

Summary of Intellectual Property Strategy Briefing

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Asahi Kasei Corporation

Note: The forecasts and estimates mentioned in this document are dependent on a variety of assumptions and economic conditions. Plans and figures depicting the future do not imply a guarantee of actual outcomes.

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Presentation

Nakamura: Let me briefly introduce my career at the beginning. I have been engaged for many years as an expert in the investigation and analysis of intellectual property (IP), and have recently been promoting IP landscaping in particular, for the strategic utilization of IP information. From October 2018 to March 2022, I was the Senior General Manager of Corporate IP, and moved to the newly-established IP Intelligence Dept. in April 2022, where I have been working as a Senior Fellow.

01 Review of IP Activities in Previous Medium-Term Management Plan (MTP)

P. 3 IP activities under the previous MTP (i)

Here is a review of IP activities conducted over the three years of the previous MTP period. I will explain along the three points in the previous MTP.

In “Promoted initiatives for growth in fields for provision of value,” we implemented strategic IP management with a focus on utilization scenarios in the important themes in those fields.

In “Strategic restructuring of businesses and acceleration of new technology/business development,” we built a platform that utilizes IP to create new businesses.

In “Accelerated efforts for sustainability and DX (Digital Transformation),” we were one of the first to introduce IP landscaping, which has recently been attracting increasing interest in the IP industry, and have promoted it throughout the Group.

P. 4 IP activities under the previous MTP (ii)

In the first initiative, “Strategic IP management and utilization,” here is an example of how we built and utilized a patent network for one of our growth business, lithium-ion battery separators. Specifically, in Shenzhen, China, as a result of exercising our patent rights against certain products of a competitor, the court accepted all of our claims and ordered injunction of sales of the products.

The third initiative, “Promotion and implementation of IP landscaping,” focused on strengthening the existing businesses by reinforcing the market strategy with IP landscaping, and has been deployed group-wide. Here is an example of our current sensors, which have the strengths of fast response and low heat generation. We analyzed customers’ patent information through IP landscaping and identified technological areas where these strengths could be touted. By identifying companies with relevant technological capabilities as promising customers and actually approaching them, we were able to acquire new customers. As we are the company which pursues technology, such approaches using IP landscaping have been accepted throughout the group.

P. 5 IP activities under the previous MTP (iii)

“Building platform for new businesses creation” is an initiative that utilizes IP information, similar to the IP landscaping. We have diverse technologies, and believe that connecting these technologies will create new businesses. For this purpose, the connection of human resources is important. We then developed and provided a human resource recommendation system utilizing IP information. When an employee is looking for a person who is familiar with a certain technology within the company, AI judges the similarity between the entered technology information and the registered patent classification (technical classification) information granted to our company’s patent

applications, and introduces the inventor of the patent. This system is expected to support connections between individuals and create communities in our company which has technologies in a wide range of different areas.

P. 6 Strengths of IP Department (Core Competencies)

Through these activities, we redefined the permanent mission of our IP function as “Protecting profits and maximizing the value of businesses through providing supports corresponding to evolving business environment with IP expertise.” The message is that our activities will be overwhelmingly oriented toward contributing to business. We call it “Sustainable IP Goals (SIPGs)” with the thought that this mission will remain unchanged as long as Asahi Kasei’s business continues.

We believe that there are two strengths of our IP function based on this mission. The first is that we are responding to our globally expanding businesses and building IP portfolios in each country appropriate for their operations. Moreover, these patents are adequately registered in each country. Patents are filed with the Patent Office of each country and registered after examination. As shown in the graph on the left of the slide, our patent grant rate is higher than the average of our domestic peer companies. This indicates our strengths in IP procedures, which have been fostered by the lateral connections across our IP function that handles diverse businesses.

The second is the high capabilities to strategically utilize IP, as represented by the IP landscaping. During the three years of the previous MTP, IP landscaping has been accepted group-wide, including by the management.

P. 7 Achievements of IP activities (awards)

In recognition of these activities, we received “Minister of Economy, Trade and Industry Award” of “Intellectual Property Achievement Awards” in FY 2021. In addition to the IP mission that aims for a permanent contribution to the business and the results of the IP landscaping activities, the high IP mindset of researchers, such as Dr. Yoshino, who received the Nobel Prize in Chemistry, is considered to be the point for the award.

With regard to DX, the company was selected as “DX Stock 2022” as in FY 2021. This is the result of the evaluation of our DX activities led by the Digital Value Co-Creation organization. We believe that the promotion of IP landscaping, also called DX of IP, and the creation of new business models using DX, which IP initiatives are contributing to, were the basis for the selection.

02 Strategies for Utilizing IP and Other Intangible Assets in the New MTP

P. 9 New MTP 2024 -Be a Trailblazer- (Basic Guideline and Business Platform)

I will explain the strategy for utilizing IP and intangible assets for the new MTP announced in April 2022.

Under the new MTP, the basic guidelines for business portfolio evolution is to implement both challenging investments and cash generation. The four key areas to be addressed for this transformation are G (Green Transformation), D (Digital Transformation), and P (Transformation of Human Resources), as well as maximum use of intangible assets.

In order to make challenging investments for the next growth, it is necessary to invest in areas where we can provide “high added value” with a sense of “speed” while being “asset-light,” that is, utilizing the assets of other companies as well as our own. As a means to realize this, utilizing IP and other intangible assets is becoming increasingly important. This is because IP creates a stronger market advantage and also plays an important role in leveraging other companies’ capital.

P. 10 Growth strategy

The new MTP outlines 10 Growth Gears, or GG10, as businesses that will drive the next growth. We will focus our resources on GG10 and aim to have these businesses account for more than 70% of total operating income in around 2030. We will also strengthen IP in the area of GG10.

P. 11 IP strategies (Policy for utilization of intellectual property and other intangible assets) (i)

As our basic policy for utilization of IP and other intangible assets, there are three

approaches leveraging the strengths of the IP function. The first is to respond to management and business policies in a timely manner, the second is to maximize the value of the diverse IP of our company, and the third is to visualize the intangible assets of our own and other companies, making maximum use of the IP landscaping. Through these efforts, we will build and implement strategies aimed at growing GG10.

To implement this policy, in April 2022 the IP Intelligence Dept. was established under the direct control of the Executive Officer in charge of corporate strategy. This will further accelerate the utilization of intangible assets throughout the Group.

**P. 12 IP strategies (Policy for utilization of intellectual property and other intangible assets)
(ii)**

We have three approaches.

In the first, “Timely alignment with corporate/business strategies,” we will continue to implement the three initiatives described in the review of the previous MTP, namely “Strategic IP management and utilization,” “Building platform for new businesses creation,” and “Promotion and implementation of IP landscaping.” The IP Intelligence Dept. will promote the strengthening of strategic aspects utilizing IP and other intangible assets through a group-wide approach that transcends business divisions while incorporating management information in a timely manner.

**P. 13 IP strategies (Policy for utilization of intellectual property and other intangible assets)
(iii)**

The second approach, “Maximizing the value of diverse IP,” focuses on going through the IP activity cycle shown on the left-hand side of the slide.

In the IP activity cycle, the first step is analyzing business environment using IP landscaping, and then filing patent applications based on utilization scenarios to properly turn them into rights. We actively utilize them toward contribution to business activities. Up to this point of the cycle, our IP function has a major advantage. When our activities are based on strategy, some patents will not be utilized. A patent is expired in twenty years from the filing of the application, but a patent fee must be paid to maintain the patent during that time. Patents that are not used should be maintained by taking inventory as appropriate based on the strategy and maintaining only the patents to be used. The resources saved by that are put into the next activity. This cycle increases the value of our IP.

The graph in the center of the slide quantifies the value of our patent. While the number of active patents we hold has been largely flat due to taking inventory, our patent value has risen steadily as a result of several years of efforts for this cycle. In the future, we will conduct such activities with an awareness of GG10 and aim to increase the applications and value of the GG10-related patents so that the percentage of the number of GG10-related active patents will exceed 50% around FY 2030.

P. 14 Advantage of our IP from an SDGs perspective

The graph shows the value of our patents related to SDGs. We have many core technologies and patents that address the various objectives of SDGs, and our strength is that their value is higher than that of other companies and also increasing. Our GG10 is in line with SDGs, and we aim to increase this value.

P. 15 Examples of visualization of IP and intangible assets

The third approach, “Visualization of intangible assets using IP landscaping,” will leverage our strength in IP analysis capabilities that we have developed over the years. In addition to conventional statistical analysis as shown in the leftmost part of the slide, we will take into account the viewpoints of inventors’ network information, value evaluation of IP, and the relationship between management indicators and IP indicators to maximize the use of IP information. The objective is not to make it a map, but to explain these in a logical way with a narrative and connect them to the strategy.

**P. 16 IP strategies (Policy for utilization of intellectual property and other intangible assets)
(iv)**

As a specific example of visualization using IP landscaping, let’s look at our efforts with Sage Automotive Interiors, Inc., which we acquired in 2018. This is an example of an IP landscaping

study on a new joint project that integrates Sage's automotive interior materials technologies with our diverse technologies, not only in the field of textiles.

First, we focused on the technological trend of autonomous driving, and mapped out the patent applications related to interior materials in that area, which is shown in the center of the slide. Text mining was performed from patent information to extract related items. Each light blue dot represents a patent application, and the distance between the dots indicates the closeness of the patent content. Applications in similar fields are circled. This provides a bird's-eye view of what patents have been applied for in the overall technology of interior materials related to automated driving.

The red markings are areas where there are signs of a surge in the number of applications. These signs can be predicted from the slope of the increase in applications, rather than after the increase. We were able to identify areas that will grow in the future and match them with our technologies, and propose new joint development between Asahi Kasei and Sage.

P. 17 Actualization of strategic IP activities

This slide embodies our IP strategic activities in the future utilizing the three approaches. This is an example of a strategy to maximize the value of intangible assets in the circular economy market. In the circular economy market, it is necessary to both accelerate the formation of the market and ensure the business viability by taking the lead in market design. Simply monopolizing the manufacture and sale of our products with patents, as in the past, is not enough to turn the business around. In order for us to take the initiative in this field, several initiatives and strategies are necessary.

For example, as shown at the bottom left of the slide, joint development is conducted with other companies to speed up development, and as shown at the top left, already established technologies are outsourced to reduce investment. Also, as shown at the lower right, a strategy could be considered to earn more broadly by licensing to other companies for low-profit businesses. Our core business areas, however, will be monopolized with patents as before, and we will take initiatives to ensure business viability.

Such strategies to utilize IP and other intangible assets will also be examined using the IP landscaping and proposed to management.

03 Examples of Strategic Utilization of IP for Accelerating 10 Growth Gears (GG10)

P. 19 Contribution to hydrogen-related business

Here are some examples of IP and intangible property utilization for the acceleration of GG10.

We are striving to enter the hydrogen business centered on alkaline water electrolysis technology, and the figure at the bottom of the slide shows the examination flow. Step 1 is to overview the entire hydrogen business industry, such as technological trends and players, from public information including not only patents but also general information. Step 2 is to organize our technological strengths and those of our competitors in the value chain of the alkaline water electrolysis business shown in the figure at the top using IP landscaping. As Step 3, we will deepen the superiority of our technological strengths, clarify missing parts, and make specific proposals on who to partner with.

P. 20 Contribution to mobility-related business

In the mobility-related business, we utilize exhibitions and other opportunities to introduce our products to automobile manufacturers, or OEMs. The figure on the right photo on the slide is a patent map that visualizes the relationship between our technology and an OEM's technology using IP landscaping. As with the text-mining map, this chart shows where common technologies and points of contact are located, thereby conveying points where we can contribute to the OEM, and activate communication. It is well received by the OEM, and we intend to continue using it in the future.

P. 21 Contribution to environmental homes business

In the environmental homes-related business, we are also using IP landscaping to promote net zero-energy residential buildings. The right-hand diagram of the slide is a map overlooking our own patents and those of other companies in the net zero-energy homes-related technologies. The

areas related to energy management and electricity trading are shown in bright colors, which are notable areas where patent applications are actively filed. We are aiming to build patent networks in these areas intensively, and the application work is already proceeding. This is one example of IP contributing to business protection and expansion.

P. 22 Contribution to global specialty pharma business

Lastly, here is an example of contribution in the global specialty pharma-related business. Asahi Kasei Pharma granted to Eli Lilly and Company an exclusive license to entrust Phase 2 clinical trial and beyond for a chronic pain drug candidate that Asahi Kasei Pharma had been developing, in order to accelerate the development speed. If they succeed in commercialization of the drug, we will be able to receive royalties on global sales while securing sales rights in Japan and other countries. This is an example of a highly valuable agreement in terms of IP monetization.

P. 23 Lifelong growth path of IP staff

Human resources are the foundation of these activities. The left chart of the slide depicts a model for the lifelong growth of IP staff to achieve the desired vision. As I said at the outset, we have the procedural skills of IP, but future IP activities must be driven by strategic awareness. Not only procedural skills, but also general skills, such as those shown as apples here, are very important. We have set up the image of human resources that the IP staff should aim for, who have these two elements, and established the development roadmap for it.

We consider that this kind of IP education is necessary not only for the IP staff, but also for all employees of Asahi Kasei, and prepared the training curriculums. IP skills required for each role are set up, and the curriculums are reviewed every year, including the establishment of a new course specializing in DX inventions in FY 2021.

P. 24 (Reference) Visualization of IP contribution to management

We started a trial analysis of the relationship between management indicators and IP and intangible asset indicators based on the thought that it should be visualized how such IP activities contribute to management and business. For example, the left-hand chart is a map of the correlations between EBITDA and IP valuation for companies in the same industry. We plotted the historical 10-year data of 20 companies and have found that there is a correlation. The chart on the right shows our EBITDA and patent value, both of which are rising. We will continue monitoring the relationship between IP and management indicators, while examining other ways to show it.

Summary from the President

Kudo: Based on the explanation from Nakamura, I would like to say a few words. Our IP function has drawn up a very ambitious strategy, and is actively pursuing initiatives in various areas that involve IP strategies in the business and management strategies. We have been working with such mindset for some time, and in FY 2022 we established the IP Intelligence Dept. under the direct supervision of the Executive Officer in charge of corporate strategy. It is because we believe that where the concept, objectives, and organization of the IP strategy have the most contact points is none other than management.

The current global situation is extremely unclear and uncertain, and management needs to steer a difficult course. In such a situation, it is very important to strengthen the management base. We have the term “GDP,” which consists of G (Green Transformation), D (Digital Transformation), and P (Transformation of Human Resources), and at the center of the three is the “Maximum use of intangible assets.” In particular, IP plays a central role.

Under the new MTP, we believe it is essential to implement both growth investment and cash generation in order to go out into new fields. I would like to make great use of the power of IP there as well. In our business strategy, we expect objective evaluations using IP landscaping to contribute to our decisions for the future, such as whether a business is something we should engage in, whether there is a growth potential, or whether it is a business in which we should invest capital in the context of capital allocation. We believe that it is also possible to understand our strengths against competitors and what needs to be done to further strengthen them.

Asahi Kasei has a diverse range of businesses, and it is extremely important to activate horizontal connections in addition to vertical ones. Whether or not we can take a big and strong step toward the next 100 years depends on the strength of our horizontal connections. IP, DX, and human resources are important factors for the horizontal axis.

Main Substance of Questions and Answers

Q: How is IP strategy involved in the implementation of M&A? With the evolution of technologies such as DX and AI in recent years, are there any changes in the certainty of pre-acquisition research? What are your thoughts on the use of IP in future M&A?

A: IP initiatives related to M&A have traditionally focused on studying IP-related risks in due diligence. In the future, we intend to promote the use of IP landscaping at an earlier stage, including in the selection of candidate companies.

In the hydrogen-related business, which is one of our medium- to long-term business areas, the value chain is long, and many companies are trying to build their businesses in each area. It is very important to determine where the missing parts are for us and with whom we can best partner, and we intend to make maximum use of IP information.

Q: You have a wide range of businesses and a large number of excellent IP assets, but it can be subject to a conglomerate discount from the stock market point of view. On the other hand, it is difficult to implement such strategic IP activities without sales on the scale of your company. When looking at the three business sectors from an IP perspective, is it possible for all the businesses to share and utilize the IP system and platforms such as DX and AI at low cost, thereby contributing to growth? Are they connected to the creation of value unique to conglomerates? Or is it that there is not much synergy because different businesses have different approaches to IP management and IP landscaping?

A: In IP, DX, and other areas, we have built a unique common platform that allows each business to take advantage of it at low additional costs. The platform of the Asahi Kasei Group is effectively utilized to create value in all of Material, Homes, and Health Care. Utilization by various businesses also strengthens the platform. This is also true for the development of human resources, with human resources growing through rotations across business sectors. Human resources with diverse experience are also active in M&A and other areas. We must make efforts in explaining ourselves properly to overcome the conglomerate discount.

Although a little farther from IP, with regard to DX, we are not only working on the horizontal axis within our company, but also across the industry. For example, in the Mizushima industrial complex, as a part of promoting smart factories in cooperation with other companies, the utilization of big data in diagnosis of pipeline damage, etc. is being implemented. The more data we collect on a common platform, the more accurate it becomes, and we are leading the industry in this effort.

Q: When other companies attempt to imitate your IP strategies, there are some points that can be enhanced through outsourcing and the use of tools, but what will be the barriers that prevent imitation? In addition to the fact that the accumulation of patent value is the top class in the industry, is the accumulation of databases and human resources, for example, the source of your superiority? In terms of IP strategy, please also tell us about the distinction between the use of external resources and in-house effort such as database building.

A: We are a company with a very high IP mindset and a culture that emphasizes the strategic use of research and information. Many of our executives have a deep knowledge of patents and are actively promoting the use of IP. Such a corporate culture will not be fostered overnight. Against this backdrop, we have an agile mindset that proactively adopts new things such as IP landscaping.

We have been working since around 2000 on the logic construction of reports, which is an important element in IP landscaping, and we have a head start. Another advantage is that our organization has accumulated and passed on experience in creating reports that meet our objectives.

We are also actively using external resources and tools. In terms of IP landscaping, we intend to utilize outside consultants and other resources as well as internal capabilities. IP landscaping does not mean that the same tools will produce the same output. Stories and logic are important, and we want to incorporate external knowledge. Rather than doing everything in-house, we intend to leverage external resources to raise our own level.

We have also been strengthening our DX efforts, including the hiring of human resources, and we believe that our efforts are the most advanced in the chemical industry. DX, IP, and human resources become a great strength when multiplied together. We believe that our diversity gives us an overwhelming advantage that no other company can match in terms of this multiplication, and we will further enhance each element. One example of strengthening human resources is the corporate venture capital, or CVC, which is strengthening human resources globally in the U.S., Europe, and China, and is also working together with the IP function. We will maximize the final product of the multiplication to further enhance our advantage.