

INTANGIBLE ASSETS

Focusing investments on intangible assets to realize ASV which lies just beyond

We categorize our intangible assets, a source of strength, into human assets, technology assets, customer assets and organization assets.

We are now focusing investments on these four intangible assets while visualizing these four assets in order to further refine our strengths.

First, human assets are the most important of our intangible assets.

The Ajinomoto Group's strengths can be found in our human assets with the passion and drive to achieve our Purpose, who produce innovation by matching our technologies with customer issues, and who maintain close connections with the people and cultures of the world. Going forward, we will secure and develop human assets who can create more diverse value that contributes to the well-being of all human beings, our society and our planet.

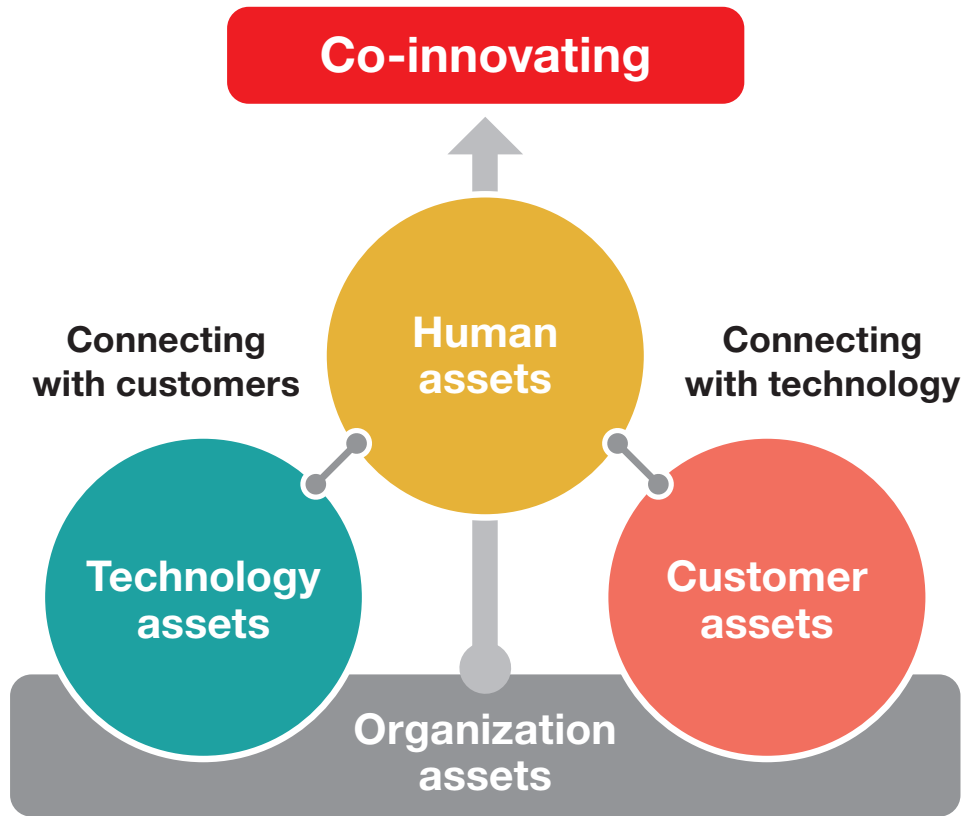
Our technology assets include advanced technologies (e.g., Deliciousness Technologies and leading-edge bioscience and fine chemical technologies), proprietary materials using the functions of amino acids, and intellectual properties developed and maintained strategically. Customer assets represent a strength because of our B2C and B2B businesses, operations in a wide range of sectors and areas, and relationships with customers globally. We continue to refine "AminoScience" by working to identify and resolve cutting-edge issues faced by customers around the world and other future issues through co-creation with customers.

Finally, organization assets represent the strength of the entire organization. The Ajinomoto Group's organization assets include our Purpose for creating passion in our people, ASV management for co-creating social value and economic value through business, the Ajinomoto Group Way (AGW) presenting our basic values, approach and stance for employees, and corporate value created thanks to the support of stakeholders.

To achieve our vision for 2030, we need to Speed Up x Scale Up our innovation starting with our local operations and our frontline workers. Toward this end, we are stepping up investment in intangible assets while paying close attention to their links with financial value.

Additionally, we are monitoring employee engagement scores with the understanding that bolstering intangible assets correlates to ASV.

Looking ahead, we will continuously enhance corporate value while confirming the effects of these investments and advancing the ASV realization process.



Ajinomoto Group strengths

Points to improve



Technology Assets

- “AminoScience” e.g., Deliciousness technologies, leading-edge bioscience and fine chemical technologies
- Strategic IP

- Strengthening innovation for creating next-generation businesses
- Digital capabilities to better meet individual needs



Human Assets

- Human resources connecting technology/customer assets and innovating
- Sharing our Purpose
- Closeness with site/field

- Acquiring and developing human resources capable of pivoting to diverse value regardless of domain
- Human resources supporting inorganic growth



Customer Assets

- Diverse and global stakeholders
- Having both B2C and B2B

- Holistic approach with other industries and government (Building ecosystems)
- Directly connected seikatsusha (consumers) through digital channels



Organization Assets

- Purpose
- “Ajinomoto Group Way”
- Brand
- Respecting local culture

- Non-uniform perspectives to create innovation
- Systems quickly linking each area with headquarters functions
- A culture of challenge
- Sophistication of marketing

Human Assets

Our vision for 2030: To be a workplace where all employees endeavor for purpose which one works

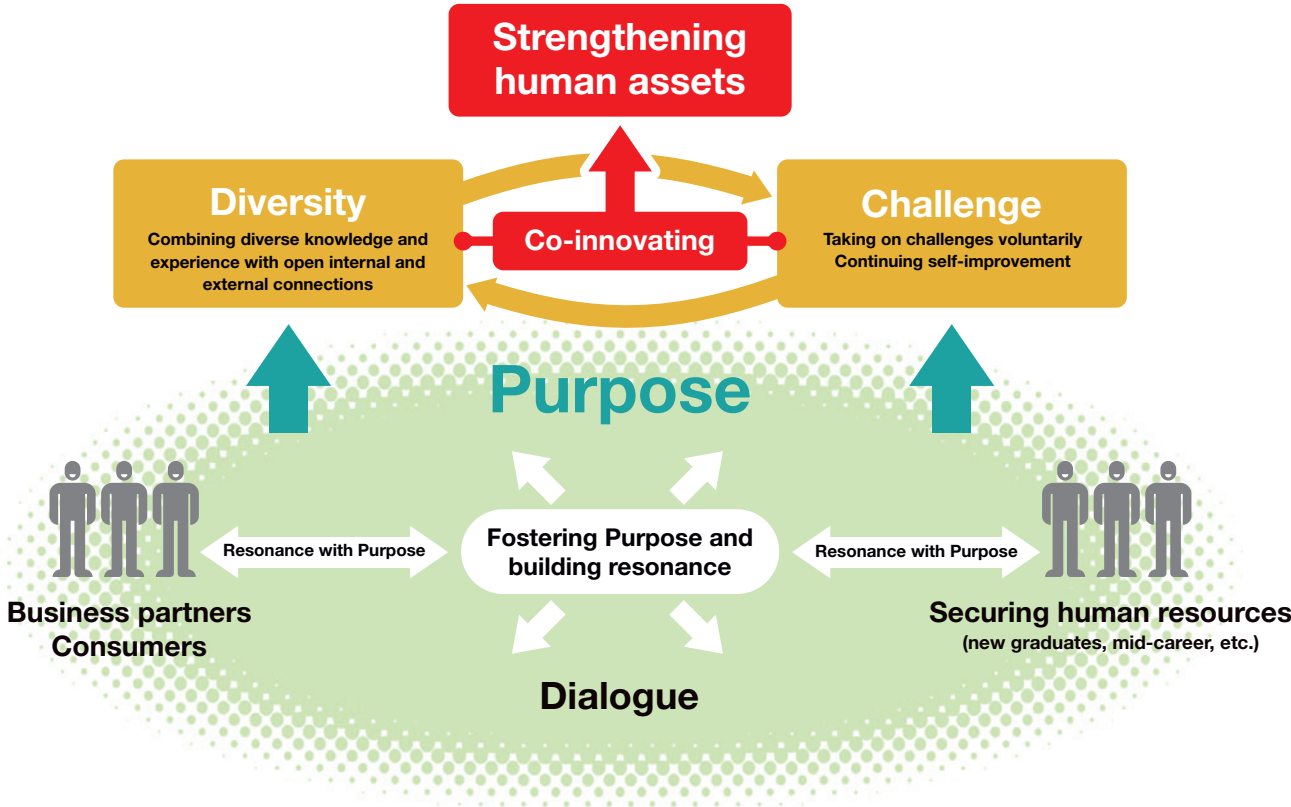
We aim to realize ASV by gathering diverse individuals inside and outside the Company who have empathy for our Purpose and our organizations leveraging

the strength of individuals to create innovation and achieve co-growth and continuously create value for the future.

Human resources strategy for creating future innovations

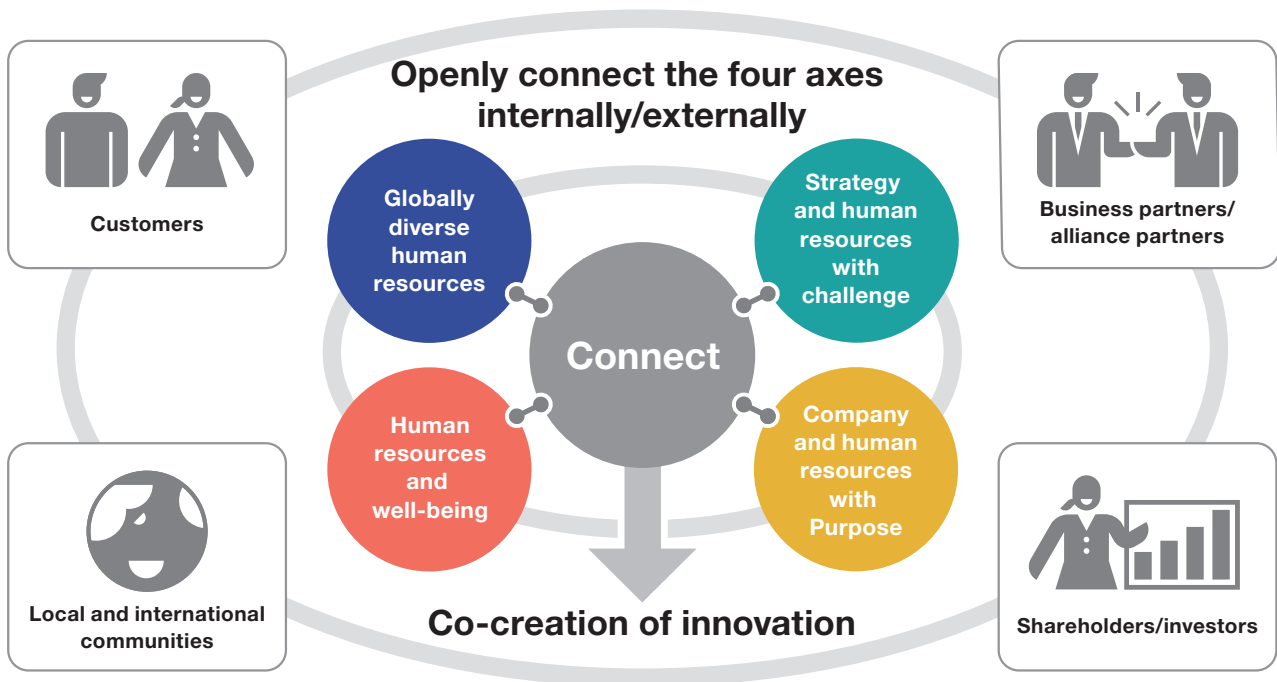
The Group recognizes that its four types of intangible assets (technology, human, customer, and organization) play an important role in achieving its management strategy. We continue working to bolster our human assets that create innovation by matching technologies with customers since these assets represent a source for

elevating the value of all intangible assets. Additionally, employee well-being represents a foundation underpinning the strength of human assets, and for this reason, we are working to enhance employee well-being from various angles, such as health advancement and asset formation.



Four connecting strategies

The Ajinomoto Group is implementing human resources strategies by connecting the four axes of “diversity,” “challenge,” “well-being,” and “Purpose” for achieving our vision.



1. Diversity : Connect globally diverse human resources

Diversity, equity, and inclusion in the organization serves to accelerate innovation and realize value co-creation while also fostering a corporate culture that encourages autonomous actions because it respects the diverse experiences and expertise of individuals regardless of gender, age, or nationality, etc., and embraces diverse viewpoints.

In order to connect diverse human resources globally, we will increase the connectivity of various measures and accelerate the assignment of the right person to the right position globally. These measures include expanding the human resources pipeline by speeding up the succession

plan globally, having candidates selected as part of succession planning participate in selective leadership training, and strategically appointing them to new duties. We are now working to achieve the following indicators by 2030.

Additionally, we are promoting ways to collaborate with and acquire diverse talent from outside the Company. This includes expanding mid-career recruitment of human resources with advanced skills and knowledge of new business development (plan for fiscal 2023–2024: approx. 50% of newly hired employees at Ajinomoto Co., Inc.) and personnel exchanges with alliance partners.

- Leadership: diversity ratio of 30% (21% as of July 2023)
- Female managers: Groupwide 40% (27% as of end of March 2023) / Ajinomoto Co., Inc. 30% (13% as of end of March 2023)^{*3}

^{*1} Executive officers, business division managers, organizational managers, and other important positions equivalent to them

^{*2} Gender, nationality, affiliation, etc., are the axis of diversity

^{*3} Participant in the 30% Club Japan since 2019

2. Challenge : Connect business strategy and human resources using “challenges”

We will introduce a personnel system that assigns human resources contributing to strategy execution, regardless of whether they are non-manager or manager, to the right position with the right amount of workload and time commitment, along with mechanisms for speeding up the revitalization of our organizations led by diverse

talent. The Ajinomoto Group believes that maximizing the skills of each individual of its diverse workforce and empowering them to tackle challenges autonomously for achieving our Purpose are indispensable actions for growing both the organization and individuals. We are now moving ahead with the following initiatives.

- Speeding up voluntary department-level transfers and participation in cross-functional projects spanning multiple departments. Enabled transfers using the internal recruitment system starting from fiscal 2022.
- Fostering a volunteer culture where employees take the initiative, while also basing decisions on business situation, etc.
- Dispatching employees to alliance partners, external research institutions, MBA programs, and specialized master's degree programs, etc.
- Emphasizing 1on1 dialogue to support employees to achieve our Purpose and tackle challenges. Holding career interviews with supervisors annually (around one hour) and feedback sessions (around one hour) semiannually since the 1980s to assist employees in achieving their career aspirations.
- Providing coaching training to all managers (training plan for fiscal 2023: Ajinomoto Co., Inc. only)
- Expanding training programs (professional development, leadership development, experiential learning, etc.)

3. Well-being : Connect human resources to improvement of well-being

The Ajinomoto Group believes that employee well-being forms the foundation of its human assets. In addition to well-being attained through growth of each individual

tackling challenges and from contributions to society through our business, we encourage improved well-being from such perspectives as health and asset formation.

- **Health:** Once every year, all of our employees working in Japan meet individually with an industrial physician and healthcare staff to receive health guidance based on the results of their health exam or stress check. Also, we have introduced a mental health recovery plan tailored to the individual needs of employees on leave to provide ongoing support from the start of leave until their return to the workplace.
- **Asset formation:** Working with an outside professional, we provide employees with an asset literacy and education program throughout the year based on our own systems and policies (approx. 2,800 participants). Employees are also given the opportunity to meet with a financial planner free of charge for additional advice (voluntary) as a way to help them build their own asset portfolio. Employees are encouraged to join the employee stock ownership plan to raise awareness about their participation in the enhancement of corporate value over the medium to long term and for their own asset formation purposes (enrollment rate among Ajinomoto Co., Inc. and its domestic Group companies (20 companies in total): 71%*).

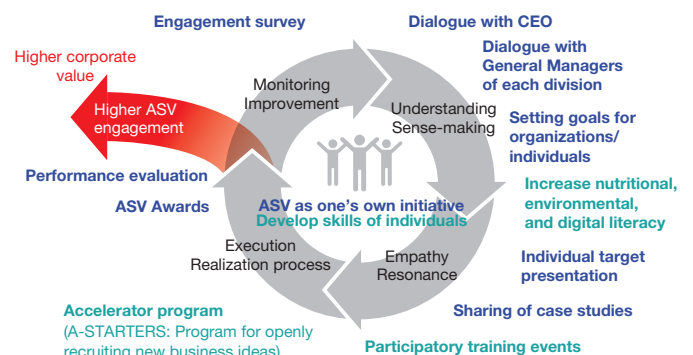
* As of May 2023

4. Purpose : Connect the purposes of the Company and its human resources

We have standardized the management cycle for realizing our Purpose of contributing to the well-being of all human beings, our society and our planet with “AminoScience.” We are now promoting initiatives for fostering empathy for this Purpose and increasing engagement in an organized manner. We began disclosing the correlation between engagement and performance in fiscal 2022 and introduced our approach to the ASV realization process in fiscal 2023. In turn, we are speeding up the visualization of opportunities and issues from the scores of individual questions of the engagement survey, assigning persons in charge of analyzing the results of the engagement survey within each organization, and promoting autonomous utilization in each

organization through workshops (beginner and advanced) and other educational opportunities.

[Management cycle for ASV results creation]



Examples of initiatives “connecting” our purposes

Individual target presentation

As part of our efforts to foster empathy for our Purpose and increase engagement, we have been holding individual target presentations at all of Ajinomoto Co., Inc.'s organizations and at 28 Group companies inside and outside of Japan since fiscal 2021.

For example, AJINOMOTO CO., (THAILAND) LTD. held its individual target presentations across all of its organizations in 2023, with a total of 1,800 employees taking part (100% participation rate). AJINOMOTO CO., (THAILAND) LTD. is comprised of various organizations including research, production, business, and corporate departments. At these individual target presentations, employees first prepared targets broken down according to the goals of AJINOMOTO CO., (THAILAND) LTD. and individual organizations, regardless of which department the employee belongs to. Next, employees clarified the customers and value provided in their own targets based on an understanding of the business' value chain, while also using their own words to describe how their job leads to ASV, which

culminated in a presentation in front of their colleagues. Through this process, we are promoting ASV as one's own initiative and elevate ASV engagement. In 2023, individual target presentations were mainly held in person because COVID-19 restrictions were largely eased or eliminated. This allowed for even more active discussions, including Q&A sessions among participants. This will lead to an organization where members recognize each other's targets and empower one another to tackle new challenges.



Individual target presentations held at AJINOMOTO CO., (THAILAND) LTD.

ASV Awards

The ASV Awards commend particularly excellent initiatives that embody ASV. In fiscal 2022, an initiative that contributes to GHG reduction implemented by a global team from the MSG and nucleic acid business took home the Gold Award. This initiative focused on the theme of tackling the challenge of Speed Up x Scale Up by maximizing intangible asset value (contribution to well-being of the planet). To achieve ASV in the MSG and nucleic acid business, the initiative launched the BRIDGE project, a cross-functional effort involving the value chain and overseas subsidiaries. “BRIDGE members are achieving ASV with a smile,” says Kohei Ishikawa of the S&I Dept. “ASV represents my behavioral guideline at the Company. Whenever I face challenges at work, I always return to the concept of ASV in my decision making.” As

a result of this project, we have greatly reduced GHG emissions from the manufacturing of MSG and nucleic acid over a short period of time. Through this initiative, the results and joy we created are helping to deepen understanding of ASV.



Left: Kohei Ishikawa of the S&I Dept. (at the time of the Award)
Right: Team members

Correlation between employee engagement and business performance

Human resources investment and visualization of efficacy

To create ASV, we actively invest in human resources with a focus on acceleration of diversity and challenge and fostering empathy for our Purpose. In fiscal 2022, we made investments^{*1} of approximately ¥10 billion, and going forward we plan to continue expanding this spending, reaching a total of more than ¥100 billion for the period from 2023 to 2030. By connecting each

initiative with the employee engagement score, we will also be able to increase employee engagement.

From fiscal 2023, we will change the method of measuring employee engagement scores from one question of “ASV as its own initiative” to the average value of question items in the “ASV realization process” that allows us to better grasp the actual situation.

*1 Amount including opportunity costs

[Main initiatives for human resources investments]

Diversity		(1) Diversity ^{*2} in leadership ^{*3} : 30% (FY2030) (2) Groupwide ratio of female managers: 40% (FY2030) (3) Securing and strengthening of human resources necessary for business growth (innovative HR [including acquisition through M&A], etc.)
Challenge		(4) Volunteering for challenges / participating in networking work styles / accelerating self-improvement, etc. (Job transfer / Group cross-functional projects / Collaborative projects / MBA dispatch / Others)
Purpose	Fostering	(5) Conducting president/general manager dialogues and individual target presentations
	Building resonance	(6) Expanding external ASV-related communications (7) Improving quality of 1on1 interviews (goals/career) (8) Expanding scope of mentoring to young people, women, and candidates for management positions

*2 Gender, nationality, affiliation, etc., are the axis of diversity

*3 Executive officers, business division managers, organizational managers, and other important positions equivalent to them

Linked



[Employee engagement]

(Average value of ASV realization process question items from FY23)

ASV realization process	Related items (examples)
1. Empathy for our Purpose	(5) (6)
2. Customer focus	(3) (4)
3. ASV as one's own initiative	(5)
4. Encouragement for new opportunities	(4) (5) (7)
5. Co-creation through inclusion	(1) (2) (4)
6. Enhancement of productivity	All items
7. Innovation creation	(1) (2) (3)
8. Creation of social and economic value	All items

ASV indicators (75% in FY22): Increase employee engagement of 80% (FY25) and 85% (FY30)

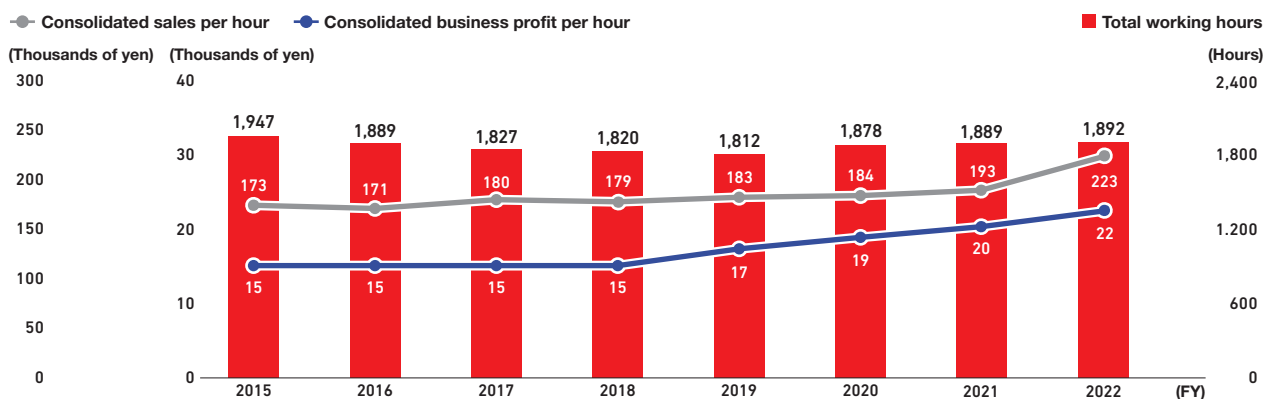
Efficacy monitoring

As for productivity, which is an outcome of human resource investment, in conjunction with our management policy to emphasize growth and efficiency, we are monitoring consolidated sales per hour^{*4} and consolidated business profit per hour^{*5}.

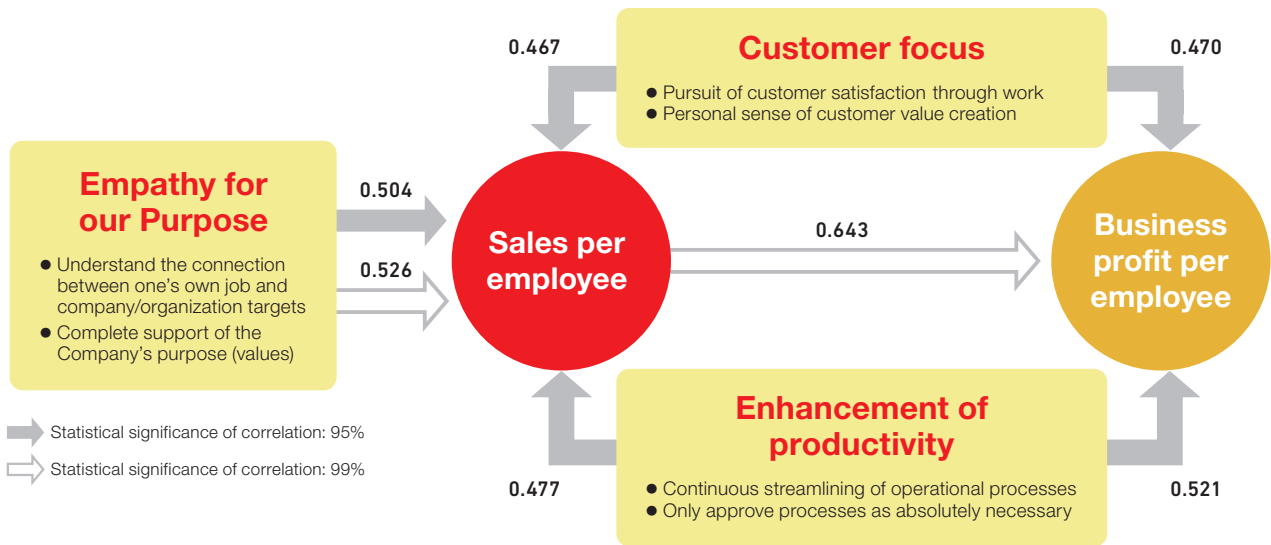
In fiscal 2022, consolidated sales per hour and consolidated business profit per hour grew steadily, totaling ¥223 thousand and ¥22 thousand, respectively.

*4 Consolidated sales / (Ajinomoto Co., Inc. employees x Total working hours) *5 Consolidated business profit / (Ajinomoto Co., Inc. employees x Total working hours)

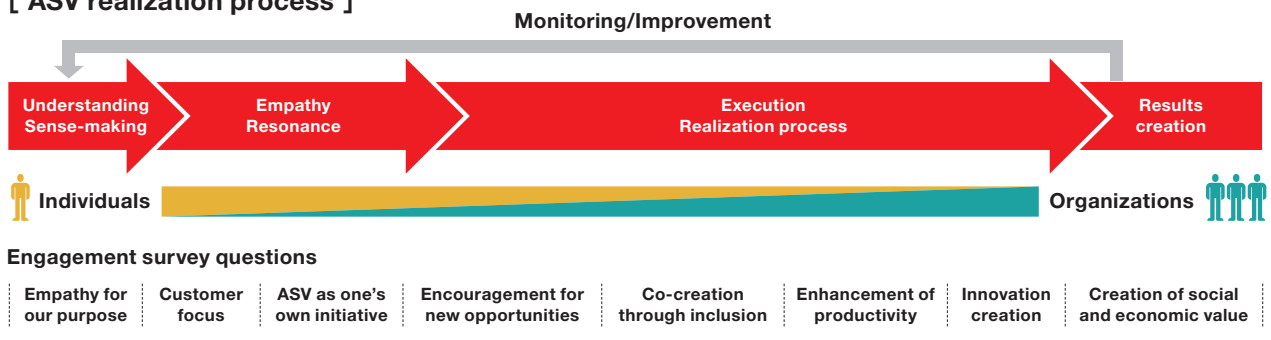
[Consolidated sales/Consolidated business profit per hour]



[Correlation analysis of employee engagement and business performance]



[ASV realization process]



Better understanding the opportunities and issues to promote ASV

The Ajinomoto Group updates the results of its engagement survey every year to analyze the correlation with business performance. The results of the previous four surveys showed a correlation between “empathy for our Purpose,” “customer focus,” and “enhancement of productivity” and both sales and business profit per employee. In addition, we conducted a time lag analysis of the engagement survey results for fiscal 2019 and fiscal 2020 and of changes in business performance in fiscal 2020 and fiscal 2021, which indicated “enhancement of productivity” correlates to sales per employee.

Starting in fiscal 2022, we began a new initiative for monitoring the progress of ASV realization using the engagement survey to visualize the process up to ASV realization (ASV realization process). In this process, we utilize the results of correlative analysis with business performance to define each step from ASV understanding and acceptance by individuals to the creation of results by

each organization and to develop related questions for the engagement survey.

From fiscal 2023, we changed the measurement method for employee engagement score, one component of bolstering intangible assets, from one question on “ASV as one’s own initiative” to the average score for question items on “ASV realization process” for greater clarity of the actual situation. Better understanding the opportunities and issues cross-functionally across Ajinomoto Group companies and organizations based on scores for ASV realization process-related questions will make it possible to take more effective action. For example, for enhancement of productivity, we are working to address the “large number of approval processes,” which was found to be a companywide issue. This approach increases our ability to promote ASV realization from the perspectives of both companywide actions and autonomous actions at the organization level.

Using the engagement survey to strengthen the connection between the Company and employees

**AJINOMOTO DO BRASIL INDÚSTRIA E COMÉRCIO DE ALIMENTOS LTDA. (below, “ABR”)
has a high level of employee engagement.**

This success has been attributed to its utilization of the engagement survey.



Shino Kayahara

Executive Officer in charge of
Diversity and HR

Joined Ajinomoto Co., Inc. in 1990. After serving as General Manager of the Public Relations Dept. from 2018, she became the General Manager of the Kyushu Branch in July 2020, and was assigned her current position in April 2023.



Fabio Luiz Ceregatto

Corporate Executive HR Director &
Associate Member of Executive Committee,
AJINOMOTO DO BRASIL INDÚSTRIA
E COMÉRCIO DE ALIMENTOS LTDA.

Joined ABR in 2005. After serving as HR Department Manager at the Limeira Plant, from 2009 he became Corporate HR Department Manager at the São Paulo Head Office. He was appointed as ABR's Corporate HR Operational Director in 2014 and was assigned his current position in 2022.

Tool for achieving ASV by finding common ground between the Company and individual purposes

Kayahara The engagement survey is a tool for expressing the level of trust and connection between the company and employees. It demonstrates whether the company's measures are aligned with employees' vision and purpose. Since it's a survey, the results are available in an easy-to-understand format, but people tend to focus on the numbers. The key is not to focus on improving scores, but rather to foster the shared awareness that the engagement survey is merely a tool to transform organizational culture.

I would like to ask about ABR's approach since it has some of the best practices within the Ajinomoto Group.

Ceregatto ABR has been utilizing the engagement survey since 2008. Initially, some employees were embarrassed or afraid of reprisals from superiors, but today everyone trusts the survey. Thanks to this, ABR's response rate is extremely high—98% in 2022.

Kayahara That's a really high response rate.

Ceregatto Each and every employee is encouraged regularly to take part in the engagement survey because it's quick and easy. We also issue a reminder shortly before the deadline. Our responsibility as management is to encourage employee's participation and follow up on the engagement

survey's responses.

Kayahara Does ABR make any other efforts in order to foster trust in the engagement survey and ensure employee participation?

Ceregatto Yes, leaders show with their own action.

Kayahara What do you mean by that?

Ceregatto Leaders show with their own action that they are not king, but rather just a part of the organization.

They visit the front line of our manufacturing and business operations in person to know firsthand what is going on.

Employees first trust our leaders after they see them walking

the front line. The presence of trustworthy leaders is why

employees are also able to buy in to the engagement survey.

That's the secret. It's also important for top management to

share its intentions with employees using words that make

sense to them. The President of ABR sends a clear message

to all employees that the engagement survey can be trusted,

and we work on fostering communication through

engagement survey workshops.

Kayahara Can you tell me more about these engagement survey workshops?

Ceregatto Last year, we held a total of 90 workshops at ABR's five business locations. HR training specialists who



The engagement survey is a tool for measuring the crossroads of the Company and individual purposes. Working toward the greater growth of the company and employees by gathering the true voice of employees through the engagement survey.

have undergone facilitator training head to each business site to lead the workshops, which last about one hour. Our manufacturing departments operate 24 hours a day using a shift system. Nevertheless, these workshops are also held for night shift workers. While it is difficult to get into contact with employees in sales who are constantly traveling throughout Brazil, they are given the opportunity to view the learning materials and transcript online. Roughly two months are spent collecting the views of employees, which makes it possible to understand the thinking of a wide swathe of employees. Although it takes a lot of work to hold training in advance and write speeches, these efforts are really making a difference in improving our corporate culture.

Kayahara Do you take any extra steps so that employees can share their candid opinions?

Ceregatto Workshops are held individually for managerial staff, middle management (assistant managers), employees in specific ranks in manufacturing and sales, and each department. The jargon and challenges faced differ for each rank and department, so it's important to select the right person to lead the workshop. This is why we choose someone who understands the views of each rank and department and someone who won't make the employees too nervous, someone that makes the employees comfortable to exchange opinions freely. How do you analyze and utilize the engagement survey in Japan?

Kayahara In Japan, each organization selects a leader to analyze the engagement survey, such as the person in charge of personnel. Workshops are then held with a consultant to analyze the results of the survey and provide hints on how to utilize these findings at the organizational level. Then, each leader who has undergone training analyzes the results of the engagement survey for their own organization together with managers to create an action plan that contains organizational targets for the next fiscal year.

Can you share any examples of where ABR further utilizes the engagement survey based on previous findings?

Ceregatto For example, in the engagement survey we have specific fields where the employee can write down their opinions (rather than multiple choice). We have also established questions unique to ABR that allow employees to share opinions considering the local company reality. These responses often result in specific requests, such as improving the breakroom. This may seem like something small, but small improvements when sustained will lead to further improvements in the organizational culture.

Kayahara ABR is really getting the most out of the engagement survey as a verification tool. Do you see any challenges in further evolving your utilization?

Ceregatto Leadership training is important. Members change due to personnel transfers, but we still need to pass down our DNA regardless of who is in charge. We also need to speed up the decision-making process and further promote work-style reform. We will empower individual employees as appropriate and allow them to choose their own working hours. By doing so, I believe we can further grow as a company and as individuals. Empowerment is the key!

Kayahara Through today's dialogue, I reaffirmed the importance of holding workshops based on the results of the engagement survey. Some of our managers believe that the engagement survey results are a report card, and while I understand this feeling, it's meaningful and important to read between the lines from the results and think together about how to improve our organizational management and culture. In Japan, the engagement survey has shed light on young employees' concerns about career development and other issues such as the gender gap. These are areas that we are now working to improve.

Thank you for sharing ABR's approaches to utilizing the engagement survey, which are helpful for all of us.

Customer Assets



Engaging in a direct dialogue with global consumers, and building relationships together with customers

For the Ajinomoto Group, customer assets are derived through an ongoing process of carefully gathering feedback from consumers and customers around the world about their expectations regarding excellent taste and nutrition, quality, function, peace of mind, and safety, and then working to achieve these together with our customers.

With a broad-ranging business portfolio in food products business and AminoScience business, 70% of sales in the Ajinomoto Group are achieved in the B2C domain, and 30% in B2B. International sales account for 60% of total sales, and sales in Japan 40%. Through this diverse range of businesses, Ajinomoto Group employees around the world communicate directly with consumers in each

country, engaging in dialogue with client businesses on a daily basis to address issues.

Moreover, when offering value to our customers, we believe that building ecosystems with partners outside the Company, such as businesses in other domains in a manner that allows us to take an integrated approach to the desires of our customers is also an important aspect to the customer assets of the Ajinomoto Group. Looking to the future, we will use digital technologies to connect directly with many of our consumers, engaging in two-way communication that lets us learn about their lifestyles and personal values, and then create relationships that allow us to make proposals based on this knowledge, further strengthening our customer assets.

Ajinomoto Vietnam – How we build our customer assets



Left: Street-level selling conducted in red uniforms. Center: Face-to-face sales activities build trust. Right: Display hangers used by sales staff.

The trust created by traditional trade direct sales system

Established in 1991, Ajinomoto Vietnam Co., Ltd. is a comparative latecomer in the ASEAN region. Even so, it has become so well established in the daily lives of Vietnamese people that nowadays they will call out “AJINOMOTO” when they see a Japanese person. This could be said to be proof that the Ajinomoto Group has built up its customer assets using sales activities leveraging the proprietary Traditional Trade (TT) direct sales system of the Ajinomoto Group.

A TT direct sales system is a system in which sales personnel visit stores on street corners or in markets to deliver and display products, receiving payment on the spot. In addition to Vietnam, the Ajinomoto Group has used this style of sales for many years in a host of different countries. Ajinomoto Vietnam currently deals with approximately 110,000 privately owned stores throughout Vietnam and employs roughly 600 Vietnamese salespeople who work in teams to visit stores around once every two weeks.

Although privately-owned stores usually display products that sell well in prominent locations, consigning other products to the corners, Ajinomoto Vietnam provides stores with hangers that allow them to display each product where customers can see them easily, especially the top-selling AJI-NO-MOTO® brand seasonings. This means that Ajinomoto Vietnam’s products can be displayed today in a highly visible location. The fact that we are able to make such an imposition on even small stores is thanks to the ongoing effort we put into our sales activities every day. The salespeople who visit the stores wipe dirt off packaging, check product expiration dates, and replace expired products, building trust with store owners.

One of the hit products that has emerged from these steady sales efforts with the TT direct sales system is Aji-mayo®. On its initial release in 2005, mayonnaise could

hardly have been said to be a feature of the Vietnamese diet, but in 2011 we changed the product name to Aji-mayo®, which saw it gain popularity, and today it is a hit product next in popularity to AJI-NO-MOTO® umami seasoning and Aji-ngo® flavor seasoning.

Looking to the future, Vietnam may see evolution in logistics systems against a background of economic growth, but Ajinomoto Vietnam will adapt to using smarter TT systems, making good use of technologies such as social networking services and GPS. Adding digital capabilities to the customer assets and sales capabilities that the company has built up means that there is still a great deal of potential for TT direct sales systems in Vietnam.

Local Voice

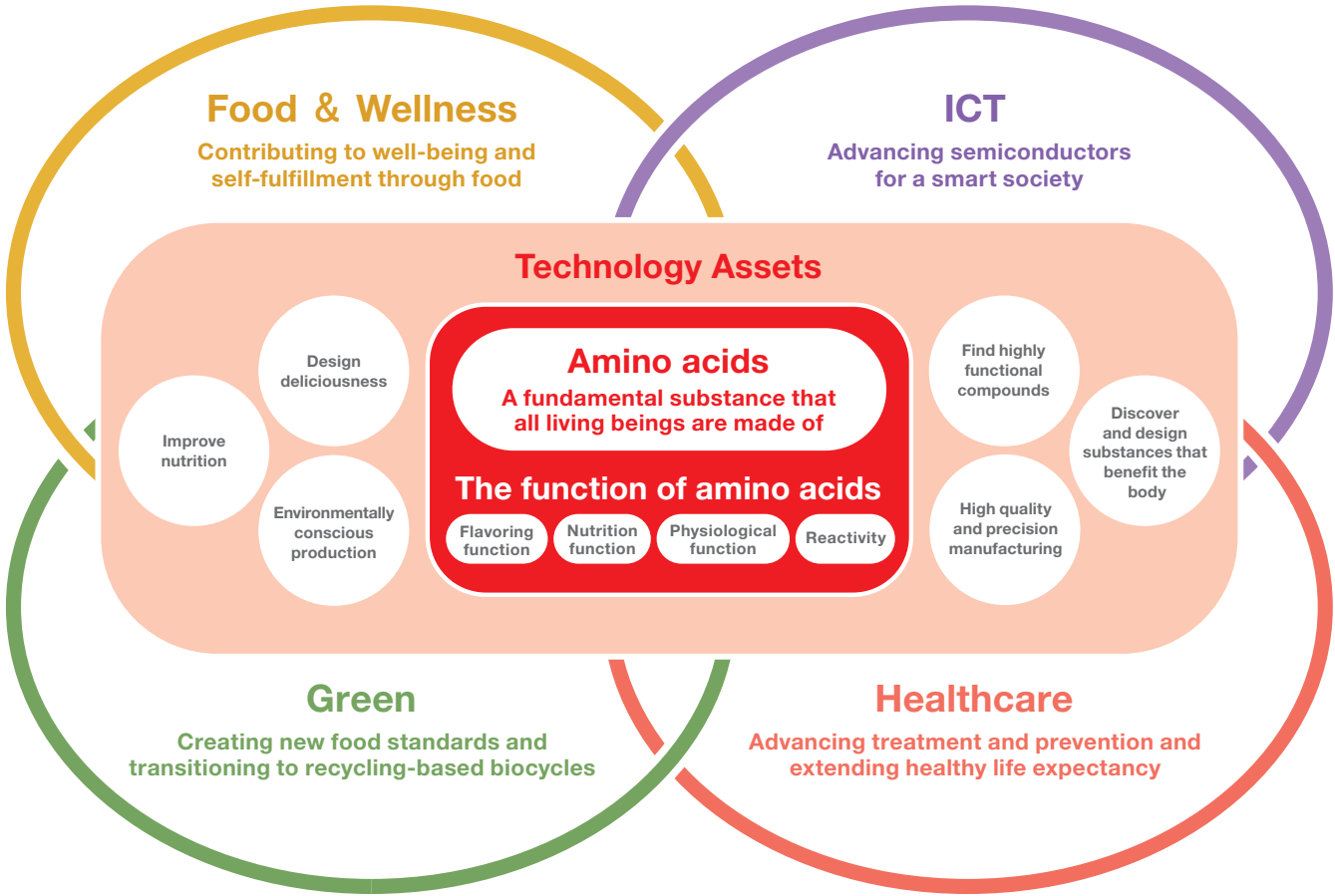
A solid grounding in the fundamentals and use of DX with an eye to the future



Pham Cong Vuong

The greatest assets of Ajinomoto Vietnam are the sales activities it engages in every day. The steadfast dedication of the sales team allows them to deliver consistently high-quality products to every corner of Vietnam. This plays a vital role in driving business growth and achieving our goals. We also employ the latest technologies and applications to allow us to meet evolving demands. We have introduced tablet terminals to shorten order activity time and improve communication with customers, and deployed innovative tools such as the eMobizMap system which links to GPS, streamlining operations and making them more efficient. Through our fundamental activities and the utilization of DX, we intend to contribute to the well-being of society and the people of Vietnam.

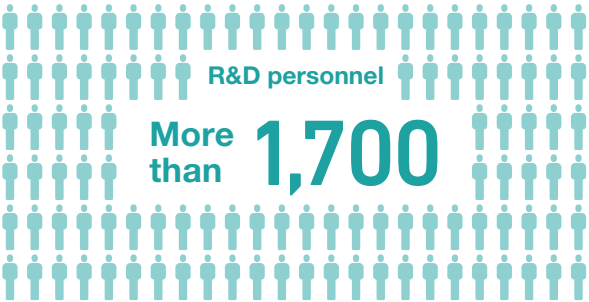
Technology Assets



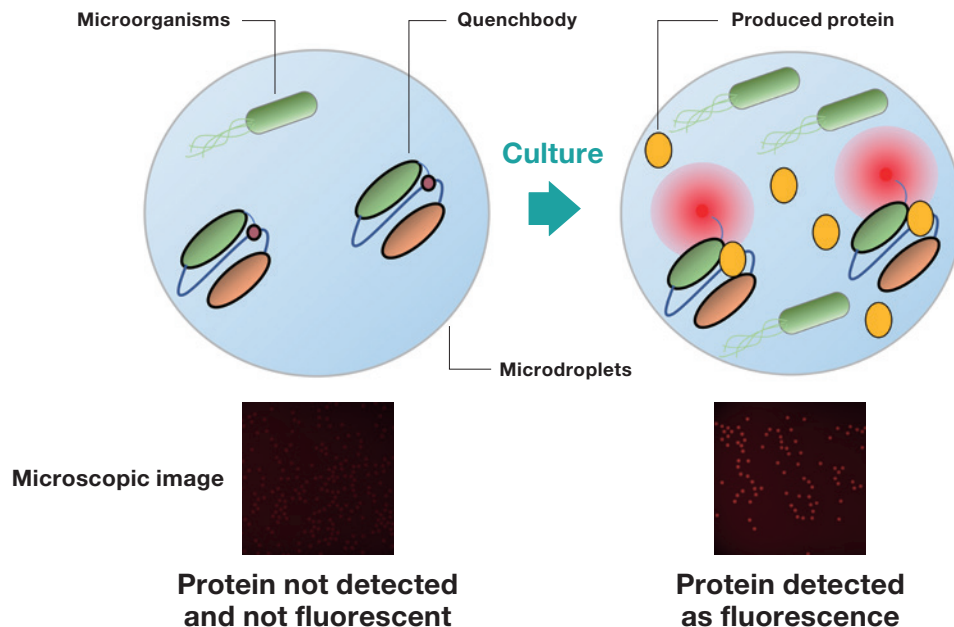
Creation of social value through unique technology assets

Since its founding, the Ajinomoto Group has evolved its diverse and unique technology assets by exploring the function of amino acids. Our technologies for designing deliciousness, high quality and precision manufacturing, environmentally conscious production, and creating

substances that benefit the body have created social value through various businesses. Going forward, we will grow our businesses in the four growth areas by continuing to evolve the technology asset that is “AminoScience.”



Droplet screening technology aimed at speeding up strain development



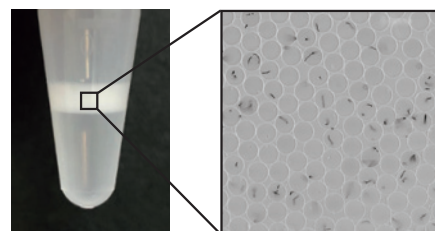
The diagram shows droplet screening theory (case of protein production bacteria). The produced protein emits fluorescence when combined with Quenchbody. By selecting droplets with high fluorescence, strains with improved protein secretion can be obtained.

Our new technology expands the possibilities of the Green area and the Healthcare area.

The Ajinomoto Group is building a global production system and developing strains that produce proteins and various other substances centered on amino acids. In particular, strains with improved production performance up to the commercialization level represent a critical technology asset supporting the competitiveness of our business operations. The key to strain development is the ability to establish methods for selecting the targeted strains in a short period of time from among the tens of thousands of candidates (screening methods). In recent years, automation of testing work previously conducted manually by researchers using robots has sped up this process by more than 10-fold compared to conventional methods. Nevertheless, the evaluation of tens of thousands of strains still requires a development period spanning over one year, while market needs are changing rapidly and becoming more fragmented, which requires new high-speed screening methods that can address these changes in the external environment.

Through joint research with universities, we successfully developed a droplet screening technology (see figure to the right) that combines technology for detecting and selecting target substances as a fluorescent signal with

technology that ferments and produces target substances by culturing microorganisms inside microdroplets with a diameter of tens of micrometers. As a result, this large-scale (tens of thousands) culturing and evaluation is possible in the space of a week. By further promoting the development of this technology, we will contribute to the growth of both business domains through refinement of production bacteria development and launching new products in the Green area and the Healthcare area at an early stage. The verification results of this method were highly praised and published in the influential scientific journal *Small*.



Culturing microorganisms encapsulated in microdroplets. There are about 10 million microscopic droplets in the cloudy upper layer.