

Powerful and Overwhelming IP Activities in the Pro-patent Era

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IP (Intellectual Property) activities have been a key to management of Japanese companies facing dramatic pro-patent era. This article introduces recent IP activities at NKK, in which it has three main backbones; “Strategic patent applications”, “Patent Approval activity”, and “Utilizing patent assets”. It is vital for powerful IP activities to carry out these strategies positively and continuously in day-to-day business. Also introduced is NKK’s recent patent cases, representing the symbol of pro-patent era.

1. The shift from the anti-patent to pro-patent policy

In 1985, the Young Report triggered the U.S. government's policy shift from anti-patent to pro-patent, placing more importance on the patent protection. It means the entrance of so called “pro-patent era.” The pro-patent policy was a leading symbol of the Reagan Administration's goal to restore a “strong America” by revitalizing the economy through enforcement of intellectual property rights (see Fig.1) and thus the U.S. entered the pro-patent era.

The spearhead of the pro-patent policy of the U.S. turned to Japan. In 1992, a federal district court ordered

Minolta Co., Ltd. to pay 12 billion yen for patent infringement concerning auto-focus technology. In the same year, another U.S. court ordered Sega Corporation to pay 4.3 billion yen.

In 1997, the Japanese government implemented a policy for the pro-patent era, and revised Article 102 of the Patent Law, which stipulated the amount of damages to be claimed for patent infringement. The revision allowed for large amounts of damages to be claimed, symbolizing “the pro-patent policy” of the Japanese government. Accordingly, amounts for damages claimed rapidly increased to levels where disputes over patents could no longer be solved through negotiations between the concerned parties. In addition, the number of lawsuits sharply increased.

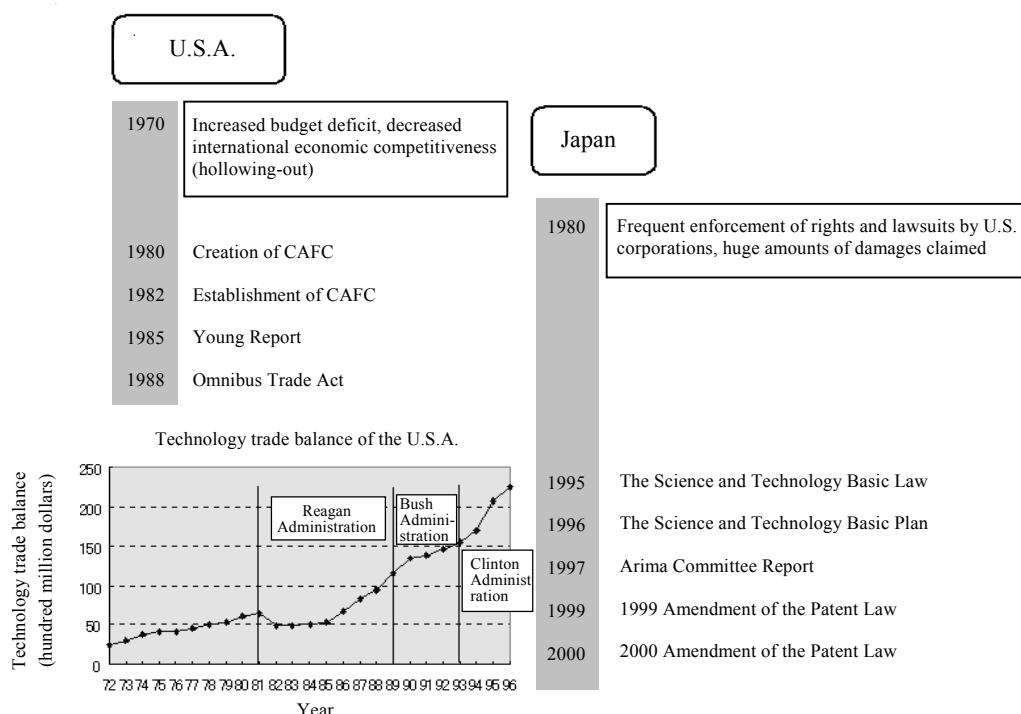


Fig.1 Transition to the pro-patent era

2. Increased patent disputes involving NKK

From around 1995, patent disputes have occurred at a greater frequency between Japanese steel makers. Although most of these disputes were settled through negotiations, one of the disputes between Japanese steel makers was brought before court in May 1999. Kawasaki Steel Corporation filed a lawsuit against Sumitomo Metal Industries, Ltd. at the Tokyo District Court for damages of 9 billion yen (the 13%-chromium seamless tube case). This was the first litigation over patents between Japanese integrated steel makers. In October of the same year, NKK was sued by Nippon Steel Corporation for patent infringement in Tokyo district court (the PZB case).

Article 102 of the Patent Law was revised in 1999; these outbursts of litigation between Japanese steel makers were closely related to this revision of §102. In the PZB case, the amount of damages claimed was as great as 2.8 billion yen for coated steel sheets with annual sales of only 5.2 billion yen.

In addition, from the time the pro-patent policy was declared in 1997, NKK has inevitably been involved in patent disputes with parties in different industrial fields. The number of such disputes has reached several dozen. The company has also been involved in several overseas patent disputes.

3. NKK's Intellectual Property Department

NKK's IP (Intellectual Property) Department, involved in fighting intellectual property wars in the pro-patent era, is a compact organization consisting of 32 members (as of May 2002), integrally stationed on one floor of the office building located in the compound of NKK's Keihin Steelworks.

The IP Department is composed of three groups: the Planning & Administration Group, the Technical Group, and the Licensing Section (see Fig.2). The each groups are organically united and carry out integrated activities. Major IP activities, i.e. "Patent prosecution" and utilizing patent assets, are primarily handled by the Technical Group. In addition, members of the IP Department are closely engaged in the establishment and execution of IP strategies in each cluster of NKK's operating divisions.

NKK's IP Department belongs to the R&D (Research and Development) Division in charge of company-wide R&D activities. The IP Department is therefore in a position where each member can closely observe the activities being carried out in the company for developing various

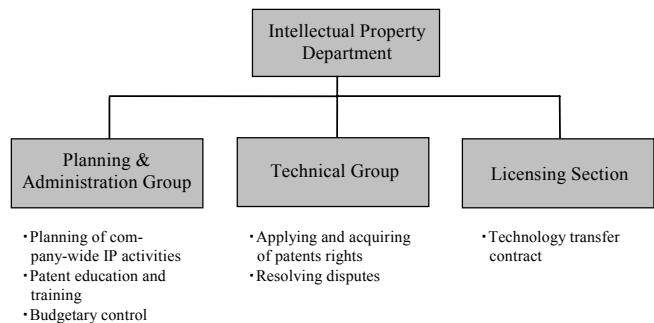


Fig.2 Organization of the Intellectual Property Department

new technologies, and can forecast the future potential of these technologies with keen sensitivity, and support the growth of these technologies into significant intellectual properties. Since many of IP members have experience working in other sections of the R&D Division, they have close relationships with current researchers and development engineers.

The IP Department benefits from highly professional expertise from its members. Some are qualified as patent attorneys. In close cooperation with prominent outside lawyers and patent attorneys, the IP Department can take necessary actions quickly and forcefully in case of disputes.

Moreover, part of the operation of the Department is entrusted to NKK's wholly-owned consulting firm, NK Techno Service Co., Ltd., and the skills of senior members who have rich patent-related expertise are fully utilized.

4. Activity guideline of the Intellectual Property Department

The IP Department emphasizes three types of activities as listed in Fig.3. This activity guideline was adopted in 1994, and has been maintained to date without modification.

1. Strategic patent application
2. Patent approval activity
3. Utilizing patent assets

Fig.3 Activity guideline of the Intellectual Property Department

4.1 Activities for strategic patent application

During the 1970's and 1980's, NKK developed a number of unique technologies. However, sufficient efforts were not exerted in those days for securing the developed technologies in the form of intellectual property rights in

order to prevent imitations by other companies, and thus to increase the business income based on these rights.

One of the reasons for this oversight is that, in the past, responsibility for acquiring patent rights and establishing intellectual properties was assigned to individual engineers and researchers of the company and the procedures were not well-organized.

Taking this into consideration, the IP Department implemented a company-wide campaign in the fall of 1994 for promoting strategic patent application, recognizing that unique technologies developed by NKK should be secured as intellectual properties, and should be used as management resources.

In the early stages of the campaign, activities were carried out in each technological cluster in the company following the procedure shown in **Fig.4**.

Driven by the campaign for strategic patent application, the total number of patent applications made in the field of steel reached 3694 by the end of fiscal 2001, and 1812 in the field of engineering.

As an example, groups of patents applied for regarding the hot-rolling sheet bar heater are shown in **Fig.5**. This newly developed technology is armed with intellectual properties composed of a large number of basic patents, application patents, and satellite patents.

The numbers of campaign themes for promoting strategic patent application in fiscal 2001 were: 27 in the field of steel (iron and steel-making: 7; steel products: 4; steel sheet/coated steel sheet: 16), 23 in the field of engineering (energy: 3; environment: 10; water treatment: 5; others: 5), and 5 in the field of applied technology research. Patent

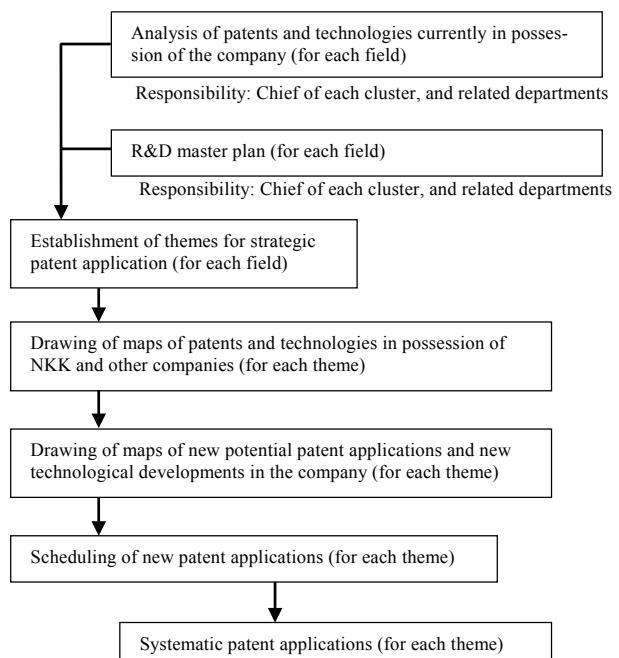


Fig.4 Procedure for promoting strategic patent application

applications submitted based on this campaign accounted for 54% of the total number of patent applications made by the company in the same year.

The patents applied for according to the campaign for strategic patent application are classified into groups based on the themes, and each group of patents is managed separately. This method is called “patent group management”. Each patent application constituting one group is designated as a basic patent, application patent, or peripheral patent so that the procedures for filing requests for examination of the applications and activities for preserving patent rights can be efficiently implemented.

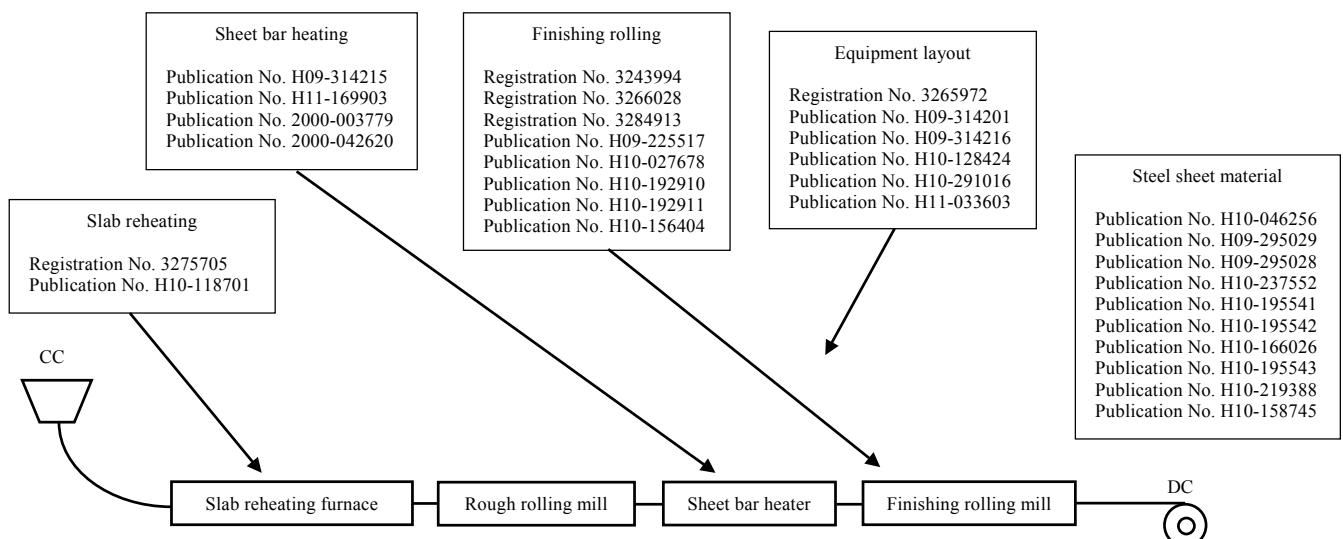


Fig.5 Groups of patents applied for regarding the hot-rolling sheet bar heater

In addition, high-priority patent applications are closely scrutinized by two or more staff members of the IP Department. Thus, various measures are taken for realizing “strong patent management”.

A high-priority application that is granted a patent right is designated as a “gold medal patent” by the IP Department, and notified across the company as NKK’s proprietary strategic technology. Examples include: the waste plastics blast furnace feeding technology, hot-rolling sheet bar heater, the SUPER-OLAC for on-line accelerated cooling of steel plates, the ECOARC electric furnace for continuous melting of steel scrap, the DELTA EYE for automatic detection and marking of steel sheet surface defects, the WING PILE for ground piling with wing-shaped circular plates on the tip, and DME as a new energy source.

The campaign for strategic patent application was implemented eight years ago, and by now has grown to a level schematically shown in **Fig.6**. R&D planning sections, researchers, engineers, and the IP Department are integrated for carrying out technological development that is strategically vital to the company. Recognizing intellectual properties as management resources, the directors are fully involved in this process and is actively using intellectual properties to expand the NKK’s business.



Fig.6 Progress in the campaign for strategic patent application

4.2 Patent approval activities

Intellectual property rights must be valued, and rights obtained by the company must not be infringed by others. Concurrently, NKK respects other company’s IP rights, and shall not infringe them.

In 1996, when Japan was shifting to the pro-patent era, NKK started company-wide activities for ensuring that intellectual property rights of other companies were not mistakenly or inadvertently infringed by the NKK’s business. Even before that time, these activities were carried

out in each technological cluster. However, company-wide organized activities for this purpose started at this time.

These activities were implemented under the name of “activities for patent approval”, and have been continuously carried out to this date. At present, the activities are being routinely conducted for preventing infringement of rights of other companies.

For example, the activities for patent approval carried out in fiscal 1996 are illustrated in **Fig.7**. The upper part of the figure presents the organization for carrying out the activities. The headquarters for these activities is the Sheet and Strip Technology Development Department of the corporate head office. The IP Department, Production Center, and Research Center were integrated for carrying out daily activities under the direction of the Technology Development Department.

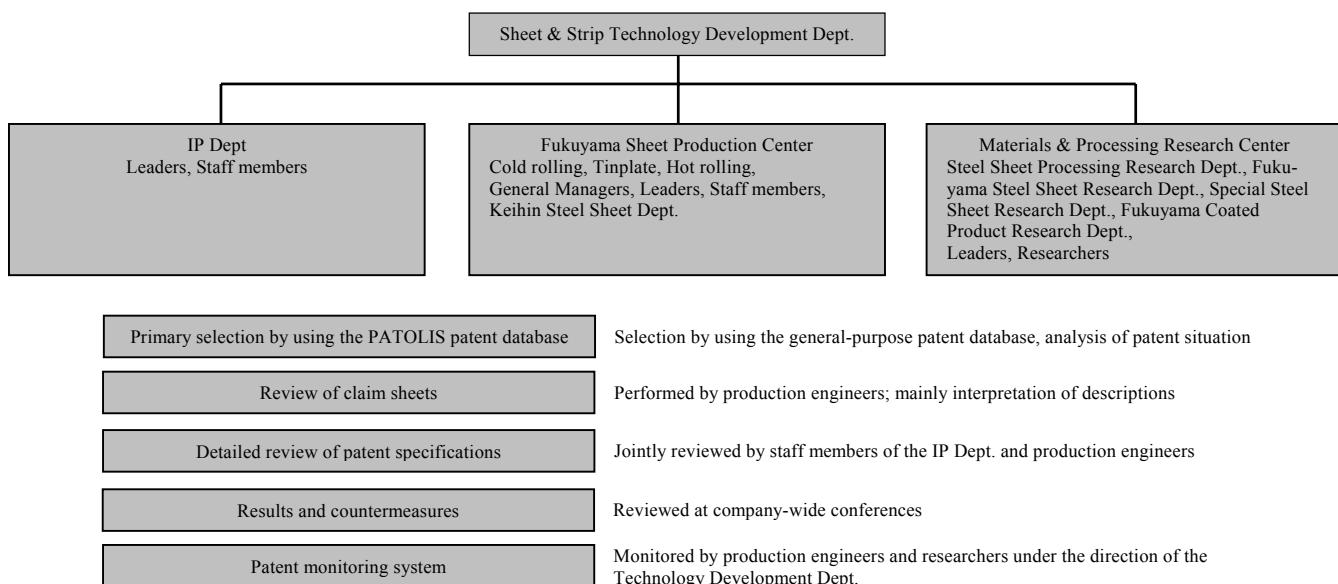
Investigations concerning the possibility of infringement of rights of other companies were primarily carried out by production engineers. Although it was a painful job for individual production engineers to examine whether there was any infringement in the technologies they were using, every technology was thoroughly examined under the direction of headquarters. A major factor behind these activities was the changing situation where huge penalties would be imposed if the rights of others were found to have been infringed.

In practice, these activities had a significant side effect of promoting production engineers’ recognition of the value of intellectual properties as management resources. As a result, a greater number of engineers began to take a positive role in the campaign for strategic patent application, and more patent applications were made for the technologies they developed.

This organization remains active, and registered patents of other companies are regularly reviewed. After the activities for patent approval were incorporated into a routine process, negligent or inadvertent infringement of the rights of other companies has been disappeared, and consequently, unnecessary disputes have been avoided.

4.3 Utilizing patent assets

With the arrival of the pro-patent era, intellectual properties are now being utilized as important management resources. In our company, specifically, the number of patent registrations has rapidly increased as a result of the ongoing campaign for strategic patent application. These intellectual property rights contribute to the protection of NKK’s excellent R&D achievements, which are second to none in the industry.

**Fig.7 Organization of patent approval activities, and an example of reviewing patents of other companies**

Doubts can arise in which a technology being implemented by a certain company might infringe the intellectual property right of our company. In such a case, the policy of NKK IP Department is to deal with the problem with resolve. This is reasonable, based on the original concept of intellectual property laws, which request that intellectual property rights be mutually honored, and allow them to be exclusively utilized as management resources of the patent holders. The level of recognition in this regard significantly influences the intellectual property activities of each company.

With the increasing number of patent rights on important technologies, the income from licensing these rights is increasing. For NKK, technology-related income more than tripled from fiscal 1994, when the campaign for strategic patent application began, to fiscal 2001. The technology-related income is expected to continue to increase in the future. The next target is the overseas market.

5. Patent litigation

The “PZB” case, which occurred in October 1999 between NKK and Nippon Steel Corporation, symbolized the arrival of the pro-patent era. The case attracted heated debate for two years at the Tokyo District Court, and ended with an overwhelming victory for NKK¹⁾. The judgment made in July 2001 has been widely quoted as a case where data obtained by experiments served as strong evidence for proving infringement.

The causes of the victory in this litigation include the strong leadership of the IP Department, the powerful activities of our laboratories, and the ability of the lawyers

and patent attorneys who represented us in this lawsuit. However, the most significant factor was that every company member, ranging from top management to the one in charge of daily activities, was united based on the common recognition that lawful rights must be protected. The strength of our patent management was proved through this case.

In July 2000, the “steel pipe piling” case occurred between NKK and Asahi Kasei Corporation. This case also concluded with victory for NKK. The reason for the court decision²⁾ made at the first trial attracted much press, namely that the patent had clear reasons that made it invalid; therefore the exercise of the right constituted a misuse of the right. Also, the victory was the result of the integrated activities of NKK for protecting its intellectual properties.

NKK is the plaintiff in several litigation cases currently in progress, for we are committed to firmly requesting that our lawful rights be recognized.

6. Conclusion

The Intellectual Property Department of our company has made significant growth in the past ten years. In line with the progress of the pro-patent era, the Intellectual Property Department has strengthened its capability, which will be passed over to the JFE Group.

References

- 1) Tokyo District Court: Judgment; No.21974, 1999 (wa).
- 2) Tokyo District Court: Judgment; No.13799, 2000 (wa).