

Technology and Intellectual Property Strategy

Yusuke Yoshimura
Executive Vice President &
Executive Officer



Since our founding more than 150 years ago, we have refined our four core technologies—materials, optics, nano-fabrication, and imaging—building on our origins in the camera and film business. By integrating these technologies, we have created distinctive strengths and value that set us apart. The technological foundation we have established through this process serves as a foundation for creating diverse forms of value, and its integration with software and AI technologies has become a key driver supporting our sustainable growth. Under our Medium-term Business Plan (2023-2025), we refocused on our technological capabilities, the foundation of our business, expanding our strengthening businesses and laying the groundwork for medium- to long-term sustainable growth. As a result, several future themes are showing clear potential for commercialization, and we have made tangible progress.

Going forward, we will thoroughly explore future themes by leveraging our existing technologies. We will carefully select themes from the perspective of medium- to long-term strategy and return on investment, with the aim of developing individual themes into robust growth areas rather than simply commercializing them. Furthermore, to secure the necessary resources, we will allocate R&D investments more selectively and harness AI to pursue fundamental improvements in development productivity.

As the world rapidly changes and evolves, we will focus on our own strengths while constantly incorporating the latest technologies to create social value and sustainably enhance corporate value from a medium- to long-term perspective.

Technology Strategy

Konica Minolta possesses a diverse range of technological assets, including its four core technologies as well as digital and AI technologies accumulated through recent business activities. Our basic policy for technology strategy is to utilize these assets to contribute to business expansion by strengthening our competitiveness in existing areas and creating new growth areas based on our core technologies.

Under the Corporate Plan 2026-2028 (hereinafter, new Medium-term Business Plan), to further strengthen our profit foundation and commercialize growth seeds aimed at sustainable growth, we will focus on the following priority measures: “1. Technology development to strengthen existing areas,” “2. Technology development to serve as a foundation for new growth,” and “3. Development and production reforms leveraging DX and AI.”

To date, we have leveraged our core technologies to provide products and services that address customer challenges, thereby enhancing our competitiveness in the Industry, Digital Workplace, Professional Print, and Imaging Solutions Businesses.

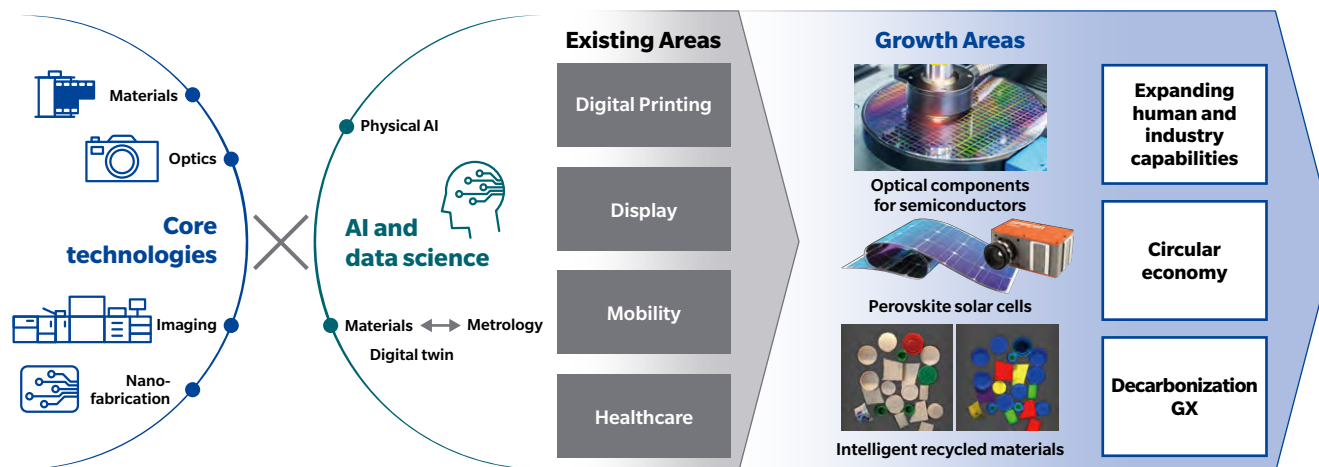
Going forward, we will further advance the integration of core technologies across businesses. By going beyond product offerings to contribute to improvements in customers’ business processes themselves, we will further strengthen the competitiveness of our existing businesses.

Furthermore, as we work to develop our technologies toward future growth, we will focus on areas of social challenges such as expanding human and industry capabilities, circular economy, and decarbonization/GX. In addition to leveraging Konica Minolta’s technological advantages, we will select R&D themes based on market growth potential and the potential to contribute to solving social issues, accelerating the creation of innovations that utilize our core technologies. At the same time, we will work to strengthen mechanisms for continuously generating new growth seeds.

Furthermore, to maximize contributions to our business, it is essential to streamline development and production and shift toward high-value-added operations. By harnessing AI and data, Konica Minolta will improve the efficiency, speed, and sophistication of its operations.

Promoting the Commercialization of Growth Seeds for Sustainable Growth

Leveraging AI with core technologies to expand from existing areas into growth areas



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

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

R&D investment

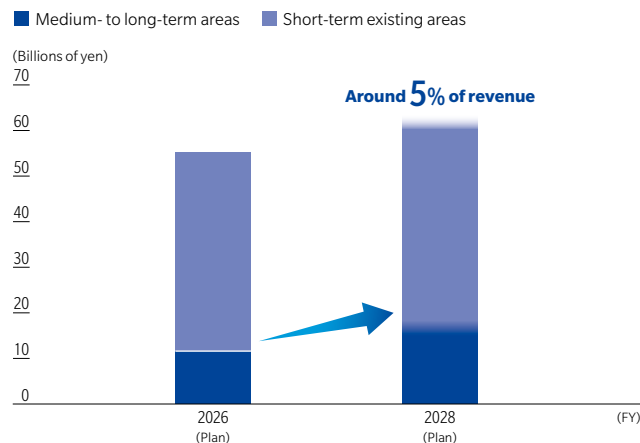
Under the Medium-term Business Plan (2023-2025), we optimized the allocation of R&D investment based on four categories: strengthening businesses, maintaining profit businesses, non-focused businesses, and direction-changing businesses. Going forward, in line with the policies of the new Medium-term Business Plan, we will increase the proportion of investment allocated to medium- to long-term growth areas.

Specifically, we will focus on fields with strong future societal needs and growth potential where Konica Minolta can leverage its strengths, thereby driving the development of new growth areas.

Furthermore, while continuing technological development to enhance product and service capabilities in our existing businesses, we will strengthen our initiatives in medium- to long-term areas. To that end, we will increase our total R&D investment in line with business growth and gradually increase investment in medium- to long-term areas.

At the same time, we will focus on initiatives to advance R&D effectively. Specifically, we will apply more rigorous go/no-go criteria to research themes based on the results of technology and customer value validation, and allocate investments effectively according to each stage of development. Furthermore, we will continue to streamline technology development through the use of AI and data.

Breakdown of R&D expenses



Priority Measure 1: Technology development to strengthen existing areas

By integrating its multiple core technologies, Konica Minolta has created products and services that solve challenges faced by its customers.

In the Professional Print Business, Konica Minolta has developed the IQ-601 intelligent quality optimizer by combining electrophotographic technology with spectroscopic and color measurement technologies. Its range of automatic adjustment functions streamlines printing processes and improves print quality, contributing to greater automation and stability in printing operations.

In the Industry Business, we have developed industrial inkjet printheads by integrating materials technologies developed through our photographic film business with precision machining technologies honed through our camera manufacturing. Featuring superb long throw distance performance and a wide range of ink options, we are advancing technological development aimed at expanding into areas ranging from sign graphics to commercial print-on-demand, as well as industrial applications such as inkjet-applied solder resist. This enables us to address an increasingly diverse range of applications, thereby helping improve customer productivity while creating value.

Furthermore, by combining technologies in optical measurement, imaging, and AI, we have developed automotive visual inspection technology. In addition to high-precision defect detection and classification, combining this technology with data analysis enables improvements to manufacturing processes. To strengthen our future competitiveness in existing fields, we are also working to integrate AI with our core technologies. As one example, we are advancing research and development of multimodal AI using fiber-reinforced resin as a model material, aiming to enhance our development capabilities in the materials field.

In the healthcare unit, we have developed technology that combines dynamic radiography imaging with image analysis to capture motion information from biological tissue that is difficult to observe in conventional static X-ray images. We are also leveraging AI to further enhance the value of this technology. For example, in patients with severe respiratory diseases, contrast around the diaphragm tends to be low; however, by using AI to track the diaphragm's vertical movement, we have improved recognition accuracy, and the technology has been well received by medical institutions.

Going forward, by continuing to integrate our core technologies and utilize AI, we will build greater competitiveness in existing fields and solve customer challenges.

Voice AI technician

Multimodal AI that advances materials technology



Ko Osawa
Data Science Center, Technology
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KONICA MINOLTA, INC.

My work focuses on enhancing materials technology by combining AI with measurement technology. In our multimodal AI system for fiber-reinforced resins, we have succeeded in simultaneously optimizing multiple quality attributes in composite materials—that could not be fully assessed from a single type of measurement data—by integrating diverse measurement

data. This has also enabled us to derive design guidelines based on the rationale behind the predictions.

The key to building multimodal AI in the field of materials chemistry was the integration of materials chemistry, measurement, and information science. Forming a team with colleagues from different areas of expertise within the company and achieving early implementation through joint research with the National Institute of Advanced Industrial Science and Technology (AIST), which has advanced expertise in this field, was a moment of great satisfaction. This technology goes beyond simply advancing measurement solutions; it can also be applied to intelligent recycled materials and process monitoring of biomanufacturing—areas that represent growth seeds for the medium to long term. Going forward, we will continue to contribute to decarbonization and resource circulation, and strive to bring about a sustainable society.

Technology and Intellectual Property Strategy

Priority Measure 2: Technology development to serve as a foundation for new growth

To achieve sustainable growth, Konica Minolta is working to develop technologies that will serve as a foundation for new growth.

With respect to semiconductors, one of our growth areas, we are working on the development of optical components for semiconductor inspection equipment. With long-term growth expected in semiconductor demand due to advances in AI and autonomous driving, circuits are becoming faster, higher-capacity, and multi-layered; as a result, the precision required of optical lenses is increasing even further alongside miniaturization. To address this market expansion and increasingly sophisticated customer needs, we are leveraging the optical design and processing technologies we have cultivated over many years to develop high-precision optical components and strengthen our production and supply capabilities.

In the field of recycled plastic materials production, we have developed and commercialized technology that enables compounding and molding under optimal conditions by combining our expertise in materials science with AI. In addition, the Konica Minolta Group's hyperspectral cameras are being used to identify and analyze waste plastics, contributing to improved productivity and quality in the recycling process.

New medium- to long-term themes

Existing business	Core technologies	AI-enhanced optics/measurement/materials	New themes
Optical components	Precision molding	Optical design simulations	Optical components for semiconductor inspection equipment
Performance materials	Materials/film forming	High-barrier layer	Barrier film for perovskite solar cells
Business Technologies Sensing	Resin molding	High-precision waste material analysis	Intelligent recycled materials
Sensing	Optical measurement	State measurement of microorganisms	Process monitoring of biomanufacturing

In the field of biomanufacturing, we are working to establish technologies that use microorganisms to synthesize materials from non-fossil-derived raw materials. Using Konica Minolta's sensing technology, we are visualizing the behavior of microorganisms to stabilize biomanufacturing and reduce costs. Furthermore, our detection system of overproducing microbial strains, which combines hyperspectral imaging with AI-based anomaly detection, received high praise from the Japan Society for Bioscience, Biotechnology, and Agrochemistry. Through the integration of sensing technology and AI, we are driving innovation in biomanufacturing workflows.

Furthermore, to facilitate the commercial deployment of perovskite solar cells (film type), which are expected to become the next generation of solar cells, we are leveraging high-barrier technology cultivated in our OLED lighting business. Barrier films utilizing this technology have shown the potential to reach practical levels in accelerated testing. By leveraging the production technologies accumulated in our roll-to-roll film business and existing equipment, we aim to quickly achieve stable mass production.

Konica Minolta will actively promote open innovation to accelerate the social implementation of innovative technologies and contribute to transforming work styles and the nature of industry.

Priority Measure 3: Development and production reforms leveraging DX and AI

Konica Minolta was an early adopter of DX and has promoted the use of AI across development and production sites.

In production, we are continuously advancing our smart factory initiatives by installing numerous sensors at our display film factories and analyzing the acquired data to achieve high-quality and stable production.

In development, we are also transforming processes through AI, including streamlining materials development through materials informatics and using simulation technology to achieve high quality earlier in the development of inkjet printers.

We are also working to establish the infrastructure needed to accelerate AI utilization. Annotating the massive amounts of data essential for AI model development is a major challenge, but by utilizing automated annotation technology, we are improving efficiency, leading to more advanced AI development and faster product and service development. Going forward, we will make the most of evolving AI technologies to further accelerate the transformation of our development and production processes.

Voice Barrier film developer

Barrier film technology supporting the commercialization of perovskite solar cells



Yusuke Nakajima

Device Technology Development Center,
Technology Development Headquarters
KONICA MINOLTA, INC.

Lightweight, flexible, and capable of generating electricity even under low-light conditions, perovskite solar cells (PSC) have the potential to significantly expand the reach of renewable energy. Having written my university thesis on perovskite crystals, I am deeply drawn to their

potential and am committed to supporting their commercialization through Konica Minolta's technologies.

The barrier film technology we have refined is foundational to the performance and lifespan of these devices. However, there is a trade-off between barrier properties and transmittance, and the path to ensuring both elements is not an easy one. We also address challenges specific to solar cells that emerge during customer evaluations, promptly by combining historical data, insights from other departments, and digital transformation. When the films we develop improve the performance of our customers' devices, I find it highly rewarding to see our technology contributing to the development of this emerging market. Through the development of barrier films, we will continue to contribute to the widespread adoption of renewable energy.

Technology and Intellectual Property Strategy

Basic approach to intellectual property strategy

Konica Minolta regards intellectual property (IP) as one of its key management resources. By advancing an IP strategy that is integrated with our business strategy, we aim to sustainably increase our corporate value.

To further enhance the alignment between our IP strategy and our business and management strategies—and to ensure the effectiveness of these strategies—we are also developing mechanisms to strengthen IP governance.

Under the new Medium-term Business Plan, a key priority is to help improve Group-wide ROE and to create the next generation of growth businesses. We will work to create value by enhancing our IP portfolio, strengthening our talent base, and promoting IP digital transformation (DX).

Priority policies of our medium-term IP strategies based on the new Medium-term Business Plan

Policy 1: Maximizing Group-wide IP ROI by pivoting IP strategy

Due to changes in the market environment and the diversification of technologies, the role expected of IP activities is expanding beyond merely acquiring and defending rights to value creation that is directly linked to business profits and capital efficiency. Therefore, Konica Minolta will review its IP strategy with a focus on current businesses and strive to maximize return on investment from IP (IP ROI) by optimizing IP investments and reevaluating and realigning the Group's entire IP portfolio.

Major initiatives

- Restructuring IP strategies in mainstay businesses and streamlining and optimizing IP investments
- Reevaluating and realigning the Group's entire IP portfolio
- Streamlining IP operations and enhancing added value through IP DX and evolving the intellectual property landscape (IPL)
- Creating new profit opportunities through strengthened collaboration with other divisions and external outreach

Policy 2: Implementing an IP strategy to create new seeds of growth

To enhance corporate value over the medium to long term, it is essential not only to strengthen existing businesses but also to establish growth areas that will serve as pillars of future profits. In areas that serve as seeds of growth to drive medium- to long-term growth, Konica Minolta will support the establishment of new businesses by having its IP division involved from the early stages of R&D and business development and by leveraging IP as a blueprint for competitive advantage.

Major initiatives

- Generating IP from a medium- to long-term perspective, focusing on technologies and business areas that serve as seeds of growth
- Supporting the establishment of new businesses by formulating and executing IP strategies in tandem with business development
- Shifting resources according to each business phase and establishing specialized organizational structures

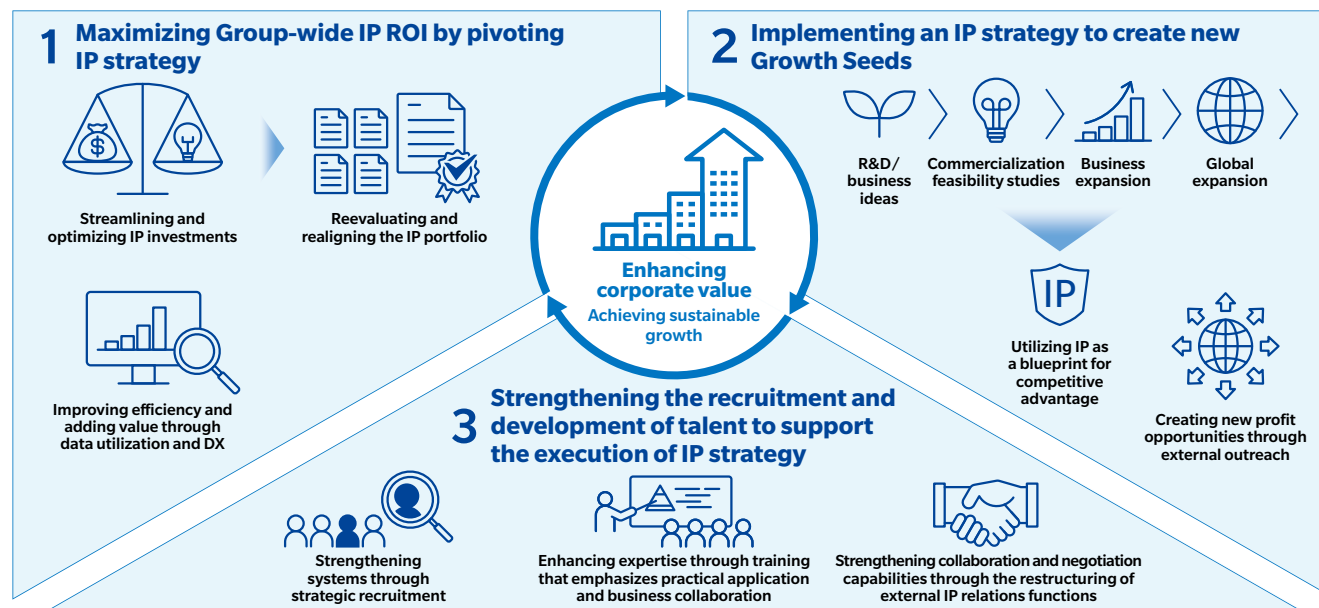
Policy 3: Strengthening the recruitment and development of talent to support the execution of IP strategy

Evolving our IP strategy requires not only knowledge of legal systems but also a multifaceted set of expertise, including technical understanding, business acumen, negotiation skills, and data utilization capabilities. To enhance our strategic execution capabilities, Konica Minolta will strengthen both recruitment and development as an integrated effort to solidify the foundation of our IP functions. Furthermore, to enhance our external response and negotiation capabilities, we will proceed with the restructuring of our external IP relations functions.

Major initiatives

- Acquiring IP talent through strategic recruitment
- Enhancing the expertise of IP talent through training that emphasizes practical application and business collaboration
- Strengthening internal and external collaboration and negotiation capabilities through the restructuring of external IP relations functions

Priority policies of our medium-term IP plan



Technology and Intellectual Property Strategy

Pivoting IP investment policy

Improving investment efficiency by strengthening IP functions

Konica Minolta is focused on enhancing the functions of its intellectual property divisions to strengthen the creation and utilization of patents key to business competitiveness. By enhancing internal analytical and strategic planning capabilities, we are reviewing our operational structure, which has relied heavily on outsourcing, and shifting toward IP activities centered on tasks that should be handled in-house.

As a result, we are moving away from IP investment purely for accumulating volume, and shifting our focus toward the creation and utilization of IP that truly contributes to our business, with clear objectives and goals defined for each individual case. This has led to efforts to optimize Group-wide IP-related costs and improve the efficiency of our IP investments.

Improving investment efficiency by strengthening IP functions

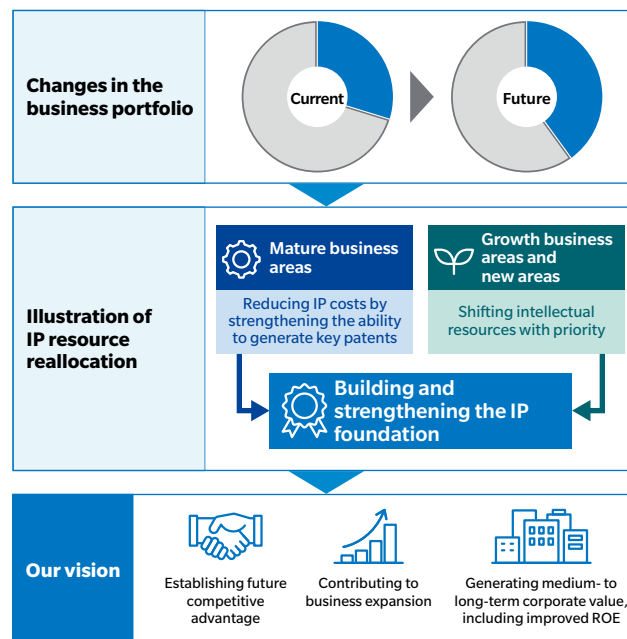


Reallocation of IP resources with a focus on growth areas

In light of changes in our business portfolio, we are also strategically reviewing the allocation of our IP investments. In mature business areas, we are optimizing IP costs by strengthening our ability to generate key patents, while prioritizing the allocation of IP resources to business areas that will drive future growth and to new areas.

In growth areas, we will contribute to the creation of medium- to long-term corporate value, including higher ROE, by building an IP foundation with an eye toward future competitive advantage and business expansion. Furthermore, by redesigning IP investments from a total Group optimization perspective, we aim to achieve both new value creation and sustainable growth.

Reallocation of IP resources with a focus on growth areas



Redesigning IP investment from a total Group optimization perspective to achieve new value creation and sustainable growth

Progress in IP activities supporting seeds of growth

Konica Minolta is fostering new technology areas that contribute to solving environmental and social issues as seeds of growth. These initiatives are characterized by having a foundation in integrating core technologies with AI and data science, and by the cross-functional development of multiple technology themes that address social needs such as resource recycling and decarbonization.

In parallel with progress in these technology areas, we are strengthening the securing and utilization of intellectual property. In particular, regarding the manufacture of recycled plastic materials, barrier films for perovskite solar cells, and process monitoring for biomanufacturing, we are strategically making patent applications. In the area of recycled plastic materials, we are integrating our proprietary sensing technology with AI to secure IP rights for technologies that enable material identification, optimization of manufacturing conditions, and improved supply stability and quality. For barrier films for perovskite solar cells, we are leveraging the patent assets we have built in the area of barrier films for OLEDs, while also strengthening our patent applications for technologies that address challenges specific to perovskite solar cells. Additionally, in the area of biomanufacturing, we are securing IP rights for productivity-improving technologies that utilize our proprietary sensors and AI.

These patents broadly cover not only individual technologies but also the value domains created by combinations of multiple technologies. Through systematic IP activities aimed at commercialization, we are working to secure a competitive advantage in each technology area and build an IP foundation that will lead to future profit generation.

Intellectual Property Report

Our Intellectual Property Report, disclosed on our website, explains in detail our strategies regarding intellectual property such as patents, our track record in acquiring and enforcing intellectual property rights, and our internal organizational structure.

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

Key points in formulating the medium-term IP plan: Insights from next-generation leaders



Yozo Okubo
Group Leader, Business Technologies
Group 2,
IP Tech Department 2

Tomoaki Takikawa
Group Leader, New Business
Development Group
IP Tech Department 1

We spoke with next generation leaders who were involved in developing the medium-term IP plan, formulated in conjunction with Corporate Plan 2026–2028, about the discussions during the planning process and the vision behind the plan.

— **What concerns prompted the development of this medium-term IP plan?**

Takikawa: The starting point was simple: the question of whether we could truly meet business needs by simply continuing with our current approach. As a division working on intellectual property, we have always been thoroughly committed to securing and defending these rights. However, as changes in the business environment accelerated, we felt that simply accumulating new property using the same old mindset would lead to a lack of focus and limit our ability to respond effectively.

Okubo: While our role in supporting existing businesses remains important, the scope of what's expected of us is expanding to

include responding to new areas, utilizing data, and collaborating with external partners. We felt the need to prioritize our efforts rather than applying the same level of focus to everything.

— **This medium-term IP plan shows a strong emphasis on reviewing and optimizing IP investments. Was that decision reached smoothly?**

Takikawa: No. In fact, that was the point we debated the most. Streamlining, reviewing, setting priorities: it sounds simple when put into words, but in reality, each step involved some pain. We have built up a lot over the years, and everyone on the front lines has their own feelings about it.

Okubo: “What to review” was more difficult than “what to increase.” Whether it's patents or organizational structures, while there's a sense of security in maintaining and continuing, we need to objectively re-evaluate whether they truly contribute to our current and future business. In this plan, we made it a priority not to gloss over that point but to address each issue head-on.

Takikawa: I believe that not looking away from those issues is precisely the greatest significance of this medium-term plan. Not “reviewing to cut back,” but “reviewing to maximize effectiveness.” It was a major achievement that we were able to consistently apply this approach.

— **On the other hand, you're also placing a strong emphasis on how to engage with new growth areas. What is the thinking behind that?**

Okubo: In some cases, it's too late for the IP division to get involved once a new business or technology has already taken shape. Rather than taking action only after the picture has already become somewhat clear, by getting involved at a stage where there's still a high degree of uncertainty, we can incorporate the IP perspective into the commercialization process itself. This is an area we'd like to further strengthen going forward.

Takikawa: In fact, the earlier the stage of a project, the less clear the answers are. To what extent should we commercialize it? How do we differentiate ourselves from competitors? How should we

lay the groundwork first? The IP division cannot make these decisions on its own; we have to go back and forth with business departments numerous times to shape the direction. I believe it is the role of the IP division to work together with business departments from an early stage to devise strategies aimed at establishing a competitive advantage.

— **While the ideal is clear, putting it into practice seems to present its own challenges.**

Takikawa: That's absolutely right. Even when setting priorities, each department sees things differently, and short-term requests can sometimes clash with medium- to long-term preparations. Not everything can be neatly organized.

Okubo: From a frontline perspective, we simply can't move forward unless we specify who is involved, to what extent, and how. We need to translate what's written in the plan into concrete details—such as project workflows, division of roles, and decision-making timelines—and naturally integrate them into daily work. We need to be strongly mindful of this and work on it moving forward.

— **How would you describe the ultimate vision you are aiming for with this medium-term IP plan?**

Takikawa: It would be that the IP division becomes an entity that is naturally relied upon when considering the direction of a business. To achieve that, we need to build trust not just through words, but through actual results and the quality of our decisions. There are no shortcuts, but I believe this plan will serve as the foundation for that.

Okubo: For those on the front lines, we can't just make a plan and walk away. In fact, the real challenge lies ahead, and it's only natural that we'll need to make adjustments as we implement it. Even so, we will restructure our IP work to better suit the current business environment. We want to stay true to this direction and steadily bring it to fruition.