KONICA MINOLTA

Intellectual Property Report

2014

Giving Shape to Ideas

Intellectual Property Report 2014

(April 2013 to March 2014)

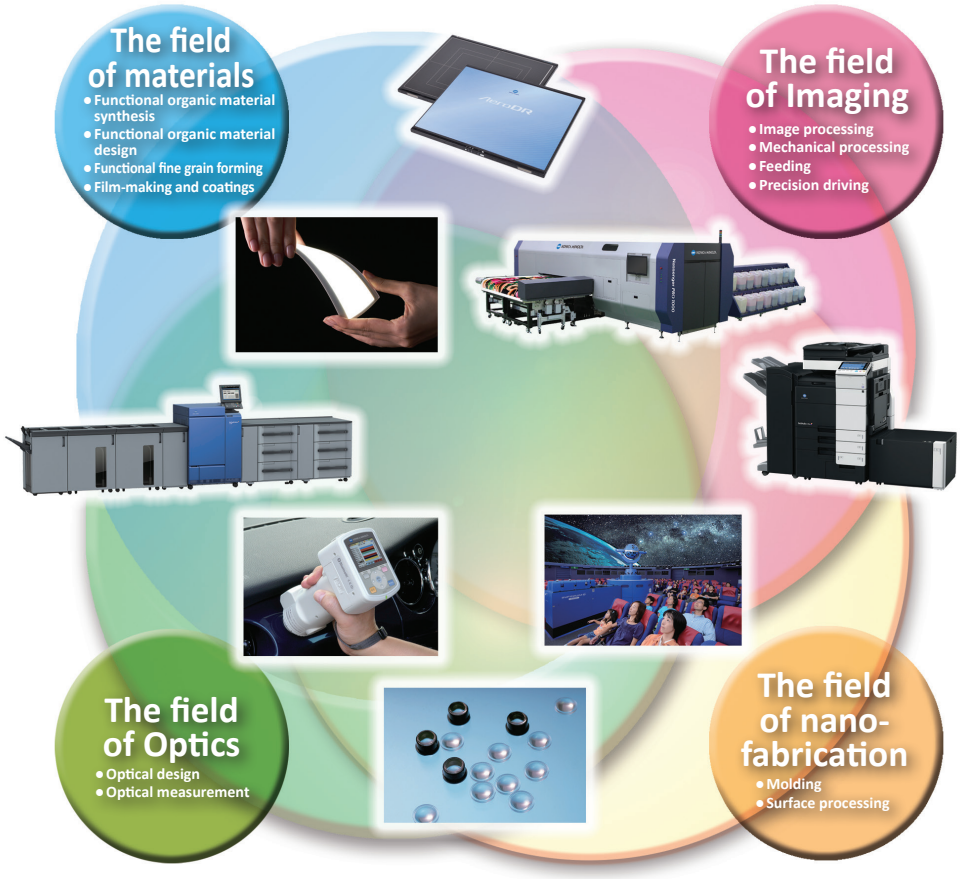
July 2014
KONICA MINOLTA, INC.

Under our management philosophy, "The Creation of New Value," Konica Minolta, Inc.*1 ("Konica Minolta") has developed businesses with the aim of achieving sustainable profit growth, becoming a customer-oriented company, and establishing firm corporate foundations. To support our business activities from the perspective of intellectual property, we have positioned our intellectual property strategy as one of three key management strategies together with business and technology strategies.
This document describes Konica Minolta's activities in the field of intellectual property in fiscal 2013.

1. Core Technologies and Business Model

For an extended period of some 140 years since its foundation, Konica Minolta has provided attractive products such as photographic films and cameras as well as multifunction peripherals (MFP) and X-ray imaging equipment developed based on the technologies that it has acquired. Through the continuous development of technology relating to these products, Konica Minolta has come to possess various core technologies*2 in four fields: materials, optics, nano-fabrication, and imaging. By capitalizing on and integrating these core technologies, Konica Minolta pursues further enhancement of product functions and the creation of new business.

Four Technology Fields and Core Technologies



One example of these efforts is the emulsion polymerized toner we have developed to replace conventional pulverized toners, which has been realized by leveraging our chemical materials technology acquired through the development of photographic films to develop toner used for MFP. Compared to pulverized toner, emulsion polymerized toner has smaller and more uniform particles, which make possible high-quality images. They also conduct heat more efficiently and are more soluble than pulverized toner particles, enabling fusing to

*1 For a company overview, visit our website: http://www.konicaminolta.com/about/corporate/outline.html
*2 For detailed information of our core technologies, visit our website: http://www.konicaminolta.com/about/investors/why/index.html

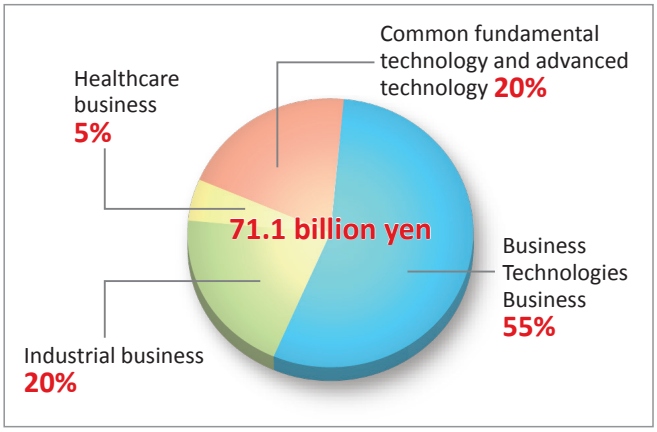
paper and other media at a lower temperature. As such, emulsion polymerized toner contributes to power savings when using MFP.
In the X-ray imaging equipment field, Konica Minolta developed equipment that employs digital radiography (DR) imaging, which directly forms an image from X-rays on a sensor panel that takes the place of conventional X-ray photographic film. This was made possible through the use and integration of the chemical materials technology and image processing technology mentioned above.
In this way, Konica Minolta is using its various core technologies acquired through the development of products for the Creation of New Value that we seek.

2. Research and Development Segment and R&D Cost

The core technologies mentioned above support four business and technology fields (the Business Technologies Business, Industrial Business, Healthcare Business, and common fundamental technology and advanced technology), and Konica Minolta conducts aggressive R&D in these areas. Konica Minolta's R&D costs in fiscal 2013 were 71.1 billion yen, making it the fourth consecutive year in which investment exceeded 70 billion yen.

The breakdown in investment in each business field is shown in the graph to the right. R&D expenditures were highest in the Business Technologies Business, our leading business segment, accounting for more than 50% of the total. In areas other than the Business Technologies Business, R&D expenditures increased in the Industrial Business segment for organic light-emitting diode (OLED) lighting and functional films and in the Healthcare Business for diagnostic ultrasound systems and other applications, which are positioned as growth businesses. Compared to the previous fiscal year, R&D expenditures on OLED lighting and functional films were up approximately 5%, and expenditures in the Healthcare Business increased by approximately 40%.

Percentage of R&D expenditures

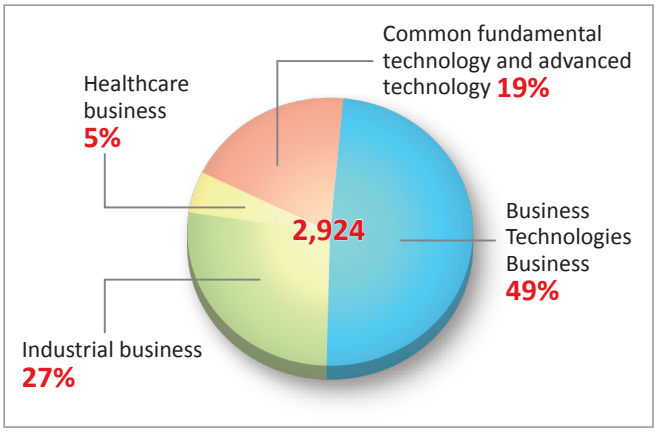


3. Outline of Intellectual Property Activities

(1) Status of Patent Applications, Securing Intellectual Property Rights, and Patent Portfolio

The number of published Japanese patent applications filed by Konica Minolta in fiscal 2013 was 2,924. A breakdown indicates that the Business Technologies Business accounted for approximately half of the applications. Numerous applications were filed in the Industrial Business field, particularly with regard to OLED lighting, accounting for 27% of the total.
Overseas sales account for more than 70% of Konica Minolta's net sales, and we have numerous overseas sites and production sites. Konica Minolta actively submits applications and secures intellectual property rights worldwide to cover important markets and production countries to support its business activities with intellectual property. Specifically, we continue to conduct aggressive patent application activities and securing our intellectual property rights in the United States, a key market, while in China, an important market and production country, we are reinforcing patent applications and measures to secure intellectual property rights.
As a result, the number of patent registrations and patents held in each country is rising steadily. Konica Minolta registered 2,108 patents in Japan in fiscal 2013. This figure is approximately 1.5 times greater than the number of registrations

Number of published Japanese patent applications

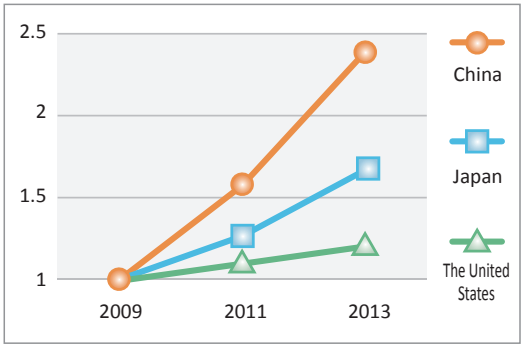


in fiscal 2009. Based on information from the "Patent Office Annual Report 2013 Edition" issued by the Japan Patent Office, Konica Minolta's rank in fiscal 2013 was 16th, the same as in fiscal 2012. As of the end of fiscal 2013, Konica Minolta held 11,831 patents, an increase of 1.7 times compared to fiscal 2009 (see graph at top right).

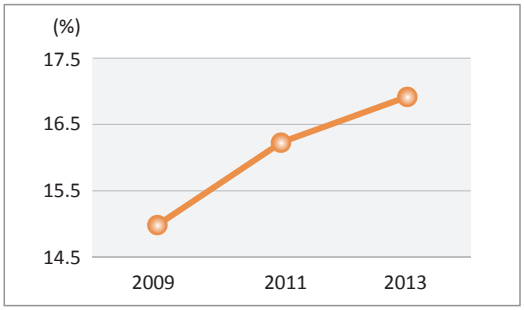
In addition, Konica Minolta had 680 patent registrations in the United States in fiscal 2013, approximately 1.5 times the number in fiscal 2009, ranking 19th[*3] among Japanese companies. The number of patents held at the end of fiscal 2013 was 1.2 times higher than in fiscal 2009 (see graph at top right). Furthermore, Konica Minolta registered 145 patents registrations in China in fiscal 2013, which is 1.2 times higher than in fiscal 2009. The number of patents held in China as of the end of fiscal 2013 was 687, up approximately 2.5 times from fiscal 2009 (see graph at top right), a substantial increase that is the result of our efforts to secure intellectual property rights.

Konica Minolta also makes use of the Patent Cooperation Treaty (PCT) to select suitable countries for filing patent applications in fields undergoing rapid changes in the business environment, which enables us to carefully observe technological trends and patentability during the period until the transition to application in each country. As shown in the chart to the lower right, the percentage of the published international PCT applications in Konica Minolta's published Japanese patent applications has increased to approximately 17% in fiscal 2013 from 15% in fiscal 2009.

Change in the number of patent rights held in Japan, the U.S. and China.
(based on the number in fiscal 2009 as 1.00)



Percentage of the number of published international PCT applications

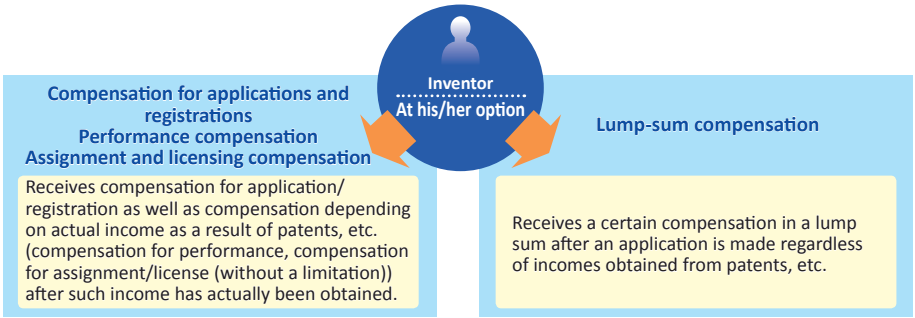


(2) Compensation and Reward for Industrial Property Rights

Konica Minolta has established and operates internal regulations for compensation and reward for industrial property rights, with the aim of inspiring our employees' inventive ideas and promoting aggressive applications for patent, etc. Application and registration compensation is paid to employees who create an invention or design at the time of application and registration. In addition, compensation for performance is paid for employee contributions to Konica Minolta products, and assignment and license compensation is paid based on actual income obtained as a result of assignment or a license granted to a third party. Due consideration is always paid with regard to the amounts of such compensation to ensure that they serve as incentives for employees. For example, the prior limit on the total amount of compensation paid based on license income was eliminated and a system that pays compensation according to license income was instituted.

Also, a system that offers employees a wider range of options concerning the method of payment of compensation was adopted. In addition to a typical method of payment used by many companies that provides payments when an application or registration is filed or when a contribution to the company's products is made, Konica Minolta also offers a lump sum payment at the time of application. Employees are free to select either method of payment of compensation.

Summary of the compensation system



*3 The rank is estimated from the data in Intellectual Property Owners Association (Top 300 Patent Owners).

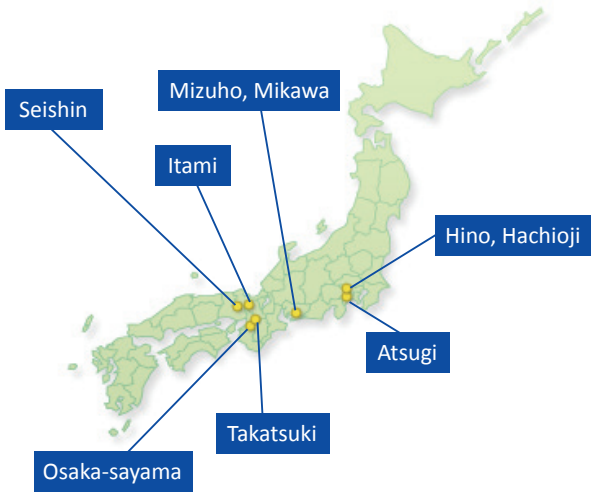
Konica Minolta has development sites in the United States and China and has created and operates compensation systems tailored to the local conditions in each country to better serve employees who work at those sites.
In addition to the compensation discussed above, Konica Minolta also has a program that pays rewards to employees based on the degree of contribution to intellectual property rights activities, and this too serves as an incentive to employees.

4. Organizational Structure to Support Intellectual Property Activities

(1) Organizational Structure

Under our intellectual property policies on the creation, protection, and effective use of intellectual property rights, Konica Minolta has formulated intellectual property strategies for each business field, and development divisions and the Intellectual Property Center work together to carry out these strategies. The Intellectual Property Center, an organization under the direct authority of the president, is responsible for overall administration and implementation of Group-wide intellectual property activities.
The Intellectual Property Center has a Patent Division that performs liaison activities to support the discovery and creation of inventions, patent applications and securing intellectual property rights, and responding to the patent rights of other companies. These liaison activities are conducted at liaison activity sites (see figure at bottom left) established at each development site to support invention discovery and creation activities through close collaboration between Patent Technology Office personnel and developers.
The Hachioji, Tokyo site in the Tokyo region, the largest site of the Intellectual Property Center, features a new research and development building[*4], the Group's largest, with seven aboveground floors and a floor area of approximately 40,000 square meters. Starting in fiscal 2014, this site will be occupied by approximately 1,500 developers and other personnel who will perform work primarily on technology relating to the Business Technologies Business and common fundamental technology and advanced technology. The new R&D building is positioned as a "creation zone" where multi-faceted technologies will be integrated and developers with different skills will provide those skills to each other to create new value with the aim of developing attractive products. For example, in the Business Technologies Business, by consolidating digital printing system development functions including design, prototype creation, and evaluation, developers will be able to effectively collaborate and development efficiency will increase, leading to the development of new products. In addition, development of technologies integrated with common fundamental technology and advanced technology can also be expected. The new R&D building will also be used by the Intellectual Property Center through consolidation of sites that were dispersed throughout the Tokyo region at the Hino, Tokyo and Hachioji, Tokyo sites. As new and integrated technologies are created and applied, the Intellectual Property Center will increase inter-departmental communication with each development department, share information and knowledge on a daily basis, conduct liaison activities with developers who possess various skills, secure intellectual property rights, and respond to the rights of other companies.

Liaison activity base



Interior of the new R&D building

*4 For detailed information on the new R&D building, visit our website:
http://www.konicaminolta.com/about/releases/2013/0408_01_01.html

IP Licensing Division was created within the Intellectual Property Center. This office will work in close collaboration with the Patent Division to conduct public relations operations including patents negotiations with other companies, development agreement operations, and other tasks. The staff of the IP Licensing Division includes attorneys licensed in the U.S. and graduates of U.S. law schools and is capable of performing international legal affairs relating to technology.
The Intellectual Property Center also has overseas offices (in San Mateo, California in the United States and Beijing in China) where seconded Japanese personnel and local staff perform a wide range of intellectual property-related tasks including discovering inventions and securing intellectual property rights.

Overseas business bases

*Base of intellectual property activities

(2) Training and Educational Activities

The Intellectual Property Center also supervises the Group's educational programs on intellectual property and leads training and educational activities including providing developers with information on intellectual property law, identifying inventions, writing patent specifications, conducting technological research, and other activities essential for developers. All developers undergo basic training on intellectual property during the first year after they are hired, and starting in the second year, courses on intellectual property are made available through the Konica Minolta College, a company-wide educational system. The Konica Minolta College is a company-wide educational system that enables employees to voluntarily take courses to enhance their skills. A wide range of courses on technology, business, and other fields are offered, and the program is tailored to meet the needs of all employees who are eager to learn. The Intellectual Property Center offers three courses on intellectual property—an introductory course, a mid-level course, and an advanced course. Developers who have completed their basic education can select a course based on their own experience and position to continue their education. These educational courses are taught by Intellectual Property Center personnel as educational programs.
These types of educational programs are not limited to Japan, but are also provided to overseas developers. For example, the development site in China created and implements a three-stage introductory educational program that includes a beginner's course, fundamentals course, and practical course. Educational programs for developers are conducted to provide developers basic knowledge concerning patents and to teach them how to approach inventions and how to draft patent applications. Starting in fiscal 2014, a mid-level educational program will be added to the introductory educational program.
Konica Minolta provides the staff of the Intellectual Property Center with comprehensive opportunities to gain specialized knowledge concerning the legal and judicial systems in different countries and to gain technical skills concerning patent practice through in-house study groups and OJD. We are currently implementing plans to assign employees to outside educational institutions and overseas law firms and patent law firms and to send employees to study at universities in the United States and China.

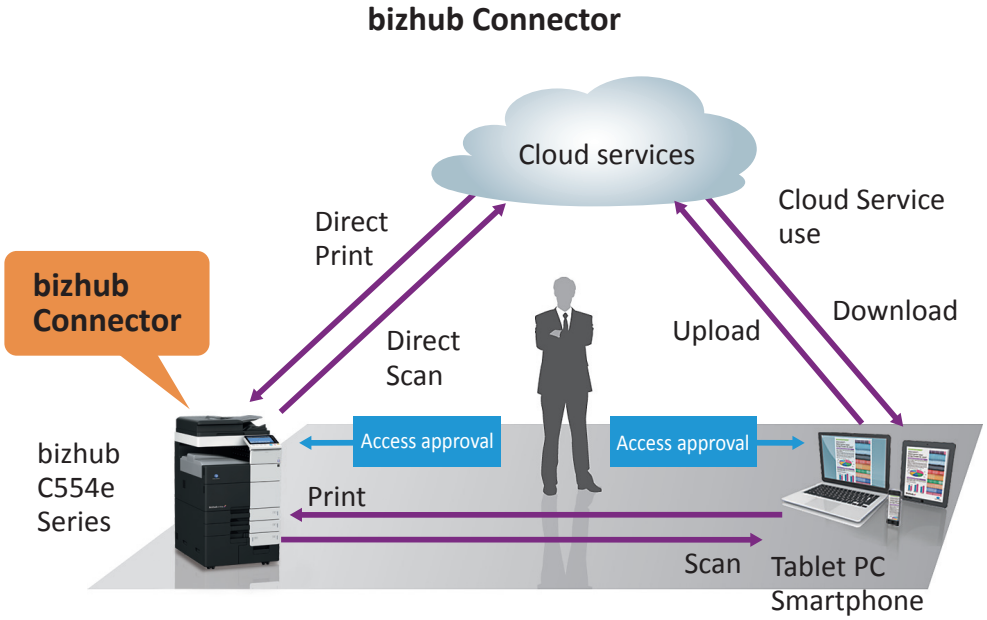
5. Business Domains and Intellectual Property Activities

(1) Business Technologies Business

The Business Technologies Business domain consists of the office segment with MFP as the core product and the Production print segment, which handles digital printing systems used in commercial and in-house printing.
In the office segment, Konica Minolta is conducting development regarding the functionality of MFP including reliability and resolution of image output as well as the provision of diverse business solutions that customers find it easier to operate. The results include development of the multi-touch user interface (UI) that is operated through simultaneous touching of the operating panel by multiple fingers to enlarge, reduce, or rotate images and intuitive and easy operation of MFP similar to the operation of a

Multi-touch UI

smartphone or tablet through the adoption of flick operations that allow images to be shifted by sliding one's finger in the direction of the move with it lightly swiping the screen.
In addition to collaboration between tablets and MFP, we also provide to customers business solutions that enhance operational productivity such as "bizhub Connector", an application that allows scanned data to be uploaded or directly printed by connecting MFPs to various cloud services.
This consistent consideration for user convenience has been well received, and Konica Minolta's MFPs have won the MFP Line of the Year award from Buyers Laboratory LLC., an independent office document hardware and solution product rating agency based in the United States, in four consecutive years, an unprecedented result anywhere in the world. The A3 color MFPs that won the award experienced an increase in sales volume, and overseas market shares reach the highest levels.



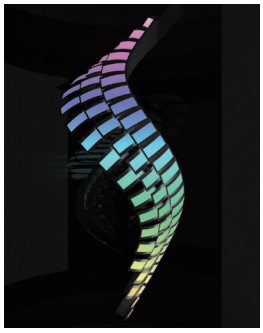
In the field of control and solutions that make possible the user-friendly operability and the diverse business solutions mentioned above, Konica Minolta has published more than 650 patent applications and registered more than 450 patents in Japan each year in the past five years running, and we are steadily building up a patent portfolio. Patent applications in this field account for approximately half of all patent applications in the Business Technologies Business.
Konica Minolta is conducting further development of emulsion polymerized toners created from core technologies and developed Digital Toner HD^{E}, which features enhanced resolution and energy-saving performance, as the successor to Digital Toner HD and Digital Toner HD^{+}. We have created optimal and natural textures for all media using three-dimensional hybrid structures including functional polymers and are making substantial contributions to electric power consumption reductions by making possible adhesion at lower temperatures. Digital Toner HD^{E} is starting to be used in production print systems in commercial and industrial printing businesses and is contributing to our leading market share worldwide in the production print segment.
As of the end of March 2014, the cumulative number of published patent applications in Japan in the emulsion polymerized toner field was approximately 1,000 and the cumulative number of patent registrations in Japan was approximately 380, putting Konica Minolta among the industry's leaders in this field.

(2) Industrial Business

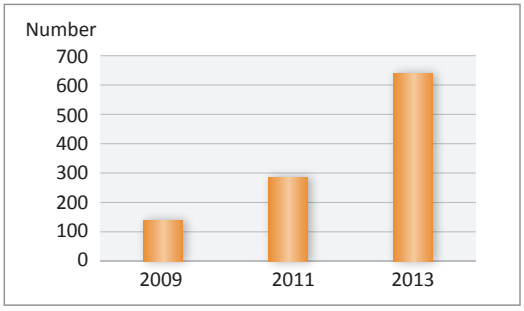
As a result of development that employs multiple core technologies including materials technology and optical design technology, Konica Minolta successfully developed flexible OLED lighting panels with new value including color adjustment functions and an ultra-thin format. Light + Building 2014, the world's largest tradeshow for lighting and building, which was held in March and April 2014, Konica Minolta displayed demonstration models (upper right photo) of thin, lightweight, and gently bendable flexible OLED lighting panels with a color adjustment function, unfolded like the feathers of a peacock[*5]. This display was the subject of considerable praise as an example of future illumination.

To provide intellectual property support for the OLED lighting business, Konica Minolta has filed more than 1,000 patent applications worldwide in areas of technology related to this business. Recently, we have focused efforts on securing rights relating to these patent applications in preparation for the sale of OLED lighting panels. As a result, we were able to increase the number of patent registrations worldwide by approximately fourfold from fiscal 2009 to fiscal 2013. The number of patents held is also increasing steadily, surpassing 630 as of the end of March 2014 (see right graph).

"Irodori" OLED Lighting with Color Adjustment Function



Changes in Worldwide Patent Holdings



(3) Healthcare Business

In the field of X-ray imaging equipment, we accelerated digitization, and the format is evolving into digital radiography (DR). DR is an imaging method that features high image quality and outstanding immediacy as a result of the capture of irradiated X-rays on a sensor panel and creation of a direct digital image. Konica Minolta's lineup of imaging products used for DR includes the Aero DR, which was launched in 2011 and features greatly enhanced convenience as a result of wireless transmission of image data and a substantial reduction in the weight of the body; and the Aero DR 1012HQ[*6] (photo to right), which was added to the Aero DR series in 2013 and is the smallest such unit with a size of just 10 inches by 12 inches. The Aero DR series boasts one of the highest shares of the domestic market for cassette-type DR devices, and overseas sales are strong. In the three years since it was launched, cumulative sales have been approximately 5,000 units. DR-related patent applications are filed worldwide to secure technologies that set us apart from others such as (1) scintillator technologies (technologies that convert X-rays to light) that can achieve high-quality images with low radiation exposure and (2) device body technologies that support lightweight structures and durability. The total number of applications exceeds 300.

AeroDR1012HQ

*5 For detailed information on our display of OLED lighting panels with color adjusting function, visit our website: http://www.konicaminolta.com/about/releases/2014/0212_01_01.html

*6 For detailed information of AeroDR1012HQ, visit our website: http://www.konicaminolta.eu/en/healthcare/products/digital-radiography/aerodr1012/key-features.html

Diagnostic ultrasound systems offers the benefits of producing diagnostic images in real time and the ability to conduct repeated examinations with little physical burden on patients. The market for such equipment is expected to grow even further in the future. In early 2014, Konica Minolta acquired the Diagnostic ultrasound systems business of Panasonic Healthcare Co., Ltd. with the aim of reinforcing and expanding its Healthcare Business[*7]. We will conduct development by integrating the Diagnostic ultrasound systems technologies acquired from Panasonic Healthcare with core technologies including chemical materials technologies developed in the photo film business and image processing technologies accumulated in the X-ray imaging field, leading to the Creation of New Value.
In conjunction with the acquisition of this business from Panasonic Healthcare, Konica Minolta also acquired related patent assets. As a result, our worldwide patent assets in this field greatly increased by approximately fourfold compared to before the acquisition. We will effectively use these patent assets for the further expansion of business.

6. Maintaining and Enhancing Brand Value

The Konica Minolta Brand is an invaluable intangible asset, and we recognize that maintaining and enhancing the value of the brand is extremely significant in conducting our global business. To do this, we are taking active measures to maintain and enhance brand value.
The Intellectual Property Center files applications for trademarks and secures and maintains our rights in approximately 200 countries in order to protect the Konica Minolta Brand around the world.
In addition, we endeavor to enhance the image of the Konica Minolta Brand through our product designs. Our color MFP, the Aero DR Portable Solution, and other products won 2013 Good Design awards[*8] in Japan. Overseas, our color MFP won the 2014 Red Dot Design award[*9], one of the world's most prestigious design awards, presented by the Design Zentrum Nordrhein Westfalen in Germany.
The Konica Minolta brand image is enhanced by designs including product designs that win prizes such as these and are the subject of design applications and acquisition of property rights in various countries.

Design award-winning color MFP

Information included in this report with regard to the future prospects of Konica Minolta is provided as forecasts based on the business environment at the time of writing. Such information is subject to change according to changes in the business environment.

KMIPR20140100

*7 For detailed information on acquisition of the ultrasound diagnostic equipment business, visit our website:
http://www.konicaminolta.com/about/releases/2013/0726_01_01.html
*8 For detailed information on the Good Design award, visit our website:
http://www.konicaminolta.com/about/releases/2013/1002_01_01.html
*9 For detailed information on the 2014 Red Dot Design award, visit our website:
http://www.konicaminolta.com/about/releases/2014/0325_01_01.html

Intellectual Property Center

KONICA MINOLTA, INC.
2970 Ishikawa-machi, Hachioji-shi, Tokyo
192-8505