

5 Evaluation of Intellectual Property Strategies to Improve International Competitiveness of Japanese Companies

-- Examples of Intellectual Property Strategies --

With the development of a global and borderless economy, Japanese companies have transformed themselves from being “catch-up” companies into “front-runner” companies. To maintain and enhance the newly gained competitiveness, the management of each Japanese company needs to coordinate its business strategy and research and development strategy with its intellectual property strategy. In order for a company to implement an intellectual property strategy in coordination with the other two strategies, the company needs to make such decisions as how to increase the efficiency in making inventions, how to detect and protect inventions, how to exploit these inventions, and what system and environment to build for efficient patent management.

The purpose of this study is to illustrate important points to take into consideration in each of the three phases, i.e., the creation, protection, and exploitation of an invention. This study also aims to examine the “category-based” patent management method that classifies inventions according to the products and technical fields to which they pertain, and the system and environment that need to be established within each company in order to devise and implement a sophisticated intellectual property strategy in coordination with its business strategy and research and development strategy.

I Introduction

Today, company managers need to make full use of the results of technology-related research and development in combination with other managerial resources. Those managers also need to enhance the ability to strategically carry out research and development activities with the future business operations in mind. This important ability could be termed technology management skill. More specifically, corporate managers who lead research and development activities should be fully aware of the possibility of using the outcomes of those activities in their business or in the business of any other company. Furthermore, the managers should treat those outcomes as intellectual property and manage and exploit them as such in order to efficiently generate profits from the intellectual property.

A company equipped with such technology management skill would not

pursue short-term growth but mid- and long-term sustainable growth, which is a specialty of Japanese companies, and would efficiently generate profits from its long-accumulated technical knowledge.

Promotion of innovation is an important policy in other countries as well partly because innovation is indispensable for companies to survive intensifying international competition. In order to better compete with other countries, especially with the fast-growing Asian countries, Japan, faced with a declining population, must hone its technology management skill and promote innovation and transform itself from being a “catch-up” country into a “front-runner” country in the field of research and development.

It is useful for companies to collect information on their own and competitors’ intellectual property such as patents as a means of monitoring the outcomes of their research and development strategy. Such

intellectual property information would help companies accelerate unification of their business strategy, research and development strategy, and intellectual property strategy. By unifying those strategies, companies would be able to prevent overlapping in research, investment, and patent applications. This would promote efficient “selection and concentration” of research and development activities and business fields, thereby strengthening the technology management skill.

II Promotion of Ingenious Inventions

1 Strategic use of intellectual property information

In order for companies to carry out their intellectual property strategies and strength their technology management skill, they need to keep making ingenious inventions. This is in line with the primary purpose of the patent system, which is to protect ingenious inventions to promote industrial development.

Companies use information on their own and competitors’ intellectual property such as patents as one of the reference tools that are useful and important in making their research and development strategies. Companies may use such information to analyze the level of their technology and to select the areas of research and development. Moreover, it is extremely beneficial for companies to use intellectual property information to get more out of their research and development activities by wisely choosing subjects of research and development and fine-tuning the direction of those activities even after the commencement of the research and development on the chosen subjects so that they can focus on the fields still untouched by other companies.

In the meantime, since information on a patent is not open to the public until 18 months have passed since the application date, the patent information tends to be obsolete when finally disclosed, especially in

a field where inventions have short life cycles. Therefore, companies need to collect updated technical information from technical papers and research institutions such as universities and from business partners in the course of transactions and make use of such information as well as conventional patent information. Each company needs to determine the direction of its research and development activities in consideration of the patents owned by other companies because no company is permitted to obtain a patent on the same invention.

Even after determining the subjects and direction of its research and development activities, a company needs to monitor the progress in close coordination with its research and development department in order to appropriately manage its inventions.

If a company notices that the expected outcome of its ongoing research and development activities is likely to overlap with the invention patented by another company, the company needs to: (1) make further inventive effort in the research and development process to make an invention different from the one patented by the other company, (2) obtain the right to exploit the patented invention by concluding a cross-licensing agreement or license-in agreement, (3) make an alliance with the company or acquire the company, (4) purchase the products or parts produced by use of the intellectual property or purchase the intellectual property itself, or (5) give up the research and development activity in that technical field, etc.

2 Option of joint research and development and introduction of new technology

For successful business operation or product development, it is often a good idea for a company to find a partner for joint research and development to increase the efficiency of its research and development activities. Joint research and development is effective especially in a case where a company has technical or financial difficulties in carrying out those activities

alone.

In an effort to pursue efficient “selection and concentration” of business, a company needs to adopt the principle of “selection and concentration” in their research and development investment as well. In this sense, it is sometimes inefficient for a company to rely solely on its research and development capabilities to solve all the technical issues that must be resolved to enhance its business operations. In such a case, the company needs to consider concluding a license-in agreement for a patent or acquiring another company in order to introduce the technology of that company.

III Strategic Protection of Inventions

1 “Visualization” of inventions

There is a consensus that inventions made by companies in the course of day-to-day business operations are important assets. For appropriate protection and management of those inventions, companies need to establish internal systems to identify, report, and reward inventions.

The intellectual property department of a company should take the initiative in identifying inventions. This would greatly benefit the company, especially when the research and development department and inventors are not aware of the importance of intellectual property. In a company that has established and made full use of the invention reporting system, no invention would remain unnoticed because the inventor of an invention is obliged to report the invention to the intellectual property department. Since the inventor fails to recognize his finding as an invention in some cases, it would be useful for a company to step up its invention identification effort and invention reporting system and to combine these endeavors with a reward system for inventions in order to detect inventions internally created in the course of day-to-day business operations and to appropriately protect and manage those inventions

through “visualization.”

2 Decision as to whether to patent an invention or protect it as secret know-how

One way of protecting an invention is to patent it. A company that is eager to patent its inventions usually has a system to recognize and manage internally developed technologies as assets. A number of such companies automatically patent internally developed technologies without considering the downside of the patent application, which is that the information disclosed in its patent application documents will be publicized and accessible from other countries after the patent publication although the patent is effective only within the country where the patent application was filed.

In the case of “technology that no other company could easily develop on its own” or “technology that the patentee would have difficulty in finding infringements thereof,” it is sometimes more desirable to avoid a patent application and keep the technology as secret know-how. Any company that chooses the latter option should consider obtaining a right of prior use. Careful evaluation of those options is necessary especially for a company that belongs to an industry where the risk of leakage of such know-how is high (an industry where production sites need to be open to other companies or an industry that has a high turnover rate) or that engages in global business.

The enforcement of a new system for the registration of utility models since April 1, 2005 has broadened the scope of application of the utility model registration system.

3 The purposes of acquiring patents

When an invention is made in a company, the company seeks to obtain an intellectual property right such as a patent right on the intellectual property mainly for the purpose of “(1) optimizing the profits generated by its business operations” and “(2) obtaining direct profits from the intellectual property

right.”

In addition to such primary purposes described in (1) and (2) above, patent acquisition would also motivate employees to make inventions and enhance the image of the company and products produced by use of the patented invention.

(1) Optimization of the profits from its own business operations

A patent, which is an exclusive right, cannot be exploited by any party other than the patentee without the consent of the patentee. Therefore, any company that obtains a patent can enjoy the advantage of being the only one to conduct business by using the patented invention. In other words, a company maintains and manages patents for the purpose of “optimizing the profits from its own business operations” on the presumption that, without patenting a technology that it has invented, the company would not be able to prevent other companies from freely conducting the same business by using the invented technology. It is reasonable for a company to presume that if the company succeeds in creating a new market as a result of carrying out a well-devised business strategy, other companies would hope to conduct the same business (enter the market).

(2) Profits directly gained from patents

A company can gain profits directly from its patents by licensing or selling them to other companies. No company would hope to conclude a patent license agreement or purchase a patent unless it considers that the exploitation of the patented invention would contribute to its commercial success and would bring the company profits larger than the royalties or purchase price that the company would have to pay for the patent. Therefore, it is important for companies to obtain patents for which other companies would be willing to pay royalties and purchase prices.

From outsiders, some companies seem to forget that they originally pursued the above-mentioned purpose (1) and to start seeing the patent application itself as a goal. For example, some companies file a great

number of patent applications for inventions that would neither give them an advantage over competitors nor exclude competitors even if patented or that do not involve sufficient inventive steps. Those companies prompt other companies to scramble to obtain unnecessary patents and to spend wasteful research and development costs and intellectual property management costs to make unpatentable or useless inventions. Such inefficiency would ultimately go beyond being an issue for just those companies and hinder the development of the Japanese industry as a whole.

Furthermore, it would damage the morale of researchers and intellectual property managers of companies if they are forced, day in and day out, to make inventions seemingly for the sole purpose of filing patent applications and to register those patents. Such a demoralizing work environment would leave them with little time and energy left for their original tasks such as making innovative inventions and strategically managing intellectual property.

4 Strategic public disclosure

A company would greatly suffer if another company obtains an infringing patent because such a patent acquisition would destabilize the business of the company whose patent was infringed. Since the stability of business is the most important issue for companies, it is extremely important to prevent such infringing patent acquisition.

Some companies think that the most effective prevention is mere publication of information on their inventions through such channels as the Journal of Technical Disclosure and actively take such preventive measures based on this understanding. Those companies consider it more effective to disclose invention information as early as possible through such publications as the Journal of Technical Disclosure than to file patent applications in terms of cost, speed, monopoly power, etc., as a means of preventing other companies from obtaining patents.

However, those companies should be aware of the downside of such early disclosure of their invention data. For instance, there is a risk that, if a company decides to file a patent application for an invention that has been disclosed in the Journal of Technical Disclosure, the description presented in the Journal of Technical Disclosure might be cited as a prior art. There is also a risk that a company that has opted for mere publication of its invention data would be considered to have voluntarily and completely renounced its right to patent the invention. They need to take into full consideration the future patent strategy and the value of the invention before choosing the option of mere publication of their invention data.

5 Patent application in other countries -- Global strategy --

Even if a company obtains a patent on an invention in Japan, the patent is not effective in other countries. This means that a competitor may exploit the invention for free outside Japan. To prevent such abuse, the company needs to obtain a patent in other countries as well. However, it would be unrealistic and irrational for companies to file patent applications for all of their inventions in all the countries that have reasonable patent systems. In reality, each company needs to devise an intellectual property strategy to increase the efficiency of overseas patent application through collaborative efforts between the intellectual property department and the operation department.

Each company needs to take the following factors into account to determine which country to file a patent application in:

- (1) The countries where the products produced by use of the patented invention are marketed;
- (2) The countries where the products produced by use of the patented invention will be marketed;
- (3) The countries where the products produced by use of the patented invention are and will be produced by the company;

(4) The countries where the products produced by use of the patented invention are and will be produced by other companies; and

(5) The current and future intellectual property environment of each country.

In reality, many companies file patent applications for inventions in order of the importance of those inventions from the perspective of management strategy including business strategy and research and development strategy. Those companies should be aware that this method of patent application in other countries would end with disclosure of their management strategy to competitors. Indeed, analysis of the overseas patent applications filed by competitors is one of the techniques for identifying the competitors' strategies.

IV Patent Value Lying in Exploitation

1 Exclusion of competitors and prevention of new entrants

In this day and age, no companies can easily retain a dominant position. Their primary goal is to maintain and expand their business in a sustainable manner. A key to achieving this goal is not to lose their competitive edge. Acquisition of a patent, which is a legally approved exclusive right, is an important means of ensuring the patentee's business advantage for many years to come. Furthermore, patents may be used as a useful tool in many ways. One way of exploiting a patent is to take advantage of the exclusivity of the patent to exclude other companies without licensing the patent.

A basic corporate business strategy aims to increase profits by marketing advantageous products that would defeat competitors. In order to make effective use of patent exclusivity, companies need to make advantageous inventions and obtain valid patents thereon.

2 Strategic licensing

In contrast to the companies that take

advantage of the exclusivity of patents, some companies have chosen to actively license patents to other companies. Such licensing is usually conducted by a company as a part of its strategy aimed at (1) Expansion of the market to which its patented technology pertains and (2) Diversification and transfer of risk in commercialization.

(1) Expansion of the market to which its patented technology pertains

If a company takes advantage of the exclusivity of a patent, the company could monopolize the profits from the patented invention. However, such exclusive use of the patented invention prevents the growth of a market for products produced by use of the invented technology. As a result, the invented technology could lose the market to other technologies. Therefore, it is sometimes more profitable to adopt the strategy of expanding the market by licensing the patent as much as possible at a reasonable royalty rate.

(2) Diversification and transfer of risk in commercialization

In recent years, companies have been trying to identify their specialty fields and funnel their management resources into those fields in order to increase the profitability of their business and reduce their business risks. Against this backdrop, it is not necessarily wise for a company to exclusively commercialize every invention made as a result of its research and development activities even if the invention has been patented. It is often the case that, even if a company that has made an invention decides not to commercialize the invention, the invention could be important for the business of other companies. In other words, through a technical alliance or licensing, a company can make effective use of an invention that it has decided not to commercialize. By using this strategy, a company can diversify or transfer the risk in the commercialization of a patented invention, while gaining profits directly from the patent at the same time.

3 High degree of freedom in business

Even if a company obtains a patent related to its business, it does not necessarily mean that its commercial activities (exploitation of the patented invention) do not directly infringe a patent owned by another company. Based on this understanding, some companies use patent acquisition as a means of ensuring a high degree of freedom in business.

This is how it works. If a company does not have a patent useful in the business that the company plans to undertake while another company has such a patent, the “patentless” company is likely to be obliged to pay a certain amount of royalties to the patentee. Even worse, the “patentless” company may be unable to conduct the business entirely. However, the company is left with the option of concluding a cross-license agreement if the company has a patent related to the business of the patentee company. The conclusion of a cross-license agreement would enable each party to avoid the risk of receiving an injunction from the other party and also to use the technologies of the other party in its own business, raising the degree of freedom in business.

Companies should be fully aware that this strategy of ensuring a “high degree of freedom” would work only if such reciprocity exists between two companies, i.e., one company has patents or technologies that the other company hopes to exploit and vice versa.

4 Enhancement of brand value

Sometimes, companies use such words as “invention” or “new technology” to advertise their products for the purpose of giving customers a progressive and preferable image of the products by notifying that the products were produced by use of new technologies. The term “patented product” is also used for the same purpose.

It is important for every company to increase its corporate value in the stock market and the financial markets in order to carry out its business operations smoothly.

As a part of its efforts to achieve this goal, it would be beneficial for the company to publicize an intellectual property report.

In a broad sense, all of these measures taken are brand strategies aimed to enhance the company's reputation.

V Creation of Patent Portfolios

1 Management of intellectual properties by category

Japan is the largest country in the world in terms of the number of patent applications. Some people have pointed out the practical problem that Japanese companies, which have obtained a great number of patents, are so overwhelmed by the huge pile of patents that they are no longer able to manage them appropriately. To improve this situation, some companies classify their patents (including pending applications) roughly into groups. Such classification allows for patent management according to the purposes of patents.

The system, method, and purpose of category-based patent management vary from one company to another. Many companies that have adopted this category-based patent management approach have found this approach very beneficial because it enables them to:

- (1) grasp the relative value of each invention at a glance;
- (2) compare their technical levels with those of other companies;
- (3) identify technologies that they should concentrate their resources on;
- (4) systematically patent inventions in association with both upstream and downstream technologies in connection with basic patents;
- (5) file patent applications for all the necessary technologies related to the core technology;
- (6) determine whether a patent unimportant for them is essential for other companies;
- (7) make effective use of their unexploited patents;
- (8) coordinate the research and development

schedule with the intellectual property acquisition schedule;

- (9) increase the efficiency in their selection and concentration of patents and costs; and
- (10) promote information sharing and communication between their intellectual property department and other departments because information classified by category is manageable and useful as a tool for efficient information sharing.

Even if a company has adopted a category-based intellectual property management system, which seems to be the best system currently available, this would not necessarily prevent the company from filing patent applications as extensively as possible just for the sake of it. Such patent applications irrelevant to the original purpose would swamp the company with too many patents to exploit appropriately, causing an increase in the intellectual property management cost as a result in some cases. It is therefore necessary for companies not to forget the purpose of category-based patent management so that they would not pursue category-based patent management just for the sake of it.

2 Introduction of portfolio management

Intellectual property portfolio management enables each company to manage its intellectual properties in the most efficient manner and to devise an appropriate management strategy to make full use of those properties.

As described above, a company that has adopted a "category-based" intellectual property management system classifies its intellectual properties into categories according to their characteristics in order to manage those properties efficiently. On the other hand, "portfolio" intellectual property management means that these categories are established in such a way that best meets the purpose of "category-based" intellectual property management.

Companies are in different phases in term of the introduction of category-based intellectual property management. Generally,

it progresses through several phases as follows:

(Phases of category-based intellectual property management)

Phase 0: No category-based intellectual property management has been introduced (individual management)

Phase 1: Collection of necessary information (classification)

Phase 2: Analysis of the current status of the company (visualization)

Phase 3: Establishment of patent categories (intellectual property categories) in such a way that best suits the future vision of the company (future vision)

By moving up these management phases, each company can benefit more from the intellectual property category-based (patent category-based) management system. For example, a company can coordinate its intellectual property strategy with business strategy and research and develop strategy, develop new business, and use patents as assets assignable to other companies. It would be effective for a company that plans to introduce the “category-based” intellectual property management system not to start with an advanced phase but with an initial phase with focus on a cost-effective field.

3 Strategic portfolio management

In most cases, a company adopts a “category-based” intellectual property management system in order to maximize profits from its existing business operations by coordinating its intellectual property strategy with its business strategy and research and development strategy. Therefore, the intellectual property categories established for this system have the function of a portfolio designed to increase profits from the business. Creation of such a portfolio should not be a transient endeavor. It is important to periodically review the portfolio to reflect the latest research and development strategy and business strategy. In other words, the role of intellectual property portfolios does not end

upon placement of the relevant products on the market or completion of the relevant research and development activities. Each company needs to continue improving its portfolio as long as it stays in business.

The value of the intellectual property portfolio of a company goes beyond the function of maximizing its existing business. For instance, a company could use its intellectual property portfolio to develop new business or build the portfolio into assets assignable to other companies. This means that companies can create intellectual property portfolios that are independent from their business strategies and research and development strategies. In the end, the portfolios themselves will be considered highly valuable assets

VI Improvement of the System and Environment of Strategic Intellectual Property Management

1 System to promote cooperation among the intellectual property department, the operation department, and the research and development department of a company

Each company needs to establish the intellectual property management system in consideration of its size, type and scope of business, geographical locations of business as well as research and development, number of patent applications, etc.

In the case of a small company with a limited scope of business or a company that files a small number of patent applications, its intellectual property department is usually solely responsible for invention management (centralized management type). The advantage of this type is that the intellectual property department can centrally manage intellectual properties of the operation department and affiliate companies and can devise an intellectual property strategy and manage intellectual properties in line with the company-wide policy.

On the other hand, in the case of a large

company with a broad scope of business, such a company sometimes has an intellectual property department in each operation department (decentralized management type) in an effort to devise and implement appropriate intellectual property strategies in consideration of the business type and strategy of each operation department and of the competition that it faces. The decentralized management type makes it easier for each operation department to manage intellectual property appropriately by facilitating communication between the intellectual property department and each operation department.

The centralized management type and the decentralized management type are opposite in terms of merits and demerits. In order to take advantage of the merits of both types and avoid their demerits as much as possible, it would be a good idea to establish an intellectual property department in the headquarters as well as in each operation department (parallel management type). The downside of the parallel management type would be that this type of system requires a relatively large number of intellectual property personnel.

For appropriate implementation of a strategic intellectual property management system, it is important to take special care in preparing a budget for intellectual property management. The budget may be allotted to either the intellectual property department or the operation department. The advantage of the first case is that the intellectual property department can control intellectual property management and earmark a certain amount of budget for prospective business from a medium- and long-term perspective irrespective of the amount of budget allotted to the operation department. In the latter case, each operation department can earmark a certain amount of budget for its business on its own responsibility.

2 The roles of the CIPO for closer cooperation among three departments

In order for a company to make full use

of intellectual property information to devise its management strategy including research and development strategy and business strategy, it is important to establish a system that allows the intellectual property department not only to provide information but also to advise how to use the information.

In order to establish and maintain effective collaboration among the intellectual property department, research and development department, and operation department, it would be useful to hold regular meetings between the research and development department and the operation department and to promote communication through exchange of such documents as invention proposals and overseas application requests.

For example, the PDCA cycle (plan-do-check-act cycle) is a useful tool for a company to oversee how its intellectual property strategy has been implemented through collaboration among the three departments.

To establish and implement an appropriate corporate management strategy, each company needs to go beyond simply promoting cooperation between the intellectual property department and the research and development department and between the intellectual property department and the operation department. Synergistic collaboration among the three departments would be necessary.

To promote the three-department collaboration, intellectual property managers need to take part in the activities of the research and development department and the operation department as intellectual property experts. At the same time, the research and development department and the operation department need to create an environment where opinions of those intellectual property managers are respected. Furthermore, it would be beneficial for each company to appoint a CIPO (Chief Intellectual Property Officer) to expedite the decision-making process for its intellectual property strategy. A CIPO is expected to play

the following three roles:

- (1) Establishment of a basic policy for an intellectual property strategy and formulation of a management strategy based on the policy;
- (2) Establishment of a detailed intellectual property strategy based on the management strategy; and
- (3) Oversight and supervision of intellectual property-related activities and reporting of the findings to the management.

3 Linkage between an intellectual property strategy and a standardization strategy

With the advancement of economic globalization, companies have stepped up their efforts to standardize their technologies and promote those technologies as the world standard. A standardization strategy has become increasingly important especially for a company that has interests in standardized technologies. Aggressive international standardization activities have been observed not only in Western countries but also in newly industrializing countries including Asian countries. The Japanese government has taken various measures in cooperation with the private sector to intensify strategic international standardization activities.

If a company succeeds in spreading its patented technology as a standardized technology, the company can benefit directly from the patent in the form of license fees. Therefore, each company should coordinate its intellectual property strategy with its research and development strategy in order to increase profits. To implement those strategies in a coordinated manner, each company needs to carry out its research and development activities and patent acquisition in parallel with standardization activities. In this case, it is important for the research and development department and the intellectual property department to work in very close contact with the standardization department.

Needless to say, the standardization strategy and the intellectual property

strategy of a company independently function as important tools to enhance its technology management skill. By implementing the two strategies in a synergistic manner, a company can further strengthen its technology management skill.

4 Development of personnel to promote collaboration among the three departments

The fact that intellectual property such as inventions is made and managed by people suggests that personnel development is important for strategic management of intellectual property. Each company may either develop such personnel on its own or newly employ people who have intellectual property management skills. To promote cooperation among the three departments, intellectual property education needs to be provided not only to the intellectual property department but also to the operation department and the research and development department, and even to the management. Since intellectual property management requires highly specialized knowledge and skills, not all the employees need to gain a high level of expertise. Any company that tries to provide the same intellectual property education to all employees runs the risk of limiting the study subjects to “numbers” such as the number of patent grants and license balance because “numbers” are easy to teach. In order to enhance every employee’s knowledge and skills about intellectual property management, each company needs to provide tailor-made intellectual property programs for each section starting from intellectual property personnel and extending to researchers, engineers, sales personnel, and the management according to the roles required of them.

It would also be beneficial for each company to provide its intellectual property personnel with training programs not only on intellectual property but also on other subjects and to rotate the personnel through different departments in order to educate them about research and development,

operations, and management in addition to intellectual property.

5 Provision of incentive through monetary rewards and official commendations

In order to promote innovative inventions that contribute to sustainable growth, it is important for a company to recognize an employee who has made an excellent invention and reward him/her appropriately. In addition to monetary rewards, a company may provide such incentives as official commendations, promotion, or improvement of the research and development environment to promote further inventions.

According to the results of the survey on companies and other organizations conducted by the JPO in January 2006, most companies and other organizations have established employee invention rules that specify the provision of a monetary reward at the time of patent application, registration, exploitation, licensing, etc.

In some cases, a company makes a strategic decision to protect a developed technology as secret know-how or to publicize the technology instead of filing a patent application for it. In such a case, an internal system to appropriately reward the inventor with a monetary reward or official commendation would help the company choose an option other than a patent application without worrying about discouraging the inventor.

A company can benefit from an invention made by an inventor thanks to many people such as those who are involved in the process of the patent application and registration and in the operation that makes profits out of the patent. Therefore, each company should establish a system of official commendation and monetary reward not only for inventors but also for those people who play important roles in patent exploitation in order to heighten their morale. Such a system would be meaningful from the perspective of fairness among those involved in inventions.

For smooth implementation of a system of monetary reward and official commendation, each company also needs to ensure high transparency of the criteria for choosing award recipients so that every employee can objectively recognize the validity of the choice of award recipients under the system.

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