Actively innovating for new customer value

Hiroyuki Kojima, Ph.D.
Chief Innovation Officer

1985 Joined Ajinomoto Co., Inc.
2005 Assigned to ZAO "Ajinomoto-Genetika Research Institute" (Russia)
2015 Corporate Vice President and General Manager, Research Institute for Bioscience Products and Fine Chemicals
2019 Corporate Senior Vice President and General Manager, R&D Planning Dept.

Creating a sustainable business as a foodtech company

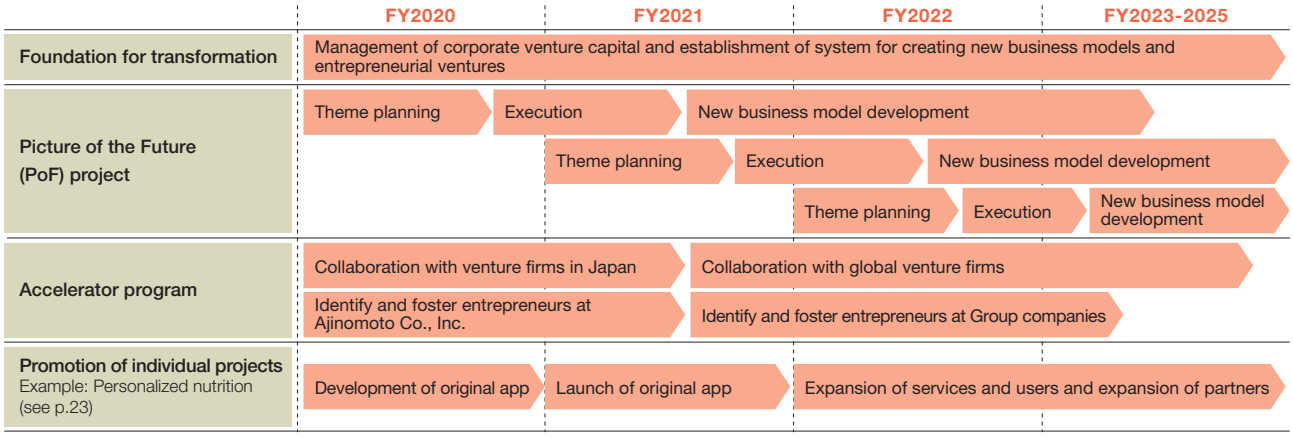
We are the first company in the world to commercialize glutamic acid, an amino acid, in the form of umami seasoning *AJI-NO-MOTO*®. Later, we elucidated all the elements of deliciousness, including taste, flavor, texture and external environment, and then combined these results with original new ingredients, new manufacturing methods, and applications to meet the needs of customers around the world. As a result, we are now capable of delivering all forms of solutions in the food industry (see p.22). Also, we provide solutions globally in healthcare using proprietary leading-edge bioscience and fine chemical technologies based on our many years of research into amino acids.

To become a solution-providing group of companies for food and health issues, it is essential that we always utilize customer-driven thinking to generate new value while combining various technologies to ensure a sustainable supply of products and solutions. This is the epitome of "foodtech," the very essence of what we strive for. To realize this vision, we must transform our corporate culture and foster an innovative culture.

I am now spearheading efforts as leader of the Business Model Transformation Task Force. One of our most important initiatives is the Picture of the Future (PoF) project. This project involves thinking outside the box in examining the value creation possible by the Ajinomoto Group, driven by social issues and consumer needs in 2030, and formulating the business themes and processes needed for this. At the same time, the project promotes open innovation and corporate venture capital. Looking ahead, we will steadily and swiftly map out a path to become a "foodtech company" that provides solutions to food and health issues (see p.24).

As discussed in the Message from the President and CEO, we will increase investments in R&D and business model development for our core businesses. For the period from fiscal 2020 to 2022, we are planning to spend 87 billion yen on R&D, with more than 80% of this amount going to core businesses, and 26 billion yen on business model development, including investments in DX and human resources development.

Roadmap for business model transformation



Dialogue

Latest sensory research changing the value of food and health

The Ajinomoto Group has pursued the mechanisms of palatability scientifically since its founding. CIO Hiroyuki Kojima sat down with Dr. Robert Margolskee, Director and President of the Monell Center, to discuss the relationship between palatability and nutrition/health as well as the future potential of applied research in these fields.

About the Monell Chemical Senses Center

Established in 1968 originally as part of the University of Pennsylvania, but independent since 1978, the Monell Chemical Senses Center is the world's largest research institution in the field of taste and smell, specializing in the mechanisms and functions of chemical senses. The Center has conducted joint research with the Group since the 1970s.

Hiroyuki Kojima, Ph.D.
Chief Innovation Officer

&

Dr. Robert Margolskee
Director and President,
Monell Chemical Senses Center

Margolskee The senses of taste and smell, which the Center studies, are closely connected to nutrition and health. We view these as a single research area. For example, the function of taste cells is largely separated into two types. First is the intake of essential nutrients, sugar and salt, while the second is avoiding toxic compounds that harm the body. Both are directly connected to nutrition and health.

Kojima People need to consume salt and sugar in appropriate amounts, but our health suffers if we consume too much. To extend healthy life expectancy, we need to control our intake of salt and sugar, but most people feel that foods with lots of salt taste delicious, so we simply cannot reduce our intake. In other words, how can we reduce our salt intake without losing the deliciousness and flavor? The technologies and knowledge of senses accumulated by Monell along with our expertise to use umami to create delicious, reduced-salt foods are vital to resolving such a difficult challenge.

Margolskee Elucidating the mechanism of taste and smell receptors, or the process by which people feel deliciousness, is important also in the pursuit of health. When the sensitivity level of receptors increases, people consume less salt and sugar because of their high sensitivity. Recently, we have revealed the correlation between people's genotype and phenotype, which is making it possible to develop personalized health solutions.

Kojima Part of the response of senses is controlled by genotype, which is quite interesting. If we can incorporate these outcomes into our research and development, we may generate new possibilities.

Margolskee Personalization in health, including personalized medicine, is becoming a worldwide trend. The next trend will be personalized nutrition. Nutrition programs specially tailored to individuals' genotype and phenotype promote healthy dietary habits and effectively help patients control diet-related diseases such as obesity and heart disease.

Kojima I'm aware that Monell is working on research that utilizes sensory information in medicine and diagnostics.

Margolskee We are working on a project for early diagnosis of ovarian cancer and pancreatic cancer using sensory information. Both of these are considered difficult to diagnose at an early stage. In addition, we are researching both the diagnosis and treatment of infectious diseases such as COVID-19.

Kojima As I learn about your latest research, I hope to work even closer together to create new value by adding business and social value to research of sensory information.

Margolskee Yes, our Center emphasizes not only basic research, but applied research, too. The Ajinomoto Group excels particularly at applied research, using what it learns from translational research* to bring products to market. You also have a history of using deliciousness research for improving health and nutrition. We've been working together for more than four decades, and this strong connection should be continued, as I believe we both stand to benefit greatly.

Kojima I look forward to further deepening our collaboration in the future. Thank you for your time today.

* Translational research covers basic research to commercialization.

Project overview

Supporting better lifestyles tailored to individuals based on the analysis of dietary patterns

Personalized Nutrition is one of the projects currently being implemented under the Business Model Transformation Task Force. The project aims to mitigate health risks by providing solutions tailored to the lifestyles of individual consumers. Below, project leader Masako Yasui presents an explanation of the project and our future aspirations.

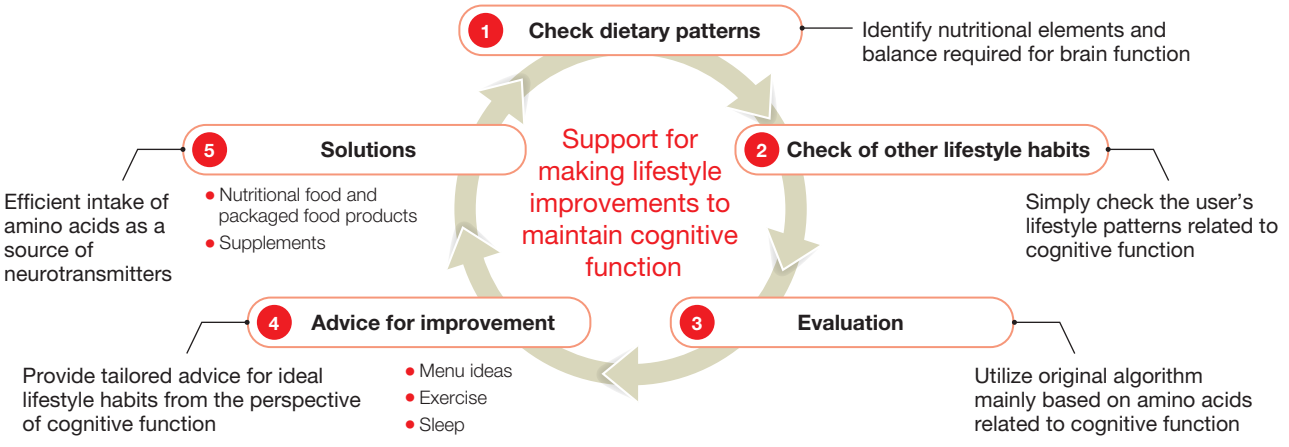
Masako Yasui
Personalized Nutrition Project Leader
Research & Business Planning Department

As the world's adult population increases and aging progresses in the 2020s and beyond, imbalanced dietary habits and nutrition could become a factor behind people's declining muscle mass and cognitive functions, which are expected to emerge as health issues. In other words, improving dietary habits from a younger age is important to mitigating future health risks. Given this, the Ajinomoto Group is implementing the Personalized Nutrition Project, which addresses individuals' health issues through direct connections with consumers. This project raises awareness about nutrition and health among consumers using IoT and digital technologies and provides one-stop solutions based on reliable information, tailored to each individual's characteristics. In particular, the project focuses on the correlation between declining cognitive functions and dietary habits, aiming to provide food-driven solutions for risk mitigation mainly targeting people in their 40s and 50s.

Specifically, we have developed an original app that enables to check user's dietary patterns to better understand the nutritional elements necessary for brain function along with what constitutes a healthy balance. In addition to food, the app can check their lifestyle habits, too. By using our original algorithms focused on cognitive function, the app can analyze the correlation between food and lifestyle habits and declining cognitive function. Based on this information, the app provides advice and recommends solutions from various angles such as menu ideas, supplements, exercise and sleep tailored to individuals' lifestyle. We believe that these solutions can only be provided by the Ajinomoto Group having expertise and technologies related to food and healthcare.

Currently, we are building an ecosystem through collaboration with IT ventures focused on the assessment of cognitive function, a major company with strengths in analyzing system and AI technology, and leading research institutions in the field of epidemiological research. This will enable us to develop evidence-based algorithms and an app that we plan to launch in fiscal 2021.

Process for providing solutions to maintaining cognitive function



Dialogue

The future as seen from foodtech

The Ajinomoto Group is now working to create a path to become a “foodtech company” that resolves food and health issues. CIO Hiroyuki Kojima sat down with Hirotaka Tanaka, director of SIGMAXYZ Inc., to discuss the current situation of foodtech and the future of food, where the Group stands to make a difference.

About SIGMAXYZ Inc.

SIGMAXYZ Inc. is a consulting firm that provides services in a wide range of fields such as business process transformation, digital transformation, business investment and management.

Hiroyuki Kojima, Ph.D.
Chief Innovation Officer
&
Hirotaka Tanaka
Director, SIGMAXYZ Inc.

Tanaka In recent years, conferences on food and technology held around the world have actively discussed food and social issues along with the diverse value of food. This is because food itself is causing social issues, including food loss and waste. In addition, some people in the world today are not satisfied with the current situation of food, and such dissatisfaction is actually multifaceted and diverse. In other words, the value of food has a long-tail nature. To tackle this issue, there is a growing initiative to visualize individual needs using technology and provide the most appropriate options. Actually, top management of foodtech ventures on the frontline of this movement are mostly from the IT industry.

Kojima As the value of food demanded by customers changes, the Ajinomoto Group believes it must understand these needs accurately and respond accordingly. Innovation is vital in this process. Regardless of industry, innovation tends to be generated across more than one business domain.

Tanaka Formerly, I worked in the electronics industry, and since joining the food industry, I, too, have discovered a number of things. For example, food and cooking are a science, which is extremely logical and compatible with engineering. Yet, depending on the person who cooks, a completely different flavor can be produced even with the same cooking method and ingredients. Also, massive data on food nutrients has not reached consumers. I’ve also found that food manufacturers such as you actually possess a high level of expertise. If this know-how is opened up to food newcomers such as foodtech ventures, we will be able to discover a new pathway for food, and in turn, standardize this pathway to spread it around the world.

Kojima This means making our intangible assets more valuable and opening them up for use, right?

Tanaka Yes. I think it’s very unfortunate that in Japan no company has yet to step forward to open up its assets, whether tangible or intangible, for broad collaboration with external parties. If major players get the message out that they are willing to open up their assets, this will help transform the convention in Japan. I expect the Ajinomoto Group to pioneer the future of food by being the first to open up its assets.

Kojima One effective approach to generating innovation is collaboration with outside parties. However, collaboration should not be the purpose; rather what we want to achieve should be the starting point. In July 2020, we renamed the R&D Planning Dept. to the Research & Business Planning Dept. This is because we aim to initiate research from the perspective of the value that we want to offer in response to customer needs, instead of what we want to make.

Tanaka This means you will bring conventional R&D and business closer together. Being customer-driven, rather than technology-driven, is important for realizing enjoyment and enrichment through food.

Kojima In our Picture of the Future project, too, we are thoroughly reviewing changes occurring among customers and what we need to do now to address them. First, we will decide on the value we want to provide, and communicate this in an appealing manner so as to attract partners who want to work with us. Next, we will create new value for food while collaborating in various ways with parties who identify with our vision for the future. Furthermore, we hope to contribute to sustainable production and consumption.