

IV. Intellectual Property

1. Basic Policy of IP Strategy

Based on the vision of “Creating IP Added Value,” the Intellectual Property Group aims to contribute to the enhancement of Hitachi’s corporate value. To achieve that, the Intellectual Property Group supports business strategies from an IP standpoint with fundamental missions such as “building a world-class patent portfolio” and “strategic IP use.”

2. Building a World-class Patent Portfolio

2.1 Globalization

To support the Hitachi Group’s globalization efforts from IP aspects, Hitachi promotes building a world-class patent portfolio. As one of the measures, Hitachi is currently pursuing a patent application filing plan under which the total number of overseas applications filed by the Hitachi Group surpasses that of domestic applications by FY2010, Hitachi’s 100th anniversary. (See Fig. 4.1). Toward FY2010, Hitachi is promoting more applications overseas, especially in the US, Europe, and China, while at the same time increasing applications in India.

Countries where applications should be filed are flexibly decided by each business segment depending on the target market of each business segment.

2.2 Group Synergies

In 2006, Hitachi adopted a corporate strategy to promote “Collaborative Creation and Profits.” This corporate strategy clarifies that Hitachi will utilize various management resources within the group, create value from synergies between businesses, and improve earnings based on operational synergies. As one of the measures, Hitachi has established the Hitachi Group patent pool system.

The patent pool system provides a scheme to integrally manage creating inventions, applying for patents, and exploiting patents that relate to cross-group technologies. For example, finger vein authentication technology is one of the pooled technologies. This technology has a wide range of applications, including log-in authentication for computers, authentication for ATM machines, and key-like functions for cars. Accordingly, the related inventions are developed in various business fields across the Hitachi Group, and Hitachi integrally manages the finger vein authentication technology under the patent pool system.

For the invention of finger vein authentication technology (Japan Patent No. 3,770,241), Hitachi won the Award of the Minister of Education, Culture, Sports, Science and Technology and the Invention Practicing Achievement Prize at the 2007 National

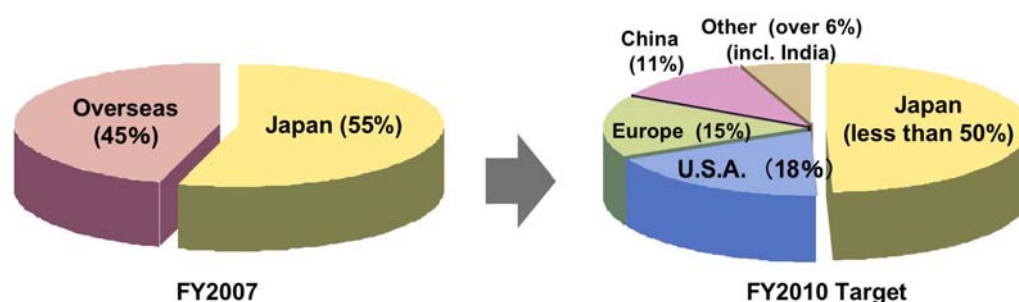


Fig. 4.1 Hitachi Group Domestic/Overseas Patent Applications

Commendation for Invention hosted by Japan Institute of Invention and Innovation (JIII). Those awards are intended to contribute to the advancement of science and technology, and development of the industry, by recognizing and commending those who made inventions, devices, and designs in Japan, and those who made a great achievement in utilizing and encouraging inventions.

2.3 Current Patent Portfolio

According to the Patent Power ranking published in the November 2007 issue of IEEE Spectrum, Hitachi ranks at the top of companies worldwide in the electronics group.

As for US issued patents in 2007, the Hitachi Group ranks third, achieving the same ranking as in 2006 (See Fig. 4.2*) (according to Hitachi's survey). Hitachi aims to also achieve a high ranking in 2008.

Fig. 4.3* shows the number of laid open patent applications in Japan and issued patents in the US in 2007, as well as their breakdown by business segment. The ratio is basically the same as last year.

* Fig. 4.3 is based on data collected by Hitachi using commercial patent databases. See reference 1 for the list of companies included as Hitachi Group companies. Part of data used in Fig. 4.3 may be cumulative because some patents are jointly filed by Hitachi, Ltd. and Hitachi Group companies.

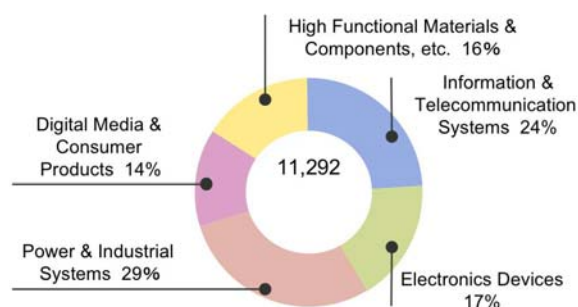


Fig. 4.3(a) 2007 Hitachi Group laid open patent applications in Japan

Company Gr.	US Patents (rank)	Rank in 2006
Samsung	3,263 (1st)	2nd
IBM	3,151 (2nd)	1st
Hitachi	2,302 (3rd)	3rd
Matsushita	2,181 (4th)	4th
Canon	2,019 (6th)	5th

Fig. 4.2 U.S. issued Patent in 2007

* Fig. 4.2 is based on data collected by Hitachi using commercial patent databases. See reference 1 for the list of companies included as Hitachi Group companies.

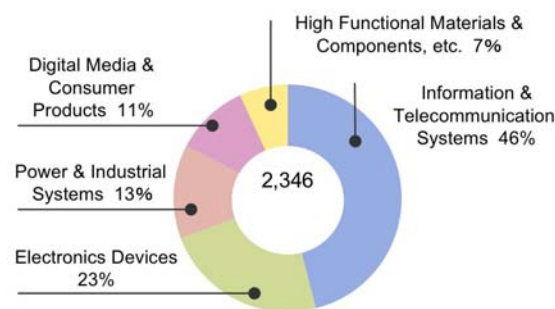


Fig. 4.3(b) 2007 Hitachi Group issued patent in the US

2.4 Selection and Focus

To build a world-class patent portfolio, Hitachi emphasizes on not only the number of patent applications and registrations but also their quality. As concrete measures, with respect to selected focus themes, the Flagship (FS) patent activities encourage creating inventions relating to Hitachi Group's advantageous technology and differentiated technology. Additionally, the Patent Portfolio Management (PPM) activities promote obtaining patents related to advantageous and differentiated technologies in Japan and overseas for the selected focus themes to build a competitive patent portfolio. Under PPM, targets are set for each theme based on market information and patent bench mark information, and so on. Later, whether targets are achieved is assessed, and the result is then used to review the targets and strategies. See Fig. 4.4 for examples of themes.

In 2007, the Hitachi Group, to promote environmental preservation and realize a sustainable society, has drafted the long-term plan "Environmental Vision 2025," under which the Group is determined to curb CO₂ emissions associated with its products by 100 million tons in FY2025. As illustrated in Fig. 4.4, Hitachi regards environmentally friendly technologies as one of the priority themes in the IP field as well, and aims to create an internationally competitive patent portfolio for such technologies that include, for instance, efficiency-enhanced gas/steam turbines and CO₂ collection technologies.

— Examples FS and PPM themes —	
Themes	Business Segment
Storage systems (SAN/ NAS solution)	Information & Telecommunication Systems
Next Generation Network (NGN)	Information & Telecommunication Systems
Electric power-train systems (Motors used in Hybrid vehicle)	Power & Industrial Systems
Eco-friendly technology (Gas/Steam turbine, etc.)	Power & Industrial Systems

Fig.4.4 Examples of FS and PPM themes

3. Strategic IP Exploitation

3.1. Methods of IP exploitation

To analyze the best strategy of IP exploitation in each business segment, the Intellectual Property Group has categorized various IP exploitations into four categories: silent pressure, cross licensing, patent royalty income, and strategic exploitation.

Silent pressure refers to the effect on competitors that is comparable to having actual cross license agreements, and that effect is generated by keeping Hitachi's patent position equivalent to that of its competitors.

Cross licensing refers to the cross license agreements between Hitachi and a competitor, a company in different industries, a component manufacturer, or a customer, which gives Hitachi more freedom in its business.

Patent royalty income means to obtain revenue to contribute to Hitachi's corporate earnings, by licensing patents to third parties.

Strategic exploitation means measures such as exclusive use (including limited licensing to strategic partners), branding of technologies, standardization, and sales supports.

Fig. 4.5 conceptually shows changes in Hitachi's IP exploitation activities. In the 1970's, Hitachi used its patents basically for silent pressure and cross licensing. In the early 1980's, patent royalty income began to increase, and the difference between Hitachi's income and expenditures related to technology license moved into the black in 1985.

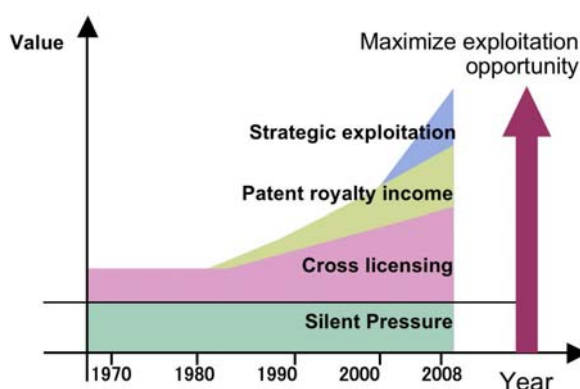


Fig. 4.5 Diversification of exploitation activity

Hitachi also actively pursues global IP licensing activities. The percentage of overseas patent royalty income* has increased to 71% in FY2007, compared to 35% in FY2000. (See Fig. 4.6)

* Patent royalty income includes those from Hitachi, Ltd. and some Group companies.

In recent years, Hitachi has made efforts not only to simply increase patent royalty income but also promote strategic IP exploitation to maximize opportunities for IP exploitation, and use IP to contribute to business segments in a more diversified way.

3.2 Strategic Exploitation

Some examples of strategic exploitation are introduced below.

3.2.1 Exclusive Use

This means a patented technology is exclusively used by Hitachi, taking advantage of the exclusive nature of a patent. Limited licensing to strategic partners also falls in this category. In the field of railcar, for instance, Hitachi has an international patent portfolio containing hundreds of patents relating to Friction Stir Welding (FSW)*, and Hitachi exclusively uses the technology. As of June 2007, more than 1,300 railcars using FSW technology have been ordered from Hitachi.

* FSW: A welding technology using frictional heat, which allows distortionless welding.

3.2.2 Sales Support

Hitachi promotes its advantageous status in technology and patents to assist product sales, by publicizing that the applicable product is protected by Hitachi patents on websites, in newspapers, and in publications to customers (such as brochures and proposals). Hitachi's secure client PC and heavy electric machinery are examples of these promoted products.

3.3 Collaborative Creation Using External Resources

Consistent with Hitachi's corporate strategy, collaborative creation is encouraged in the IP field as well. The followings are a few examples of collaborative creation.

For instance, The Welding Institute (TWI) in the UK owns certain fundamental patents of FSW technology. Hitachi acquired a non-exclusive license under two of those patents from TWI, and customized the FSW technology for railcars. Building on that, Hitachi has established a substantial patent portfolio of hundreds of Japanese and overseas patents directed to the customized FSW technology.

Standardization and patent pool can also be regarded as an example of collaborative creation. By providing Hitachi's own technologies to standardization organizations to combine with others' technologies and promote further development, collaborative creation based on internal and external resources are achieved. Patents that are essential for a standard are submitted to the standard's patent pool for licensing

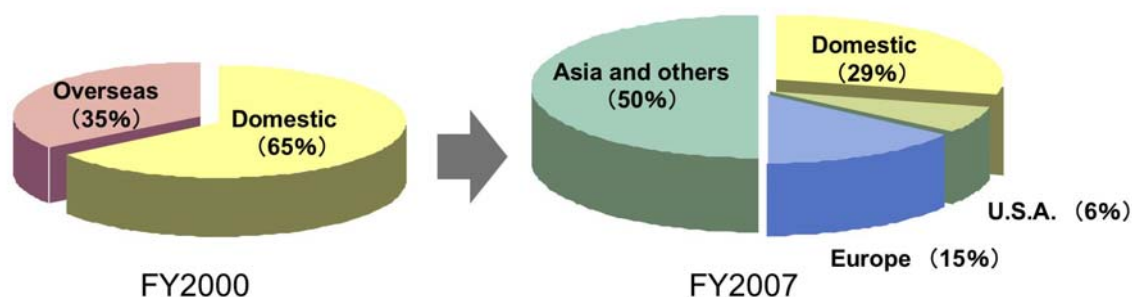


Fig.4.6 Domestic and overseas royalty income breakdown

to facilitate wide adoption of the standard. Fig. 4.7 shows major standardization activities that the Hitachi Group took part in.

4. Invention Reward System

4.1 Overview

In April 2005, Hitachi revised its invention reward system in line with the amendment of Article 35 of Japan Patent Law (effective in April 2005). Inventors now receive rewards at various stages in a patent's lifecycle, that is, the application filing stage, the registration stage, and the utilization stage, at the last of which the patent's utilization is evaluated based on the status of the internal use or licensing out of the patented invention. The revised system especially improves the reward at the utilization stage. Hitachi will further review and revise the system on a regular basis.

4.2 Invention Reward Committee

To improve transparency and inventor satisfaction of the reward system, including reward amount, Hitachi established the "Invention Reward Committee" to hear inventors' opinions and to respond to any concerns.

4.3 Invention Information System

Hitachi's "Invention Information System" aims to encourage invention by promoting communication between inventors and the business divisions that utilize patents. Using this system, inventors can

report online how patents relating to their inventions are used by Hitachi or non-Hitachi companies.

Inventors can also inspect online how the rewards they received at the exploitation stage were computed.

Through appropriate implementation of the Invention Information System, Hitachi will further encourage employees who work in the forefront of R&D activities to create more inventions and patents that contribute to Hitachi's business.

5. Trade Secret Management

The Hitachi Group has always actively managed its trade secret (especially technology information). It adopted the "Hitachi Trade Secret Management Regulations," the "Rules for Handling Other Company's Trade Secret," and other measures after amendments to Japan's Unfair Competition Prevention Law in 1990 that required further protection of trade secret. Hitachi also upgraded its corporate regulations and management system to meet the challenges of the digital and networked information environment. Recently Hitachi reinforced its preparedness to any inadvertent leaks of technology information (one form of trade secret) due to, for instance, the increased mobilization of human resources and technology transfer to China and other countries. Also, to ensure information security, Hitachi provides employees with e-learning and other training programs and thin client PCs. By these measures, Hitachi reinforces the trade secret protection.

Standardization Technique	Standardization Group	Patent Pool Management Organization
MPEG-2, 4 (Image compression technique)	ISO	MPEG LA
DVD-6C (Optical disks)	DVD forum	DVD-6C license agent
Blue-Ray (Optical disks)	Blue-Ray Disc Association	TBD
IEEE-1394 (Digital broadcasting)	IEEE	MPEG LA
ARIB (Digital broadcasting)	ARIB	ULDAGE

Fig. 4.7 Major Standardizations that Hitachi Participated In