

Technology and Intellectual Property Strategy

Message from the Lead Officer



Toshiya Eguchi
Executive Vice President &
Executive Officer

In the Medium-term Business Plan starting from fiscal 2023, we are focusing on two points: “enhancing technology development to expand strengthening businesses” and “stocking up on technologies for future growth.” Prior to the previous Medium-term Business Plan, DX2022, the emphasis was on obtaining technologies through acquisitions, which led to a dispersion of technologies and human resources to new areas (currently non-focused businesses and direction-changing businesses), and a lack of enhancing our original core technologies and stocking up on technologies for the future. In this Medium-term Business Plan, we have shifted to a technology strategy based on this reflection.

In our long history, we have created new businesses by fusing multiple core technologies cultivated based on imaging technology to create value unique to our Company. In order to continue to powerfully expand our strengthening businesses, we will continue to gather the necessary technologies from across the Company and develop our core technologies by fusing technologies across businesses and utilizing AI to maximize the competitiveness and value of our businesses.

In order to continue to be a company that contributes to society by meeting customers’ desires to “see”, we will also intensify our efforts to develop technologies that will become “seeds for future growth” for creating future businesses. In particular, “biomanufacturing” and “utilization of recycled materials”, for which there is increasing research and development around the world toward a decarbonized society, are growth markets where our proprietary sensing technology can be utilized. We are currently promoting technological development through external collaboration with the aim of commercialization.

We will continue to take on the challenge of solving social issues by developing technologies that respond to the new desires to “see” that society and people will demand in the future, based on our five material issues.

Shifting Technology Strategies and Seeds for Future Growth

Technology strategy this Medium-term Business Plan aims at

Konica Minolta has developed, highly advanced and fused its four core technologies of materials, optics, nano-fabrication, and imaging, which it has honed for 150 years since its establishment, into a technology that “visualize the invisible” by combining them with advanced AI technology as well. Now is the time to reaffirm the essence of our technological strength, and to make our core technologies the driving force of our growth, which we believe is crucial for sustainable growth.

The first priority of the technology strategy in the Medium-term Business Plan is to “enhance technology development to expand strengthening businesses.” Konica Minolta has been fortifying its competitiveness with its core technologies in the areas to be strengthened, namely, the Industry, Healthcare, and Professional Print businesses. Going forward, we will further promote the development of new technologies by integrating core technologies across businesses. In addition, we aim to expand our business by providing products and services that address customer issues in new areas beyond the existing customer industries.

The second priority is “to prepare technologies for future growth.” We decided to backcast our thinking from the perspective of a possible future society. In order to continue to be a company that will be needed at that time, we decided to develop technologies that contribute to reducing environmental impact by utilizing our proprietary technologies. In particular, we intend to focus on solving the issues of “using limited resources effectively” and “addressing climate change.” Konica Minolta will actively pursue R&D themes, taking into consideration the fact that its strengths in “sensing technology + AI technology” can be utilized and that this is a growth market that society will demand in the future.

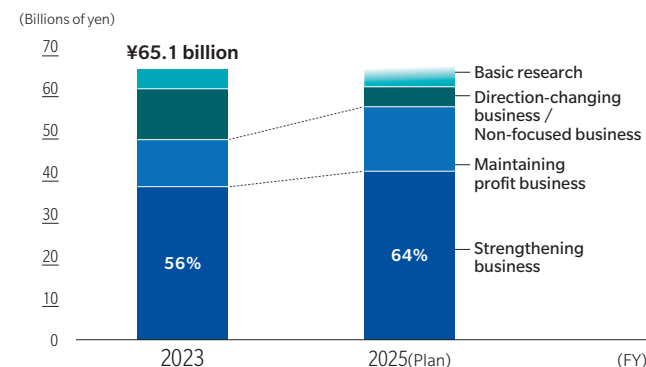
R&D investments that reflect the strategy

Addressing these priority issues, we are optimizing the allocation of R&D investment. We have classified our businesses into four categories: “strengthening business,” “maintaining profit

business,” “non-focused business,” and “direction-changing business,” and plan to increase the investment ratio in strengthening businesses from 56% in fiscal 2023 to 64% in fiscal 2025. In this way, we will select and concentrate resources to accelerate business expansion in the areas to be strengthened. In addition, we are increasing investment in maintaining profit businesses in order to produce stable cash generation.

Meanwhile, in basic research, we will invest technological resources in the development of technologies that will become “seeds for future growth” for the creation of future businesses. In particular, as mentioned above, we are increasing the ratio of investment in technologies that address environmental and decarbonization issues, and will develop technologies that contribute to the realization of a sustainable future society.

Breakdown of R&D expenses



Technology Development that Contributes to the Expansion of Strengthening Businesses

Integration of core technologies that create strengths

Konica Minolta has created superior technologies by combining and fusing its own multiple core technologies.

For example, in the Professional Print Business, one of its strengthening businesses, Konica Minolta has developed the IQ-501 automatic quality optimizer by combining electrophotographic technology with spectroscopic and color measurement technologies. This product was achieved by

Technology and Intellectual Property Strategy

combining Konica Minolta's core technologies of high-precision paper transport, sensing of printed images, and advanced real-time data processing within the unit. Customers have praised the effectiveness of this technology in reducing losses due to downtime. We are applying this technology to commercial printing and label printing to help increase the value of digital printing.

In the healthcare business, the fusion of X-ray dynamic imaging technology and image analysis technology has made it possible to obtain information on the movement of biological tissue that could not be seen in still images taken with conventional X-ray imaging. It has been reported that this enables, for example, respiratory function tests for chronic obstructive pulmonary disease by analyzing dynamic images, and this is expected to reduce the burden on patients during examinations.

Data utilization and DX to increase business value by improving productivity

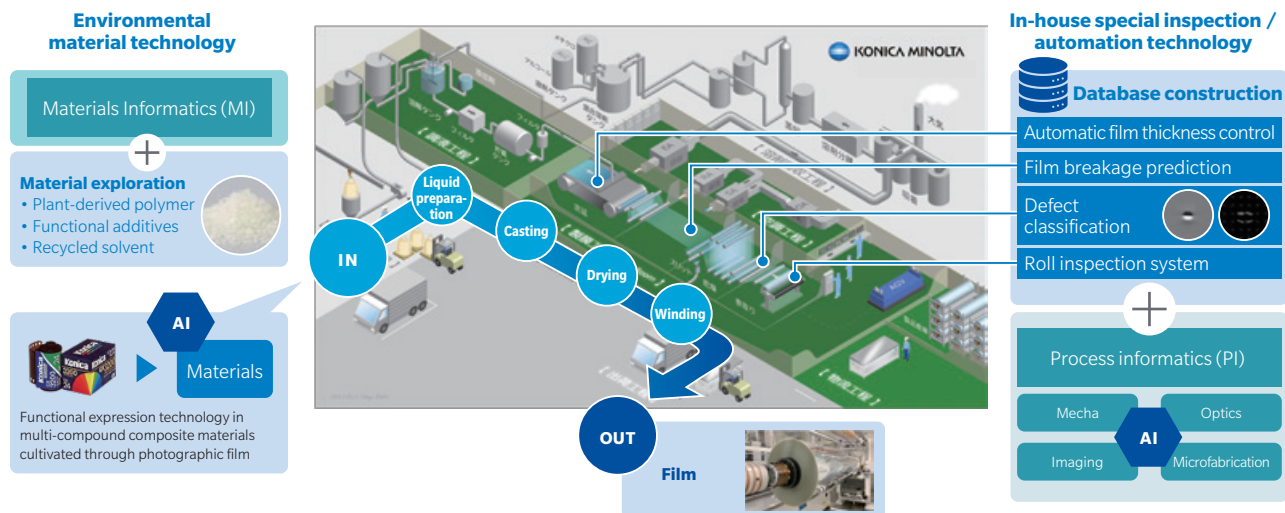
Konica Minolta has been committed to the practice of DX from early on and has strengthened the development of 1,000 DX

specialist human capital. The DX specialists (including more than 400 data scientists) have been assigned to all divisions of the Company, and they are now implementing data utilization in every aspect of our operations. In practice, DX specialists and frontline members work together on DX themes, and there have been approximately 300 business reforms through DX within the Company in the last two years.

One example of how the promotion of data utilization has come to fruition is the conversion of a display film production factory into a smart factory. By analyzing data acquired from multiple sensors installed in the factory, we were able to achieve high-quality and stable manufacturing. In addition, DX, which uses material informatics to develop materials, has greatly shortened the development period by introducing the latest simulation technology, enabling rapid development of products that meet the needs of a wide variety of customers.

In the utilization of generative AI, a company-wide team specially assigned to the utilization of generative AI was formed in July 2023 to improve efficiency through its use in various operational tasks within the Company.

Smart factory in display film production plant



Voice



Sayaka Matsumoto

Data Science Center
Technology Development Headquarters

Embedding a culture of data utilization at production sites to improve yields of key products and reduce workloads

Konica Minolta Chemical (PCL), which manufactures chemical products, has long supported its business by making decisions based on tacit knowledge such as hunches and knacks. However, with changes in the business environment due to diversifying customer needs and other factors, the Company faced the challenges of “improving the yield rate of key products” and “reducing the workload on the shop floor.” To address these issues, an internal DX support team led by myself and PCL’s front-line employees worked together to launch a project aimed at transforming the production site through DX.

First, our team analyzed manufacturing data for key products that had not yet been utilized, and came up with a solution that would help improve yields and reduce workload. This led to the solicitation of problems from all PCL employees on site and the development of various measures to improve operations through the use of data. At the same time, DX training is being provided to employees on the production floor, and we are seeing changes such as on-site employees themselves making proposals for equipment installation and workflow improvement based on data, and we feel that DX is taking root as part of our culture. These efforts are also expected to contribute approximately ¥50 million yearly in profits through reductions in product loss and other effects. We hope to apply the knowledge and expertise gained through PCL’s DX to the entire Konica Minolta Group to improve the speed and accuracy of decision making.

Technology and Intellectual Property Strategy

Preparing Technologies for Future Growth

Development of technologies to reduce environmental impact

Regarding the preparation of technologies to be introduced into growth areas, which was mentioned as one of the priority issues at the outset, we will accelerate innovation by investing in themes related to the reduction of environmental impact for sustainable growth. For example, as an initiative to realize a recycling-oriented society, the recycled plastic business, which sprung from materials technology, one of Konica Minolta's core technologies, has started external sales of recycled plastic upgraded and recycled from conventional waste. In the future, Konica Minolta will contribute to social issues by introducing its sensing technologies, such as hyperspectral cameras, into the process of judging whether waste plastics are reusable or not, thereby improving the productivity and quality of recycling.

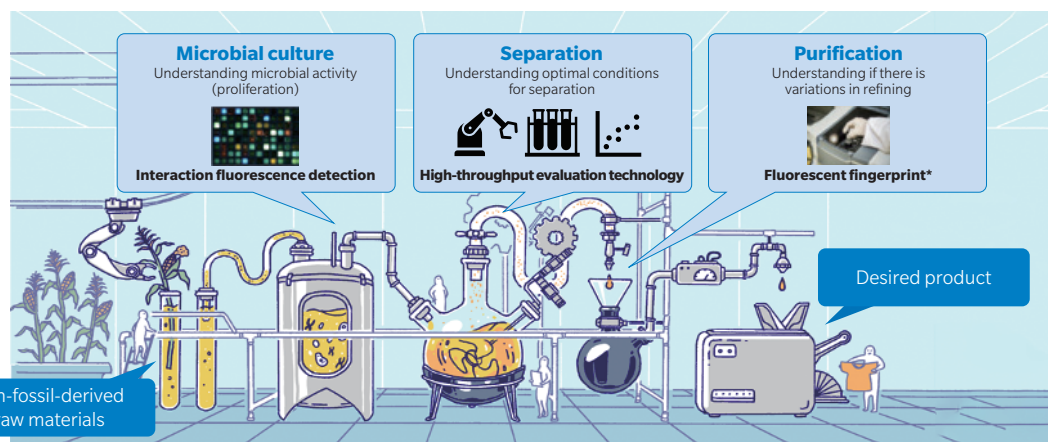
We are also developing technologies for biomanufacturing, which uses microorganisms to synthesize materials from non-fossil-derived raw materials. By combining Konica Minolta's sensing technologies to visualize the complex behavior of microorganisms, we believe we can contribute to the stabilization and cost reduction of biomanufacturing.

“Biomanufacturing” using non-fossil-derived raw materials

Challenges in biomanufacturing

- Microbial behavior changes due to subtle differences in conditions
- Yield and quality stability
- Scale up

Fluorescent fingerprint*: A technology that identifies the state and properties of a material from the unique fluorescence patterns obtained by irradiating the material with light of various wavelengths



Open innovation for social implementation

In such technological development related to biomanufacturing, we have established Bioprocess Technology Cooperative Research Laboratory (hereafter, “BTCR Lab”) with the National Institute of Advanced Industrial Science and Technology (hereafter, “AIST”) to research a series of advanced biotechnologies, including the cultivation and separation of microorganisms and purification. In addition, we are accelerating open innovation for social implementation through collaboration with domestic and overseas biomanufacturing ventures and joint industry-academia research on multimodal AI to be applied to manufacturing processes.

We are also working to openly disclose our technologies and lead the formation of rules in the market. At the request of the Fire and Disaster Management Agency (FDMA), Konica Minolta used its highly sensitive infrared sensor gas leak inspection technology to measure gas retention conditions around outdoor storage tanks at plants. As a result, the project led to a review of the existing regulations and contributed to improving the efficiency of the inspection process for outdoor storage tanks, which is conducted by visual inspection. For this contribution to rulemaking and rule revision, the Company was selected by the Ministry of Economy, Trade and Industry as a “Company with High Market Formation Capability Indicators.”

Voice



Yuu Watari

Technology Development Headquarters
Research Strategy Center

Established a collaborative laboratory with AIST to promote research for practical application of biomanufacturing

Konica Minolta, which focuses on biomanufacturing using microorganisms, established the BTCR Lab with AIST in 2023, aiming to scale up production processes. The development and cultivation of smart cells, cells that can produce chemicals suitable for mass production, is key to the practical application of biomanufacturing. I was seconded to the bioprocess research lab as a specific intensive research specialist and serve as the theme leader for the development of smart cell technology. My main research tasks are to develop technologies for discriminating versatile smart cells and optimizing culture conditions. I believe they can be achieved through the fusion of our sensing technologies and AIST's biotechnology.

The BTCR Lab is a large group of 24 researchers with different specialties, and at first it was difficult to unify a common understanding in terms of language and direction. Our members were strongly aware that the people at AIST are also our customers who are well versed in biomanufacturing, and we worked to solve the problems that arose in the collaborative research by viewing them as customer issues. When we completed the verification of the principle of the technology we had developed, AIST members told us that they would be the first to use it once we had commercialized it, which gave us a lot of confidence.

We will continue to expand our partnership strategy with companies engaged in biomanufacturing.

For more details: **Konica Minolta's Technology**

<https://research.konicaminolta.com/jp/>

For more details: **Technology Report**

<https://research.konicaminolta.com/jp/report/2024/>

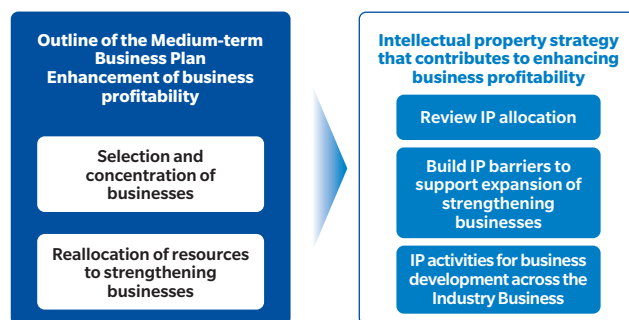
Technology and Intellectual Property Strategy

Intellectual Property Strategy

Intellectual property activities that contribute to business activities

In recent years, intangible assets such as intellectual property have attracted increasing attention as an important management resource that is a source of competitiveness, and Konica Minolta has been striving to strengthen competitiveness and improve corporate value by investing in and utilizing intellectual property and intangible assets. In particular, we have formulated and implemented an intellectual property strategy that is closely linked to our business strategy to support business growth and profitability. In the Medium-term Intellectual Property Plan, which corresponds to the Medium-term Business Plan, we have focused on investing intensively in technologies, products, and services that are key to achieving business expansion and sustainable growth in strengthening businesses, and formulating and utilizing intellectual property that is linked to business scenarios.

Basic Policy of Intellectual Property (IP) Strategy



Promoting the new Medium-term Business Plan

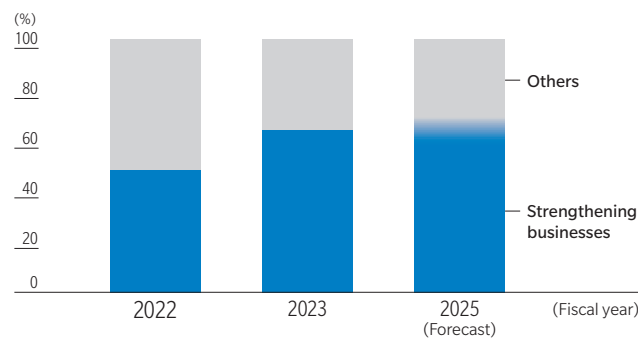
Specifically, in order to further promote the expansion of strengthening businesses through selection and concentration of businesses, we have also promoted selection and concentration in intellectual property investment, and significantly increased the ratio of strengthening businesses (Industry, Healthcare, and Professional Print) to the company-wide patent applications to over 60% from fiscal 2023. The plan is to further increase this to

nearly 70% by fiscal 2025.

For strengthening businesses and the products and services that are key to their business expansion, we build intellectual property barriers that restrain the entry of competitors at the timing from the start-up period to the expansion and growth phases. The strength of a business or product, which is the source of its competitive advantage, is formed not only from its technological and intellectual property, but also from other intangible assets such as customer relationships, organizational structure, and production know-how, as well as tangible assets such as production facilities. However, in the start-up phase of a business or a product, intangible assets other than intellectual property, such as customer relationships and production know-how, may not have been formed to a level that would serve as a barrier to new entry by competitors. Therefore, we ensure business expansion and growth by forming barriers to entry through intellectual property such as patent rights before entering the expansion phase.

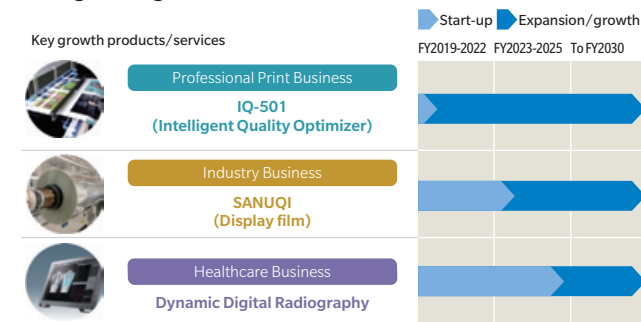
The upper right figure outlines the start-up and the expansion and growth phases of the products and services that are key to the expansion of Konica Minolta's strengthening businesses. In each business, IP barriers have been established at the timing from the start-up of the business to the expansion and growth phases. For example, as shown in the figure right, the patents related to the IQ-501 (Intelligent Quality Optimizer), which played a major role in the expansion and growth of the Professional Print Business, became a powerful IP barrier that overwhelmed competitors in terms of both quality and quantity. The patents have contributed to the establishment of competitive advantage and price maintenance of Konica Minolta's products by restraining competitors from

Ratio of strengthening businesses to patent applications

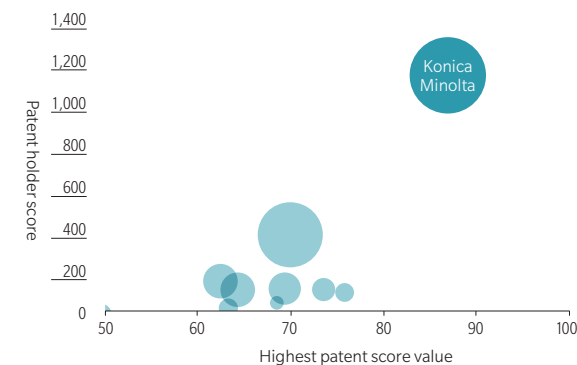


entering the market for a long period of time. Similarly, we are building and strengthening IP barriers for "SANUQI" film in the Industry Business and "Dynamic Digital Radiography" in the Healthcare Business to ensure the expansion of our business.

Key products and services for the expansion of strengthening businesses



IQ-501 Japanese Patent (Published Patent + Registered Patent) Score Map



Intellectual Property Report

We explain in detail the intellectual property rights strategy, including patent rights, the results of acquiring and exercising intellectual property rights, and the Company's internal structure in the intellectual property report disclosed on our website.

https://www.konicaminolta.com/global-en/investors/ir_library/intellectual_property/index.html