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How can we integrate IP Strategy with Corporate Strategy? Combining IP strategy with Management Strategy Making Process

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Abstract. Intellectual property systems have been introduced and used in many countries as a global standard. However its practical utilization is still not yet mature because of the lack of IP Strategy. Each enterprise has to define a unique IP strategy and be differentiated by other enterprises because the outside environment and internal resource are different. IP people have to have better understandings on strategy making process, which is fundamental to management field. In addition, IP strategy should include IP expertise based on IP laws and its regulations. In this paper, strategy making process is introduced for IP personnel together with a new proposal of an IP Strategy Menu which will combine IP strategy with management strategy making, for further improvement of IP activities for the growth of enterprise.

1 .Introduction

Due to the serious economic crisis and economic globalization, it is strongly requested to restructure management resources and enterprises' activities. In Japan, most of the enterprises are seriously considering the high exchange rate of Japanese yen, and venturing overseas to produce and market their products resulting in change of business structures. Based on these circumstances, there are a plethora of discussions on the globalization of intellectual property systems to be established in every country, based on the initiative by WTO, WIPO, etc. Needless to say, intellectual property system can be valuable management resources when IP is effectively created, properly protected and utilized on the market. We can say that the IP system itself has been established in most of countries; however, it is difficult to say whether the enterprises which are the owners of IPR have received the visible benefits of IPR. There was a strong leadership made by the Japanese Prime Minister to strengthen enterprises' competence by promoting the utilization of IPR. Also, the integration among business unit, R&D department and IP department has been emphasized to avail of the benefits of IPR and to strengthen the enterprises' business competence. While it is easy to say that such integration needs to be established, each organization however has their own strategy and these strategies cannot be easily shared by different organizations because of different tasks and roles with varying approaches based on their own specialties. Figure 1 shows a key for business growth and strength by sharing strategy of different internal organizations. The left figure has different vectors with different directions, while the right figure shows different vectors having almost same directions.

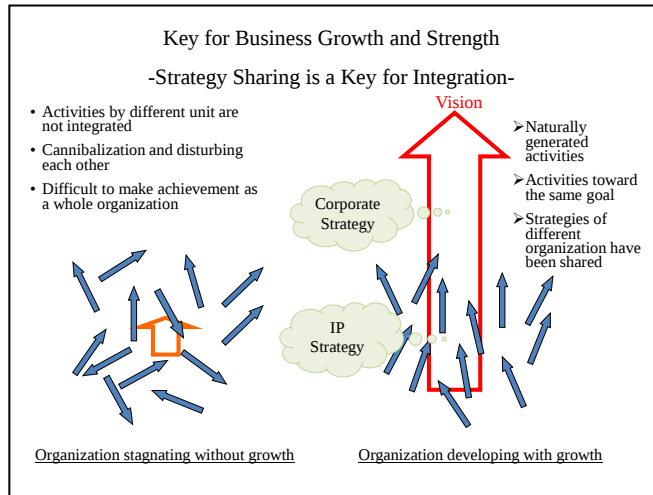


Figure 1: Concept sharing Strategy in enterprise

The corporate strategy and IP strategy is well shared understanding of each other and targeting the same goal. In other words, when IP strategy is integrated with corporate strategy, IP activities can make substantial contribution to corporate strategy. There are many discussions on the importance of IP strategy ; however, the concept of IP strategy has not yet clearly defined and IP strategy making is not yet implemented well in the real business situation.[1][2][3][4][5][6][7][8][9]

In this paper, we show the necessity of having IP personnel understand the fundamental of strategy making in the field of business management, and propose an IP Strategy menu in the implementation of IP strategy making. We also aim to provide information and suggestion on how IP strategy can be integrated with corporate strategy in a comprehensive way using an example of IP strategy making.

2. Fundamental of Strategy Making

According to past research results, strategy making process has been established in the field of business management.

For the business strategy making, we need proper understandings of the 3external environment surrounding the subject enterprise. What kind of opportunities and threats exist there? If you use the traditional tools like PEST Analysis or Porters 5 Forces Analysis, one can determine the external opportunities and threats. On the other hand, we also need to analyze our own strength and weakness existing inside the enterprise. Typical tools for this purpose are the Value Chain Analysis or VRIO Analysis, which are recommended to define your own strength and weakness. After making these analyses on the internal environment and external resources, we must conduct a strategy formulation process using SWOT or 3C Analysis, re-considering our business domain using Levitt's theory and Eibel's CFT theory. During the strategy formulation process, basic theory for business strategy such as Porter's 3 basic strategy, strategy according to the competitive position by Kotler, Ansoff's Growth Vector, Product Portfolio Management by BCG, Core Competence by Hamel and Praharad, etc. [10][11][12][13] These are fundamental for strategy making process, which can be applied in every field, such as sales strategy, production strategy, marketing strategy, human

The important point here is to combine Business Strategy with IP Strategy Menu when making a formulation process to define concrete strategy responding the following questions; How do we make the best use of the strength to take the opportunity?, How do we make the best use of the strength to avoid the threats?, How do we catch the opportunity, even if we have the weakness?

Here in this paper, we propose a 19th IP Strategy Menu which considers the expertise of IP activities under IP related laws and its regulations. The 19th IP Strategy Menu was created by making interviews to 24 enterprises regarding IP strategies implemented by the interviewee's enterprises. Since the strategic issues are strictly confidential, we are prohibited to disclose the enterprise name and its IP strategies. Industrial filed and interviewee's positions are described in Table 1.

	Position	Mechanical	Chemical	Electronics	Other
Corporate	President Director	7	5	8	4
IP	Manager	7	5	8	4

Table 1: Attribute of enterprises interviewed

Here we categorized the results of interviews into 19th IP strategies, as follow:

① Digging Up the Invention Strategy

For the enterprises which have not had strong consciousness on IP, people are not familiar with patentability, and do not know what kind of technologies are the subject for IP protection. Naturally, many technologies have not been recognized because the inventions are hidden in the enterprise. It is necessary to have intensive inventory of those hidden technologies as the subject for patent applications. IP people have to jump into R&D, Production, and Marketing (etc.) to unravel all the inventions within limited period based on close collaborations among functional department.

② Focusing on a "Hole" Strategy

In a niche market as Kotler suggested, there is a similar idea about patent net. In some areas, there are so many patent applications that have been filed, while in the other field, there are no patent applications filed. There seems to be a "hole" of a patent net. For the challenger, they have to compete against the market leader by producing discriminated products. In this case this "hole strategy" functions well to establish the competitive field.

③ Focusing on Core Technology Strategy

As Hamel Prahalad proposed, the enterprise has to create and keep their core competence. Core competence makes the imitation of products difficult for competitors, provides the value creation to their customers, and creates various application fields. First, the enterprise has to clarify their core competence, and accumulates the resource which dominates the competitive market; then the business development based on the core competence shall be built into their business strategy. IP shall be focused on this core competence area to protect and maintain their competence against competitors.

④ Improvement Patents Strategy

For the challengers or followers on the market, the enterprise has to catch up to the competitor and reach a competitive level against the leader. The leader has already established his position with their pioneering technologies, and has developed their business field. The challengers or followers are forced to make improvement patent strategy for the time being until they catch up and obtain comparable capability. Improvement patents normally go into small modifications, and very serious and continuous efforts are expected to cover many variations surrounding the basic patent.

⑤ Flooding Patents Strategy

This depends on the product architectures; but in case, we need many improvement patents especially in the field of electronics. There are different levels of inventive step for patents: some patents have very high inventive step, while the others have low level of inventive step just satisfied minimum requirement of inventive step. There are cases wherein the number of patents has a certain significance to establish the scope of technology. In such case, continuous patent applications with many variations of technical improvements, is especially effective for a challenger to compete against a leader.

⑥ Patent Portfolio Strategy

Generally speaking, one product has multiple patents involved in its technologies. The product has many technical elements, and each element has a certain technical feature protected by patents. In order to have a dominant position, we have to establish a series of patents, which are called a patent portfolio. [15] One enterprise can also have a certain product diversification with multiple products. In this case, as a total product diversification, we have to establish a patent portfolio to protect the product diversification. Comparing with competitors' portfolios, our patent portfolio should be unique and differentiated from the technical point of view together with protection point of views by patents.

⑦ Patent Information Strategy

It is said that there are over 60,000,000 patent publications in the world. Reading and analyzing the competitors' patent publications is very useful in recognizing their R&D activities and also to make technological estimate for the future market. Patent watching has to be done regularly to avoid infringing others' patent, especially at the timing of R&D investment and launching new product on the market. Patent information system must be established in-house or using commercial data base for the effective use of patent information. Under the open innovation era, patent information can be used for technology scouting. We can easily find the suitable technologies and partners from patent information, resulting in good alliance or licensing agreement.

⑧ Invalidation Strategy

It is realistically assumed that several enterprises are making R&D for similar technologies. It is a competitive situation for technological development, and we have to watch patent publications of other enterprises. In case if we find an obstacle patent, a certain legal actions must be initiated to invalidate the other's patent. Patent examination process is applied in most of countries; however we also have to be on the lookout for competitors' patents and take legal actions to invalidate them carefully.

⑨ Enforcement Strategy

When an infringement occurs, we have to be prepared to take a legal action against the competitor which produces and distributes the infringing product. We have to show our strict attitude against infringement, otherwise the competitor does not think about our existence seriously. As a first step, warnings and negotiations must be taken to initiate enforcement discussions, in case the competitor does not show sincere response, we have to take a legal action. We have to investigate all possibility not only for our patents but also against the competitor's patents, define the purpose of law suit, and confirm customers' and suppliers' reactions which can be influenced by the legal action.

⑩ Licensing Out Strategy

The purpose of licensing out is to establish partnership with other enterprises, to increase the market share, get the royalty and spread our technologies. We have to think about the positioning of product life cycle - initial investment stage, rapid growing stage, matured stage or declining stage.[14] Generally speaking, at the initial stage and growing stage we should hesitate to license out the products ; however at the matured stage, we have to consider further growth of market by making licensing out to others. We need to have good partnership with others to maintain the matured market or promote further growth of market.

⑪ Licensing In Strategy

Under the current open innovation era, NIH syndrome shall be crushed and more open attitude shall be promoted for R&D or new business creation. Technology scouting has been efficiently utilized to supplement the lack of technical capability. We have to pay royalty to make licensing in; however we can easily obtain necessary technologies from others without spending R&D expense within a limited time. In case the both parties make licensing out and licensing in, we must expect cross licensing to reinforce the technical capabilities of both parties which often occur in the electronic sector where their product has many technical elements.

⑫ Negotiation Up Strategy

To make the competing position superior in the market, the enterprise has to have core competence as Hamel and Praharad proposed. In many cases, the core competence is linked with technical capability and subject for protection by patents. In case we have our core competence protected by patents, the enterprise can display high negotiation ability for many business negotiation cases, such as joint R&D agreement, legal dispute, licensing agreement, purchasing or sales agreement. We can expect to take a strong leadership based on well-managed IP activities.

⑬ Standardization Strategy

Technology standardization is getting important and popular especially in the electrical industries to establish fair competition, to save redundant investment, to expand the market volume, also to keep safety for consumers. Enterprises have to try to obtain the patents which are essential for the standardization technology. However, it is important to have proper strategy not only obtain patents but also make a decision on whether we must provide the essential patents to the patent pooling in connection with the standardization or keep them outside of the pooling, which is a very critical strategy in market positioning. In the global economy, we have to create an advantageous standardization and be careful not to be left behind.

⑭ Alliance Strategy

Business partnership is a key important issue to create strength of business operation. It is important to compete against competitors within the market; however there is possibility that someone will participate in this market as a new comer, and an alternative product will appear in the same market replacing the current product. Also, our suppliers' position will be altered and customers' relations will be changed according to the new business environment in the future. Thus, competition is important but at the same time cooperation as an alliance partner is also important. We have to evaluate carefully the candidate partner by making evaluation of technical capability and business potential from the IP information analysis.

⑮ Joint R&D Strategy

As long as the product is becoming complex, enterprises have to obtain all the necessary technologies used for the product. In many cases we need a certain technology obtained from others or to be supported by others. In order to supplement the lack of technologies mutually, we have to seriously set up a joint R&D project with others. Under the current open innovation pushing by the time and the money, it is very important for the enterprises to work together to create a new product to be launched responding to the market needs without delay. The results of joint R&D have to be managed carefully involving legal procedures, the ownership of inventions, responsibility to make licensing out to the other enterprises and the continued results after the termination of joint R&D agreement, etc.

⑯ Inventors' Motivation Strategy

Who generate the new ideas and inventions? People make inventions. According to the researches in the field of psychology, people make good inventions by activating their creativities when they are motivated internally with their own voluntarily intentions. In order to make a super creative product, it is important to motivate inventors and arrange necessary working conditions. New ideas need to be adopted as future products, the inventors shall be reasonably treated for remunerations, R&D project management has to include human resource management not only roadmap, milestone, budgeting, marketing, etc.

⑰ IP Training/Education Strategy

Knowledge of intellectual property rights is very important for every enterprise and every industry. IP global standard also has been improved by WTO and WIPO, and every country has started to create an IP policy and its legal system. All employees are need to learn what is IP, how to be protected, what is the legal power, importance to accumulate competitive capability, understand secrecy management, how to utilize IP information, licensing, enforcement, etc.

⑱ Secrecy Strategy

The technologies owned by enterprises shall be defined into 2 categories: subject for patent protected with its disclosure, or subject for secret information no protection as a registration without disclosure. Under the open innovation, which is a kind of fashionable expression, not all technologies should be opened, and the core technologies should be kept as secret information. Secrecy management in the enterprise is complicated and not easy to practice. We have to distinguish secret information from other information, making leveling of secret information depending on its seriousness of secrecy, which shall be strictly implemented for both suppliers and even customers.

When employees resign the enterprise, the secrecy has to be kept and they must preserve the confidentiality of the trade secrets.

⑲ Overseas Business Strategy

Under the global society, the enterprise has to obtain patent overseas. IPR is independent in every country based on its local law and regulation; therefore the enterprise has to obtain protection in every country. Generally speaking, the target country is the country for manufacturing, for marketing. PCT can be used for its applications together with other regional treaty like EPC, UPC, etc. The enterprise sends IP specialists in the targeting country and creates a branch office which will follow-up the IP applications and which will obtain information about competitors' patents and products on the local market. IP activities overseas make strong influence on the local market share

4. Integration of IP Strategy with Corporate Strategy

IP Strategies can be picked up from the 19th strategy menu, depending on the enterprise's situation such as outside environment and internal resources. We have to evaluate which IP strategy is best and to take the opportunity by making the best use of the strength, in order to avoid the threat and catch the opportunity even if we have weaknesses. Each enterprise has their own unique IP strategies can be adopted. Also, during this strategy making process, IP strategies and business strategies can be integrated and defined with integration at the same time, which enables IP activities to contribute to the achievement of corporate strategy resulting in corporate business growth.

Table 2 shows the best choices of IP strategies from the menu, depending on 3 different enterprises.

Table 2: Best Choices from IP Strategy Menu

IP Strategy Menu	Big enterprise	R&D oriented	Global enterprise
Digging Up Invention Strategy	X		
Focusing on a "Hole" Strategy		X	
Focusing on Core Technology Strategy	X	X	
Improvement Patents Strategy	X		
Flooding Patents Strategy	X		
Patent Portfolio Strategy		X	
Patent Information Strategy		X	
Invalidation Strategy	X		
Enforcement Strategy			X
Licensing Out Strategy			X
Licensing In Strategy			
Negotiation Up Strategy		X	
Standardization Strategy	X		
Alliance Strategy	X		
Joint R&D Strategy		X	
Inventors' Motivation Strategy	X	X	
IP Training/Education Strategy			X
Secrecy Strategy		X	X
Overseas Business Strategy			X

The point here is the recognition of different IP strategies adopted by different type of enterprises. The enterprise does not need to use all of strategy menu, and it can pick up some from the strategy menu, which can be effective for the said enterprise. Table 2

is merely intended to show various ideas in choosing suitable strategies from the menu as we cannot define which strategy is efficient for a specific enterprise. As described in the previous chapter, we first have to conduct an external environment analysis and internal resource analysis before choosing efficient strategies from the menu as a strategy formulation process.

5. Case Study of company “A” -Exercise to make an intellectual property strategy

This chapter shows how we can develop an IP strategy based on the process we described in the above. This is very simple case study proposing how we can create an IP strategy according to the fundamentals of strategy making and the 19th IP strategy. First, let us explain the background of this company A, as follows.

5.1 Situation of company “A”

Company A is a small and medium-sized enterprise concentrating in research and development since it was established about 20 years ago. It doesn't have manufacturing facilities in-house. The capital is 1 million US\$, the number of employees is 20 people, and the annual turnover is 35 million US\$. Since its establishment, company A has continued their business operation with a vision offering “Creating the earth good to live”, to provide comfortable environment by the air cleaning system using a minus ion generating device as a core technology. It is their unique technologies which support their business operation. They have made great efforts to research and develop a large amount of minus ion generating device by the corona discharge in the titanium pipe. They have acquired the basic patent in this field, and have a dominant position in the market and do not permit others to participate in the same product area. About 17 patents are acquired including the basic patent and improvement patents. The period of protection remains for about ten years.

The business environment is in the fair wind situation that grows up rapidly by recent social trend of health and environment valuing. Because there is a possibility of the market expansion in the future, the major electric manufacturer is under consideration as a new participant. Though a certain major electric manufacturer had approached the license negotiation, company A refused the request. The company A has been outsourcing its manufacturing to a foreign country, and has advanced sales of imports in the Japanese market with an agency contract. It limits its activity in the Japanese market on a small scale; therefore the patent applications have not yet done in foreign countries. The market trend in this product in Europe and America is also growing.

The product of company A is being manufactured now under the manufacturing license agreement with a Taiwanese manufacturer. Because the quality of the titanium pipe is important, they procure it in Japan and send it to the Taiwanese manufacturer. The company has been informed that the similar products began to appear in Chinese market. However neither the function nor the quality of Chinese products has overtaken the company's products.

Considering the situation mentioned in the above description, first we can make an analysis of the external environment and internal resources, extracting opportunities, threats, strength and weakness. PEST analysis or/and 5 forces analysis is recommended

to define opportunities and threats. Value chain analysis or/and VRIO analysis are recommended to define strength and weakness.

Opportunities

- International discussions to solve global environmental problems
- Symptom of recovery from the world financial crisis
- Expansion of investment by the government to green technologies
- Expansion of market trend of health and environmental issues
- Possibility of sales expansion in global market
- The competition in the industry is not so strong
- Still to take time for alternative product
- Procurement price of titanium materials is decreasing because of usage expansion.

Threats

- Though it has the unique technology, next generation products are expected.
- Other companies may have started the development of alternative products.
- Though the Japanese market is protected by the patents, other enterprise appeared in foreign market.
- Pressure from the customer rises if the alternative product appears.
- The patent application of the alternative product will soon be filed in the flow of increasing applications in China.

Strengths:

- Overseas manufacturing cost is obviously cheap.
- Minus ion generating device is still unique, and still has a value contributing to company for the time being.
- The product is protected by the basic patent and improvement patents in Japan.
- Similar products have not yet appeared in the Japanese market.

Weaknesses:

- It costs because the titanium pipe is procured in Japan and transported to the overseas manufacturing base.
- Because of outsourcing of manufacturing to overseas, the quality level is not enough.
- The delivery date has a problem because of manufacturing overseas to decrease the stock in the agency.
- Imitation products appear in the market.
- There are no IPRs to exercise the rights in foreign countries.
- The international application is costly and difficult to apply because of small and medium-sized enterprise.

Strategy making process using business strategy and IP strategies from the 19th IP strategy Menu can create the corporate strategy integrating business strategies and IP strategies, as illustrated in Figure 4.

	Strength	Weakness
Opportunity	<u>How to make the best use of the strength to take the opportunity?</u> ➤The overseas presence shall be advanced with the fair wind. ➤Investment overseas is necessary according to business alliance. ➤The negotiation on the alliance agreement shall be advantageously advanced based on the patent portfolio. ➤Exports from Taiwan to the world shall be stated. ➤The cooperation of the other companies is necessary based on the licensing out.	<u>How to catch the opportunity even if we have the weakness?</u> ➤Patent strategy to outsource manufacturing overseas of titanium pipe ➤Alliance formation with domestic manufacture to respond to market trend ➤Licensing out to the copy manufacture to merge it ➤Licensing out to domestic major enterprise ➤International application by the joint research development with others
Threat	<u>How to make the best use of the strength to avoid the threat?</u> ➤Further development and patent applications for the next generation products ➤Core application and construction of portfolio ➤Take a legal action to exercise the rights against counterfeit goods. ➤Invalidation trial on the patents regarding the alternative products ➤Delete the alternative products by promoting the standardization strategy ➤Avoid the disclosure of secret technology	<u>How to avoid the threat not actually becomes by the weakness?</u>

Figure 4: Case on IP Strategy Making

6. Conclusions

In this research, we pointed out the lack of IP strategy, which should be defined properly according to the fundamental of strategy making process. We made preliminary interviews why IP strategy is not well defined by the IP department of most of enterprises, and we received feedback that IP people do not have good understanding of strategy making process. Therefore, they are poor at making fair analysis on opportunities, threats, strength and weakness. Without these analyses, the IP strategy would be difficult to be integrated with corporate business strategy, resulting in the IP activities failing to contribute to the corporate management. In this paper, we showed the importance of understandings the fundamental of strategy making in the field of business management. We proposed an IP Strategy Menu for proper implementation of IP strategy making and demonstrating how IP strategy can be integrated with corporate strategy in a comprehensive way using a case study as an example of IP strategy making. The case was very helpful in making the IP people understand and implement IP strategy making.

We conclude that IP laws and regulations will be efficient and valuable for enterprises when the legal understandings are integrated with strategy making processes. Finally, we hope that this paper will be valuable for enterprises in defining strategic IP activities and contributing to their business strength and business growth in the future.

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