

Technology and Intellectual Property Strategy

Toshiya Eguchi

Executive Vice
President &
Executive Officer



The technology strategy of the Medium-term Business Plan focuses on two points: “enhancing technology development to expand strengthening businesses” and “cultivating technologies for future growth.” For about 10 years up to the previous Medium-term Business Plan, emphasis was placed on obtaining technologies through acquisitions, but despite this, we fell short of strengthening core technologies that have been our strength. Based on this reflection, we believe that now is the time to make our core technologies the driving force of growth for sustainable growth.

Throughout our long history, we have created new businesses by integrating multiple core technologies. Continuing this trend, for “enhancing technology development to expand strengthening businesses,” we will promote the use of AI and data science throughout the Group and further advance our core technologies to enhance our competitive advantage (see [page 24](#)).

For “cultivating technologies for future growth,” we are focusing on GX (Green Transformation) technologies that are indispensable to society and are expected to experience significant market growth. (see [page 26](#)). In this context, we have identified potential growth businesses in promising areas for achieving decarbonized society, utilization of recycled plastics, measurement systems for manufacturing processes in biomanufacturing, and barrier films for perovskite solar cells, where we can continue to leverage our strengths through the combination of our core technologies and AI. We have begun full-scale development of technologies toward commercialization, in collaboration with external organizations such as the National Institute of Advanced Industrial Science and Technology (AIST).

Guided by our materiality, we will continue to take on the challenge of addressing social challenges through technology development that satisfies the desires to “see” demanded by society.

Basic policy for technology strategy

The first priority of the technology strategy in the Medium-term Business Plan is to “enhance technology development to expand strengthening businesses.” To date, in the strengthening businesses (Industry, strengthening areas of Professional Print, and Healthcare), Konica Minolta has strengthened its competitiveness through its core technologies. 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 exploring new areas where our core technologies can be utilized and providing products and services that address customer needs.

The second priority is “to cultivate technologies for future growth.” In this initiative, we have decided to focus on technology development that contributes to “the effective use of limited resources” and “addressing climate change,” taking a backcasting approach from our envisioned future society. Regarding R&D themes to be initiated, Konica Minolta will base its decisions on the ability to leverage its strengths in “sensing technology + AI technology,” and alignment with growth markets that will be in demand in the future society, and will actively pursue these initiatives.

Our understanding of the challenges under the previous and earlier Medium-term Business Plans

- To accelerate growth business creation, we actively acquired technologies via M&A. However, being far from our core competencies, they yielded limited results.
- Continuous enhancement of technologies necessary from a medium- to long-term perspective and core technologies was lacking.

Basic policy on technology strategy in the current Medium-term Business Plan

1: Developing technologies to accelerate expansion of strengthening businesses (active use of AI)

2: Cultivating technologies for growth (aggressive investment in GX technologies)

For more details: [Konica Minolta’s Technology](https://research.konicaminolta.com/en/technology/)
<https://research.konicaminolta.com/en/technology/>

Overall technology strategy

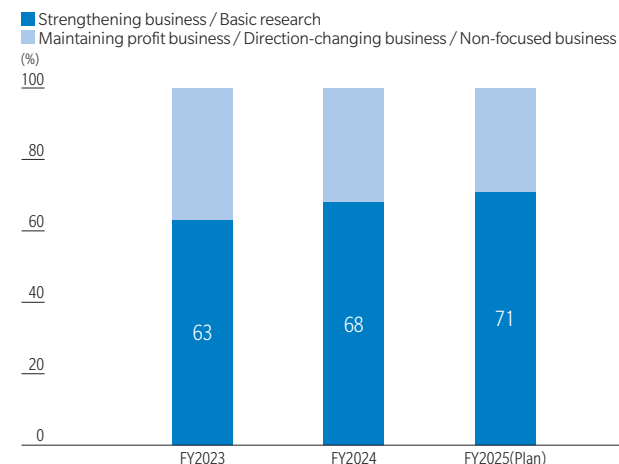
Under the Medium-term Business Plan, we have classified the Konica Minolta Group’s businesses into four categories: “strengthening business,” “maintaining profit business,” “non-focused business,” and “direction-changing business,” and have optimized the allocation of R&D investment accordingly.

Fiscal 2025 is an important milestone as the final year of the Medium-term Business Plan, and Konica Minolta’s technology strategy is also in a transitional phase with a view to the next Medium-term Business Plan. In line with this, we plan to increase the ratio of R&D investment in strengthening businesses and basic research to 71% in fiscal 2025. In this way, we are improving our product and service capabilities in priority business areas where growth is expected, while strengthening our ability to respond to technological changes in the market.

We are also strengthening our R&D investments, with a focus on basic research, in promising technological fields that contribute to the realization of a decarbonized society. These efforts represent a deliberate investment in cultivating key technologies that will feed into the next Medium-term Business Plan.

Through these efforts, we will further advance the integration of our core technologies with AI and data science, and continuously drive a technology strategy that aims to both strengthen our business competitiveness and address social challenges.

Breakdown of R&D expenses



For more details: [Technology Report](https://research.konicaminolta.com/en/report/2025/)
<https://research.konicaminolta.com/en/report/2025/>

Technology development that contributes to the expansion of strengthening businesses

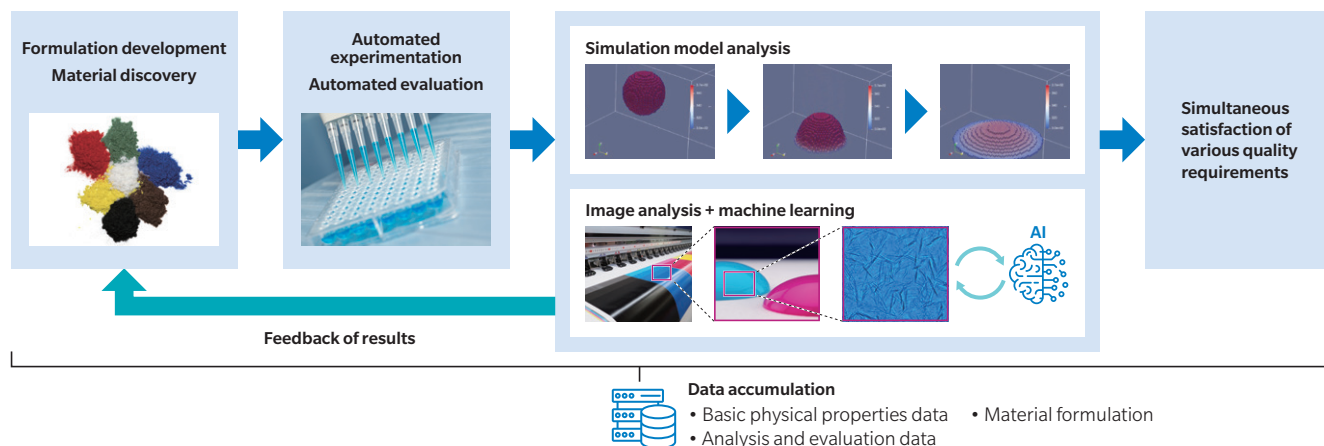
Integration and evolution of core technologies that create strengths

Konica Minolta has developed superior technologies by fusing multiple core technologies of its own.

For example, in the Professional Print Business, Konica Minolta has developed the IQ-501 automatic quality optimizer by combining electrophotographic technology with spectroscopic and color measurement technologies. In this development, Konica Minolta has advanced the high-level integration of its precision paper feeding technology, print image sensing technology, and real-time data processing within the unit. Commercial and label printing products featuring the IQ-501 have been highly valued by customers for reducing losses caused by downtime.

In the healthcare business, we have developed a technology that integrates dynamic radiography imaging technology with image analysis technology to obtain motion information of biological tissue that cannot be seen with conventional static X-ray images. This technology has been reported to enable pulmonary function tests for chronic obstructive pulmonary disease by analyzing dynamic images, with the potential to reduce the burden of such tests.

Data-driven development of inks for inkjet printers



Furthermore, Konica Minolta is focusing on the development of optical components for semiconductor manufacturing equipment as an area where we should leverage our strength to meet future social needs. Demand for semiconductors is expected to continue expanding over the long term, especially in such fields as AI and autonomous driving, leading to advances in higher speeds, larger capacities, and increased multilayering of semiconductor circuits. At the same time, the precision required for optical lenses is becoming increasingly stringent as process miniaturization progresses. Konica Minolta will strengthen the development and supply of high-precision optical components to meet this growing demand and the exacting requirements of our customers by leveraging our long-cultivated expertise in optical design and molding technologies.

Improving development efficiency through the use of AI and data science

Konica Minolta has been committed to the practice of DX from early on and has been improving efficiency thanks to its DX specialists. More than 1,000 of these specialists have been trained within the Group and work alongside frontline members to achieve numerous business process reforms each year.

One example of these business process reforms resulting from data utilization is the data-driven development of inkjet (IJ) inks. IJ ink is a complex product that requires a manufacturer to bring together two contradictory properties, low viscosity on

jetting and high viscosity after landing. Therefore, material design requires advanced technology and precise control. Konica Minolta has automated the process of experimentation and evaluation, creating a system that can test many conditions without human intervention, greatly increasing the speed of experiments and the scope of testing. In addition, by combining predictive models, image analysis, and AI with the vast amount of data obtained from experiments, the efficiency of materials discovery and other processes was enhanced and a development process with minimal rework was realized. This has achieved both a significant reduction in development time and stabilization of quality, producing significant results.

Voice Data-driven development of IJ inks



Maho Miyauchi
Data Science Center,
Technology Development Headquarters

Our IJ inks are developed by precisely controlling the physical properties on jetting and on landing, enabling high-speed, high-quality printing. In the past, each team carried out development for each target separately, which created challenges in terms of development efficiency and the deployment of technology to other projects.

In the data-driven development project for IJ inks, we acquired a large dataset of images printed with inks using various materials and their combinations, and developed a machine learning model capable of predicting ink performance. In parallel, we developed a simulation model that maps the complex control factors during printing and reproduces the behavior of ink on jetting and landing. These models are consistent with results deduced from theory, leading to greater exploration space and speed in future materials design.

Going forward, we intend to roll out this case across the entire Konica Minolta Group and promote data-driven materials development to improve our development efficiency and technological capabilities.

Cultivating Technologies for Future Growth

Development of technologies to reduce environmental impact

As for cultivating technologies for sustainable growth, we will invest mainly in themes related to reducing environmental impact and accelerating innovation. For example, as an initiative to realize a recycling-based society, in the field of recycled plastic materials production—an area that has evolved from materials technology, one of our core technologies—we began external sales of recycled plastic upcycled from waste plastics.

Hyperspectral cameras, a product of the Konica Minolta Group, are also used to distinguish and analyze waste plastics. We will contribute to solving social challenges by combining multiple technologies, such as optical technology for raw material selection and material technology for the production of recycled materials, to improve the productivity and quality of recycling.

In addition, in the field of “biomanufacturing,” which uses microorganisms to synthesize materials from non-fossil-derived raw materials, we are developing technologies to monitor complex processes. In this initiative, we are bringing together Konica Minolta’s sensing technologies to visualize the complex behavior of microorganisms, with the aim of stabilizing biomanufacturing and reducing costs. In 2025, in the field of biomanufacturing, a high-yield strain detection system

developed by combining hyperspectral imaging (HSI) and anomaly detection model using AI technology was highly evaluated by the Japan Society for Bioscience, Biotechnology, and Agrochemistry.

Furthermore, we are advancing the development of vapor barrier film to overcome durability challenges for the full-scale social implementation of lightweight, flexible perovskite solar cells (film type), which are a promising candidate for the next generation solar cells. By leveraging the technology developed in our OLED lighting business, along with film forming technology and mass production expertise, we aim to achieve early mass production.

Konica Minolta will continue to actively engage in the advanced development of technologies that contribute to reducing environmental impact, in order to remain a company that is essential to society.

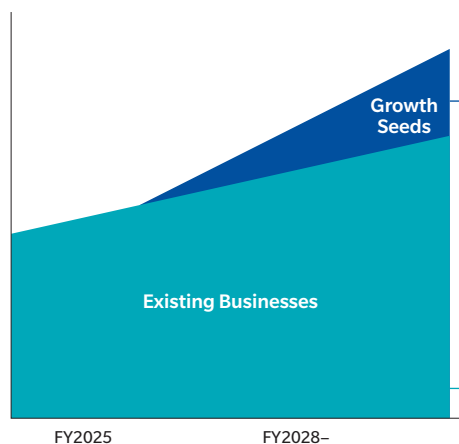
Open innovation for social implementation

In the development of technologies related to biomanufacturing, we have jointly set up the Bioprocess Technology Cooperative Research Laboratory with the National Institute of Advanced Industrial Science and Technology, aiming to realize advanced biomanufacturing processes such as microorganism cultivation, isolation, and purification, while focusing on the development of monitoring technologies for these processes.

In addition, a joint research agreement launched in 2020 with the University of Toronto, which is conducting world-leading research in the area of cutting-edge AI technology, has been extended for five years. We will continue to focus on acquiring cutting-edge technologies to improve processing performance of AI imaging, utilize AI for manufacturing quality control, and develop new materials that contribute to reducing environmental impact.

Konica Minolta will continue to actively promote open innovation and accelerate the social implementation of innovative technologies.

Concept of the Profit Growth



New medium- to long-term themes

Existing business	Core technology	AI-enhanced optics/measurement/materials	New theme
Business Technologies Sensing	Resin molding	✕ High-precision waste material analysis	Recycled plastic materials production
Performance materials (OLED lighting)	Materials / film forming	✕ High barrier layer	Barrier film of perovskite solar cell
Sensing	Optical measurement	✕ State measurement of microorganisms	Process monitoring of biomanufacturing
Optical components	Precision molding	✕ Optical design Simulations	Optical components for semiconductor manufacturing equipment

Voice Joint research with the University of Toronto



Takuya Aoyama
System Technology Development Center,
Technology Development Headquarters

In collaboration with the University of Toronto, we are researching AI model building techniques that can support data prediction and factor analysis for use in a wide range of cases, under the guidance of a professor with expertise in AI technology and its industrial applications. In particular, we are working to develop technology aimed at stabilizing quality in complex processes for Konica Minolta’s film production plants, and have achieved results in which AI derives methods for dealing with production troubles in ways similar to the expertise of our operators.

Through this joint research project, I gained a global perspective that allowed me to understand the current state of both industry and academia and to identify challenges. At the same time, I realized the potential of this technology to be applied to many social challenges, including the reduction of environmental impact, and became keenly aware of the significant role my research should play.

Going forward, I intend to contribute to solving various social challenges by integrating the effectiveness of the AI models we have verified, the technologies and knowledge I have learned at the university, and the results of colleagues engaged in joint research on other themes, and through social implementation in areas such as materials development.

Intellectual Property Strategy

Strategic use of intellectual property to establish a foundation for growth

Fiscal 2025, the final year of the Medium-term Business Plan, is positioned as a year to “establish a foundation for growth,” and in addition to deepening existing businesses, we are preparing technologies for future growth. An important part of this effort is the strategic use of intellectual property related to those technologies. Konica Minolta designs backcasts on how to use intellectual property to achieve the medium-term goals set for each business, and closely aligns its intellectual property strategy with its business strategy. In doing so, we create a story of how intellectual property will contribute to each business’s direction, and then we develop specific intellectual property activities necessary to make that story come true.

DX initiatives to support intellectual property strategy

In order to further accelerate and advance intellectual property activities, we are actively investing in DX and creating an environment where employees can be freed from routine tasks and focus on more creative and value-added work through AI-driven automation. These digital transformations have contributed to the efficiency and sophistication of intellectual property activities not only in the Intellectual Property Division, but also in development departments and throughout the entire Group.

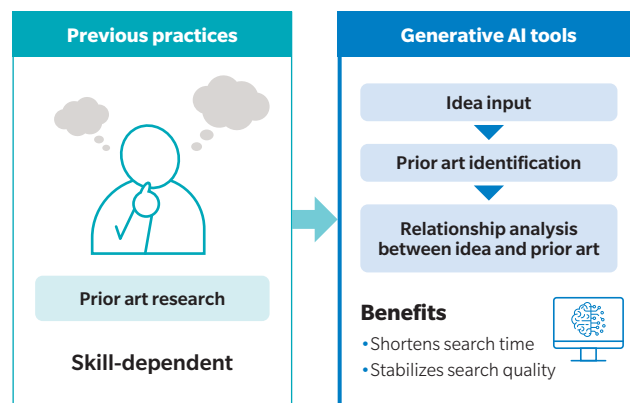
As a specific initiative in the Intellectual Property Division, we are taking stock of IP operations and visualizing processes, and then introducing AI-based digital tools to automate and streamline each task, such as prior art research, searches for in-house technology and human assets, and foreign patent applications.

In addition, for prior art research, which previously relied on individual developer skills, we have developed a tool that can easily identify prior art by simply entering an invention idea in a simple sentence. This AI-based tool can also analyze the relationship between the identified prior art and the idea in question, allowing developers to use the analysis results to improve their ideas. The introduction of this tool has made it possible to significantly shorten the time required for prior art searches and to control variations in the quality of the research.

Standardization strategy initiatives

Standardization is more than just compliance with standards; it is a business strategy tool for market creation and expansion, and in conjunction with intellectual property strategies, it is the key to greater competitive advantage. With this in mind, Konica Minolta launched a project in fiscal 2024 aimed at organizing its standardization strategy as a Group-wide function.

AI applications in the Intellectual Property Division



In this project, we are studying standardization strategies that contribute to business startups and business expansion for several strategic business themes, as well as promoting in-house education and standardization human capital development.

Going forward, we will further strengthen the standardization of intellectual property as a business strategy tool for developing growth businesses and expanding strengthening businesses, in conjunction with our intellectual property strategy.

Intellectual property contributing to a decarbonized society

By accurately grasping important social issues such as addressing climate change and using limited resources effectively in the future, and by approaching these issues from a backcasting perspective, Konica Minolta has been working from an early stage to develop technologies that will help reduce environmental impact and realize a decarbonized society. As a result, we have applied for a number of patents related to green transformation (GX) technologies.

We intend to carefully select from among these intellectual properties, including patents, those that are particularly promising in line with our moves toward business selection and concentration, and strategically use them to support and protect our core technologies in future growth areas.

Specifically, in areas we expect to prepare technologies for future growth, such as biomanufacturing and perovskite solar cell (film-type) barrier film, we will actively utilize and protect intellectual property, including patents and expertise, in technological areas that contribute to the realization of a decarbonized society, in order to ensure our technological superiority and continuously enhance our corporate value.

Intellectual Property Report

The Intellectual Property Report disclosed on our website explains in detail our strategies and activity results related to intellectual property.

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