



KONICA MINOLTA

Intellectual Property Report 2016



Giving Shape to Ideas

Intellectual Property Report 2016

(April 2015 to March 2016)

July 2016
KONICA MINOLTA, INC.

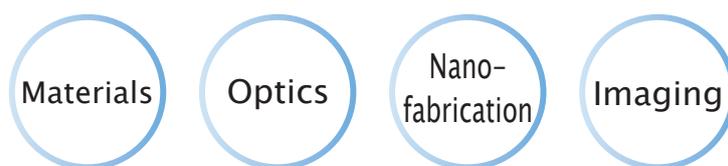
Under our management philosophy, “The Creation of New Value,” Konica Minolta, Inc.^{*1} (“Konica Minolta”) undertakes initiatives for developing increasingly higher added-value businesses, all the while strengthening its capacity for proposing services and solutions to customers on the basis of its Medium Term Business Plan TRANSFORM 2016^{*2}. To achieve the objectives of our management philosophy from the perspective of intellectual property, we have positioned our intellectual property strategy as one of our key management strategies in conjunction with our business and technology strategies, and accordingly promote those three strategies together as a whole.

This document describes Konica Minolta’s activities in the field of intellectual property in fiscal 2015.

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 digital X-ray imaging devices developed based on the technologies that it has acquired. Through the continuous development of technology related to these products, Konica Minolta has come to possess a number of core technologies^{*3} in four

fields: materials, optics, nano-fabrication, and imaging. Konica Minolta is currently taking steps to further enhance product functions by capitalizing on and integrating these core technologies under the Medium Term Business Plan TRANSFORM 2016 (see figure at bottom). We are also working to create new businesses that are geared to resolving challenges faced by our customers and society.



Leveraging our core technologies to create sophisticated products and new businesses



*1 For a company overview, visit our website: <http://www.konicaminolta.com/about/corporate/outline.html>

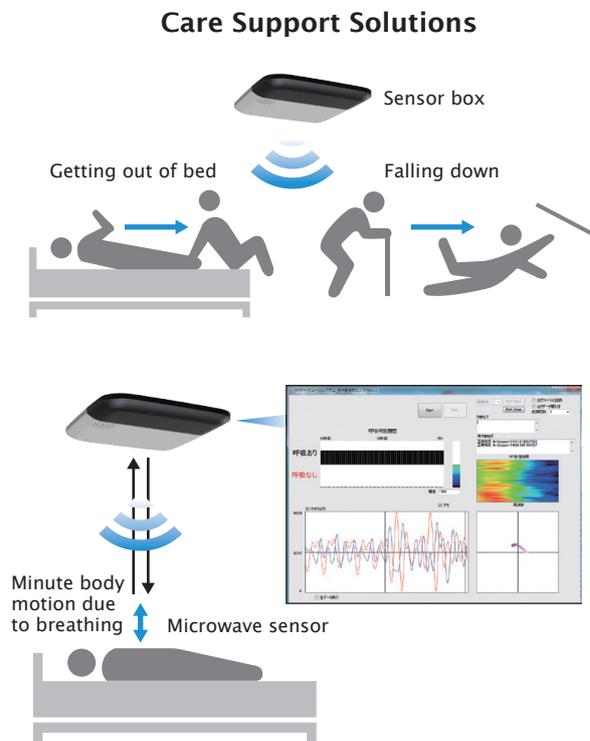
*2 For information on TRANSFORM, visit our website: http://www.konicaminolta.com/about/investors/ir_library/ar/ar2014/index.html

*3 For detailed information on our core technologies, visit our website: <http://www.konicaminolta.com/about/investors/why/index.html>

For instance, drawing on technologies in the field of imaging, we have developed the Care Support Solution^{*4} caregiver support system for nursing care facilities, which makes it possible for caregivers, when alerted, to visually check on residents of such facilities using a smartphone display. The Care Support Solution devices are equipped with near-infrared cameras that act as sensors capable of detecting physical movement, such as when a resident wakes up, gets out of bed, falls down or collapses, with such detection drawing on proprietary algorithms for processing video images. In addition to near-infrared cameras, devices are also equipped with microwave sensors capable of detecting breathing and other minute physical movements, so that caregivers are able to monitor residents while the residents are in bed. Providing care to residents requires that nursing care staff members continually move from one place to the other throughout their facilities. Before the advent of the Care Support Solution system, a nursing care staff member would have to physically check on a resident whenever an alert was sounded. With the Care Support Solution, however, caregivers are now able to visually check on residents by viewing a smartphone display, rather than having to physically make on-site visits to locations of individual residents. This results in substantial gains in work-flow efficiencies because staff members are now able to check on residents before paying them a visit, without the need to head to where a resident is located as soon as an alert is sounded, as was previously required.

Drawing on technologies we have cultivated in the field of optics, we have developed 3-D LiDAR^{*5} sensors that detect people and objects situated in three-dimensional space using laser beams to seamlessly scan given locations. Given that our 3-D LiDAR sensors are capable of precisely detecting sizes and shapes of objects upon instantly scanning an extensive physical area, it is likely that they will eventually be used across a range of applications, such as those involving surveillance cameras and driverless vehicles. Also, we have developed a wearable device in the form of eye glasses, dubbed the Wearable Communicator (WCc)^{*5}, which combines technologies in the field of optics with information and communications technologies (ICT). The WCc glasses provide the wearer with digital information overlapped onto the real-world environment seen through the glasses, which are small and lightweight thanks to our proprietary holographic optical technology. We also intend to apply products such

as our 3-D LiDAR sensors and WCc glasses to uses in digital manufacturing^{*6} which offers new solutions for production based on information and communications technology (ICT) and Internet of Things (IoT) concepts, thereby promoting commercialization in that regard.



3-D LiDAR (left) and WCc (right)



*4 For detailed information on the Care Support Solution, visit our website: http://www.konicaminolta.com/about/research/future/care_support/index.html

*5 For detailed information on 3-D LiDAR and WCc (Wearable Communicator), visit our website: <http://www.konicaminolta.com/about/research/future/index.html>

*6 For detailed information on Digital Manufacturing, visit our website: http://www.konicaminolta.com/about/releases/2016/0414_01_01.html

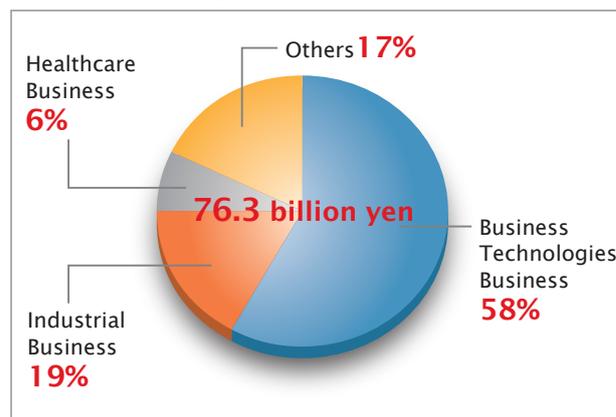
2. Research and Development Segment and R&D Cost

Konica Minolta is developing three primary areas of business: the Business Technologies Business, involving products such as multifunction peripherals (MFPs); the Industrial Business, involving products such as polarizer protection film for liquid crystal displays, measuring instruments, and lenses for industrial and professional use, and; the Healthcare Business, involving products such as medical diagnostic imaging systems. In so doing, we are actively engaging in R&D initiatives geared toward expanding in those three areas of business while also creating new businesses.

Under our investment plan for achieving objectives set forth in TRANSFORM 2016, we have earmarked a cumulative total of ¥240 billion for R&D expenses over the three years from fiscal 2014 to fiscal 2016, with those outlays in fiscal 2015 amounting to ¥76.3 billion, a 2.7% increase compared with the previous fiscal year. Looking at the breakdown of R&D expenses per area of business in fiscal 2015, our mainstay Business Technologies Business accounted for the largest share of those funds at 58% of overall R&D expenditures (see right graph). Meanwhile investment channeled into the Industrial Business amounted to 19% of the overall total, which is a 2 percentage point increase in comparison with

the previous fiscal year, and the total amount of investment was second only to that for the Business Technologies Business. Meanwhile, we ramped up the amount of investment in the Industrial Business by 11% in comparison with the previous fiscal year. Research and development expenses incurred by the Others segment amounted to 17% of the overall total, with such outlays encompassing R&D initiatives geared to creating new ventures, such as those involving the previously mentioned Care Support Solutions and 3-D LiDAR businesses.

Percentage of R&D expenditures



3. Status of Patent Applications, and Patent Portfolio

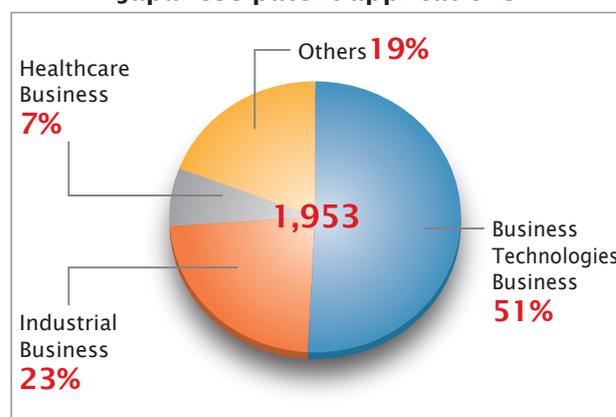
(1) Status of Patent Applications

Konica Minolta filed 1,953^{*7} published Japanese patent applications in fiscal 2015 (see graph at bottom right). Our mainstay Business Technologies Business accounted for 51% of that total number of published Japanese patent applications, while our Industrial Business accounted for 23% of the total, with its applications primarily involving organic light-emitting diode (OLED) lighting. We have been taking a selective and focused approach in targeting specific fields with respect to filing patent applications. As a result, the numbers of published patent applications in Japan for the Business Technologies Business and the Industrial Business have decreased year on year as a percentage of our overall total. On the other hand, the proportion of published patent applications in Japan for the Healthcare Business increased in comparison with the previous fiscal year as a result of active initiatives to file for patents made in recent years, primarily in the realms of cassette-type digital radiography systems and ultrasound diagnostic imaging systems.

Konica Minolta's overseas sales accounted for 81% of its revenues in fiscal 2015, amid the Company's global business expansion. With the aim of supporting such global business activities from an intellectual property perspective, we have been redoubling our efforts to file for patents overseas,

and actively submitting applications in respective countries with a focus on the U.S. and China. In order to provide support with respect to intellectual property in terms of creating new business ventures such as those noted previously, we have been actively filing applications related to those new business opportunities in Japan and abroad, and otherwise enhancing our patent-related strengths.

Number of published Japanese patent applications



*7 This includes the number of published PCT applications from operations in Japan.

(2) Status of the Patent Portfolio

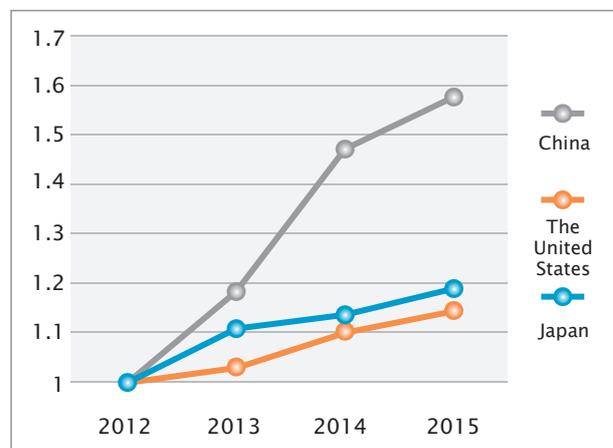
As a result of our intellectual property activities on a global basis, the number of patent registrations and patents held, particularly in Japan, the United States and China, has been rising steadily. Konica Minolta acquired 1,626 patents in Japan in fiscal 2015. Based on information from the "Patent Office Annual Report 2016 Edition" issued by the Japan Patent Office, Konica Minolta ranked 13th in the number of patents acquired in fiscal 2015. As of the end of fiscal 2015, the number of patents held in Japan by Konica Minolta was 13,408.

In the U.S., Konica Minolta acquired 577 patents in fiscal 2015, bringing its overall patent portfolio to 7,132 patents as of the end of fiscal 2015. We now rank number 20^{*8} among Japanese companies in terms of total number of patents acquired there.

Konica Minolta acquired 279 patents in China in fiscal 2015. Our patent portfolio has been achieving substantial growth year after year because we have been focusing our efforts on strategically filing for patents and securing intellectual property rights particularly in China. Consequently, as of the end of

fiscal 2015 we held 1,165 patents in China, which amounts to 1.6 times the number we held in fiscal 2012, showing that we have significantly reinforced our patent portfolio in China (see graph below).

Change in the number of patent rights held in Japan, the U.S. and China. (based on the number in fiscal 2012 as 1.00)



4. System to Support Intellectual Property Activities

(1) Role of the Intellectual Property Division

On the basis of our intellectual property policy stating that "we are committed to actively promoting efforts geared toward creating, protecting and making effective use of intellectual property rights, and we respect the valid intellectual property rights of third parties in the course of engaging in business activities," Konica Minolta formulates intellectual property strategies for each of its areas of business, while its business divisions and the Intellectual Property Division work together in implementing those strategies. The Intellectual Property Division is under the direct authority of the President and assumes responsibility for administration and implementation of Group-wide intellectual property initiatives that include invention discovery activities, patent application and rights acquisition activities and addressing issues involving patents of third parties.

When it comes to our invention discovery activities, we establish bases where members of the Intellectual Property Division carry out such initiatives at respective development sites, while creating an environment that facilitates close communications with developers (see illustrations on next page). This makes it possible for the division to assess progress being made with respect to development on a timely basis, while also allowing us to exhaustively pinpoint inventions related to technologies that we have conceived in the course of our daily development efforts, under the eye of intellectual property experts.

Moreover, in recent years Konica Minolta has been actively engaging in development initiatives overseas as a result of acquiring overseas entities through M&A initiatives and expansion of its customer-centric businesses. In order to provide support for enhancing such development activities overseas from an intellectual property perspective, we have established a framework that enables us, on a day-to-day basis, to work at the local level with respect to initiatives that include strengthening ties with locally based legal firms, and fine-tuning inventions through direct three party communications involving locally based patent attorneys, developers and our Intellectual Property Division employees stationed abroad.

The division's initiatives with respect to patent application and rights acquisition involve working in conjunction with patent firms in Japan and overseas in pursuing matters associated with new inventions, with the aim of more firmly establishing rights that contribute to success of our businesses. In that regard, the Intellectual Property Division endeavors to acquire patents in a manner that entails sharing information with patent firms regarding criteria for patents that contribute to our business operations in line with Konica Minolta's aims, evaluating patent application specification and response documents on the basis of such criteria, and exchanging opinions on such issues. It also regularly holds seminars to brief patent firms on matters having to do with Konica Minolta's business, technology and intellectual property strategies, thereby helping to create an environment where such firms are able to take a proactive approach in supporting us in our activities that involve intellectual property.

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

To address issues involving patents of third parties, the division has also adopted a system for patent clearance. Under the system, when developing products and entering new businesses, the division implements measures as necessary during the product development

process that involve scrupulously performing investigations with respect to third-party patents beginning in the early phases of product development. These efforts help ensure that we continue to generate consistent profits from our business operations.

Activity bases in Japan



Overseas activity bases



(2) Education Framework

The Intellectual Property Division organizes education and training programs for developers on issues involving intellectual property that are essential to our development activities, in areas that include the basics of intellectual property laws, understanding inventions and conducting prior art searches. More specifically, we provide numerous education and training programs on intellectual property through Konica Minolta College, which acts as a company-wide educational system offering employees the option of taking courses to enhance their skills. In fiscal 2015, the programs were revamped into a format organized by function, including the functions of filing for patents, responding to reasons for rejection, and patent investigations, in place of the previous format, which was hierarchical based on developers' years of experience in development. Because this has made it possible for developers to access the necessary program content when needed, developers are now able to apply skills they have learned to actual development tasks on a timely basis.

These types of educational programs are not limited to Japan, but are also provided to developers in the United States and China. In those locations, Intellectual Property Division employees stationed locally serve as instructors in providing the same programs organized by function as those available in Japan. The education and training in patent applications, for instance,

involves content encompassing means of generating and developing ideas, which has enabled us to enhance the patent filing capabilities of development sites overseas.

We have also been focusing our efforts on education and training of Intellectual Property Division employees, with the aim of enhancing the functional capabilities of that division. More specifically, we actively develop the abilities of such employees by offering on-the-job development (OJD) opportunities and in-house study groups, and also by making use of education and training programs outside the company on legal systems and practices related to patents in different countries. As one particular example, we have launched a mentoring program geared to our younger employees, which involves a systematic approach to career development. Under the program, mentors spearhead initiatives in providing such employees with individualized guidance over multiple years, encompassing facets of their development that include fostering professional attitudes as well as workplace knowledge and skills.

Furthermore, in order to develop human resources who are capable of playing an active role amid the global intellectual property landscape, we also send employees to U.S. law schools and Chinese universities, and post them to the intellectual property strongholds of the U.S. and China.

5. Fields of Business and Intellectual Property Activities

(1) Business Technologies Business

The Business Technologies Business domain is classified into the office services field, with MFP as the core product, and the commercial and industrial

printing field, which handles digital printing systems used in commercial printing and in-house printing.

(1-1) Office Services Field

In the office services field, we have been linking multi-functional peripherals (MFPs) and information and communications technology (ICT) services

extending beyond development geared to improving MFP performance in recent years, and thereby offering solutions that are optimally tailored to the office

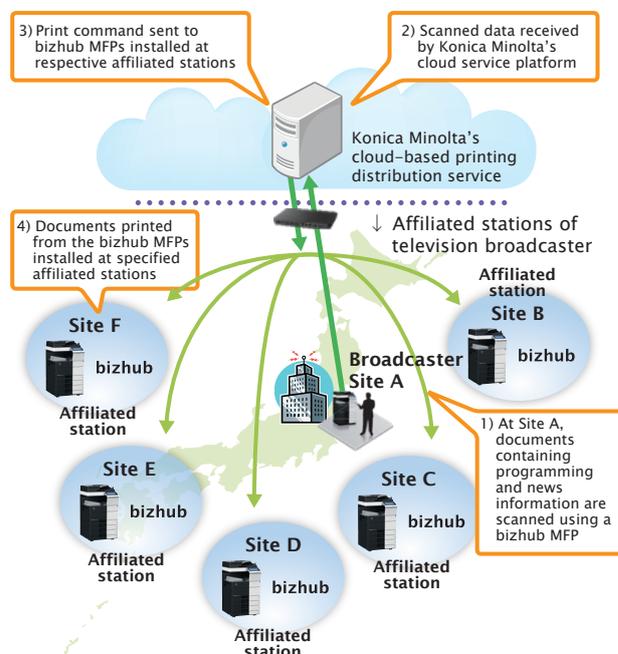
environments of our customers. For instance, we have been providing access to our cloud-based printer server network, using our INFO-Palette Cloud⁹ services, to a television broadcaster for whom information acts as a lifeline with respect to its programming and news content. The broadcaster had previously relied on fax machines to send information among its affiliated stations. However, that means of relaying information posed issues in terms of safety and reliability, particularly given challenges of sending and receiving faxes at times when telephone networks fail to function properly during major disasters and other crises. The broadcaster also faced issues with respect to poor fax quality and high costs.

However, using a cloud-based printer server, the broadcaster's MFPs were linked to our cloud services, thereby enabling the broadcaster to achieve gains in terms of productivity and reliability without having to make any modifications to its existing workflow. With the new system, the broadcaster scans documents on programming and other such details using one of the MFPs that have been installed at its affiliated stations across Japan, and then temporarily sends such data to Konica Minolta's cloud platform. Then, using the cloud platform, those at the affiliated stations are able to relay information on programming and other such matters simply by sending a command to the multiple MFPs at affiliated stations to print such documents. This enables the broadcaster to send information through existing workflow procedures involving fax machines already in place, and without having to go through the telephone network.

In this regard, we have been taking a strategic

approach in filing patent applications on a worldwide basis in order to support Konica Minolta from the standpoint of intellectual property in the realm of technologies involving solutions that bring MFPs and ICT services together. As such, we have steadily built up our patent portfolio to the point where our published patent applications for these technologies numbered over 1,000 as of the end of fiscal 2015.

Cloud-based printer server network



(1-2) Commercial and Industrial Printing Field

In the commercial and industrial printing field, we have been forging ahead in developing a label printing system that is capable of printing to long sheets of label paper. In fiscal 2015, we took part in Labelexpo Europe 2015, where we exhibited our bizhub PRESS C71cf¹⁰ digital label printing system, which is capable of printing to label paper using the same electro-photographic printing process as that used by MFPs (see photo at right). In the commercial and industrial printing field, printing companies have been grappling with the need to handle a wide variety of print orders with short lead times, given an ongoing scenario of ever increasing numbers of high-mix, low-volume print jobs. In this regard, printing demands that had been difficult to fulfill with conventional analogue presses can now be processed efficiently thanks to the flexibility of digital printing. The bizhub PRESS C71cf is ideal for printers who seek solutions for reducing print run times, handling high-mix yet low-volume print jobs on-demand, providing personalization for specific customers, and printing various versions of printed materials. The unit also offers outstanding productivity and brilliant image quality through the electro-photographic printing process, and is very easy to use. The bizhub PRESS

C71cf is ideal for printers looking to expand into new markets for printing services and opting to bring in additional presses that will complement their existing analogue machines.

We have also been focusing our efforts on patent filings with respect to such label printer technologies, and currently have approximately 100 published patent applications in this domain.

bizhub PRESS C71cf



⁹ For information on INFO-Palette Cloud, visit our website: http://www.konicaminolta.jp/business/service/info_palette_cloud/index.html (Japanese) http://www.konicaminolta.jp/about/release/2016/0324_01_01.html (Japanese)

¹⁰ For information on bizhub PRESS C71cf, visit our website: <http://www.konicaminolta.eu/bizhub-press-c71cf>

(2) Industrial Business

In the performance materials field of the Industrial Business, Konica Minolta manufactures and sells organic light-emitting diode (OLED) lighting and performance films, mainly including polarizer protection film for liquid crystal displays, drawing on technologies we have amassed with respect to photographic films. Konica Minolta's polarizer protection film is widely used across a range of devices equipped with small- and medium-sized displays such as those found in smartphones and tablet computers, and large displays such as those found in large LCD TVs.

In fiscal 2015, we developed QWP film^{*11}, which enables users to see the true colors of images appearing on liquid crystal displays, even when viewed through polarized glasses. Previously, there were issues involving display visibility in that images would appear dark or discolored when viewed from certain angles through polarized glasses. There has been a growing need to address this issue in recent years, because people are increasingly viewing smartphone and tablet computer displays outdoors, meaning that they more frequently view such displays through polarized glasses. We have also been focusing our efforts on patent filings with respect to QWP film technologies, and as a result have approximately 200 published patent applications worldwide as of the end of fiscal 2015.

Images as viewed through polarizing sunglasses

With QWP film



Without QWP film



(3) Healthcare Business

In the Healthcare Business, we engage in manufacturing and sales of digital X-ray diagnostic imaging systems, diagnostic ultrasound systems, and other medical diagnostic imaging systems, and provide healthcare IT solutions services.

In the healthcare IT solutions field, we offer services that involve setting up collaborative healthcare networks that enable multiple medical institutions to share electronic medical records, diagnostic images and other forms of information online, and we also provide cloud services that support home care providers. In fiscal 2015, we acquired Viztek LLC ("Viztek") of the U.S., a provider of healthcare IT solution services^{*12}. In the U.S., there are growing

needs among medical institutions with respect to sharing diagnostic images and medical examination records as institutions accelerate initiatives to streamline healthcare operations due to health insurance reform. With further growth anticipated in the primary care market, we are combining Konica Minolta's diagnostic imaging technologies with the IT solutions of Viztek in order to provide value in terms of improving and streamlining medical care. We have also been focusing our efforts on patent filings to provide support to the healthcare IT solutions business, and as a result have approximately 180 published patent applications worldwide as of the end of fiscal 2015.

*11 For information on QWP film, visit our website:

http://www.konicaminolta.com/about/releases/2015/0807_01_01.html

*12 For detailed information on acquisition of Viztek, visit our website:

http://www.konicaminolta.com/about/releases/2015/1002_01_01.html

6. Maintaining and Enhancing Brand Value

We fully recognize the considerable importance of Konica Minolta's brands in the course of promoting our business, and are aggressively pushing forward to maintain and enhance the value of those brands.

As such, to protect our brands we have accordingly filed applications for trademarks and otherwise taken steps to secure our intellectual property rights in approximately 200 countries, and have registered roughly 2,900 trademarks worldwide as of the end of fiscal 2015.

Moreover, we regard product design as a key element in our efforts to maintain and enhance brand value. We also seek visibility as well as operability with respect to our product designs. In Japan, Konica Minolta won the Good Design Award 2015, awarded by the Japan Institute of Design Promotion (JDP)^{*13} for its bizhub 367/287/227 monochrome MFPs and the bizhub Remote Access application for mobile devices (see photo at right).

Accordingly, to protect our designs we also file design applications and pursue efforts to acquire intellectual property rights in Japan and overseas, from the perspective of heightening brand value and addressing threats posed by counterfeit goods. As such, we have holdings of approximately 330 design rights worldwide as of the end of fiscal 2015.

Products recognized by the Good Design Award



7. Conclusion

At Konica Minolta, we fully recognize that our intellectual property constitutes one of our most important business resources, and accordingly engage in initiatives involving our intellectual property on a daily basis. We will continue to aggressively promote efforts to ensure proper creation, protection and effective use of our intellectual property, thereby providing support for enabling "The Creation of New Value," our management philosophy, from an intellectual property perspective.

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.

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*13 For information on the Good Design Award 2015 by the Japan Institute of Design Promotion, visit our website:

http://www.konicaminolta.com/about/releases/2015/1009_01_01.html

○ KONICA MINOLTA logos and symbols, Giving Shape to Ideas, bizhub, bizhub PRESS, Care Support Solution, WCc, and INFO-Palette Cloud are the trademarks or registered trademarks of Konica Minolta. Other brand names and product descriptions are the trademarks or registered trademarks of their respective companies.



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