sales. Furthermore, people in marketing department in Vietnamese enterprises also seem to be familiar with intellectual property, especially trademark and trademark promotion issues. Therefore, this system may be very good for Vietnamese SMEs not involved so much on R&D activities.

In addition to above systems, enterprises can flexibly create any their own system for patent department based on their own time-to-time conditions and business strategy so long as it can help enterprise to obtain the final goal of taking advantages of patent system for its development. In many cases, staffs of patent department can be dispatched to other departments to conduct patent activities. In contrast, staffs in other departments can conduct some patent activities under the coordination of patent department and its staffs. Sometimes, a temporary unit can be set up in order to solve some important issues arising in a limited period of time and it may take an administrational system different from the usual organization.
3.1.3. Teamwork

In patent activities, team working is very effective and necessary working method because patent activities are relatively complicated works. They have many relationships with other activities as well as have big and mutual impact on such activities. Staffs at patent department or staffs in charge of patent activities cannot accomplish all their tasks without support and collaboration from staffs in charge of other activities.

In particular, in some relatively complicated and multiple expertise-required works such as market survey and research for newly developed product, patent information search, licensing-in or licensing-out negotiation, or dealing with patent disputes, team working method should be used. In many cases, a project team may be established in order to accomplish a special duty in a limited period of time.

3.2. Establishment of Patent Rights

Normally at first step, in order to take the advantages of patent system, enterprises must establish the patent rights. The course of establishing patent rights includes many procedures and it should be managed securely. In this Subsection, some main procedures in the course of establishment of patent rights are reviewed.

3.2.1. Survey before Developing a Technical Solution

Before developing a technical idea into an invention, first work that enterprises should do is determining whether such development should be conducted or not.

At this stage, enterprises may carry out a market survey in order to reply several questions relating to the market for that invention such as what are the similar products on the market, who are the customers, what are the customer’s needs and expectations, what is the affordable price, etc. Without a market survey before developing a technical solution, enterprises may have many serious problems in marketing it in the future.

3.2.2. Searching Prior Art

In addition, before developing a technical idea into an invention, it is also very important to carry out a prior art search in order to secure the patentability of invention as well as to prevent patent disputes emerged in the future.
The aim of prior art search is establishing an overall picture of technology in given technical fields at a certain time, thereby develop a technical solution based on the current status of technologies. In this manner, a comprehensive prior art search along with good solutions of solving a certain technical problem may result in a good invention. Prior art search will help researchers or inventors find what technology existed and what technology is being developed, avoid others’ patent right infringement and wasteful investment in R&D.

Patent information is a very valuable source of technical and business information and utilization of patent information is cheapest way of taking advantages of patent system. Patent information is laid open to public and it is always well organized for searching by key word(s) and patent classification index. In addition, patent information is really a gold mine of detailed technological information on high technology. In many cases, patent information contains information which cannot be found anywhere else or, if so, with a substantial delay. Through prior art search, enterprises themselves can determine whether a technological development is novel or not, thereby decides further investment or not. Therefore, patent searching can be an effective tool that can be used for development and investment of enterprises. Searching with patent information is also cheap because now several patent information databases are available free of charge on the internet. At present, for searching with patent information, enterprise can use several search tools available free of charge on the internet. For example, ones can find them on the website http://www.wipo.int of World Intellectual Property Organization, http://ep.espacenet.com of European Patent Office, http://www.uspto.gov of United States Patent and Trademark Office and http://www.jpo.go.jp of Japan Patent Office.

In addition to a valuable source of technical information, patent information is also a valuable source of business information. Patent information contains much useful information about patent rights and the tendency of technological and product development of others. In this regard, patent information can be considered as valuable source of legal and marketing information. By analyzing patent information, an enterprise can forecast the trend of technological development in a certain industrial field and determine strength and weakness of itself as well as its rivals in that field. In such a way, patent information also can

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provide good information about the future competitors, the competitors’ technology development trend, possible patent infringers and potential licensees. This information is really important for the decision of top management. It can range from giving up the product development to buying a license for such product.21

In conducting of prior art search, not only patent information, but also all other kind of literatures should be used. Here, there is very interesting information that because of expensive patenting cost, some companies select some website on the internet to disclose their technological information, which is so-called defensive publication or prophylactic publication, in order to destroy the later patenting possibility of other companies. Therefore, the utilization of some free of charge popular search tools available on the internet such as http://www.google.com, http://www.altavista.com or the likes should be used in prior art search.22 In addition, for searching the status of patent protection in Vietnam, enterprises can use the NOIP official website: http://www.noip.gov.vn free of charge. In Vietnam, due to the domestic market is not very big and foreign direct investment was newly developed in last 15 years, the number of overseas patent applications was not very high (around 1000 overseas applications per year) and it can be foreseen that many useful and advanced technologies were not patented in Vietnam. Hence, there are advantages that such technologies may be exploited in Vietnam without paying any royalty. For taking these advantages, Vietnamese enterprises should pay more attention to improving the skills in search and utilization of patent information of their staffs, particularly staffs involving in R&D activities.

In enterprises, prior art search can be conducted by staffs involved in R&D activities or staffs in charge of patent activities. It is better if prior art search is conducted by staffs in charge of R&D along with assistance and management from staffs in charge of patent activities. Otherwise, they can conduct prior art search with the assistance of professional patent attorneys.

3.2.3. Finding Inventions

Besides inventions developed as results of R&D activities, many inventions can appear unexpectedly from many ideas in the course of action of enterprises. It is

21 See: Peter Cordsen, Supra note 13, p. 3-5.
22 As mentioned in Andy Gibbs and Bob DeMatteis, Supra Note 3, p. 52, enterprises can use website www.IP.com for publishing their technical disclosure with the cost of $100 per document, much cheaper compared to average patenting cost of $10,000.
called employee’s invention and it is important to catch those inventions whenever they appear, then develop and patent it in strategic way.

To deal with this work, a system for recognizing and notifying invention, promoting creativity of employees and encouraging them to disclose invention along with proper policies on employee’s invention, should be set up and managed in enterprises so that valuable inventions will not be omitted. In this activity, patent department will play the central role and staffs in charge of patent activities must know well about the R&D and manufacturing progress of enterprises, technical problems existed and actively acquire information relating to innovation and technical improvement in their enterprise. In such a way, any necessary measures for supporting the development of an idea into an invention such as providing budget for further improvement and development will be taken immediately. These measures will help to obtain strong patent rights for this invention afterward.

3.2.4. Developing Inventions

After finding an invention, the invention needs to be developed in order to obtain broader and stronger patent rights and prevent others from simply modifying the invention. An invention may be developed in such a way that it covers all possible embodiments of the invention in order to broaden the scope of invention as much as possible.

In the course of developing invention, it is important to recognize an invention as broad concept, consider whether the results of invention may be obtained by another method or process and make sure that all results obtained through research activities are covered by one or more patent applications. In addition, for securing the scope of protection of invention, the essence of invention, that is the function and rule constituting the invention, should be clarified. Accordingly, the essence of invention can be clarified by analyzing the mechanism (problem and solution) of an invention, documenting the invention, picking up elements and correlate them with each other and find new functions and rules provided by the invention. Through those steps, the core function of invention will be found and developed.²³

In this issue, it should be noticed that most breakthrough technological achievements are the result of subsequent improvement of existing product. A new

product launch protected by a product patent might get sales started, but a patent for subsequent improvement usually creates the breakthrough opportunity and make sales soar.\textsuperscript{24}

3.2.5. Right to Apply for a Patent

Right to apply for a patent should be aware and clarified before applying for a patent, otherwise some disputes will happen afterward. As provided in Article 789 of Civil Code of Vietnam and regulated in details in Article 14(1) of Decree No. 63/CP of the Government, the right to apply for a patent belongs to inventor or his/her successor. For an invention “created in the course of employment under duties assigned by the employer or created mainly by using funds or material facilities of the employer, the right to apply for a Protection Title shall belong to the employer assigning the task, or providing funds or material facilities” to the inventor. For an invention created under a contractual work, “the right to apply for a Protection Title shall belong to the provider of such work unless otherwise stipulated in the contract”.

In practice, sometimes it is not easy to ascertain the right to apply for patent for invention created by employees. Therefore, enterprises should set up and implement their detailed internal stipulations concerning the right to apply for a patent relating to employee’s invention in order to secure the right to apply for a patent based on their investment as well as enhance incentive to invent of employees.

3.2.6. Reasons for Filing Patent Applications

In order to get patent rights, enterprise has to file a patent application with patent office. Before going to decision of filing patent applications, enterprises should analyze carefully the reasons and motives for filing such patent application, what are the advantages and disadvantages of filing such patent application, this action will help enterprise exploit patent rights effectively in future.

The reasons for applying for a patent of an enterprise always depend on its own overall business strategy and patent strategy. These reasons can vary too much case by case, industry by industry, enterprise by enterprise. Sometimes, enterprises have to select between filing a patent application for an invention and keeping it

\textsuperscript{24} See: Andy Gibbs and Bob DeMatteis, Supra Note 3, p. 9.
secret as know-how. In principle, a patent application should be filed if it can generates a broad scope of protection and the patented invention cannot be modified around easily (under the application of Doctrine of Equivalents) while it should not be filed (i.e. it should be kept secret as a know-how) if its patent generates a weak protection and can be modified around easily.

In practice, the reasons for applying a patent can also go beyond directly profiting from a patented innovation through its commercialization or licensing. In this regard, the research of Cohen et al. provided an overview of reasons why U.S. firms patent or not. For example, the most prominent motives for patenting of U.S. firms include prevention of rivals from patenting related inventions (patent blocking), the use of patent in negotiation and the prevention of suit. The results of Cohen et al. research also showed that the reasons firms patent differ across industries and technologies. In majority of discrete product industries (discrete product is the product comprising relatively few separately patentable elements such as chemicals, pharmaceuticals and metal products.), firms are more likely to patent for the purpose of blocking rivals patent on related innovations by creating “patent fences” around some patented core inventions while in complex product industries (complex product is the product comprising numerous separately patentable elements such as electronics and instruments), firms are more likely to patent for the purpose of building patent portfolio and strengthening their position in cross-licensing negotiation. In addition, the reasons not to patent considered by Cohen et al. in above paper include: difficulty in demonstrating the novelty of an invention; the amount of information disclosed in a patent application; the cost of applying; the cost of defending a patent in court; the ease of legally inventing around patent, in which inventing around is top ranked reason, followed by information disclosure.

For SMEs, there is a benefit of filing a patent application is that a patent application published will prevent any future patenting for the same invention (defensive publication) and the rivals can never get any exclusive rights to those subject matters even if the original patent is not granted. For many small firms, it is more important that they exclude other’s exclusivity than it is for them to control exclusivity themselves. Intentionally disclosing a technology, ideally

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through patent information, so as to destroy the later patenting is considerable business strategy and it is inexpensive.\textsuperscript{26} In this regard, as discussed above, instead of disclosing technical information through the route of filing patent application, enterprises can use some internet tools for their defensive publication and this route may be much cheaper.

Finally, another factor should be considered by enterprises is that patent application can be withdrawn at any time during patenting procedure. For example, when finding out that an invention seems to be too early for the market and to be unable to create profit at the time being, patent applicants can withdrawn the patent application before it is published and later, they can file another patent application for this invention and get patent rights to it.

3.2.7. When to File a Patent Application

Most countries in the world (except U.S.) use the First-to-File system for patent application and the filing date of patent application is used to determine the priority between applications for the same subject matters. So it is important to file a patent application before another and to file a patent application as soon as the invention was made.

On the other hand, a patent application should not be filed at the time that invention is not completed sufficiently because applicant cannot amend the application in a way that goes beyond the scope of original disclosure in patent application, or at the time that the applicant has not enough financial capabilities to cover the patent cost or at the time that patent will not be exploited effectively after granting, therefore patent owner will not have enough time to exploit the patented invention during the limited period of protection of 20 years. In this regard, for delaying the patent granting procedures, there is a simple method that enterprises may withdraw the application before it is publicly published and then re-file it one or more times and the patentability of later application will not be affected by previous application. However, this method involve a risk that the invention will not be granted if there is another patent application for the same subject matter filed after its withdrawal.

3.2.8. Where to File a Patent Application

As mention in “Guide on Patents for Business”\(^\text{27}\), some of the key considerations when selecting where to file a patent application are: where is the patented product likely to be commercialized? Which are the main markets for similar products? What are the costs involved in patenting and what is enterprise’s budget? Where are the main competitors based? Where will the product be manufactured? How difficult will it be to enforce a patent in a given country?

In a normal case, enterprises develop their products or processes for the purpose of fulfilling changing demands of a national or maybe regional market – not worldwide market. Therefore, it is always necessary for them to apply for a national patent and the cost for national patenting, particularly in Vietnam, is not expensive. On the other hand, when developing a break-through technology, enterprises should take the possibility of international patenting into consideration. In this case, the costs for applying and maintaining an overseas patent is the most serious problem for Vietnamese enterprises which always don’t have strong enough financial power. Dealing with this problem, enterprises may enter into alliance with, share the right to file patent application with or look for support from other domestic or even overseas organizations, which can provide financial recourse and professional advice in international patenting matters under proper contractual provisions.\(^\text{28}\)

3.2.9. Preparing Patent Applications

In Vietnam, as stipulated in Article 6.2, Circular No. 30/2003/TT-BKHCN of Ministry of Science and Technology, patent application comprises request for a patent, patent specification, patent abstract, filing and publication fee, and other documents, if necessary.

Patent specification consists of description, claims, drawings, diagrams, calculation tables, etc. (if needed to clarify the nature of the described technical solution). It is used in the examination procedure to helps patent examiners understand the invention and it is normally published on Industrial Property Official Gazette 18 months after its priority date for the purpose of disclosing


\(^{28}\) See: Peter Corden, Supra Note 13, p. 5.
technological knowledge and informing third party about applicant’s provisional right to technical subject matter(s).

Patent description must disclose the nature of the invention that requires protection. The description must contain sufficient information to some extent that based on that information, any person having average knowledge in the art will be able to carry out the technical solution. The description must be clearly disclosed with respect to novelty, inventive step and the applicability of the invention. When formulating a patent description, it is very important to incorporate all essential technical features to distinguish it from prior art. If essential technical features are absent from the description, it cannot be added at later stages in patenting procedure.

The most important part of patent specification is patent claims. The claims serve as basis for determining the scope of protection of invention. The claims must be presented unambiguously and briefly, be consistent with and fully supported by the description and drawings. In this regard, it is important that patent description must describe all essential technical features and possible embodiments of invention, and broadest claims will be formulated thereon. The breadth of claims is very important to a patent. Broader claims will bring broader protection in patent right enforcement afterward. In practice, there is a relatively simple way to broaden the scope of claims by using a generic language instead of specific language in formulating patent description and put it into patent claims. For example, the use of phrase “fastening means” generates broader scope than “screw”, “input means” generates broader scope than “keyboard” or “data recording medium” generates broader scope than “disc”, etc.

Due to lack of expertise in patent matters, Vietnamese enterprises have many difficulties in formulating patent specification and commonly they need a lot of helps from patent examiners. Otherwise, they have to use patent attorney for this work. When using a patent attorney, it is necessary to find patent attorneys having good knowledge and experience in formulating patent specification as well in technical field of the invention.

3.2.10. Handling Patent Application during Examination Procedure

In Vietnam, there are two kinds of examination during examination procedure including formality examination and substantive examination. Purpose of formality examination is checking whether or not the application complies with
the all requirements provided by the law in respect of formality of an patent application, thus making a conclusion whether or not to consider the application as an officially accepted one. Officially accepted application shall be further processed. Applications failing to comply with formality requirements shall be refused (shall not be further processed).

After accepted as officially accepted applications, patent application will be published on Industrial Property Official Gazette 18 months after its priority date. For applications where a request for substantive examination was filed after the Application is officially accepted but not later than the expiration of 18 months from the priority date, the Application shall be published in the second month from the date of receiving this request. Enterprises can apply this provision in case they want an earlier publishing of their application.

In order to be substantively examined, a request for substantive examination has to be submitted within the time limit of 42 months from the priority date in case of application for invention and 36 months from the priority date in case of application for utility solution along with search and examination fees. If the search and substantive examination fees are not paid, the request for substantive examination shall be considered invalid. The request for substantive examination can be submitted by the applicant or any third party. Where appropriate, the time limit for submitting the request for substantive examination may be extended by a maximum period of 6 months.

The purpose of substantive examination is determining the patentability of the subject matters claimed in patent application in accordance with the patentability criteria and determining the respective scope of protection. As provided by Vietnamese IP law, the patentability criteria for invention include novelty, inventive step and industrial applicability while the patentability criteria for utility solution include novelty and industrial applicability. In addition, inventions or utility solutions that are against public interest or public order or contrary to the principles of humanity are not patented.

After examination procedure, if examiners cannot find any reasons for rejecting the patent application, a patent is granted. In this case, the applicant shall pay the fee for publication of the protection title, fees for registration and grant of protection title and annual fee for the first year for obtaining patent rights. After

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that, the applicant has the exclusive rights to exploit the invention during the term of protection. It is 20 years from the filing date of patent application as long as the patent owner submits annual maintenance fee.

During examination procedure, the applicant can amend patent application in such a way the amendment does not go beyond the contents disclosed in the originally filed application and does not broaden the scope of invention. Therefore, it is very important to include all essential technical features in patent specification originally filed, otherwise the applicant cannot do it later.

3.2.11. Patenting University/Public Institute - Developed Technologies

In Vietnam, universities/public research institutes have significant competence in R&D activities. Many technical improvements were developed in universities/research institutes but only a small number of them were successful in commercialization. Generally, in Vietnamese universities/research institutes, the significance of patent rights even is less emphasized than enterprises and most of their improvements were not patented. Otherwise, universities/research institutes also did not have enough experience in commercial activities and they have many difficulties in commercialization of technical improvements. This fact result in many problems such as they could not earn revenue for R&D activities, they had to rely mainly on the investment from government for R&D activities while the incentive to invent of the researchers could not be promoted significantly.

For solving these problems, the establishment of an alliance between universities/research institutes and business sector should be considered. Through this alliance, the technical improvements of universities/public research institutes can be notified to enterprises, enterprises can provide additional investment for further improvement and development, universities/public institutes and enterprises can share the right to apply for a patent for a technical improvement as co-applicants of patent applications and share profit earned from patents. Otherwise, enterprises/public institutes can assign the right to apply for a patent or grant a license to enterprises and earn the revenue. In this alliance, enterprises can utilize the R&D competence of universities/public research institutes while universities/research institutes can utilize the business competence of enterprises. The patenting of R&D achievements of universities/research institutes also facilitates technology transfer from universities/research institutes to business sector.
For further clarification, the corresponding issue in U.S. and Japan may be mentioned. Until 1980, U.S. policy had stipulated that “patent rights born of research funded by the federal government shall be the property of federal government”, the federal government would allow any company wishing to work a patent to do so. But in fact, no company made active use of these patent because any other company could easily copy a competitor by working the same patents. As a result, the transfer of technology from academia to business sector was not effective. The Bayh-Dole Act, which is enacted in U.S. in 1980, reversed this policy by stipulating that “patent rights born of research activities within universities precincts shall be the property if that university, regardless of whether or not research funding was provided by the federal government”. Since then, the number of patent owned by universities and incidences of technology transfer have increased dramatically. Universities in U.S have actively established new technology licensing organizations and strengthened existing ones since the passage of Bayh-Dole Act. Patent right ownership enabled universities to enter into their own licensing contracts with corporations and collect license fee. Therefore, universities were motivated to strengthen their technology licensing activity because it can provide license revenue and in turn, license revenue will supply more funds for R&D activities. In Japan, the industry-academia linkages are implemented under the Law for Promoting University-Industry Technology Transfer.\(^{30}\) This law’s objective is to create a cycle of intellectual creation by enabling universities to acquire patent rights for their research results, transfer technologies to public sector based on those rights, and apply resulting profits to further research activities. More specifically, this law aimed to promote technology transfer by providing up to 20 million yen (now 30 million yen) annually in assistance to technology licensing organization that serve the purpose of uniting universities and industry. Based on this law, Technology Licensing Organizations (TLOs) were established in every region of Japan. In addition, in April 2000, laws were established to enable instructors at national and public universities to concurrently serve as directors of private companies, resulting the emergence of venture companies originating from national or public universities

\(^{30}\) Officially the “Law Concerning the Promotion of the Transfer of Research Results Related to Technologies of Universities, etc. to private Sector Businesses”
and a recent increase in the number of business start-ups based on academic research.\textsuperscript{31}

\textbf{3.2.12. Know-how}

Know-how can be interpreted as technical secrets and it is very common and important in industrial manufacture. The term “know-how” is may be defined as all confidential and useful technical knowledge, experience, data and other information to manufacture or use a product or to work a method with optimal results. Know-how is knowledge that is believed to be outside the common domain and that may outlast the life of a patent.

In the context of patent issue, with a less broad meaning, know-how can be interpreted as confidential technical information that helps to accomplish an invention with best result. Unlike patent, which has a limited term of protection, the lifetime of know-how in unlimited as long as it is kept secret. In Vietnam, know-how is protected as trade secret under Decree No. 54/2000/ND-CP of the Government on the Protection of Industrial Property Rights to Trade Secret, Geographical Indications, Trade Names and on the Protection against Unfair Competition in Respect of Industrial Property (3 October 2000) but this kind of protection is not as strong as patent protection.\textsuperscript{32}

In practice, it is not easy to investigate the acts of infringement of patent rights, especially in case of process invention. To deal with this problem, know-how should not be disclosed specifically and clearly in patent specification and therefore, ones usually cannot accomplish an invention with optimal results and at a high rate of yield at industrial production scale merely based on disclosure of a patent specification. There are many kinds of know-how, for example proper reaction temperature, proper time for carrying out a process, type and speed of device, type and ratio between various reactants, the optimal composition of adjuvant, etc. In formulating patent specification, the disclosure of process’s

\begin{footnotesize}
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\item\textsuperscript{31} See: \textit{Experience of Japan - Contribution by the Patent System to Industrial Development of Japan}, Supra Note 4, p. 69-70.
\item\textsuperscript{32} According to Dr. Koh Kueneda in \textit{Economic Development and Licensing} (Summary), JPO/IPR Training Course for IP Trainers, July 19 – August 5, 2005, p. 10, “know-how should be managed by in-house rule of keeping secrecy; know-how should be separated as designated “Confidential” from other information and be provided safekeeping in the fixed place in the organization; and member who have access know-how should be strictly limited and the use of know-how should be controlled by the in-house rule of keeping secrecy”.
\end{itemize}
\end{footnotesize}
parameters in certain effective ranges is a simple and effective way to keep the secrecy of know-how.33

3.2.13. Protection against Infringement of Patent Rights

After granting, patent rights come into effect and it can be infringed intentionally or unintentionally. When the act of infringement is discovered, all necessary measures should be taken against the infringement and they should be conducted as soon as possible. In some cases, patent owners would like to delay this action because they want the damage to increase and they can sue the infringer(s) for bigger amount of money. However, it is not a best solution against infringement because it can cause many unpredicted consequences to enterprise such as reduction of enterprise’s reputation and difficulties in stopping the infringement when it has become widespread. In practice, there is a very common way to prevent unintentional infringement of patent rights is marking products with the number of patents or patent applications concerned. For example, the products could be marked as followed: “Product under the Protection of Patent …” or “Pending Patent Application…”. In addition, the same way can be done in case of advertising a product under a patent or pending application.

In dealing with patent infringement, the patent owner should clearly determine who is the alleged infringer, the relationship between the patent owner and alleged infringer, the infringer’s strength in comparison with patent owner’s as well as the scope of protection of patent(s) in question, thereby determine properly the approach to deal with the alleged infringer. This can vary from a conciliatory approach, in which the infringer pays a reasonable royalty to continue with its activities, to a more aggressive approach, in which the complainant sends a warning letter to the alleged infringer, sets a reasonable deadline for response, and indicates that it will start legal proceedings if the response is not satisfactory.34

33 Under IP law of many countries, the description of an invention must be sufficiently clear and complete to permit a person skilled in the art to carry out the invention. Some other countries’ IP law, e.g. United States, even more highly requires that the best mode contemplated by the inventor for carrying out the invention be set forth in patent specification (under Section 112, paragraph 1 of 35 U.S.C., the patent specification “shall set forth the best mode contemplated by the inventor of carrying out his invention”), but these laws do not extend to requiring the disclosure of the most economic, simplest, fastest way which presupposes the uses of information and expertise acquired through long experimentation. (see: World Intellectual Property Organization, Licensing Guide for Developing Countries, 1977). The best-mode requirement in U.S. IP law may be abolished under the Bill H.R. 2795 as introduced on June 8, 2005. There is no similar best-mode requirement in Vietnamese IP law.

34 See: Alan Wilson, What Protection to Expect, Supra Note 26, p. 199-202
As stipulated by Vietnam’s law\(^{35}\), various measures can be used to cope with patent infringements. Before bringing the infringement matter to the competent authority or the court, the patent owner may notify the infringers and request them to stop the act of infringement. The patent owner has the right to request the competent state authorities to deal with or initiate proceedings at a competent court against any third party for the act of infringement of patent rights. The patent owner also has the right to request an injunction and compensation for the damage from infringer.

3.3. Utilization of Patent Rights

3.3.1. Significance of Utilization of Patent Rights

It is clear that the advantages of patent system may lose all their meaning if patent rights are not used because when a patent is granted, it only confers the exclusive rights to exclude others from working the patented invention on patent owner but not automatically gives the patent owner its benefits. In other words, the value of patent rights for an enterprise cannot be realized unless it is used. Every year, there are thousands of patent application filed all over the world but it is estimated that only 1 in 100 will cover costs and only 1 in 1,400 becomes a world-beater\(^{36}\) while most of patents in the world remain unexploited and never reach the market, one of final targets of patent. The term “utilization of patent” can be deemed as the procedures of taking advantages of patent rights. Today, besides traditional way of using patent rights such as preventing others from using the patented invention, applying a patented invention in the course of manufacturing or licensing patent right, patent can be used in other less direct ways such as use of patent for building patent fences or (patent blocking) or building patent portfolio for strengthening enterprise’s position in cross-licensing negotiation. In utilization and commercialization of patent rights, lowest possible cost, shortest possible time and best possible financial return should be recognized as main principles.\(^{37}\)

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36 Linda Oakley, *Invention to Business*, Supra Note 26, p. 81.

37 Billy Harkin, *IP Commercialization*, Supra Note 26, p. 73.
3.3.2. Types of Utilization of Patent Rights

First of all, due to the essence of an exclusive right, patent is used for preventing others from using (working) a patented invention. It creates the monopoly position of enterprise in the market and may be the most important application of patent.

In a most conventional method, the benefit of a patented invention is exploited directly by applying the patented invention in the course of manufacturing of enterprises while others cannot do it. In this way, the benefit of patent rights is transferred to superior qualities of product sold by enterprises as well as other advantages such as lower product’s cost or higher productivity. In this way, the expenditure for patent can be recovered through improved manufacturing and sales capabilities and enterprise may have a good chance to move ahead their competitors in the market.

Another conventional method of using patent rights is granting a patent license to a licensee. When licensing out a patent, enterprises can directly earn licensing revenue to compensate the expenditure for patent. Licensing patent may be highly effective way of expanding the business relationship, especially in cross-licensing negotiation. In addition, licensing out a patent may be the cheapest way of exploiting a patent. The content of patent licensing activity will be discussed in more details in Subsection 3.5. below.

Furthermore, patents themselves are the best countermeasure to the threat of litigation and it is very hard for a third party to sue an enterprise for an infringement of a technical subject matter in case enterprise holds a patent for that. Therefore, prevention of lawsuits may be one of the most important uses of patents.

As discussed by Cohen et al. in the above-mentioned research, besides some conventional way of using patent as mentioned above, patent can be used in other less direct or conventional ways such as the prevention of other firm’s attempts to patent a related invention (“patent blocking”), use to strengthen the firm’s position in negotiations with other firms (such as in cross-licensing agreements), or use as a measure for enhancing firms’ reputation. For example, patent can be used in the prevention of rivals from patenting related inventions (i.e. patent blocking). In this way, for the purpose of protecting core invention, patent owner tries to get patents for all substitutes in order to block that possibility to rivals. The peripheral patents
is called “patent fence”. For example, in the 1940’s, du Pont patented over 200 substitutes for Nylon to protect its core invention.38

Basically, it is impossible to say which method of utilization of patent rights is better for a certain enterprise and the methods of utilization of patent rights should be planned based on various factors relating to enterprise itself and the legal and business environment around the enterprise such as business strategy of enterprise, enterprise’s size, field of industries, the competency of enterprises in patent activities, enterprise’s competitiveness, etc.

3.4. Patent Strategy

3.4.1. Roles and Functions of Patent Strategy

The patent strategy sets the initial stages for how patent owner will develop, protect and exploit patents. Due to the significance of patent activities, patent strategy is having a more significant impact on overall business strategy of enterprises and having close relationships with other strategies of enterprise such as R&D strategy, production strategy or marketing strategy. The perspectives and participation of other department of enterprises such as marketing, R&D, engineering, information technology, sales, human resource, manufacturing and legal department are very important to result in correct patent strategy.

According to Andy Gibbs and Bob DeMatteis, patent strategy may have following functions: protecting product line, protecting market share, product line extension, creating new product opportunities, licensing out, expanding out patent portfolio and building share holder value. Patent strategy is a mechanism that helps direct investment, resource allocation and policy development within an organization. Furthermore, patent strategy will help define the tactical operations intended to maximize patent value.

Patent strategy can change time to time along with changes in business, technological, administrative and legal environment surrounding patent. Therefore, it should be reviewed and modified periodically in order to adapt with the changes in other strategies of enterprise and changes in environment surrounding patent.

39 See: Andy Gibbs and Bob DeMateis, Supra Note 3, p. 49.
3.4.2. Planning Patent Strategy

In planning a patent strategy, all business, legal and financial aspects should be considered carefully in patent strategy discussion. Such aspects may include where and when a patent application should be or should not be filed, how many patents should be filed, financial objectives and budget limitations, competitive positioning based on R&D plan, patent plan, patent licensing strategy, long-term revenue objectives, and so on.

According to Sadao Matsumura⁴⁰, there may be three factors that should be considered in planning a patent strategy. First factor is the evaluation of the patent rights of the enterprise and that of other enterprises. Second factor is changes in the environment surrounding the patent and the third factor is of technical and business situations where the patent is utilized.

The first factor includes evaluation of the capability of the patents for an enterprise and an analytical evaluation of the patent for other enterprises. In the evaluation of the capability of the patents for an enterprise, trends in filing patents and the state of acquiring patents at the enterprise should be determined and investigated. Then a trend for filing patents at other enterprises is established and compared. Through this comparison, the capability of the patent for the enterprise is determined. The evaluation of the capability of the patent for an enterprise should be made based on the current technological state and the prospects of technical development in the future. In the analytical evaluation of the patent for other enterprises, the trend in patent applications can be determined by analyzing patent information, through which their tendency of technology development will be found.

The second factor is changes in the environment surrounding patents. When setting up a patent strategy, it is important to study the trend of changes in patents around the world in order to adapt enterprise’s patent strategy with it. The realization of the changes in the environment surrounding patents is very important and should be fully discussed when planning a patent strategy in order to come up with correct strategy.

The third factor relates to technical and business situations where the patent is utilized. In technical aspect, the value of patents varies at various stages in the development of the technology, such as, in the developing stage, in the stage

⁴⁰ See: Sadao Matsumura, Supra Note 18, p. 48-49.
where the technology is utilized to make products, and in the stage where the products are sold to a large market. Patent strategy also varies with the position of enterprise in the race for technological development. Therefore in planning patent strategy, the tendency of technology and product development should be taken into account. In business aspect, it is very important in planning patent strategy to analyze business trends to see if any strong competition exists in the same business and who are the competitors.

In current practice, there are various models of patent strategy derived from various points of view of enterprises concerning patent. Among them, as mentioned by Peter Cordsen, there are at least four patenting strategies can be applied.\(^4^1\)

In the first strategy, every invention will be patented, both national and international. The reason for this strategy may either be lacking of marketing competency – or dictated by the wish of pretending hi-tech competency, regardless of price. The objective of this strategy is to patent every aspect of new opportunity including product, various individual attributes of product, various methods of use it may have, processes and machinery used to make the product, etc. This strategy is very costly but it may be good for well-financed enterprises.

In the second strategy, every invention will be applied for a patent but only those show a potential for creating a substantial profit will be followed up. This strategy is currently applied by enterprises that do not have unlimited budget for patents and they have to consider whether an invention should be pursued or not. When serious costs occur, a cost-benefit analysis will decide the future steps. In this circumstance, filing a patent application for every invention can be seen as a sort of insurance because it prevent other from patenting same invention. In an alternative of this strategy, instead of filing patent application, enterprises can publicly publish a defensive disclosure on other sources that are cheaper than patent system, for example published on the internet.

In the third strategy, patent application will be filed in selected cases, and only if there is a documentation for the profitability. This is probably the most cost-efficient way of using patent system and perhaps the most commonly used

approach by SMEs. The disadvantage of this strategy is that it involves the risk of losing patent rights if profit predictions are too negative.

In the fourth strategy, no patents are filed, but the patent literature is carefully studied in order to prevent from infringing existing rights. Occasionally, defensive publication takes place in order to prevent others from protecting. This strategy is always applied by enterprises in electronic field where some branched technologies develop so fast that it is outdated before a patent issued. This is a cheap but dangerous strategy.

With respect to Vietnamese enterprises, due to limited financial strength and patent expertise, it may be very difficult to apply the first strategy but the second, third or fourth strategy can be applied based on the actual conditions and business strategy of each enterprise.

3.5. Patent Licensing

3.5.1. Roles of Patent Licensing

Like other property rights, a patent right may be assigned to another party. This is called a transfer of patent rights or transfer of the ownership. Once assigned, even the original patentee will have no right to the invention.

On the other hand, the right to use a patent can be obtained through a patent license. The transfer of the right to use a patent must be conducted through a written contract (license agreement or license contract).\(^{42}\) Licensing can be used as a business tool and it is very popular in business practice. Through license contract, the patent owner may convey some or all of the patent rights to a licensee. With a patent license, the licensee can receive some or all of the patent rights, e.g. the right to manufacture, sell, offer for sale, etc., under the scope of protection generated by a patent.

Patent licensing is an activity that must be presented in written agreement, in which the patent owner conveys some or all of the patent rights to a licensee. The licensee is the receiver of patent rights. Patent licensing is a very common measure that enterprises normally use to gain the return for invention and can be an

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\(^{42}\) In Vietnam, a patent license contract will have legal effect only upon registration with state industrial property administration authority. The decision of IP office on the registration of licensing agreement is published on Official Gazette of Industrial Property and it is recorded in National Industrial Property Registration (National Registry).
attractive means of generating income. For example, annual licensing revenue of IBM is $1.7 billion while Stanford University can earn more than $100 million in annual royalty income. Patent licensing can be also a highly effective way of expanding the international competency of enterprises through cross-licensing activities.

In today’s technically advanced society, it is impossible for one enterprise to develop all necessary technologies by themselves. Therefore, licensing is very important activity of enterprise. Through licensing activities, enterprise is able to expand its scope of business activities and secure the freedom of working, which contributes to the further development of the enterprise.

3.5.2. Types of Licenses

As stipulated by IP law of many countries, rights arising out of licensing are categorized as either exclusive or non-exclusive rights based on the terms and conditions of license agreement.

(a) Exclusive License

An exclusive license contract is license contract whereby the licensee has an exclusive right to use the industrial property object while the licensor can, during the term of the license and within the territories of the license, neither conclude any license contracts with any third party nor use the industrial property subject matter.

Exclusive license allows the licensee to monopolize the use of patented invention and prevent even the original patentee from working the invention in relation to products in the territory and the period as set forth in the license agreement. In general, the licensee for an exclusive license may grant a sublicense to a third party upon written approval of the patentee presented in the license contract. A sub-license contract means a license contract, in which the licensor is a licensee under another contract.

By granting an exclusive license, instead of using the patent right by himself/herself, the patentee is able to receive compensation for its use by granting an exclusive right to a person who desires to have exclusive use of his/her invention and within the territory of exclusive license, the licensee has the patent

43 See: Andy Gibbs and Bob DeMatteis, Supra Note 3, p. 21.
right equal to that of the patentee, he/she can demand for an injunction and compensation in case an infringement of rights occurs.

(b) Non-Exclusive License

A non-exclusive license contract is a license contract between a licensor and a licensee, in which within the territory of that license, the licensor still has the rights both to use the industrial property subject matter and also to conclude non-exclusive contracts with parties other than that non-exclusive licensee. A non-exclusive license does not allow a licensee to monopolize the use of patented invention, but allows only working the patented invention.

Granted non-exclusive licenses become effective when a patentee or an exclusive licensee grants it to another party through a licensing agreement. This is the most commonly adopted type of license. A non-exclusive license allows the licensee to use patented inventions within the territory as set forth in licensing agreement.

In Japan, in addition to the normal non-exclusive license as mentioned above, there are statutory non-exclusive licenses. A statutory non-exclusive license is granted when it is required for the sake of public interest and equity. Two most typical licenses for statutory non-exclusive licenses are non-exclusive licenses by virtue of prior use (Section 79, Japanese Patent Law) and non-exclusive licenses for employees’ inventions (Section 35(1), Japanese Patent Law).

(c) Compulsory License

A compulsory license is referred as to the compulsory granting of permission by the owner of patent right, or his or her licensee, to another person or entity to use the whole patented invention, upon the decision of competent state authority. The owner of patent right shall be forced to grant a compulsory license under the following conditions: the patent owners have failed to use the patented invention or have used it in a manner not in accordance with the needs of the economic or social development of the country without a reasonable reason; the persons who need to use such invention have negotiated with the owners in different ways and offered a reasonable price but the owner still refuses to conclude a licensing agreement; and the use of such invention is necessary to meet the demands of national defense, national security, health or other urgent demands of society (Article 802, Civil Code of Socialist Republic of Vietnam). Compulsory license is non-exclusive license.
3.5.3. Types of Licensing Activities

Based the position of concerned parties in license agreement, licensing activities can be categorized into three types including licensing in, licensing out and cross-licensing.

(a) Licensing In

The term “licensing in” is used to refer the act of buying the right to use a patent. Licensing in can create new business opportunities, therefore developing a new market. Licensing in can be remarkably effective driver of business growth. Licensing in creates many good opportunities for enterprise such as developing a new business, reducing the time-to-market, improving productivity and product quality. Furthermore, licensing in existing technologies helps save money for R&D activities. With licensed-in technologies, enterprises have a chance to become the first mover on local market and may also avoid the risk of patent rights infringement and patent disputes.

(b) Licensing Out

The term “licensing out” is used to refer the act of selling the right to use a patent. The first advantage of licensing out is it can generate revenue and profit from licensor’s patent resource. By licensing out, licensor can exploit other market, avoid the risks concerning setting up complete manufacturing and marketing facilities and investment at the place outside enterprise’s reach while the promotional and selling costs belong to licensee’s responsibility. Licensing out is also a measure for enterprise to reclaim unexploited patent and promote utilization of patent rights.

Furthermore, licensing out can make a technology become a new acceptable standard. The technology that is made most available will likely become the industry standard. In contrast, the refusal to license out may have seriously negative effect. A very famous example of this situation is Apple Computer’s refusal to license out its software and operating system to others. That decision forces others to develop competing technologies instead and at last, a technology being developed by Microsoft, HP and Compaq, but not Apple’s technology, have become common and have been used by most of PCs in the world today.44

(c) Cross-Licensing

44 See: Andy Gibbs and Bob DeMatteis, Supra Note 3, p. 41-42.
Cross-licensing is a business in which parties exchange their rights to use patents through cross-licensing agreements. As mentioned above, cross-licensing activities always happen in complex product industries where one enterprise alone cannot cover all necessary technologies and they need to use other’s patent rights while others also need to use theirs. Enterprises usually tend to build a patent portfolio as large as possible (so-called patent portfolio race) for strengthening their position in cross-licensing activities and use it to bargain with other enterprises in cross-licensing negotiation.

3.5.4. License Contracts

(a) Preparatory Survey

Before entering into a licensing agreement, a preparatory survey should be conducted in order determine the environment and situation surrounding the would-be license agreement. From the would-be licensor’s perspective, items that should be inquired may include the confirmation of political stability as well national policies in would-be licensee’s country, legal framework to protect IP rights in would-be licensee’s country, confirmation of legal restriction on the introduction of technology as well as foreign currency control in would-be licensee’s country, tax system in would-be licensee’s country, import/export restrictions on raw material, parts and products in would-be licensee’s country, trends in R&D activities and the existence of the competitive technology in would-be licensee’s country and manufacturing, marketing and sales, and R&D capabilities of would-be licensee.\(^{45}\)

From the would-be licensee’s perspective, the items that should be clarified before entering into a licensing negotiation may include the would-be licensor’s willing and ability of fulfilling its obligations under the license, the willing of know-how disclosure in license agreement, the technical and training assistance after concluding license contract, the assistance for marketing or management, etc.

(b) Licensing Negotiation

The terms and conditions of a license contract may significantly affect the business activities of concerned parties. Therefore, it is very important to acquire the most favorable terms and conditions for the enterprise involved in license contract. Generally, there three steps in licensing negotiation. The first step

\(^{45}\) See: Koh Kunieda, Supra Note 32, p. 22.
includes exchanging opinions, coordinating interests and requests. The second step includes negotiating on each article in license agreement, in the case where it is necessary to disclose the information required for the Feasibility Study of the technology to be licensed, the Secrecy Agreement should be concluded. And the third step is negotiating and signing an official license agreement.\textsuperscript{46} In licensing negotiation, the persons in charge of the licensing activities must have highly advanced knowledge of technological matters and licensing issues, capability and experience in licensing negotiations. Moreover, professional helps of experts is always necessary in drafting license contract.

There is no standard license agreement in licensing agreement, each is individually negotiated according to actual capability and willing as well as business strategy of both parties, and the importance of the licensed technology and commercial purpose of both parties.

(c) Basic Term and Conditions of License Contracts

In practice, there are some basic terms and conditions that should be included in most license contracts as mentioned below:

1. A description of rights being granted (e.g. patent, know-how, industrial design or trademark or their combination).
2. The type of license being granted, e.g. exclusive license or non-exclusive license.
3. The geographic territories for which the rights are being granted.
4. The period for which the license is to apply.
5. Supply of technical information and know-how.
6. Technical assistance.
7. Technical training.
8. Quality control.
9. Royalty and payment (in licensing contract, the main forms of payment for a license include lump-sum payment and/or recurring (running) royalties, a pre-agreed amount, which may be based on sales volume of the licensed product (per unit royalty) or on net sales (net sales-based royalty)\textsuperscript{47} or on quantity of sold product. The combination of a fixed payment and royalties is a very popular form

\textsuperscript{46} See: Koh Kunieda, Supra Note 32, p. 16.
\textsuperscript{47} See: Guide on Patents for Business, Supra Note 27.
of payment in licensing business today. The royalty rate depends on the particular provisions and factors being negotiated. It is important that the basis of calculation for royalties is precise and unambiguous. The method of calculation of license fee may be based on profits to be obtained in a project using the license and it may be in range of 1/3 to 1/5 of the profits, depend on industry).\(^{48}\)

10. Infringement lawsuit.

11. Sublicense.

12. Confidentiality.

13. Termination.\(^{49}\)

Furthermore, there are many other terms and conditions that may be included in a license contract, depend on each case. Here the importance is the terms and conditions agreed upon during negotiations are written up in a contract and they should be in line with business policy and strategy. The contract is a legal document stipulates the rights and obligation of both parties during the license term. Therefore, the preparation of license contract must be carried out and checked carefully to make sure that they correctly present all contents agreed upon in licensing negotiations and they do not contravene any laws or legal regulations in the countries concerned, and they do not have any expressions which might cause trouble. In practice, it is effective to utilize a checklist in order to prevent


\(^{49}\) In Vietnam, as stipulated in Article 17.3 and 17.4, Circular No. 3055/TT-SHCN of Ministry of Science, Technology and Environment (31 December 1996), a license contract shall the following substantial provisions: Name and complete address of the licensor and the licensee; Bases of the license; Scope of the license, including type of license; limitations to use; territorial limitations; term of license, etc.; price for the license; rights and obligations of the contractual parties, a license contract shall not have the following provisions: a) prohibiting the licensee to improve the patented subject matter under the license; compelling the licensee to grant a free license, to assign the right to file patent application or to assign patent right in respect of such improvements to the licensor; b) directly or indirectly restricting export of goods produced or services supplied under the licensing contract to the territories where the licensor neither is the patent right owner nor has the exclusive right to import such goods; c) compelling the licensee to buy all or a given percentage of materials, components or equipments from the licensor or the persons designated by the licensor without aiming at ensuring the quality of goods produced or services supplied by the licensee; d) prohibiting the licensee from contesting validity of the patent right or the right to license.

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making mistakes in the course of checking. For example, a checklist of a patent license agreement from licensee’s perspective may include following items: Type of License, Term, Compensation, Record Inspection and Audit, Intellectual Property Protection, Warranties and Obligations, Marking and Samples, Termination, Post Termination Rights, Infringements, Confidentiality, Indemnity, Insurance, Export Control, Taxes and Governmental Approvals, Force Majeure, Notice and Payment, Jurisdictions/Disputes, Agreement Binding on Successors, Assignability, Waiver, Severability, Integration.50

3.6. Patent Disputes

In the context of this research, the term “patent dispute” is used to refer the act of unintentional utilization of other’s patent rights. However, patent disputes still also constitute acts of infringement and in many cases, patent disputes may bring a serious damage to the enterprise. Disputes often begin with an unexpected warning letter from an unknown party. The sender of the warning letter may sometimes not be a patent owner. An exclusive licensee is entitled to start a patent infringement lawsuit. Upon the determination of patent infringement, actions taken by the patentee may range from request for stopping the acts of infringement, asking to enter into licensing negotiations, request for compensation for damage to initiating proceedings at court.

3.6.1. Doctrine of Equivalents

In many countries (e.g. United States and Japan), a so-called “Doctrine of Equivalents” is applied in assessing the acts of patent infringement. The Doctrine of Equivalents was established in 1950 and it may be simply explained by that, if the elements of a product or a process do not literally infringe a patent’s claims, but if they do the same work in a substantially similar way to achieve the same results, then a claim of infringement is still valid. Under the doctrine of equivalents: “1. The accused product, process, apparatus, or composition: a. has substantially the same overall function, b. operates in substantially the same way, and c. achieves substantially the same result or qualities as the product, process, apparatus, composition disclosed in the patent claim; and 2. Every element of the patent claim either is literally present, or has some substantially equivalent

corresponding element in the accused product, process, apparatus, composition”. Therefore, with its broad meaning, the application of doctrine of equivalents in determining whether an infringement of a patent has occurred or not is very complicated and always results in litigations at courts.

In Vietnam, as stipulated in Article 1.4 of Decree No. 12/1999/ND-CP of the Government on the Handling of Administrative Violations in the Field of Industrial Property (6 March 1999), the infringing elements are defined as “a part of a product or a product or a production process which is identical to a part of product or a product or production process protected under a patent for invention or utility solution”. In addition, as stipulated in details in Article 7.3.a) of Circular No. 825/2000/TT-BKHCNMT of Ministry of Science, Technology and Environment (3 May 2000), amended and supplemented by Circular No. 49/2001/TT-BKHCNMT of Ministry of Science, Technology and Environment (15 September 2001), “to determine whether or not a product or a part of a product, or a process or a part of a process is identical to a product or process under protection, it is necessary to compare every technical feature in the claims (hereinafter referred to as protected features) with every feature of the product under suspicion of infringement (hereinafter referred to as compared features). The identification of the infringement can be assured only if all the features in at least one claim are identical or similar to the compared features of a product/a part of a product, a process/a part of a process under the suspicion of infringement, in which: (i) A technical feature is consider to be identical to a protected feature if they are of the same technical nature, are used for the same purpose and have the same interaction with other features as presented in such claim; (ii) A technical feature is considered to be similar to a protected feature if the nature of such technical feature has been known in relevant technical field and achieves the same purpose in the same way”.

In practice, in order to prevent patent disputes or litigation under the application of this doctrine, it is very important to understand thoroughly the doctrine of equivalents as well as case laws in application of doctrine of equivalents.

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3.6.2. Patent Right Survey to Prevent Patent Disputes

In order to prevent patent disputes, it is very important to conduct a patent right survey for patent rights held by others before applying new technologies or developing new technical solutions. A patent survey is always conducted for all related published patent applications and patents for which the protection term is still valid. Afterward, it is necessary to determine whether or not third party patent rights can potentially result in a problem. When a right likely to present a problem is found, further considerations and analyses will be taken for determining more clearly scope of rights, what action will constitute an infringement and what not, and then a best measure will be applied to prevent patent dispute in the future.52

For conducting a patent right survey in Vietnam, enterprises can submit a request for patent right search with NOIP along with search fee. Patent right search is conducted on database of published patents as well as published invention/utility solution applications.

3.6.3. Dealing with Patent Disputes

Despite intensive patent right surveys were conducted, patent disputes can still happen in many cases. One reason for this problem may be explained by the fact that normally, a patent application is published 18 months after the filing date or priority date and during such period, no third party can retrieve it, therefore it may be omitted in patent right survey step.

When patent disputes have happened, one important thing is to resolve it effectively. There are a number of ways in which patent disputes may be resolved and they could resolved through patent invalidation, negotiation and acquisition of license, mediation, arbitration, or litigation.

Most patent disputes are capable of resolution in way that will provide a satisfactory compromise for the concerned parties without recourse to the courts. Therefore, a patent dispute between two parties should be resolved by various resolutions before going to the court. Generally, litigation should be taken as a last resolution for patent disputes because a patent litigation in the court is always costly for both parties, needs a substantial amount of time while its result is not easy to anticipate.53

52 Sadao Matsumura, Supra Note 18, p. 31-33.
53 See: Bruce Alexander, Dispute Resolution, Supra Note 26, p. 225-228.
In dealing with patent disputes, it is necessary to form a project team comprised of representatives from related departments inside the enterprise and outside experts such as patent attorneys and attorneys from outside the company. Some following measures may be applied to deal with patent disputes:

(a) Invalidation of patent

When a patent dispute takes place, the opportunity for invalidation of patent rights or reduction of scope of rights should be taken into account. In Vietnam, during the term of protection, any third party can have the right to request the competent state authority to invalidate a patent. Vietnamese patent can be entirely invalidated in the following cases: a) patent application has been filed by the person who has no right to apply; b) the patented subject matter has not satisfied the patentability criteria. A patent can be partly invalidated if it has a part that has not satisfied the patentability criteria.\(^{54}\) In case a reason for invalidation is found, a request for patent invalidation can be submitted to NOIP along with proper evidence and claims that prove the reasons for invalidation. The patent dispute will disappear when its base, patent(s), is entirely invalidated.

(b) Negotiation and Acquisition of License

When a rights holder gives a warning of infringement and a dispute develops, in many cases it is settled through negotiations, not by a lawsuit. In that case, if the acts of infringement are significantly obvious and the alleged infringer still wants to produce and sell the alleged infringed products, he should negotiate and try to conclude a license agreement with the rights holder. However, if a patent infringement is aware before the production and sales begin, it is much better to negotiate a license agreement before disputes arising. Moreover, in case an enterprise is not be able to acquire a license due to the rights holder refuse to grant it, there is another opportunities for enterprise to acquire such license through a cross-licensing agreement.

The negotiation leading to a license agreement is usually achieved after a number of meeting and exchanges. Sometimes, negotiations are only commenced after litigation has started or been threatened. In this regard, the vast majority of IP actions started in the courts are settled before coming to trial.\(^{55}\)

\(^{54}\) See: Article 792, Civil Code of Socialist Republic of Vietnam, 1995; Article 29, Decree 63/CP of the Vietnamese Government.

\(^{55}\) See: Bruce Alexander, *Dispute Resolution*, Supra Note 26, p. 229.
(c) Mediation

Mediation is a process conducted between parties involved in disputes and a neutral, intermediary third party, so-called mediator. In a mediation procedure, the mediator helps the parties to reach a mutually satisfactory settlement of their dispute and any settlement is recorded in an enforceable contract. Mediation is an efficient and cost-effective way of achieving that result while preserving, even enhancing the relationship of both parties.

As defined in the website of WIPO Arbitration and Mediation Center, the principal characteristics of mediation are:\(^{56}\)

\((1)\) **Mediation is a non-binding procedure controlled by the parties**

A party to a mediation cannot be forced to accept an outcome. The mediator is not a decision-maker and cannot impose a settlement on the parties. The mediator's role is to assist the parties in reaching a settlement of a dispute that is acceptable for them.

When the parties have agreed to submit a dispute to mediation, they are free to abandon the process at any time after the first meeting if they find that its continuation does not meet their interests.

\((2)\) **Mediation is a confidential procedure**

In a mediation, the parties cannot be compelled to disclose information that they prefer to keep confidential. If the parties agree to disclose confidential information, that information cannot, under the WIPO Mediation Rules, be provided to anyone - including in subsequent court litigation or arbitration - outside the context of the mediation. Furthermore, under the WIPO Mediation Rules, the existence and outcome of the mediation are also confidential.

\((3)\) **Mediation is an interest-based procedure**

Unlike court litigation or arbitration, the outcome of a case is determined by the facts of the dispute and the applicable law. In a mediation, the parties can also be guided by their business interests and the parties are free to choose an outcome that benefits both parties.

Because mediation is non-binding and confidential, it involves minimal risk for the parties and generates significant benefits. Even when a settlement is not

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achieved, mediation can help the parties to define the facts and issues of the dispute for subsequent arbitration or court proceedings.

(d) Arbitration

“Arbitration is a procedure in which a dispute is submitted, by agreement of the parties, to one or more arbitrators who make a binding decision on the dispute. In choosing arbitration, the parties opt for a private dispute resolution procedure instead of going to court”.  

As defined on the website of WIPO Arbitration and Mediation Center, the principal characteristics of arbitration are:

(1) Arbitration is consensual

An arbitration can only take place if both parties have agreed to it. An arbitration can be agreed on ad hoc basis or otherwise, in the case of future disputes arising under a contract, the parties insert an arbitration clause in the relevant contract. An existing dispute can be referred to arbitration by means of a submission agreement between the parties. Unlike mediation, a party cannot unilaterally withdraw from an arbitration.

(2) The parties choose the arbitrator(s)

Under the WIPO Rules, the parties can select a sole arbitrator together. If they choose to have a three-member arbitral tribunal, each party appoints one of the arbitrators; those two persons then agree on the presiding arbitrator. Alternatively, the Center can suggest potential arbitrators with relevant expertise or directly appoint members of the arbitral tribunal.

(3) Arbitration is neutral

In addition to their selection of neutrals of an appropriate nationality, parties are able to choose such important elements as the applicable law, language and venue of the arbitration. This allows them to ensure that no party enjoys a home court advantage.

(4) Arbitration is a confidential procedure

The WIPO Arbitration Rules specifically protect the confidentiality of the existence of the arbitration, any disclosures made during that procedure, and the award. In certain circumstances, the WIPO Rules allow a party to restrict access to trade secrets or other confidential information that is submitted to the arbitral tribunal or to a confidentiality advisor to the tribunal.

(5) The decision of the arbitral tribunal is final and easy to enforce

Under the WIPO Rules, the parties agree to carry out the decision of the arbitral tribunal without delay. International awards are enforced by national courts under the New York Convention, which permits them to be set aside only in very limited circumstances. More than 130 States are party to this Convention and Vietnam is also a member of this Convention.

(e) Litigation

As mentioned above, litigation should be considered as last resolution for patent disputes since legal proceedings generally take a lot of time and resources, it is always costly for both parties and it is very difficult to foresee its results. In practice, the decision of initiating a patent litigation at the court should be based on the actual conditions of the disputes including the severity of disputes, the technologies under the disputes and/or anticipated results obtained with other resolution(s). In a litigation concerning patent, the main remedies obtained often include an amount of compensation for the damage caused by infringing activities and an injunction to prevent further infringement.

As stipulated by Vietnamese IP laws\(^58\), various measures can be used to cope with patent infringements. Before bringing the infringement matter to the competent authority or the court, the patent owner may notify the infringers and request them to stop the act of infringement. The patent owner has the right to request the competent state authorities to deal with or initiate proceedings at a competent court against any third party for the act of infringement of patent rights. The patent owner has the right to request an injunction and compensation for the damage from infringers.

3.7. Encouragement of Invention

3.7.1. Roles of Invention Encouragement

Encouragement of invention and technical improvement is very important activity of an enterprise. Through this activity, the intellectual asset of enterprise is continuously enhanced and as discussed above, it is one of key factors for the solid development of an enterprise. For well accomplishing this activity, based on their conditions, enterprises should establish their own policies in order to encourage the incentive to invent of employees along with secure the management of employees’ invention.

3.7.2. Remuneration for Employee’s Inventions

As provided in Vietnamese IP Laws, the right to apply for a patent belongs to inventor. For an invention created in the course of employment under duties assigned by the employer or created mainly by using funds or material facilities of the employer, the right to apply for a patent belongs to the employer assigning the duties, or providing funds and/or material facilities to the inventor. For an invention created under a contractual work, the right to apply for a patent belongs to the provider of such work unless otherwise stipulated in the contract.

Regarding the rights of inventors, inventors of invention have the right to receive remuneration from other persons who use the patented invention, unless the patent owner and inventors have agreed otherwise, the right to demand the court and the competent state authorities to deal with violations against the rights of inventors, and the right to receive the awards granted for invention of which they are the inventors (Article 800 of Civil Code). In addition, the right to remuneration of inventor even is provided more detailed in Article 44 of Decree No. 63/CP. According to that article, the patent owner have the obligation to pay remuneration to the inventors at least 10% of the revenue gained from the use of such invention every year, 15% of the total amount of money received by the patent owner on each payment upon the granting of a license, including compulsory license, unless there are other agreements between the patent owner and the inventors. The payment of remuneration to the inventor must be made no later than 60 days as from the last day of the 12th month of each year of use or no later than 30 days.

from the date the patent owner has received money as payment for the granting of a license, unless otherwise agreed between the patent owner and the inventor.

Based on these provisions of law, employees of an enterprise have the right to a reasonable remuneration for their invention. In this regard, enterprises should establish, notify and apply their own invention remuneration policies based on the provisions of law. The contents of such policies will be made based on minimum requirements of law but they should be stipulated in details in accordance with enterprise’s business philosophy and strategy, business situation and enterprise size. In calculating the remuneration for employee’s invention, various factors may be considered such as the sales amount of the products to which the invention is referred, the ratio of the whole products commanded by the invention, the ratio of contribution made by the invention, etc.

3.7.3. QC Circles and Proposal Systems

The QC (Quality Control) circle was a kind of self-control system, which was created during the process while a statistical quality control method introduced from the United States for the purpose of improving the quality of industrial products in the middle of the 1950’s was practiced in the enterprises. In which, normally five to ten employees form a group, they pick up problems on their own jobs and matters around them, analyze them, think out their solutions and sometimes summarize the results as a proposal, by themselves.

Around the first time, a part of leading enterprises attained success and then a number of enterprises had gradually come to adopt this system. Later on, subjects of the QC circle were extended to productivity, cost, distribution, safety and working environment, etc. Moreover, the same kind of methods has gradually extended to the indirect departments from the initial manufacturing sites, and even in the industrial fields, it has extended to the service industry.

According to an estimation made in the 1980’s, there seemed to be about one million QC circles all over Japan, and they contributed greatly to raise the quality of Japanese products and enhance their export competitiveness. According to a survey made by the Japan Institute of Inventions and Innovations, the QC circles
and the proposal systems played a role as one of the grounds produced many technical improvement and inventions, or small inventions.\textsuperscript{60}

IV. Case Study on Patent Activities of Japanese Enterprises

For the purpose of gaining information about patent activities in Japanese enterprises, a questionnaire on patent activities of Japanese enterprises was formulated and sent to 20 Japanese enterprises at the end of June 2005. This questionnaire also was revised and supplemented by Professor Yoshitoshi Tanaka at Graduate School of Tokyo Institute of Technology.

4.1. Questionnaire

4.1.1. Objective Enterprises

At the end of June 2005, this questionnaire was sent to 20 Japanese enterprises working in four main industrial fields including automobile, electronic, pharmaceutical and food processing. Until the end of July 2005, 15 responses (i.e. 75\%) in total of 20 questionnaires sent out were received. Among replied enterprises, the average annual turnover for the years of 2002, 2003 and 2004 ranges from 255.0 to 8,991.8 billion Japanese yen (JPY), while the number of employees in 2004 ranges from 1,547 to 64,000 employees. It may be better if these questionnaires would be sent only to SMEs because the conditions of big enterprises and SMEs, which are very common in Vietnam, are quite different and information obtained from SMEs may be more practical and useful.

4.1.2. Respondents

As indicated in the questionnaire, the respondent of this questionnaire is manager of Intellectual Property/Patent Department of each enterprise. If there’s no Industrial Property/Patent Department in their enterprises, the respondents will be the managers of R&D department (or laboratory) of each enterprise. If there’s no R&D department (or laboratory), the respondents will be the managers of marketing department of each enterprise. In case of being difficult to answer a question or impossible to disclose accurate data, the question can be skipped by the respondents. In addition, we also had two meetings with people responsible for IP/patent activities in two Japanese enterprises. In those meeting, some specific

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contents of patent activities as well as the strategy for patent activities in future was further clarified.

4.1.3. Content of Questionnaire

This questionnaire includes 117 questions on patent activities of an enterprise such as the organization of patent department, staffs in charge of patent activities, establishment of patent rights, patent licensing, patent disputes and encouragement of invention. In addition, this questionnaire also includes questions on relationships between patent activities and other activities (e.g. R&D activities, management activities, manufacturing activities, sales/marketing activities), how to link patent activities with other related activities and strategy for the development of patent activities in the future.

4.2. Results of Questionnaire Survey

In this Subsection, the information on patent activities of Japanese is provided and analyzed. Based on these analyses in this chapter as well as Chapter III, some conclusions and recommendations will be given in Chapter V.

4.2.1. Patent Department

(a) Organizational Systems

Among 15 replied enterprises, 14 enterprises (93.3%) have an independent IP/patent department. This is understandable because all of them are big enterprises. There is only one enterprise working in food processing industry (number of employees in 2004: 1547, average turnover for 2002, 2003 and 2004 is 256.5 billion JPY) does not have an independent IP/patent department but instead, there is a section in charge of intellectual properties in the Legal Department. This kind of organizational system corresponds with the legally oriented organizational system as mentioned in Subsection 3.1.2.

Regarding management level of the head of IP/patent departments, 6 enterprises have the head of IP/patent departments to be in the top management level, in which the highest position of the head of IP/patent department is Executive Vice President.

In terms of manpower of IP/patent department, the number of staff members of IP/patent department is in the range of 11 to 400 staffs, in which patent attorneys are available in most of them. Here, as can be seen in Figures 1-3, it was observed
that there is no clear proportion between the enterprise size (i.e. the number of employees and annual turnover) and the number of staffs in IP/patent department. It may be said that the number of staffs in IP/patent department somewhat does not absolutely depend on the size of enterprise, but it may depends on the interest and the competency of an enterprise in IP/patent matter, R&D activities as well as the industrial field of working. In a patent-intensive industry like electronics, the number of staffs in IP/patent department may be always higher than in other industries.

Figure 1. Number of employees in 2004

![Figure 1](image1)

Figure 2. Average annual turnover (2002, 2003 and 2004) (unit: billion JPY)

![Figure 2](image2)

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The designations of enterprises are same in Figures 1-3. Enterprises 1, 2, 3 and 4 work in automobile industry, enterprises 5, 6 and 7 work in food processing industry, enterprises 8, 9 and 10 work in pharmaceutical industry, and enterprises 11 and 12 work in electronic industry. Due to the confidentiality agreement, we cannot disclose the names of enterprises.
(b) Function of IP/Patent Department

Based on the replies to the questionnaire, it was observed that there are five main functions of IP/patent department which were mentioned by most respondents:

1. Strategy and management function, which may include: planning/implementing strategy and policies on IP/patent, managing implementation of IP strategy and policies and management/assessment of IP/patent rights.

2. Information function, which may include: conducting IP/patent information searches, collecting/analyzing/providing information on competitors’ IP/patent rights.

3. Right acquisition function, which may include: discovering (finding) inventions, filing IP/patent applications and maintenance of IP/patent rights.

4. Enforcement function, which may include: utilization of IP/patent rights in general, license-in and license-out negotiations and agreements, rivals’ IP/patent rights watching, raising and handling invalidation trials based on IP/patent information and handling IP/patent disputes and litigations.

5. Support function, which may include: providing patent information to other departments, giving advice from the perspective of IP/patent and providing proposals based on IP strategy and information.

Although some respondents replied that their enterprises were interested in innovation encouragement activities and development of human resource for patent activities but these functions were not mentioned as functions of IP/patent department.
4.2.2. Staffs in Charge of Patent Activities

When being asked about the personal qualities of a staff in charge of patent activities according to their enterprise’s viewpoint, almost all respondent mentioned the technical and IP/patent-related laws knowledge. The actual viewpoints of enterprises on personal qualities of a staff in charge of patent activities are shown in Figure 4 below.

Figure 4. Personal qualities of a staff in charge of patent activities

![Bar Chart](image)


Among above requirements, the requirements on technical and legal skills can be explained by the complexity of patent activities, which involve in both technical and legal matters, while the language skill can help people a lot in dealing with patent activities in international extent.

In addition to staffs working in IP/patent department, 10 of 14 respondents replied that their enterprises have persons in charge of IP/patent activities in departments other than IP/patent department. These persons are always positioned in Development/R&D/Invention section. Among enterprises which do not have persons in charge of IP/patent activities in departments other than IP/patent department, there is one enterprise replied that even there are no staffs in charge of IP activities in non-IP departments but there are staffs in IP/patent department responsible for supporting activities concerning IP/patent in some other departments.

4.2.3. Roles of Patent Attorneys

Regarding the roles of patent attorneys, all respondents replied that their enterprises had relied on patent attorneys in patent activities. A very important role
of patent attorneys, which is mentioned by most of respondents, is assisting enterprises in acquisition and maintenance of IP/patent right such as formulating patent specifications, carrying out prosecution to IP/patent Office actions and representative for foreign patent applications. Furthermore, enterprises tend to need more assistance from patent attorneys when handling/dealing with patent invalidation trials as well as patent disputes and litigation, especially in overseas countries.

4.2.4. Establishment of Patent Rights

As stated above, a prior art search should be conducted before developing a technical solution and actually, it was confirmed by all respondents. Prior art search helps enterprises to avoid wasteful R&D, avoid infringements of others’ intellectual property rights, find out best countermeasures against problematic competitors rights and provide correct guidance for future development.

As replied, prior art search is always done by the inventors (or researchers), in cooperation with staffs in charge of patent search/patent activities. Some enterprises even established a “research support group” or “patent search group” for discovering invention and carrying out prior art search in cooperation with inventors. Otherwise, in another enterprise, prior art searches for important cases are entrusted to the investigation company of its group. For searching prior art, some enterprises use their own in-house database (may be only for prior search in the working field of the enterprises) and most of them use outside databases such as database of Japan Patent Office and other commercially available databases.

At next steps, for developing an invention and digging up a patent, a sufficient communication between inventors or researchers or developers, IP/patent department and manufacturing sites should be maintained within enterprises and thereby, some proposals are given to develop the invention. In addition, patent education for inventor/researchers and other staffs is also an effective measure for the development of invention.

The number of patent applications filed by these enterprises in the period of 1995-2004 was between 239 (by an enterprise working in food processing industry) and 100,000 (by an enterprise working in electronic industry) while number of granted patent in such period was between 143 (enterprise working in food processing industry) and 30,000 (enterprise working in electronic industry). Here, we also did not observe a clear proportion between enterprises size and number of patent
applications as well as granted patents, which can be seen in Figure 5. It is believed that the number of patent applications and accordingly the number of granted patents depends much on industrial field of working of enterprises. The number of patent applications and granted patents is highest in electronic industry, where the technologies develop rapidly and enterprises have to reinforce their positions in cross-licensing negotiation through building a big patent portfolio.

Figure 5. Enterprise size and number of patent applications and granted patent

On the other hand, in judgment of patent applications for coming to a decision of filing a domestic or foreign patent application or not, the following factors, as presented in Figure 6, should be taken into account.

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62 The designations of enterprises (1-9) in Figure 5 are not absolutely same as in Figures 1-3. Enterprises 1-5 are working in automobile industry, enterprises 6-7 working in food processing industry, and enterprises 8 and 9 are working in electronic industry. Because of lack of sufficient data, we cannot introduce any enterprise working in pharmaceutical industry.
As can be seen in Figure 6, the most significant changes in the ranking positions of the corresponding influence factors from domestic phase to international phase of patent applications are the higher positions of applicability and exclusivity factors. In this regard, it can be contemplated that enterprises tend to file patent applications in certain foreign countries if they find at least an applicability of the invention in the relevant countries, more specifically whether the countries are potential manufacturing areas or whether they have a potential market for the invention, or alternatively, the situation of IP/patent protection and enforcement in those countries or more simply, if they find that it is necessary to exclude competitors from working that invention in those markets.

4.2.5. Patent Strategy

In our questionnaire survey, 11 respondents replied that the patent strategy of their enterprise was under the authorization of top management. In general, as observed in the responses, there are 3 remarkable contents in patent strategy, including:

(1) Improving the support function of patent activities towards provision of better support for management/business/development activities.

(2) Reinforcing and strengthening the intellectual creation cycle. In this content, the systems of creating/obtaining protection/utilizing intellectual property rights will be further reinforced and strengthened for the purposes of obtaining more basic patents, increasing the number of patents and improving the effectiveness of utilization of patents.
(3) Unifying business strategy, R&D strategy and patent strategy, in which business and R&D strategies will be further streamlined through IP activities.

4.2.6. Patent Licensing

As replied by the respondents, all of 15 replied enterprises involved in patent licensing activities but there was only one respondent disclosed the number of licenses acquired and granted by his enterprise. Among those enterprises, 14 of 15 enterprises had fixed person(s) in charge of licensing activities and the objects of licensing, as mentioned by respondents, may be various kinds of IP rights including patent, know-how, trademark, breeder’s right and copyrights.

Regarding the purposes of licensing according to enterprise’s viewpoint, there are three main purposes as shown below in Figure 7.

Figure 7. Purposes of licensing

Note: 1. Obtaining license royalties and promoting utilization of patent, 2. Securing working freedom and avoid disputes. 3. Creating a license environment with licensees (cross-licensing)

In the above results, the obtaining royalties and promoting utilization of patent are the most mentioned reason for licensing-out while securing working freedom and avoid disputes are the most mentioned reason for licensing-in. The reason of creating a license environment with licensees was mentioned by one enterprise working in automobile industry.

4.2.7. Patent Disputes

In this regard, all 12 respondents replied that their enterprises had involved in patent lawsuit in the period 1995-2004, however the actual number of patent lawsuits involved was not disclosed by almost all respondents.
As mentioned by respondents, for dealing with patent disputes when there is a possibility of infringement of others’ patent rights, there may be some main measures that are illustrated in Figure 8.

**Figure 8. Measures for patent infringement**

As can be observed in Figure 8, acquisition of a license for infringing product and changing technology/modification of product or even cancellation of project are most common measures in dealing with patent disputes. Although some other measures such as mediation or arbitration or litigation were not mentioned but it may be assumed that these resolutions are always taken at later stages of a dispute, when the situation becomes more serious and above measures cannot reach satisfactory results for both parties.

### 4.2.8. Encouragement of Inventions

For encouraging the incentive to invent of employees, normally these enterprises have their own compensation and award system for invention. The compensation may be done at the time of application, registration, self-implementation and licensing, and eight respondents replied that their enterprise already filed patent applications for employee’s inventions.

### 4.2.9. Development of Human Resource

For developing the human resource for patent activities, 12 respondents replied that training or education programs on patent activities were held for staff members in IP/patent department while 13 respondents replied that training or education programs on patent activities were held for staff members in departments other than IP/patent department. Patent education may be regularly
provided for the members of the R&D department as well as provided in the factories in order to increase their level of knowledge concerning patents.

In practice, in-house and outside education may be conducted. Some enterprises have their own in-house training programs and the in-house education or training may be given by staffs in charge of IP/patent activities or outside instructors in forms of classroom style, group education, impromptu seminars, on the job training (OJT) or job rotation. The education is always given based on staff experience such as service years, job title and education programs include an introductory patent education program for entry-level employees, a mid-level patent education program for mid-level employees and programs for managers. Outside education may include participation in outside seminars and training courses, overseas training and dispatching to patent firms.

IP/patent education may cover a broad range of contents, from basic knowledge of the intellectual property law to management of intellectual properties, from legal aspects to practical affairs such as how to project ideas, how to write patent specifications, how to determine disputes, how to solve disputes or how to manage business by utilizing IP/patent rights. In addition, in OJT training, the trainees will have a chance to take charge of patent activities such as searching on IP/patent database, preparing patent applications or dealing with competitor’s IP/patent rights.

4.2.10. Relationships between Patent Activities and Other Activities

For the purpose of further clarifying the operation of patent activities in Japanese enterprises, the relationship between patent activities and other activities of an enterprise are explored. As replied, the corresponding relationships between patent activities and R&D activities, manufacturing activities, sales/marketing activities, and rival watching activities, were recognized by most respondents.

(a) Relationships with R&D activities

When mentioned the impact of patent activities on R&D activities, almost all respondents emphasized the support role of patent activities. Patent activities provide prior art search and analyses, timely filing patent application, protect innovative technologies created by R&D activities and secure freedom of working, and the profits gained through patent rights are returned to R&D activities to promote further technical innovation. In addition, patent activities help to avoid
infringement of others’ patent rights, enhance R&D cost-effectiveness through the provision of accurate prior art information, promote incentives to invent of researchers through proper invention awarding and determine the direction of research and development. In practice, ten respondents replied that there are periodical meetings between R&D and patent department. On the other hand, in seven enterprises, persons in charge of patent activities attend the meetings where the theme of R&D or the development of new products will be decided while in two other enterprises, they will attend when necessary or when discussing high-priority themes. There is only one enterprise working in food processing industry, where the persons in charge of patent activities do not attend those meeting.

(b) Relationships with manufacturing activities

As replied by most respondents, the most important role of patent activities here is also the support role. In particular, a very important impact of patent activities on manufacturing activities that should be emphasized is securing the freedom of working. On the one hand, the securement of working freedom is accomplished by acquiring the exclusive rights under the patent protection for product and technologies used in production activities and preventing others from doing that, while on the other hand, license(s) or cross-license(s) acquired through patent licensing activities will help enterprises to use patented technologies of others’ and avoid patent infringement. Another important role of patent activities on manufacturing activities is protection and management of production know-how. This important role was mentioned by two enterprises working in electronic industry.

(c) Relationships with sales/marketing activities

There were eight respondents recognized the relationship between patent activities and sales/marketing activities and four enterprises did not recognize this relationship. Here again, we observed that a prominent role of patent activities on sale/marketing activities is support role. This impact is created by advantage of the exclusive rights under patent protection. Patent rights enable to secure the sales of patented products or products directly obtained by a patented process, prevent the emergence of competitors and maintain the competitiveness of such products. By acquiring and enforcing patent rights for a product or its manufacturing process, the sales of this product can be assured and increased. Conversely, by finding potential infringements on the market, sales/marketing activities enable enterprise
to deal with patent infringements as long as they appear and ensure better enforcement of patent rights.

(d) Relationships with rivals watching activities

In this regard, twelve respondents recognized the relationships between patent activities and rivals watching activities, one respondent even indicated that: “competitor monitoring activities are the most important area in IP activity”. There are two enterprises did not recognize such relationships. As mentioned by seven respondents, a main function of patent activities on rivals watching activities is identification of infringements on patents of their enterprises and prevention of infringement on others’ patent rights, therefore monitoring the securing of freedom of working. In addition, another important function of patent activities on rivals watching activities, as confirmed by four respondents, is investigation of the rivals’ technical trend. Accomplishing this function will help enterprises to determine the mutual positions of their technologies and their patent competency.

V. Conclusion and Recommendations

5.1. Conclusions

In intensively competitive business environment of world’s economy today, the creation, protection and utilization of innovative technical solutions in business are considered as key factors for the existence and development of an enterprise. These activities are believed as indispensable measures to create high added value, to improve productivity, to reduce the costs of products and to help enterprises to strengthen their position on the market. Lacking such activities, enterprises will have many difficulties in protecting and increasing market shares, in moving ahead their competitors and in integrating into international economy.

It that context, the roles of patent system and patent activities are becoming more and more important for enterprises all over the world. Patent system and patent activities contribute to support and promote R&D activities, to promote the utilization of the results obtained in R&D activities, secures the return for investment on R&D and in turn, this return will nourish efforts into the further development.

The importance of patent activities is still less emphasized or not sufficiently appreciated in Vietnamese enterprises. This situation is shown by low proportion and patentability of domestic patent applications, small number of license
contracts acquired by Vietnamese enterprises and lack of awareness, knowledge and experience for patent activities. This situation will probably bring many disadvantages to Vietnamese enterprises. It obviously contributes to restrict the competitiveness of Vietnamese enterprises in global market and even in domestic market. This problem may become more serious when doing business overseas, especially in developed countries where the pro-patent policy is being implemented and IP/patent litigation may cause a big damage for the enterprise. With those reasons, it is absolutely clear that competency of Vietnamese enterprises in patent activities should be further strengthened as soon and as much as possible, for the time being and for the near future of international economic integration, when Vietnam becomes a WTO member.

For the purpose of strengthening patent activities in Vietnamese enterprises, in this research we attempt to study all related aspects of the patent activities in an enterprise that were considered practical and applicable for Vietnamese enterprises and thereby try to provide a relatively comprehensible overview of patent activities for them. The aspects, which are explored in this research, include the organization, roles and functions of patent department, establishment of patent rights, utilization of patent rights, patent strategy, patent licensing, patent disputes and encouragement of invention. Although not covering all aspects of patent activities in this research but we hope that it will provide useful information about patent activities to businessmen, especially Vietnamese businessmen, who want to set up, operate and develop patent activities in their enterprises.

Patent activities are relatively difficult, complicated and costly business, not only for SMEs, but also for large companies in developed countries. Patent activities require a lot of legal and technical skills, good financial strength as well as long-term investment on human resource but benefits created by them are also very significant. Therefore, they should be taken by the enterprises instead of being omitted. The core issues here is how to organize, operate and develop a strategy, working system and human resource for patent activities effectively, which are really appropriate for actual conditions and situation of their enterprises, thereby help enterprises to develop and protect their inventive technologies, earn the return for R&D costs, license-in and license-out, secure the freedom of working, maximize profit under a general goal of taking advantage of patent system for solid development of enterprise. In general, these issues depends on the size of enterprises, their industrial fields of working, short-term and long-term business
strategy, financial strength, human resource, national legal system, national policies, awareness of society on patent issues, situation of IP rights enforcement and other factors. In Vietnam, with great efforts and supports of the government as well as entire society towards improving the IP legal system and promoting IP activities, we have a great expectation that there will be probably big chances for the development of patent activities in Vietnam and Vietnamese enterprises and thereby their significance and advantages will be asserted.

5.2. Recommendations

Based on analyses, discussion and actual information given above in this research report, some recommendations will be provided below for the purpose of further strengthening patent activities in Vietnamese enterprises:

1. In the development strategy of Vietnam, one important objective is becoming an industrialized and developed country before the year of 2020. For the achievement of this objective, the creation and utilization of advanced technologies in Vietnamese enterprises will probably play a very important role and this cannot be obtained without the support of the Government. Therefore, from the Government side, it is important to set up practical and comprehensive policies as well as accompanied measures for encouraging and supporting such activities. Among those, there should be policies, which focus on promoting patent activities in Vietnamese enterprises, because, as shown above, the technological creation and utilization activities may not be operated and developed efficiently without supports from patent activities. Such policies may cover wide range of related issues such as policies on enhancing the awareness of patent activities in business sector, supporting SMEs in utilization of patent information, in development of human resource (e.g. patent education and training), in international patenting, in patent licensing and technology transfer, in settlement of patent disputes, in encouragement of invention, providing legal consultancy concerning patent activities and others.

2. For enhancing the IP/patent awareness of business sector and developing human resources for patent activities, although there were many measures already conducted in Vietnam so far such as holding domestic and international training course and seminars, IP/patent propaganda in various media sources, overseas training and visits, etc., and in some extent, these measures already contributed to improve the IP/patent awareness in Vietnam
but their outcomes seem to be not sufficient, especially in patent related issues. For further enhancing this awareness, now is the time of incorporating IP/patent education as a mandatory subject into education programs of at least big universities of techniques and law. In this regard, the lack of human resource for IP/patent education may be a problem but it may be solved significantly with the efforts of concerned parties such as government organizations, patent attorneys and universities along with taking advantages of the assistance from various international and overseas sources. On the other hand, the programs of IP/patent education and training should be improved to be more useful, more practical and in conformity with actual practice of patent activities in the world. The participation as lecturers of foreign experts in such education and training should be taken into account. In addition, the socialization and diversification of IP/patent education and training activities is another noticeable possibilities that should be developed.

3. In current practice, the process of strengthening patent activities in Vietnamese enterprises should begin from improving skills of searching and utilizing patent information for at least persons in charge of R&D or engineering activities in Vietnamese enterprises through various basic and advanced training courses. These will contribute to prevent the unintentional infringement of others’ patent right, to reduce overlapping and wasteful researches, to improve the efficiency of R&D activities and to enhance the patentability of domestic application. In this regard, persons in charge of R&D or engineering activities have advantages of being familiar with technical matters and therefore being able to acquire these skills with good results. Thereafter, if necessary, the patent information as well as search skill will be disseminated to other sections of enterprises such as manufacturing section or marketing/sales section where patent information can be used.

4. With regard to activities of establishment of patent rights, each enterprise should determine a proper patenting strategy based on their own conditions such as R&D situation, business strategy, technological fields of working, financial strength, etc. In this regard, it is very important to carry out prior art search as well as survey the market for invention before starting an R&D project and it should be conducted by the researchers/developers in cooperation with persons in charge of sales/marketing activities in the enterprises.
5. Along with the promotion of utilization of patent information, patent and know-how licensing are also very important measures for improving the technological competency of Vietnamese enterprises. These advantages have not been taken by most Vietnamese enterprises and this situation should be changed as soon as possible. For promoting the licensing activities, the competency of enterprises, universities and research institutes as well as advisory organizations in patent/licensing activities should be more and more strengthened. In addition, the establishment of technology licensing organizations (TLOs) according to the experience of Japan may be a good possibility. These TLOs will play a central role in promoting technology licensing and transfer activities between Vietnamese parties, for example between universities/research institutes and enterprises, as well as between Vietnamese parties and foreign parties and vice versa.

6. For the purpose of improving the efficiency of R&D activities in Vietnamese enterprises and universities/research institutes, R&D activities should be restructured to be more practical, more efficient, to satisfy market’s demand, to focus on technological fields, in which Vietnamese enterprises may have good competitive capacities such as the fields of naturally derived chemical compounds, pharmaceutical formulations based on traditional medicine, food processing technologies or electronic components. In this regard, the R&D policies of the Government as well as universities and research institutes should be focused more on applied science instead of basic science while short-term and long-term strategies to cultivate, educate, train and develop the line-up of inventors and innovators should be planned. In addition, the remunerating and awarding systems for inventions and innovations in enterprises, universities and research institutes also should be improved and renovated in order to enhance the incentive to invent of researchers, innovators and inventors.

7. For the long-term and stable strengthening of patent activities in Vietnamese enterprises, it is necessary to promote socialization of IP/patent education and training as well as other possible aspects of IP activities. This will contribute to reduce heavy working burden on governmental authorities and make Vietnamese enterprises more active in organizing, operating and developing their IP/patent activities. In this regard, the establishment of a public organization like Japan Institute of Invention and Innovation should be taken
into consideration. Based on member fees and other incomes obtained from various activities such as IP/patent research, survey, education, support, encouragement of invention or commendation for invention, this organization will play a central role in promoting and supporting IP/patent activities in Vietnam in general as well as in Vietnamese enterprises in particular.
LIST OF REFERENCE


