

# Intellectual Property Department Being Active in “Pro-Patent” Era\*



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## 1 Introduction

It is said that the “pro-patent” policy which strongly respects and protects the right of owners of intellectual properties has significantly contributed to the current development of the economy in the United States of America. In Japan, the same policy has been adopted in the last few years to promote the “swift, strong and wide” protection of intellectual properties through the establishment of systems and laws related to intellectual properties. This is the basis for the 21st century which is said to be the “age of intelligence.” It means a shift from the conventional economy based on material property to the economy based on intangible asset which is represented by intellectual properties.

The policy of pro-patent means that intellectual properties as sources of national wealth are effectively used and promotion of their use as well as their appropriate protection are made purposefully at the national level, as they are at the enterprise level.

Facing such a “pro-patent” era, Kawasaki Steel has promoted the policy of respecting intellectual properties more strongly than before with the intellectual property (IP) division whose center is IP Dept. Though intellectual property consists of patents, utility models, trademarks and designs, the most prominent one is patent. The present paper describes a part of the activities of Kawasaki Steel with respect to intellectual properties,

## Synopsis:

*Activity related to intellectual properties such as patents is done by Intellectual Property Dept. of Kawasaki Steel and Patent & Technical Information Business Div. of Kawasaki Steel Techno-Research Corp. (KTEC). Kawasaki Steel established a system in 1996 that meets all kinds of requirements made in the so called “pro-patent” era. The main focus is on (1) patenting its own technologies, (2) respecting the patents of other companies and (3) effective use of its own patents. The number of patents filed annually increased to reach a maximum of about 2 400 in 1993 and now remains at a level of about 1 300. Most of them are in the field of steel as a matter of course for a steel company. The number of patents granted and maintained in Japan is about 4 400 while it is about 2 800 abroad. The number of patents granted to Kawasaki Steel in the USA is one of the greatest among the steel companies in the world. The income made on the basis of technology began surpassing the expenditure in 1979. The balance between them has increased since then. The annual internal use of patents granted and its benefit have reached about 300 in number and about four billion yen, respectively.*

particularly patents.

## 2 System and Role of the Intellectual Property Division

### 2.1 System

**Figure 1** shows the current system of the IP division. The IP division does the business related to intellectual properties of Kawasaki Steel with IP Dept. placed at its center in cooperation with Patent & Technical Information Business (P&TIB) Div. of Kawasaki Steel Techno-research Corp. (KTEC). IP Dept. focuses intellectual property related strategic management, practical use of intellectual property, contract and dispute, while Patent Management Sec. and Patent Research Gr. of P&TIB Div. of KTEC focus patent application, patent acquisition and patent search for IP Dept.

\* Originally published in *Kawasaki Steel Gihō*, 32(2000)3, 175–178

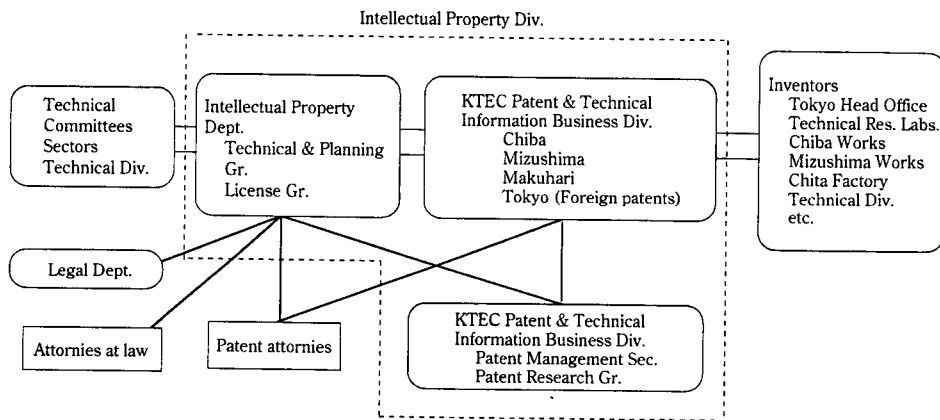


Fig. 1 System of Intellectual Property Division

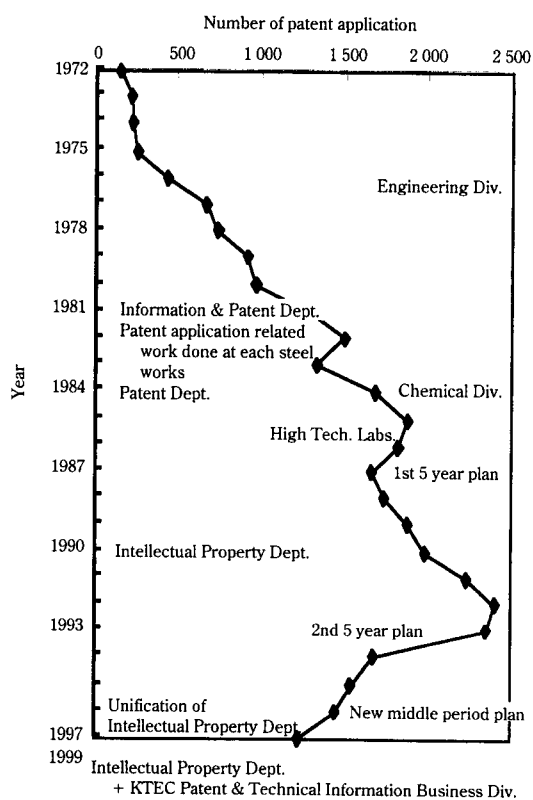


Fig. 2 Changes of Intellectual Property Department and number of patent application

The main changes in the IP division over the past 30 years are shown in Fig. 2 together with that in the number of patent application. They correspond to the change in business of the company, the surroundings and the change in the number of patent applications, which is the main managing subject of the department. The IP division started with the organization of Patent Gr. and Managing Gr. of Technical Examination Sec. of Technology Dept. in Tokyo Office as organizations specializing in patent application and technical contract of the

whole company in 1959 after the foundation of the company in 1950. They steadily developed with the expansion of business and the progress of research and development (R&D) of the company. Since the original Steel Plant Engineering & Construction Div. was organized for licensing the patents and know-hows concerning steel making in 1978, this licensing business was taken over by the division. In 1981 Technical Information & Patent Dept. was organized as an institute specializing in intellectual properties. When a patent managing system for the whole company started operation in 1982, the domestic patent application business was transferred to the steel works of Chiba and Mizushima and Res. Labs. to further promote the patent application as a result of R&D and also give convenience to inventors. Patent Dept. was organized in 1984 as an institute specializing in intellectual properties both in name and in reality, and in 1990 it was renamed Intellectual Property Dept., the current name. At this time, Patent Sec. and Contracting Sec. were abolished to increase the maneuverability of the department. Furthermore, in 1996 the domestic patent application groups belonging to Res. Labs. and Chiba and Mizushima Works became the sections dispatched from IP Dept. to do the whole intellectual property related business of the company. Since January of 1999, however, the business of domestic and foreign patent application and some other patent application related businesses have been entrusted from IP Dept. to P&TIB Div. of KTEC.

As described above, the IP division of Kawasaki Steel in fact established the system in 1996 which could adequately meet the so-called "pro-patent" era.

## 2.2 Role

The IP division in the pro-patent era includes as its role the activity of swiftly acquiring patents which will not be invalidated and are difficult for other companies to evade, and also has made various systems for studying the patents of other companies not only at the time of patent application but also in the stages of planning

and promotion of R&D, the manufacturing process of the developed technology, and business.

### 2.2.1 Acquisition of patents from our own technology

A strategic support for patent application is made under what is called "patent prioritized theme" program. Under the program, from the stand point of the whole company, it selects in each fiscal year especially important R&D themes from the view point of patents and gives them priorities for managing not only the number of patent application, but also the content of the patent particularly from the view point of business strategy. Those patents produced from these themes often become candidates for foreign patent application, since those themes often create technologies to be licensed domestically and internationally and also products to be sold.

The patent specification should be made with its future use in mind. For that purpose, an active contribution of specialists of intellectual property in making the patent specification is very important. The IP division is doing everyday work through close information exchange and communication between the specialists of the division and the inventors. When patents are produced from important R&D, a patent map which is made from an intense study of the patents already applied by our own and other companies is used to apply patents without any omission. It is effective in applying patents and also in respecting the patents of other companies. When the patents are applied, the acquisition of basic patents and not a single but a group of patents is promoted for an important technology. From this view point, the contribution of patent specialists working in cooperation with inventors is important.

Furthermore to meet the requirement of patent laws and also to promote the inventing activity of inventors such as researchers and engineers, monetary compensation is made to the inventor at each application and registration of patent. In the case that a patent is actually used inside or outside the company, a compensation is made to the inventor depending on the degree of his or her contribution. When a patent is made on the basis of an invention, the time schedule is strictly managed to acquire the patent in the shortest time period.

An online patent managing system which consists of four systems for reception of application, domestic patent application, foreign patent application and watching patents of other companies has been established for patenting technologies. It can do all the procedures from the reception of application to the lapse of patent correctly and without delay according to the law and the rules of the company.

### 2.2.2 Respect of patents of other companies

If an investment into large scale facilities or the result of R&D cannot be materialized because of the existence of patents of other companies, it may lead to a

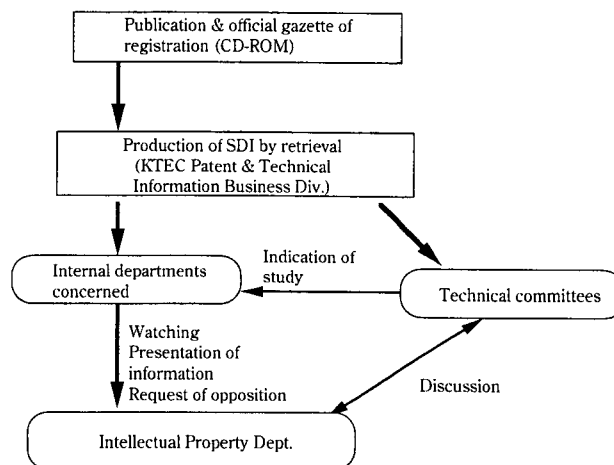


Fig. 3 System of watching publication of patent application and registered patents of other companies

crisis for business activity. It is necessary, therefore, to study the patents of other companies beforehand to respect them and avoid infringing them. The "PKY activity" which means a beforehand caution of patents started with such a background. In this activity the search of patents is carried out by Patent Research Gr. of P&TIB Div. of KTEC whenever necessary. When the technology to be used in the near future is found to be included in that claimed by a patent of another company, it becomes necessary either to get licensed, to develop a different technology to avoid infringement, or to request opposition. The necessary actions such as judgment of patent based on expert opinion, licensing agreement and request for opposition are taken under the leadership of IP Dept. with the cooperation of researchers, engineers and whoever else is concerned.

For daily watching of patents of other companies, the system illustrated in Fig. 3 has been established. In this system, publication and official gazette of registration are routinely distributed to the section concerned and any problem found is reported to the IP division. If a request for opposition was not successful, a reexamination of the technology in use and thorough measures for keeping the technology in use, or to be used, away from the patents in concern are required. Since the 1998 and 1999 revisions of the patent laws were made from the view point of protection of patentees, which reflect the "pro-patent" era, watching patents of other companies has become much more important than before.

### 2.2.3 Effective use of our own patents

With an understanding that the patent is a business resource, the actions of not only securing the technology used in the company in the shape of patent as was being done before, but also stopping other companies from using our technology and licensing it if necessary to

acquire profit are taken.

In the effective use of our own patents, it is important to raise the sensitivity of each person to the infringement of our patents made by other companies and also to do technical examination based on information on infringement. The activity for these purposes includes a reward as an incentive given to the finder of the infringement of our patents made by other companies, and the one given to the inventor of the patent concerned.

The merely defensive patents, which are not effective at the present or in the future for sale of products, sale of technical know-how, licensing or other use in business, often lead to the payment of maintenance fees alone. Therefore, not the mere number of patents but the maintenance of those patents which can be effectively used is important. From such a view point, an examination of the necessity of maintaining each patent is made routinely to abandon an unnecessary one before its expiration time.

### 3 Acquisition of Intellectual Properties

Figure 2 shows the change in the number of domestic patent applications since 1972. Patent application, which had increased in number since 1969, which was one year after Res. Labs. were united in Chiba, showed a clear tendency of increase in number, reaching a peak of about 2 400 in 1993. Though High-Technology Res. Labs. were established in 1985 to do R&D in the fields of new materials, chemistry and LSI, the increase in number of patent applications was mainly made in the field of steel. Since then, the patent application has gradually decreased in number to reflect the rise of application fee and maintenance fee and the decrease of the number of inventors. The annual application number is about 1 300 in these few years.

Figure 4 shows the domestic patent applications in different technical fields made between 1993 and 1997. As a matter of course for a steel company, most applications were made in the fields of steel products and their production, though the applications in the field of LSI and chemistry combined made up about 10% of the total.

Figure 5 shows the change in the number of domestic and foreign patents, domestic utility models and domestic designs which have been retained in recent years. The domestic patents retained, total foreign patents, domestic utility models and designs are about 4 400, 2 800, 450 and 80, respectively. The number of these intellectual properties is kept so low that only the properties that have the possibility of effective use are maintained. Most of the applications to foreign countries are made to the United States, while the number to Asian countries is still small. Since systems of intellectual property are being established in Asian countries, however, application will increase from now on with the development of business.

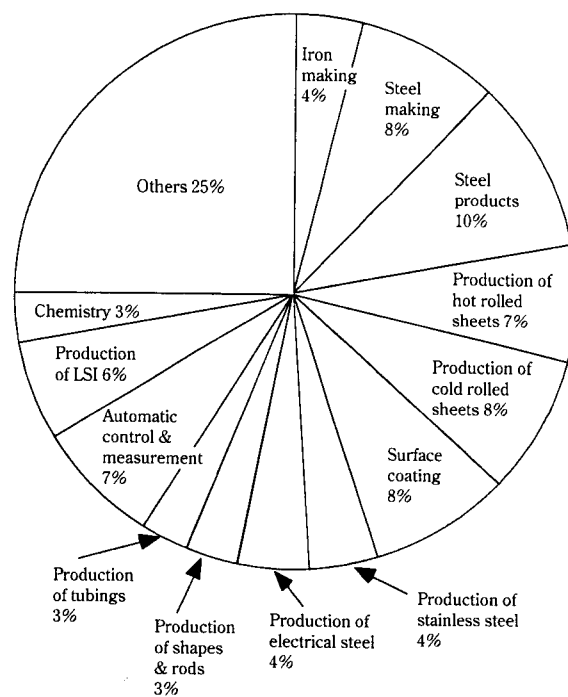


Fig. 4 Patent application in different technical fields (1993-1997 years)

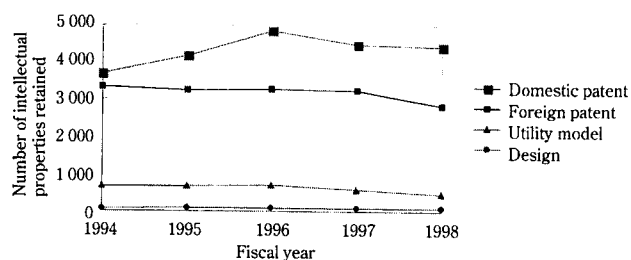


Fig. 5 Change in number of intellectual properties retained

Figure 6 shows the relation between the number of US patents registered and the amount of crude steel production in 1997 for steel companies in the world. The patents held by Japanese steel companies are significantly higher than by others. The number for Kawasaki Steel is quite high if its amount of steel production is taken into account, indicating that technology development and the acquisition of patents as a result are emphasized.

### 4 Contribution of Intellectual Properties to Business

The income, expenditure and their balance related to technologies for Kawasaki Steel is shown in Fig. 7. The balance has steadily increased since it went into the black in 1979. The income is the sum of that made by licensing managed by IP Dept. and that made in the

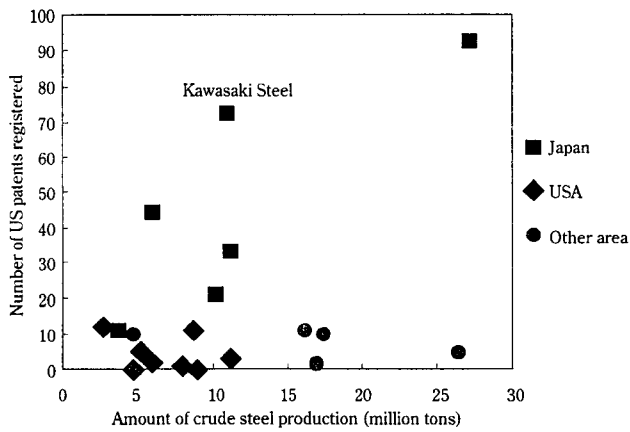


Fig. 6 Relation between number of US patents registered and amount of crude steel production

form of contracts for patents and know-how. That is, the income made through the contracts of IP Dept. is almost a quarter of the total amount. The expenditure due to technology introduction, on the other hand, consists of not only steel related introduction but also LSI and environmental business related ones. The latter occupies almost all the expenditure recently. In the negotiation for introducing technologies, it is very important to have good patents of our own, which contribute to the reduction of payment through the cross license with the counterpart.

The technology developed by R&D and patented is firstly used inside the company. **Figure 8** shows the change in number of patents used internally. The number of patents used internally is 200 to 300 annually, which corresponds to about 25% of the total. The benefit coming from the technologies covered by those patents ranges from 3 to 4 billion yens even if the patents which raise the benefit of less than a hundred million yens and consist of more than 60% of the total are omitted.

## 5 Future Prospects

As the recognition of "pro-patent" spreads, more people have become aware of the importance of intellectual

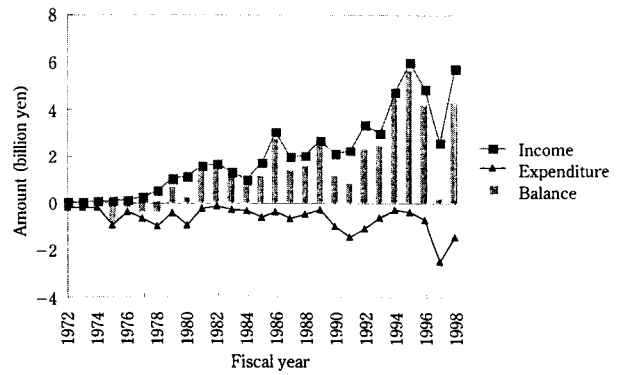


Fig. 7 Income, expenditure and their balance related to technologies

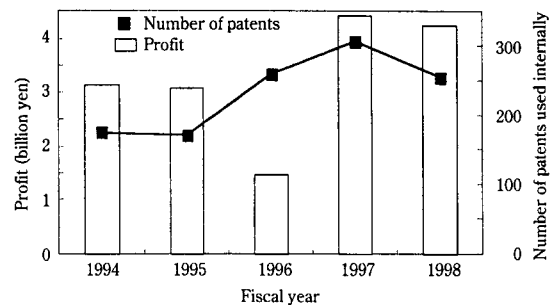


Fig. 8 Number of patents used internally and their profit

properties, particularly patents, even in the field of steel, resulting in the increase in the number of disputes. This comes from the recognition that intellectual property has a significant meaning as a business resource. Therefore, R&D which aims at the development of new technologies meaningfully different from their counterpart is very important. To do so, it is very important again to select R&D themes which produce strong intellectual properties and also to acquire strong patents covering wide technologies swiftly. A system for this purpose has been established. It is expected to strongly carry out the intellectual property acquisition in the cooperation of inventors and members of IP Dept. like two wheels on an axle, and the effective use of them.