

Management Model and Management System

– Two major systems as the backbone of innovation

Trial & Error experiment driven company

We try new things without fear of failure.
We enjoy answers produced from accumulated experiments.
We continue to be a "Trial & Error experiment driven company," creating unique solutions.



Kaneka Tower

Key basic structure of our management model
– Its viewpoint and perspective (what is valued)

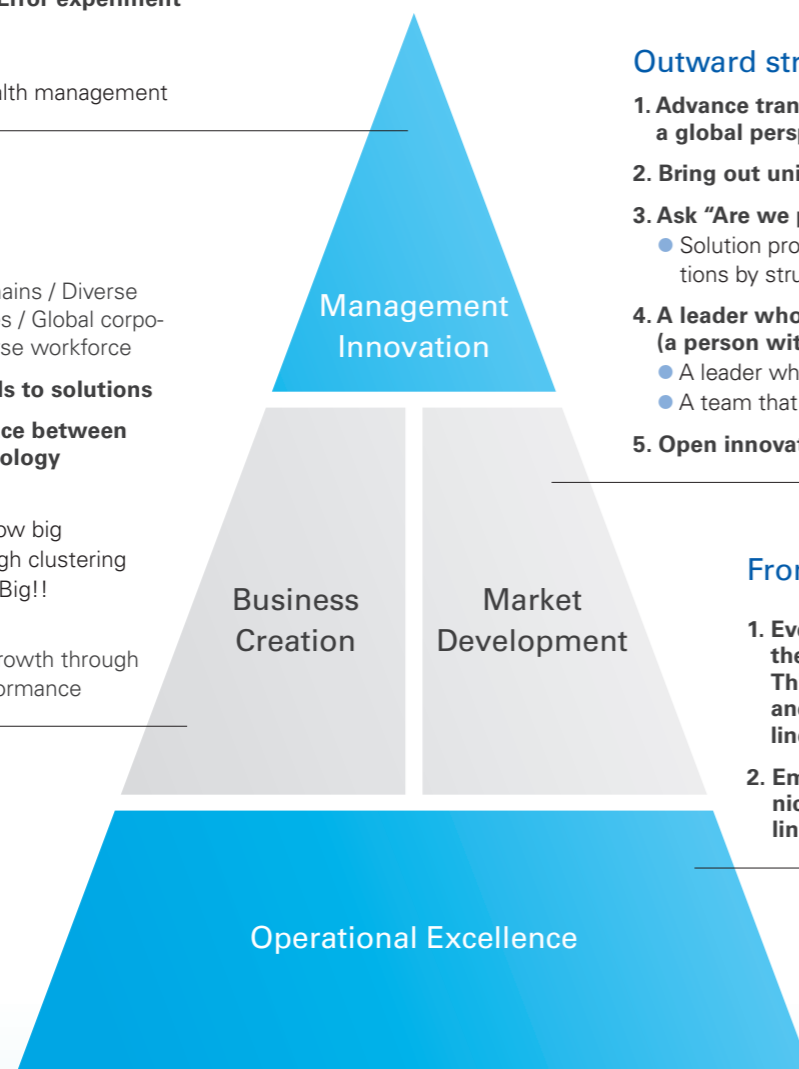
Ability to grow tall

Kaneka as a "Trial & Error experiment driven company"

- ESG management
- "Wellness First" health management

Inner strengths

- 1. Diversity**
Broad business domains / Diverse range of technologies / Global corporate activities / Diverse workforce
- 2. Shift from materials to solutions**
- 3. Serve as an interface between markets and technology**
- 4. From small to big**
 - Start small and grow big
 - Cell division through clustering
 - Born small, Grow Big!!
- 5. "Kaneka 1-on-1"**
Facilitate personal growth through employees' job performance



Outward strengths

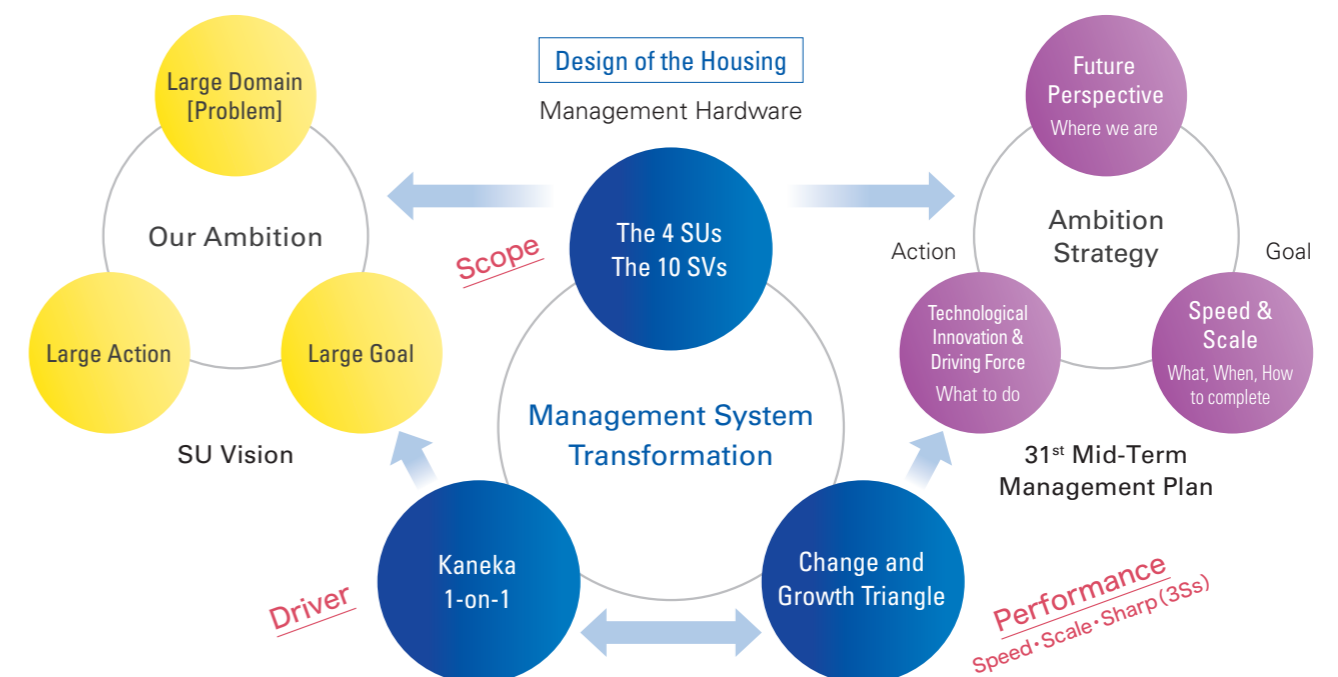
- 1. Advance transculturation from a global perspective**
- 2. Bring out uniqueness**
- 3. Ask "Are we playing a useful role?"**
 - Solution provider that provides solutions by structuring customers needs
- 4. A leader who will face challenges (a person with an edge)**
 - A leader who will influence people
 - A team that will unite to tackle issues
- 5. Open innovation**

Frontline execution

- 1. Every value is created on the frontline**
Think by seeing, hearing, and touching on the frontline to make decisions
- 2. Emphasize Value Communication to link the frontlines together**

Management System

Triple package as management system transformation
Further accelerate transformation to a solution provider based on a new management system



Leadership that lights a fire in people's hearts

《Management Software》
Implementation of the new personnel system (Kaneka 1-on-1)
Growth of people and work

31st Mid-Term Management Plan

Growth strategy from the viewpoint of the Change and Growth Triangle

Work Culture Innovation

Effective use of time, information, and people
Maximization of organizational productivity

- Renaissance (Recovering Our Humanity) -



Providing Solutions for People, Quality of Life, and the Environment (with visionary eyes)



By providing valuable solutions globally, we will continue growing and building a reputation for contributing to the evolution of people's lives and the environment throughout the world.



Contribute to the advancement of life and the environment of people world wide through chemistry

Earthology Chemical Solution

We bring innovation to lifestyles and the environment by harnessing the unlimited potential of chemical materials to help communities achieve sustainability.

Material SU

- Vinyls and Chlor-Alkali SV
- Performance Polymers (MOD) SV
- Performance Polymers (MS) SV

Quality of Life SU

- Foam & Residential Techs SV
- E & I Technology SV
- PV & Energy management SV
- Performance Fibers SV

Solutions Unit vision

Material Value Creator

To support the advancement of life and the environment by drawing out the richness of the materials

Quality of Life Pathfinder

To produce the leading edge of the enhancement of the quality of life through the power of materials

Measures

- Contribute to global environmental conservation and comfortable living**
 - Provide outstanding materials for evolving social infrastructure, mobility (lighter weight, more fuel efficient vehicles), and more
 - Provide solutions where materials like biopolymers are of direct help to ecological society
- Contribute to energy saving and a rich life**
 - Deliver energy-efficient housing solutions→Create a high quality, sustainable housing market
 - Provide unique materials and services that excel regarding both energy saving and smart application needs

Active Human Life Solution

By adopting a unified approach to food and medicine that is defined by a focus on chemistry, we provide innovative solutions that empower people to live healthier lives.

Health Care SU

- Medical SV
- Pharma & Supplemental Nutrition SV

Nutrition SU

- Foods & Agris SV

Medical Edge Explorer

To create a world where advanced medical means are available to as many people as possible

Nutrition Value Chain Innovator

To re-innovate food and health

Measures

- Contribute to a society advancing in age and medical sophistication**
 - Strengthen marketing and product development globally in cutting-edge medical fields including biopharmaceuticals, and regenerative medicine and cell therapy
 - Proactively utilize open innovation and U.S. R&B bases
 - Provide solutions that deliver value by fusing devices and medicine
- Contribute to health and a plentiful, varied diet**
 - Provide a broad range of solutions that help diversify and enrich people's diets
 - Offer solutions that help prevent disease and promote health, and enhance the food materials lineup
 - Deliver solutions that assist production in the fields of agriculture, livestock, and fishery

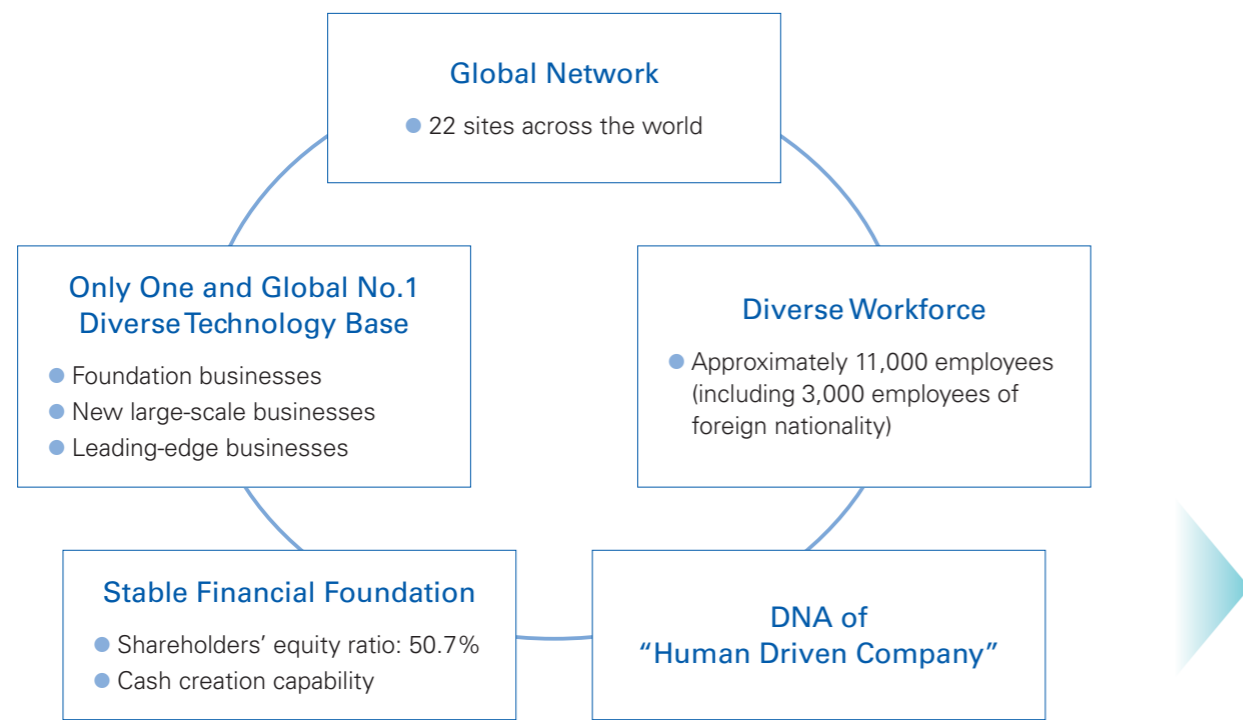


Kaneka's Value Creation Process

(based on creative fusion of people and technology)

Source of Competitiveness (Diversity)

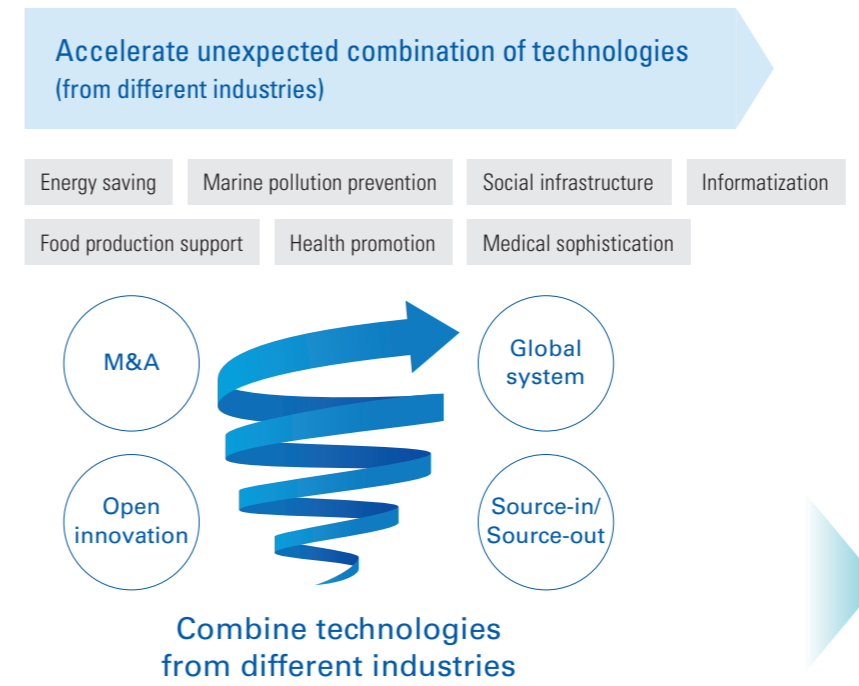
Solid foundation of people and technology



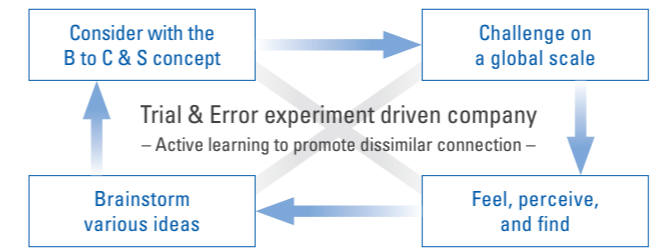
Business is conducted by people, and our proud technology underpins various products. We have a tradition of creating something new through unexpected combination of two or more things (technologies). We will provide new value on a global scale by encouraging healthy and vibrant people to repeat value communication from the perspective of B to C & B and the more social perspective of B to C & S.

Value Driver

Creative fusion of people and technology



Trial & Error experiment driven company
Try a large number of things and put in place the ones that work



Resolution of Social Issues
KANEKA thinks "Wellness First".

Resolution of environmental and energy issues

Resolution of food issues

Resolution of wellness issues



R&B Aimed at Creating Big and Sustainable Businesses

We have contributed to resolving social issues through original products developed using diverse businesses and technologies, “Only One” and “Global No.1” technology base. Amid accelerating global trends toward a sustainable society with the aim of ending the COVID-19 pandemic:

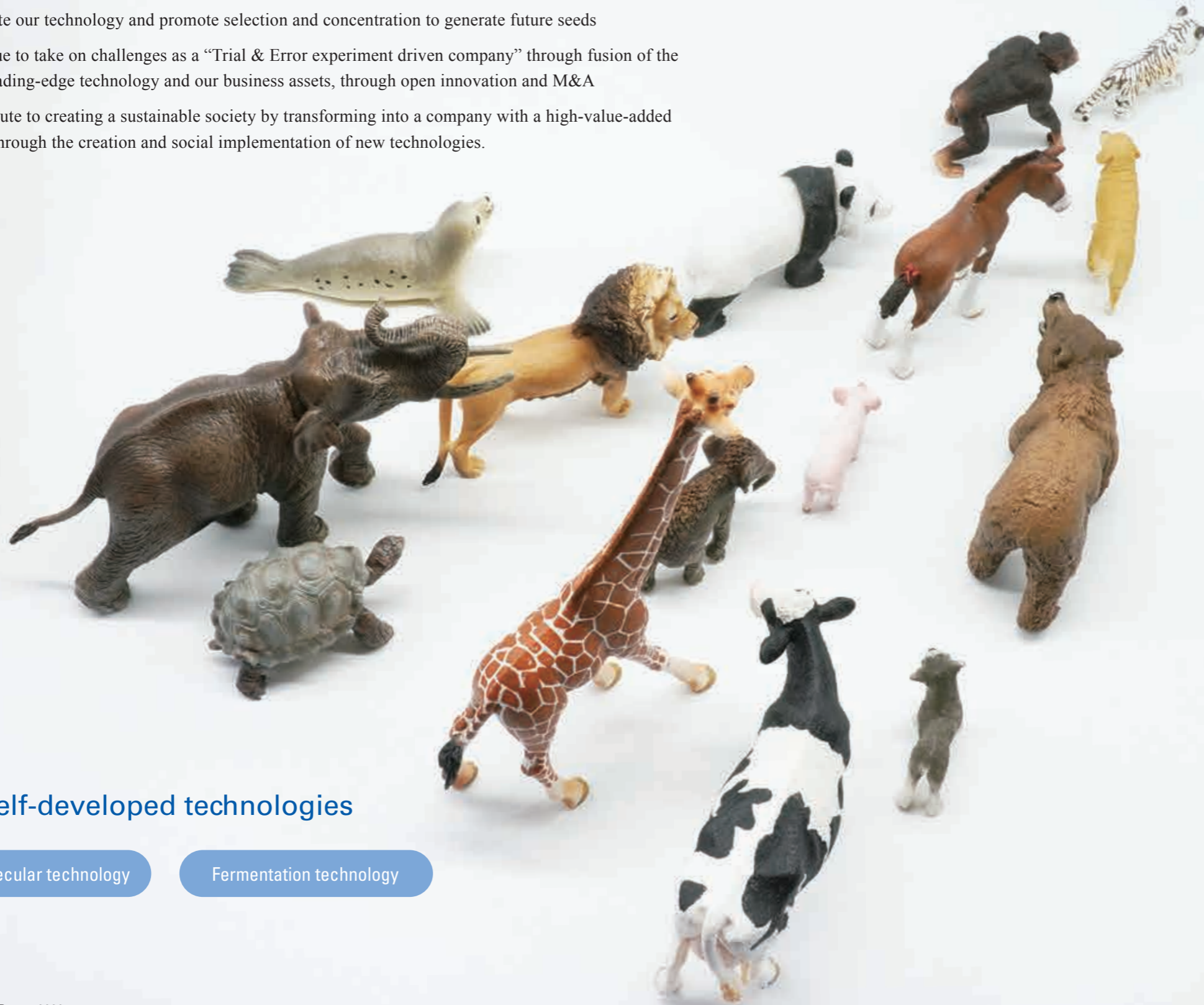
- (1) we cultivate our technology and promote selection and concentration to generate future seeds
- (2) we continue to take on challenges as a “Trial & Error experiment driven company” through fusion of the world’s leading-edge technology and our business assets, through open innovation and M&A
- (3) we contribute to creating a sustainable society by transforming into a company with a high-value-added portfolio through the creation and social implementation of new technologies.

Self-developed technologies

Macromolecular technology

Fermentation technology

KANEKA thinks
“Wellness First”.



Resolution of environmental and energy issues

Through the development of marine biodegradable polymer materials and a photovoltaic system installable on building walls, we aim to create a society where everyone can use clean and sustainable resources and energy.



KANEKA Biodegradable Polymer Green Planet



Building integrated photovoltaics (BIPV)

Resolution of food issues

By developing food production support products and producing high-value-added dairy products through cooperation with dairy farmers, we realize a society where safe, secure and highly nutritious food is available to everyone and where food producers are also satisfied.



KANEKA PEPTIDE



Milk for Bread / Café au lait for Bread

Resolution of wellness issues

By developing safe and highly effective supplements and other products to maintain and improve physical health, we realize a society where everyone has access to adequate medical services and can continue to live a vibrant and healthy life.



Kaneka Ubiquinol



Floradapt (Lactic acid bacteria)

Accelerating Unexpected Combination of Two or More Technologies (from Different Industries) through Open Innovation

New R&B structures with open innovation

Cultivating Breakthrough Technologies

We have set the purpose of our R&D activities as “social implementation at the earliest opportunity possible by pursuing value from the perspectives of markets and customers through the proactive use of leading-edge technologies” and have redefined

R&D as R&B (Research & Business). We will ensure sustainable growth as a solution provider through the cultivation and social implementation of breakthrough technologies with overwhelming competitiveness that help to resolve social issues.

Creating Big and Sustainable Businesses Based on Selection and Concentration

We will transform into a company with a sustainable portfolio by fusing our self-developed technologies with introduced technologies and developing businesses to resolve environmental, energy, food, and wellness issues. Planting seeds for future R&B themes, we boost the speed and scale of transformation based on selection and concentration.

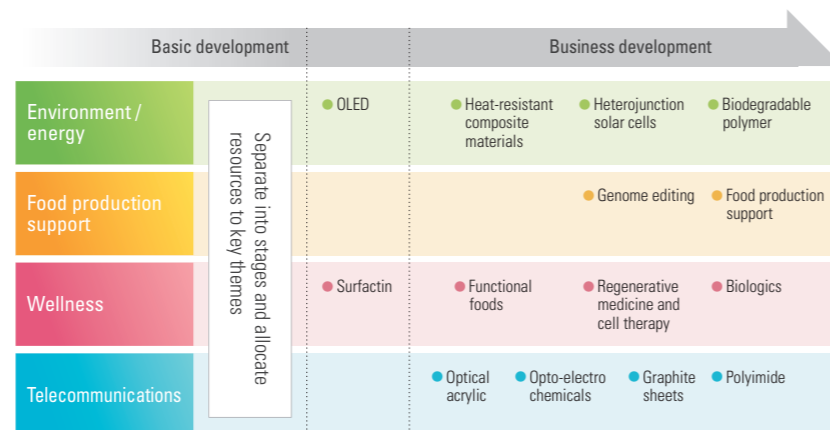
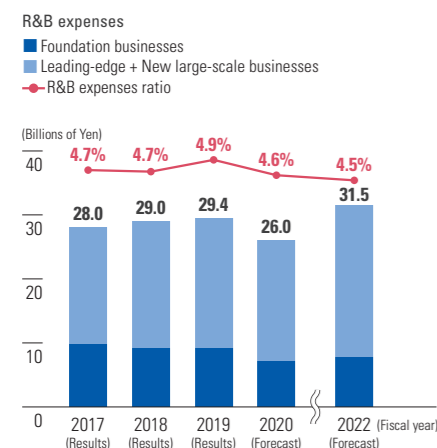
Improvement of R&B Productivity

We promote the selection and concentration of key themes to increase the impact and speed of R&B and expand our technology and market share. We enhance speed and scale by structuring issues and clustering the selected themes, respectively.

Mid-Term Management Plan (Fiscal 2020-2022)

We will focus on leading-edge and new large-scale businesses.

R&B Strategy (Selection and Concentration for Resource Allocation and Key Themes)



New Sprouting through the Power of One Team

We will introduce our new movement toward the creation of big businesses after transformation to R&B structures.

- Toward the early social implementation of R&B themes with speed and scale, we are promoting multiple projects that cross the borders of corporate and business divisions (in the fields of the environment and energy, electronics, life science, etc.)
- Toward the social implementation of KANEKA Biodegradable Polymer Green Planet, which contributes to resolving marine pollution issues, we are promoting company-wide projects to develop processing technology, cultivate markets together with major brand holders, and enhance production technology.

- To promote research on COVID-19 and other infection control measures, we have launched the Infection Initiative Team to provide various solutions, including the contract production of DNA vaccines, the supply of active pharmaceutical ingredients for Avigan® Tablet*, the development of antiviral drugs, and the provision of PCR test kits.
- As open innovation projects, we are developed in R&D initiatives, including launching joint research on biomedicine production technologies with the biomedical research institute “de Duve Institute” of the University of Louvain (UC Louvain), Belgium, and establishing the Agri-Bio Research Center through the acquisition of assets of Japan Tobacco Inc.

* Avigan® Tablet is a registered trademark of FUJIFILM Toyama Chemical Co., Ltd.

Comments from the Person in Charge

Aiming to establish big and sustainable breakthrough technologies while building an R&B culture that contributes to resolving social issues.

Hiroyuki Deguchi
Executive Officer
General Manager
Corporate Research & Business Division

Redefining R&D as R&B (Research & Business), we are developed in activities centered on promoting social implementation of R&D to provide solutions to social issues. Although we have developed various original products based on diverse technologies, it is important to boost the speed and scale of R&B, promoting selection and concentration, in a rapidly changing environment.

To realize this, we focus on establishing big breakthrough technologies as early as possible by taking timely action to fill the gap between our ideals and reality and actively promoting open innovation while cultivating our technology. We have developed KANEKA Biodegradable Polymer Green Planet, next-generation photovoltaic modules, and new electronics materials and have entered the biologics, regenerative medicine and cell therapy, and probiotics businesses, encouraging new sprouting to resolve major social issues.

The COVID-19 pandemic has affected behavior patterns of people, leading to a transition to new economic activities and a new industrial structure. The R&D, practical application, and digitization of new medicine is being accelerated. Technological development toward the realization of carbon neutrality is also becoming more important.

These changes are a great opportunity for our company with diverse technologies. We will become a company that continues to rejuvenate itself, fusing our technologies in the fields of life science, electronics and polymers to work on future-oriented R&D as a “Trial & Error experiment driven company”.

We will improve R&D productivity by actively introducing materials informatics and digital technologies to continue to produce large-scale results speedily by tackling issues with the power of One Team. We thereby aim to build an R&B culture that contributes to resolving social issues.

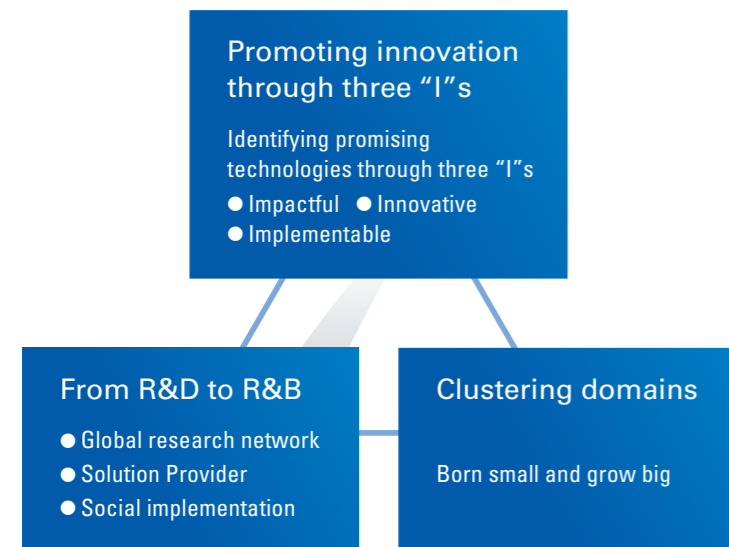
Fusion of Self-developed Technologies with Introduced Technologies

Open innovation accelerating combination of technologies from different industries

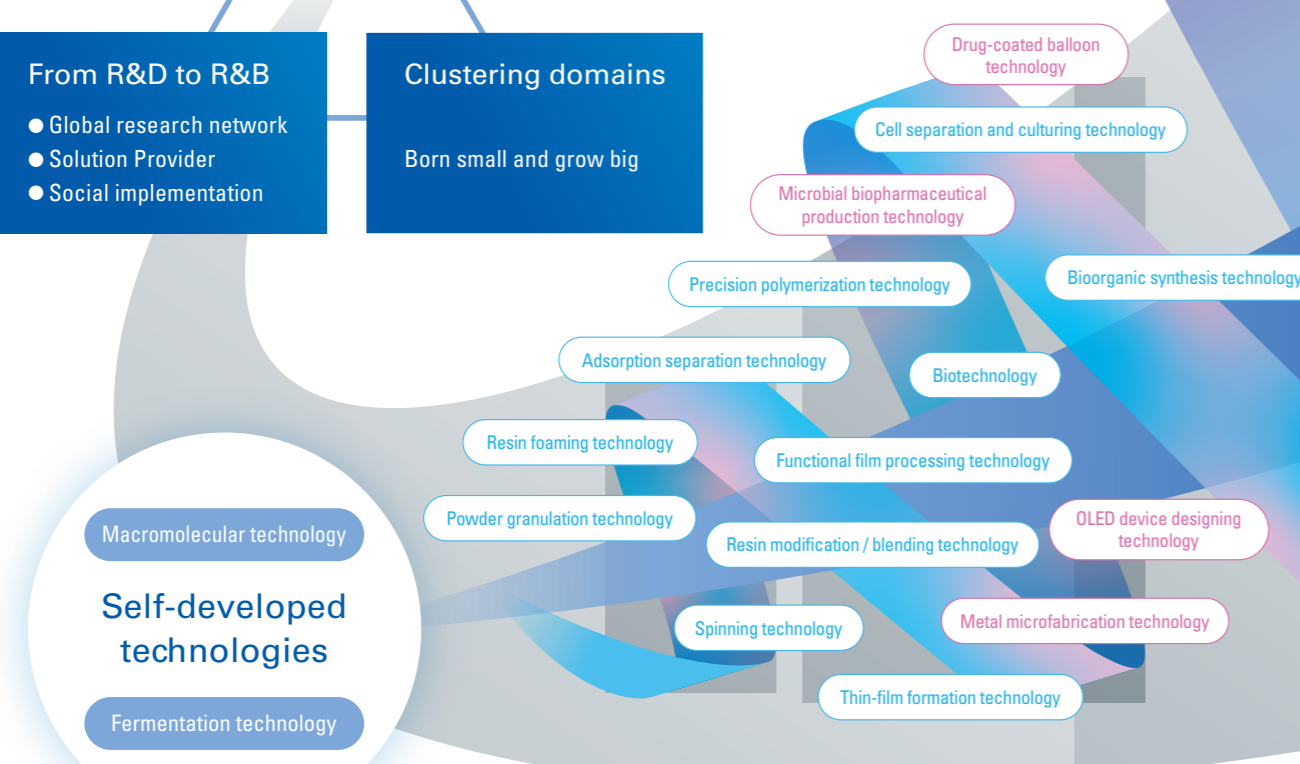
Since our foundation, we have inherited creativity and a challenging spirit, with which we repeat trial and error as our important values and have built "Only One" and "Global No.1" diverse technology base, including developing macromolecular and fermentation technologies. Having defined the resolution of the three crises

of environment / energy, food, and wellness as a key domain, we create solutions to resolve social issues through fusion of self-developed technologies and external technologies and through open innovation. Kaneka will continue to pursue its mission "Kaneka thinks 'Wellness First'".

Actions to embody the concept of Kaneka as "Trial & Error experiment driven company"



Fusion of self-developed technologies with introduced technologies



Key technologies and key drivers for the future



Environment / Energy

- Biodegradable materials for food and product packaging and containers
- Next-generation mobility materials (vehicles, aircraft, spacecraft)
- Next-generation information terminal materials
- High-efficiency photovoltaic models and see-through photovoltaic models that realize 100% renewable energy

Three Crises
Resolution of social issues
Social implementation of new materials and systems

Food

- Environmental stress-tolerant crops / Hypoallergenic crops
- High-performance fertilizer that accelerates the growth of crops and boosts their resistance to environmental stress, including climate change

Wellness

- Health maintenance / Frailty*1 prevention
- Refractory disease: Innovative treatment
- Circulatory disease: Minimally invasive treatment*2
- Infection control measures

*1 A state where physical and mental weakness appears associated with decline in motor and cognitive functions caused by aging and decline in daily living function due to the impact of comorbid chronic diseases. It is possible to maintain and improve daily living function through appropriate intervention and support.

*2 Treatment that reduces burden on the patient's body.

Resolving the COVID-19 Issue



Bringing Together Our Technologies to Provide Solutions to Resolve Global Issues

Under the circumstances where the end of the COVID-19 pandemic cannot be foreseen, we contribute to virus infection countermeasures through scale-up of our small molecule pharmaceuticals, production technology, and quality control management and assurance skills as well as our accumulated knowledge of and technologies for the production of

biopharmaceuticals from microorganisms, such as proteins and plasmid DNA*1. We continue to provide various solutions to help people live a healthy, safe, and secure life, aiming to resolve social issues.

*1 Plasmid DNA: A general term for circular DNA molecules that exist outside the nucleus of bacteria, such as E. coli and yeast, and that are passed down to daughter cells through cell division.

Globally Pressing Need for Infection Control Measures

We have been actively engaged in the supply of PCR test reagents and active pharmaceutical ingredients (APIs) for Avigan® Tablet*2 since the beginning of the spread of COVID-19. In August 2020, we joined a consortium that aims to mass-produce a DNA vaccine*3 for COVID-19, which is being developed by AnGes Inc. and Osaka University, and so on. Our affiliate Kaneka Eurogentec S.A. has agreed to produce plasmid DNA for COVID-19 vaccines. Using its advanced technologies for mRNA*4 and plasmid DNA production, Kaneka Eurogentec is responding to growing inquiries for contract production of COVID-19 vaccines, whose development is accelerated by pharmaceutical companies and biotech ventures.

In October 2020, we began selling an RT-qPCR test kit that allows detection of the novel coronavirus within an hour (product name: KANEKA Direct RT-qPCR Kit "SARS-CoV-2") to medical institutions

and testing facilities through our affiliate Kaneka Medix Corporation. In this test kit, pretreatment is completed by heat treatment only since there is no need to purify viral RNA*5 from samples taken from saliva or the top of the throat. Accordingly, pretreatment that with conventional methods took around one hour is shortened to around five minutes, allowing the overall time needed for the PCR test to be greatly shortened to within an hour.

*2 Avigan® Tablet is a registered trademark of FUJIFILM Toyama Chemical Co., Ltd.

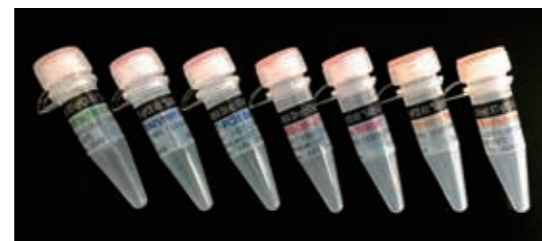
*3 DNA vaccine: A vaccine whereby introducing into the body plasmid DNA encoded with proteins from a part of the targeted pathogens (without using any dangerous pathogens), the proteins are produced within the body, giving immunity against said pathogens.

*4 mRNA: An RNA molecule that transcribes genetic information for protein synthesis from DNA. It is expected to be used for vaccines and therapeutics.

*5 Viral RNA: Genes characteristic of the novel coronavirus. Through PCR testing, viral RNA is amplified to detect infection.

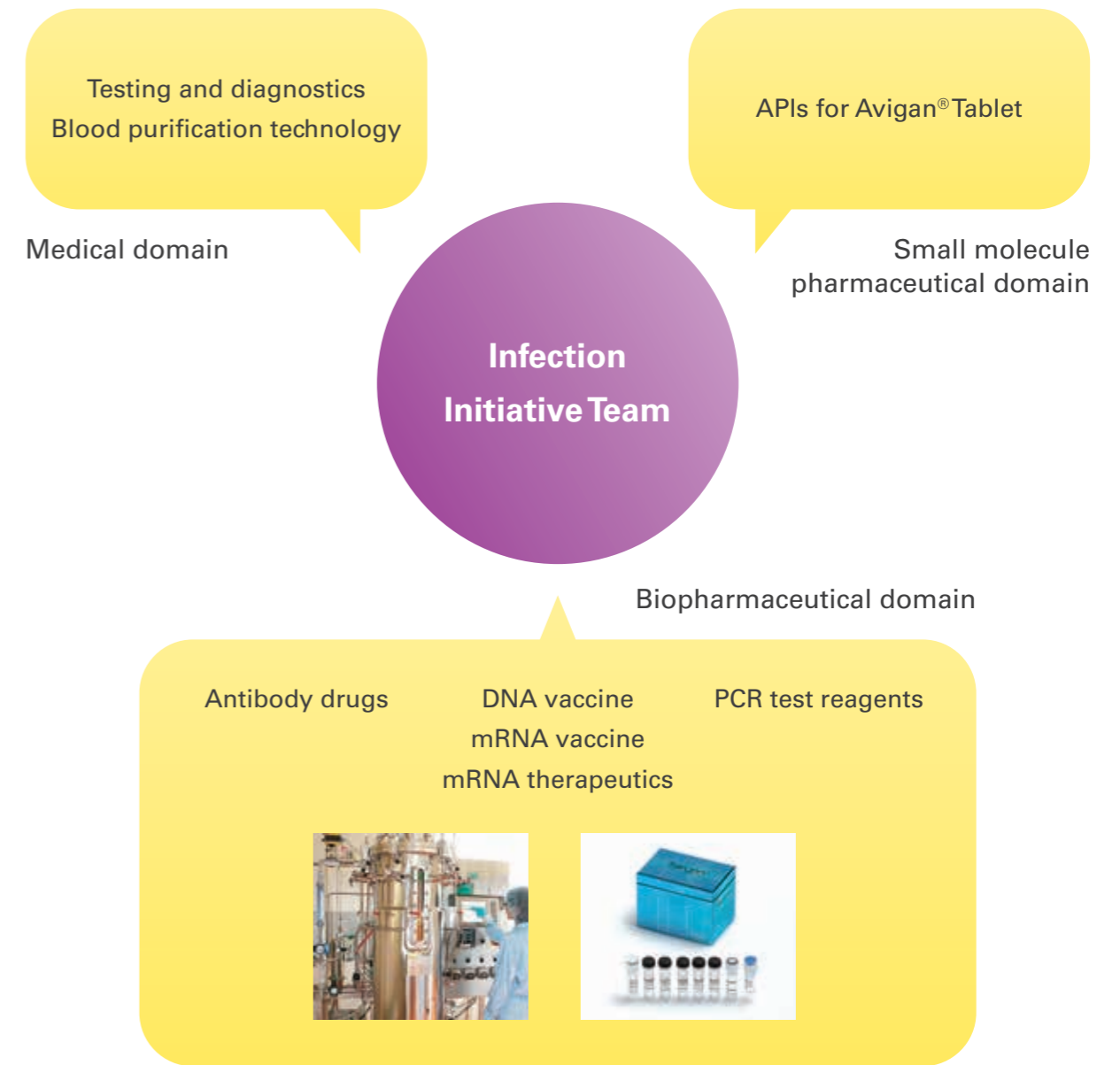


Biopharmaceutical contract development and manufacturing building of Kaneka Eurogentec



PCR test kit capable of detecting the novel coronavirus within an hour

► System for Addressing Infections with a Broad Range of Technologies



Providing Maximum Solutions under a Cross-sectional Corporate Structure

We have launched the Infection Initiative Team, which promotes R&D of infection control measures, aiming to promote unique social implementation of solutions from a wide range of perspectives by making maximum use of our various technologies. We are taking a wide range of measures to resolve the global COVID-19 issue, including the supplying of PCR test kits and PCR test reagents, the manufacturing of DNA vaccine, and the supplying of APIs for Avigan® Tablet.

To make the world more wellness-first, we will provide various solutions, including advanced medical means, which are helpful to patients and related medical staff and help people live a healthy, safe, and secure life, by bringing together our technologies and combining superior external technology through joint research with the de Duve Institute of the University of Louvain (UCLouvain), Belgium.

Resolving Marine Pollution Issues



Accelerating the Social Implementation of KANEKA Biodegradable Polymer Green Planet to Realize a Sustainable Society

We apply KANEKA Biodegradable Polymer Green Planet ("Green Planet"), which is 100% plant-based and biodegradable in the sea, soil, and other natural

environments, to daily life, leading to innovation in lifestyles and the environment to help communities achieve sustainability.

Joint Projects for Further Value Provision Requires by Society

With its superior biodegradability under a wide range of environments, our 100% plant-based Green Planet has obtained the "OK Biodegradable MARINE" certificate for some grades. Contributing to reducing marine pollution caused by microplastics, it is expected to be a solution for global plastic pollution and environmental issues.

Under partnership with Shiseido Company Ltd., whose concept of "A Kiss to the sea" for Sustainable Beauty Actions (SBAS) through the SHISEIDO brand matches Green Planet's marine biodegradability, we developed cosmetic containers made from Green Planet for the first time in the world and sold them at the SHISEIDO GLOBAL FLAGSHIPSTORE in Ginza, Tokyo, in November 2020.

Green Planet has also been adopted in 6 mm straws for Seven Cafés at about 10,000 stores in Japan of SEVEN-ELEVEN JAPAN Co., Ltd. In June 2020, it was adopted in 8 mm straws for its new lineup "CAFÉ LATTE SWEETS" sold throughout Japan.

Outside Japan, Green Planet has been adopted for wide-ranging applications, including fruit and vegetable bags, garbage bags, nursery pots, and coffee capsules. We are also considering its uses in cutlery, shopping bags, cup lids, and paper coating materials with many global brand holders.

Based on our mission "Kaneka thinks 'Wellness First'", we will continue to offer value to the world as a solution provider.



AquaGel Lip Palette (Courtesy of the SHISEIDO brand, Shiseido Company Ltd.)



Seven Café's "CAFÉ LATTE SWEETS"

Road Map to Develop and Disseminate Green Planet Products and a Plan to Increase Production Capacity



Toward the Further Expansion of Social and Economic Value – Joining a Demonstration Project to Establish a Resource Recycling System

Since plant oils are used as ingredients for Green Planet, we have considered how to use waste cooking oil. Since 2019, we have jointly implemented the Life Cycle Demonstration Project for PHA-polymers, adopted by the Ministry of the Environment, with the Advanced Science, Technology & Management Research Institute of KYOTO, the applicant of the project. The project consists of three parts:

- (1) Producing Green Planet from waste cooking oil and renewable resources
- (2) Using Green Planet to produce garbage bags and plastic alternative products and using them for biogasification
- (3) Demonstrating the effects of environmental impact reduction in the life cycle of PHA-polymers and assessing costs.

We aim to establish a new recycling-oriented waste treatment system to realize a decarbonized and

recycling-oriented society and address marine plastic pollution.

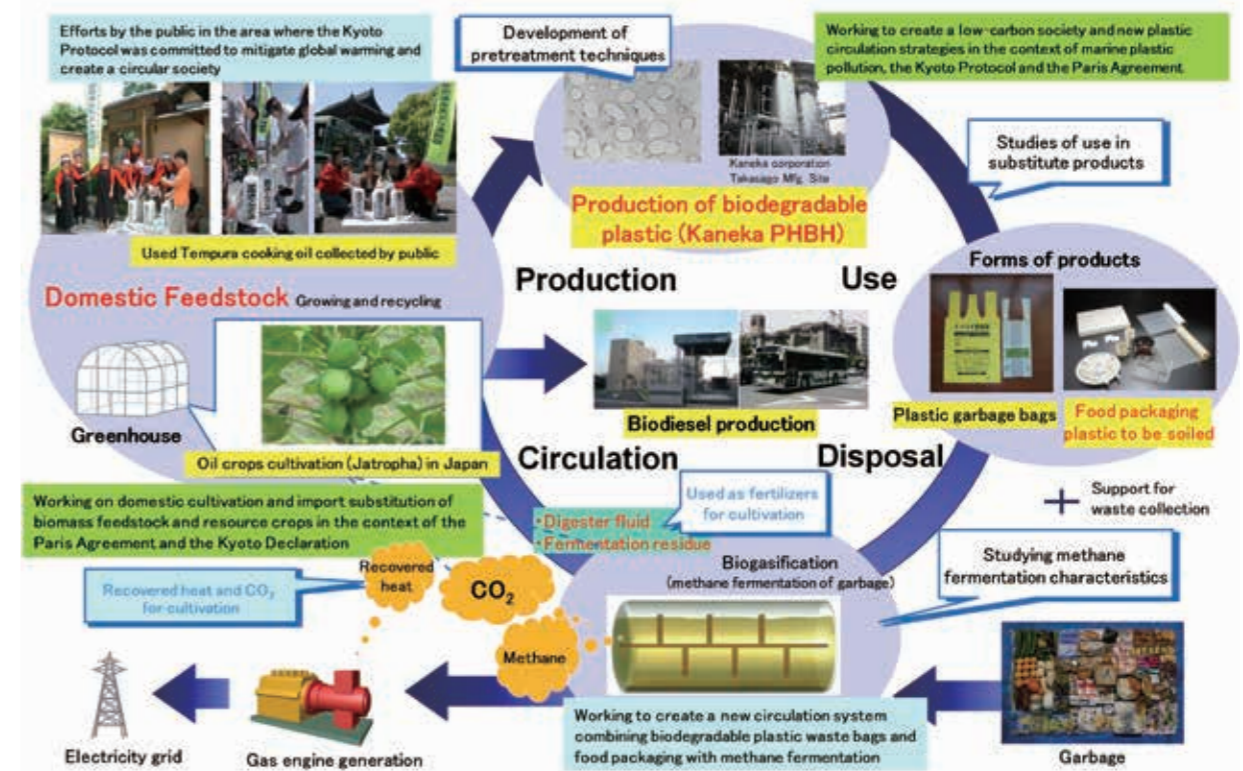
We are mainly involved in (1) producing Green Planet using waste cooking oil from businesses and households, which is used as biomass feedstock, and (2) producing garbage bags using Green Planet made from waste cooking oil toward their use at biogas plants.

We have mostly established technology that uses waste cooking oil from businesses as biomass feedstock and have confirmed that Green Planet is biodegradable in the biogasification process. In 2021, we will work to expand technology that uses waste cooking oil from various sources and to mass-produce garbage bags. Through the project, we actively propose the use of garbage bags made from Green Planet to local governments and businesses that plan to use food waste biogas facilities and that work on energy recovery and recycling through biogasification from food waste.

Life Cycle Demonstration Project for PHA-polymers

"Demonstration Project for the Creation of a Plastic and Other Resource Recycling System That Supports a Decarbonized Society" - a commissioned project by the Ministry of the Environment

Outline of the Project for the Manufacture, Use, and Recycling of Biodegradable Plastic



(Source: March 2020; Advanced Science, Technology & Management Research Institute of KYOTO)
(Note) We changed our product registered trademark from "KANEKA Biodegradable Polymer PHBH" to "KANEKA Biodegradable Polymer Green Planet" in February 2021.

Supporting a Clean Society



Aiming for High-performance Next-generation Photovoltaic Modules – Fusion of Thin-film Photovoltaic Module Technology into Heterojunction Technology

Aiming to achieve carbon neutrality by 2050, as declared by the Japanese government in October 2020, we support a clean society with high-perfor-

mance next-generation photovoltaic modules, centering on technological fusion through enhanced industry-academia-government collaboration.

Social Implementation of a Wall-Installable Photovoltaic System

In December 2019, we developed the exterior system “T-Green® Multi Solar,” which generates electricity through photovoltaic laminates integrated into outer walls and windows, through the joint development of a wall-installable photovoltaic system with Taisei Corporation. (“T-Green” is a registered trademark of Taisei Corporation.) A next-generation see-through photovoltaic module integrated into windows was developed as a new building integrated photovoltaic (BIPV) with increased power generation and thermal insulation by low-E multi-layered glass*1 through combination of our bi-facial heterojunction photovoltaic cell technology and low-E glass. With a cellular structure with electrode wires invisible from the outside, a solid-type photovoltaic module for outer walls features advanced design workability as a high-efficiency photovoltaic module adaptable to spandrel areas*2 of building exterior. With two types of modules combined, the system can be applied to various outer walls including glass curtain walls*3. High-efficiency crystalline Si see-through photovoltaic modules have been used for the roof eaves of the Japan National Stadium. Both companies have begun developing photovoltaic modules integrated with precast concrete*4 and renewed PVs for existing buildings toward the expanded use of BIPVs.

We aim to realize a power-generating house/building equipped with high-performance next-generation photovoltaic modules toward the realization of a carbon neutral society.

*1 Low-E multi-layered glass: Multi-layered glass that uses glass coated with a special metal film (Low-E glass).

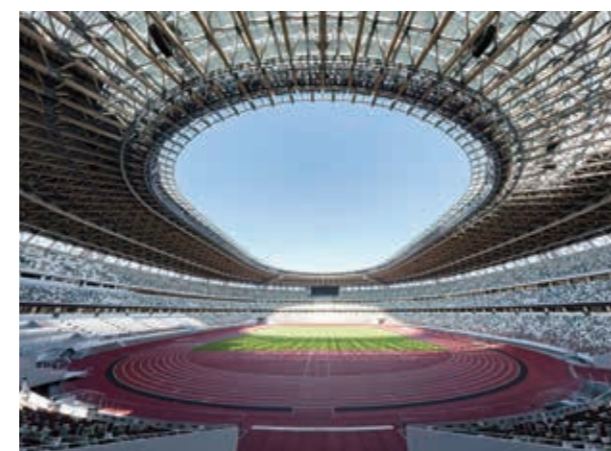
*2 Spandrel area: The area of outer walls specified in Article 112 of the Order for Enforcement of the Building Standards Act. To prevent the passage of fire from one opening to another, a space or a waist-high wall is placed between each opening.

*3 Glass curtain wall: A wall that does not support the structural load of a building, such as all-glass walls and panel outer walls.

*4 Precast concrete: A concrete product manufactured at a plant and transported to the construction site, or a construction method using precast concrete members.



Sample of utilization



Interior of the Japan National Stadium (Courtesy of Taisei Corporation)

► The Merits of the SolidType (for Outer Surfaces (Wall)) and the See-through Type (for Windows)

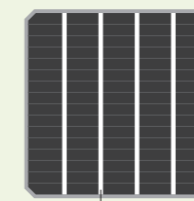
Solid type (for outer surface (wall))

Solar cells with advanced design workability



A cellular structure where the electrode wires can't be seen from the outside

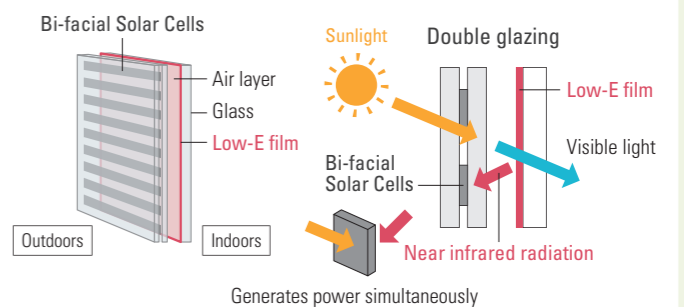
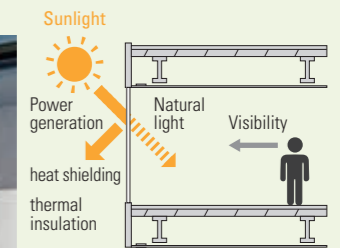
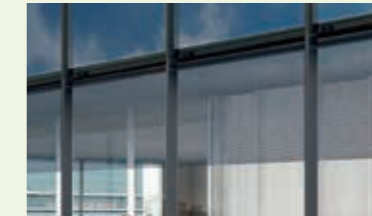
Traditional type



Electrode wires

See-through type (for windows)

Solar cells with high transmission

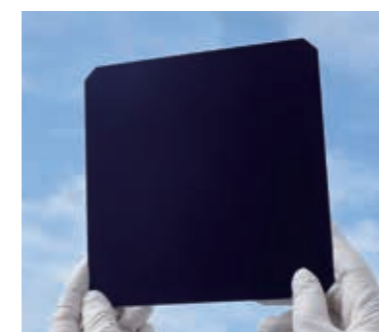


From Thin-film Si Tandem Solar Cells to Heterojunction Crystalline Si Solar Cells

Crystalline Si photovoltaic modules account for 95% of the world's photovoltaic module production.

We have achieved the world's highest cell conversion efficiency of 26.7% and module conversion efficiency of 24.5% in heterojunction back-contact crystalline Si solar cells (Photo 1), using our heterojunction technology developed based on thin-film Si tandem technology.

We are advancing R&D to implement this technology in application as in-vehicle solar cells (Photo 2). For its development, it is crucial to lower the cost and increase the efficiency of solar cells as well as to reconcile our technology with the customer's technology. We are working to adapt this technology to a new style of society, including a mobility application.



(Photo 1) Heterojunction back-contact crystalline Si solar cell



(Photo 2) Kaneka's solar cell installed in the roof glass of Toyota's low speed automatic driving EV "e-Palette" (Courtesy of Toyota Motor Corporation)

Development from Heterojunction Crystalline Si Solar Cells to High-performance Tandem Solar Cells

We are engaged in R&D of a high-performance next-generation solar cell (perovskite/heterojunction crystalline Si tandem solar cell) composed of our heterojunction crystalline Si solar cell as a bottom cell and a perovskite solar cell*5 as a top cell.

In this combination, the intermediate layer, developed for thin-film Si tandem solar cells, plays a key role. High-accuracy simulation using actual parameters concluded that a conversion efficiency of 35% could be achieved. In our verification, we have achieved the world's highest conversion efficiency

level of nearly 30% for a small area (1 cm²). In its practical use, our technologies, developed for thin-film Si tandem solar cells, will contribute to differentiation of the product.

High-efficiency solar cells are effective in reducing leveled cost of electricity (LCOE) and allow for expansion into new markets. An increase in conversion efficiency leads to an equivalent increase in power generation in the same area, leading to the reduction of environmental load.

► Type, Structure and Conversion Efficiency of Our Solar Cells

Name	Thin-film Si (amorphous Si/ microcrystalline Si) tandem solar cell*6	Heterojunction crystalline Si solar cell*7	Heterojunction back-contact crystalline Si solar cell*8	High-performance next-generation solar cell (perovskite/heterojunction crystalline Si tandem solar cell)
Cross-section structure (schematic)				
Cell efficiency [Kaneka]	13.4%	25.1%	26.7% (World's highest performance*9)	35% possible according to high-accuracy simulation using actual parameters

*5 Perovskite solar cell: A solar cell composed of the perovskite-structured compound as a light absorption layer.

*6 Thin-film Si tandem solar cell: A stacked solar cell composed of amorphous and microcrystalline Si thin film layers as light absorbing layers. A tandem solar cell comprises top and bottom cells that absorb short-and long-wavelength light, respectively. A stacked cell structure can increase conversion efficiency.

*7 Heterojunction crystalline Si solar cell: A crystalline Si solar cell with a heterojunction formed by crystalline and amorphous Si. Heterojunction technology binds semiconductor materials with different physical properties and can improve conversion efficiency through defect reduction.

*8 Heterojunction back-contact crystalline Si solar cell: A crystalline Si solar cell that combines heterojunction and back-contact technologies. Back-contact technology, with electrodes formed only on the back face of the solar cell, can make the light receiving area of the top face larger, resulting in better conversion efficiency.

*9 Solar cell efficiency tables (Version 57), Prog. Photovolt. Res. Appl. 2020;1-13

Resolving Agricultural Production Support Issues – Crop Breeding Based on Genome Editing



Agricultural Production Support through Accelerated R&D of Crop Breeding Based on Genome Editing

We are accelerating our initiative to provide solutions to food issues through fusion of our unique genome editing technology and cutting-edge gene delivery technology, aiming to enter the seed business for genome-edited crops, which have high growth potential.

In August 2020, we signed an agreement with Japan Tobacco Inc. to acquire its assets related to plant biotechnology*1.

This asset acquisition is aimed at accelerating R&D of genome edited-crops and innovating conventional crop breeding by using our core technology "In planta Genome Editing Technology*2" (iPB method), which is highly efficient and applicable to a wide range of commercial crop varieties, and Japan Tobacco Inc.'s state-of-the-art research facilities, global network with the Ag-bio industry, and cutting-edge gene delivery technology.

Under the new R&D system, we will promote the acquisition of useful seed technology and the sophistication of our core technology, making maximum use of open innovation.

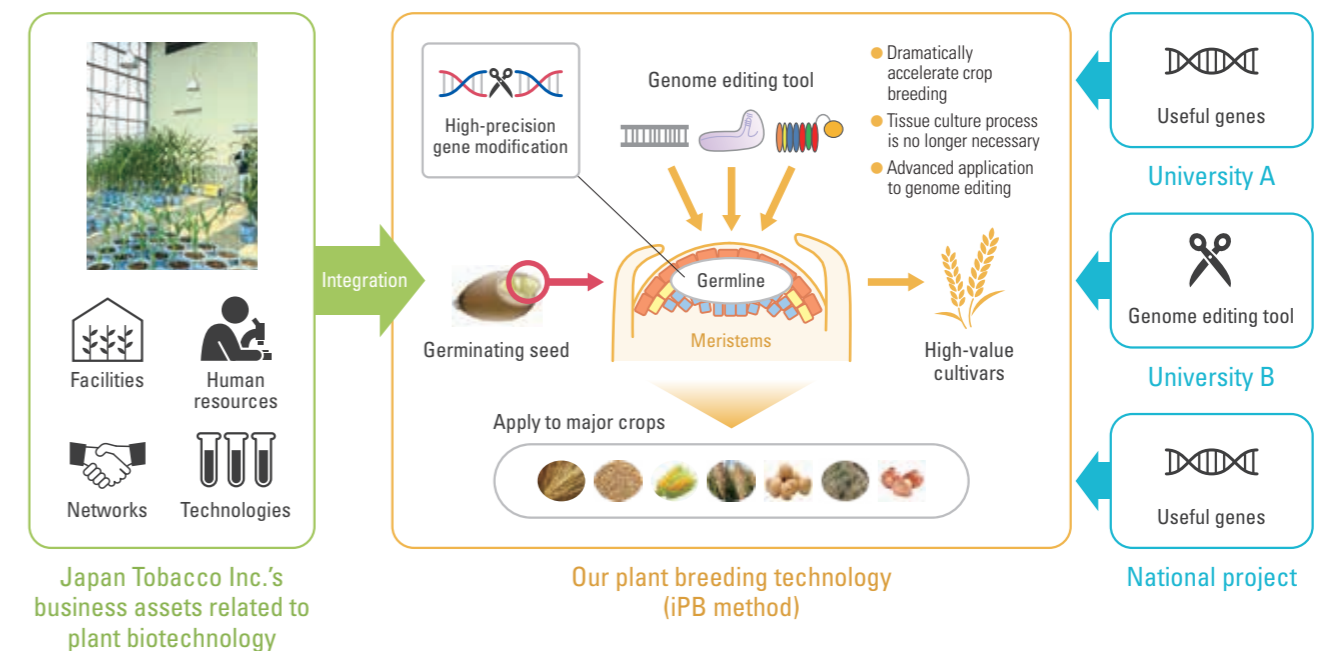
We will strengthen the license business of gene delivery technology and contract R&D of crop seeds*3 with functionality tailored to customer needs and high yield, aiming to enter the seed business for genome-edited crops, which have high growth potential.

Based on the concept that Kaneka thinks "Wellness First", we will accelerate the development of solutions for global food issues, ensuring safe, secure, and stable food supply.

*1 Breeding technology to introduce beneficial traits, such as disease resistance, into plants (tissue culture technology, gene delivery technology, etc.).

*2 Technology for rapid breed improvement which enables gene modification without integrating a genome-editing enzyme gene into the plant chromosomes.

*3 Developing genome-edited seeds based on customer requests.



Contributing to a Healthy Dietary Lives

– Dairy Products



Deploying New Organic Dairy Products Made from Quality Raw Milk through Product Development Focused on High Quality and Delicious Flavor

Since 2018, we have been engaged in the dairy products business, aiming to contribute to a rich and healthy dietary lives through our integrated operations, from dairy farming to the production and sales of dairy products. Since establishing a technical tie-up with Pur Natur Invest BVBA in Belgium in January 2018 to develop high-quality and delicious dairy products, we have provided various dairy products, such

as milk, café au lait, fermented butter, and yogurt, by combining its technology and quality milk from Hokkaido. Having launched “Watashi no Chikara (My Energy) Q10 Yogurt,” which contains Kaneka Ubiquinol, in January 2021, we have further expanded our lineup of high-value-added dairy products focused on delicious flavor and health.

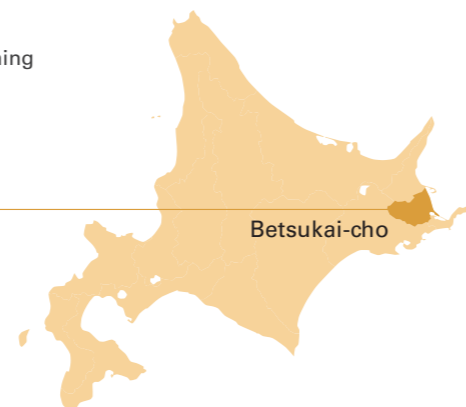
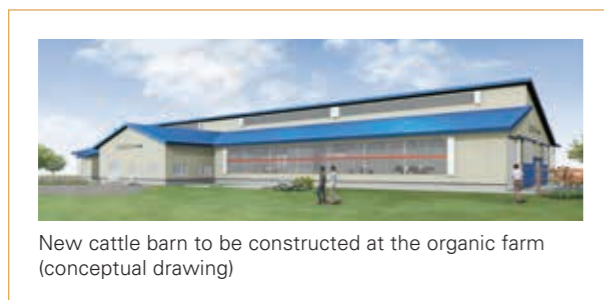
Deploying New Organic Dairy Products through Development Focused on High Quality and Delicious Flavor Based on Organic Dairy Farming

Japan’s dairy farming faces a difficult environment due to the lack of successors and labor. Our business philosophy is to work with dairy farmers to realize attractive and sustainable dairy farming. We work to raise productivity in dairy farming, improve the workplace environment, and address environmental issues, using our food production support business and production know-how. In June 2020, we together with Betsukai Milk World Co., Ltd.*1 (Location: Betsukai-cho, Notsuke-gun, Hokkaido; President: Sadayuki Nakayama), established Betsukai Wellness Farm Co., Ltd., which is engaged in the production and sales of organic raw milk*2. Having acquired an organic farm, we will engage in organic dairy farming with high productivity and deploy new organic dairy products. The

farm starts operation in April 2021, aiming to acquire organic JAS certification*3 by 2022. We work to produce high-value-added organic raw milk and raise productivity through labor saving and home growing of feed, aiming for sustainable and recycling-oriented dairy farming considerate of people, dairy cattle, and the environment.

*1 Kaneka’s dairy farming partner that deals in raw milk.
 *2 Raw milk taken from cows that have been raised in an environment that conforms to the standards of the organic JAS certification, which involves using organic feed among other practices. Raw milk taken as is from cows and not subjected to processing is a raw material for milk and dairy products.
 *3 An organic food inspection certification system prescribed by the Ministry of Agriculture, Forestry and Fisheries. It certifies agricultural and livestock products that are produced without reliance on chemical substances such as pesticides or chemical fertilizers.

► Location of Betsukai Wellness Farm Co., Ltd., a Base for Organic Dairy Farming



Launching Product Development through SNS-based Value Communication with Customers

For the “For Bread” series launched in 2018, we have expanded our product lineup, releasing “Milk for Bread,” “Café au Lait for Bread,” and “Milk Tea for Bread.” Sold at more than 8,000 stores, products in the series had achieved a recognition rate of 10.3% by September 2020.

To attract more fans, we have not only offered and advertised products but have also opened an official account on Instagram, aiming to enhance customer-participation-type product development and expand customer contacts.

Posting information on recommended products,

proposals for dietary scenes, dairy farms, and bakery events and campaigns (about 8 times/month), we use this official account as a “coordinator” for the series to communicate with consumers toward new product development.

We will further promote information dissemination and valuable communication through SNSs and conduct promotional activities through the media and actual measures to advertise the KANEKA brand, providing new dairy products with high quality and good flavor.



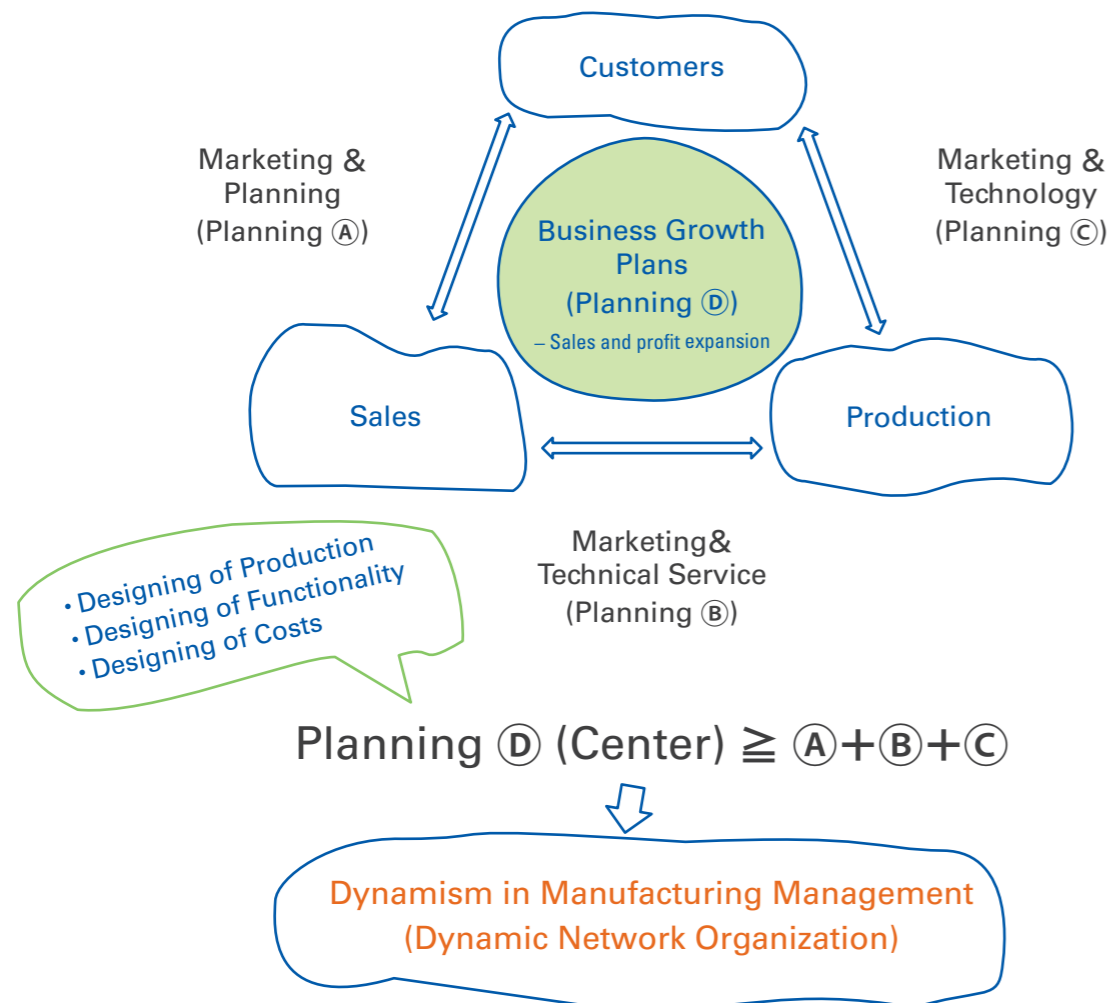
Toward Dynamism in Manufacturing Management – “R&B + P”

We have operated as an R&D company, taking advantage of diverse businesses and technologies, “Only One” and “Global No.1” technology base. Amid accelerating global trends toward a sustainable society, our ideal for manufacturing as an R&D company is to contribute to resolving social issues by turning our technologies into products and having them adopted

highly evaluated in the market.

To realize this, we will work to strengthen our planning functions and capabilities based on a network connecting production and sales organizations with customers and to highly enhance the planning function that supervises these functions and designs as a whole.

▶ “R&B + P*” as Manufacturing
 → Enhancement of four planning functions and capabilities
 * P: Production



Think Global, Act Local

Kaneka Group has always promoted business operations, leading the way in advance of other companies, on a world scale.

We are currently accelerating technological and material development tailored to regional characteristics around the world, with an emphasis on glocaliza-

tion (local-based global business).

We will continue to promote business operations rooted in the local community and offer valuable solutions to the world market in a timely manner, aiming to become a company with a global presence.



Wellness and Growth of Individual Employees as a Source of Innovation and Value Creation



Being a “Human Driven Company” is the DNA of Kaneka. In the VUCA world, individual employees in good physical and mental health generate the results and value of work and realize innovation. Considering that only such employees can help organizations maintain and improve health and achieve high productivity, we are involved in various activities while cultivating our capacity for innovation and creativity.

Work Culture Innovation

Changing “Pain” to “Gain”

To make effective use of time, information, and human resources and maximize the productivity of organizations and employees from the perspectives of “Life in Work” and “Work in Life,” we have formed the Work Culture Committee under the ESG Conference to streamline business processes and change office environments. We also work to enhance value communication and create a robust organization where members are united toward the same purpose.

We have promoted the reform of working practices by introducing various systems that allow employees to choose a flexible working style, including the adoption of remote working. We have also introduced shorter and staggered work hours programs, a child and nursing care leave system, and a babysitting expense aid system to help employees achieve a better work-life balance.

The COVID-19 pandemic has drastically changed the conventional working environment. We are accelerating innovation to create a new way of working adaptable to this drastic paradigm shift. While continuously engaging in remote working, making full use of online technologies, individual employees need to cultivate their imagination, creativity, and intuition to acquire more effective and productive job performance skills and achieve discontinuous innovation and growth.

With the slogan “Change pain to gain!” we will further deepen our efforts and continue to innovate toward smart work that leads to better working conditions and higher productivity.

New Style Work Culture

(1) Improvement of telecommuting system

Our conventional telecommuting system has been improved to respond to the COVID-19 pandemic. We have improved our IT infrastructure and have established a telecommuting aid system to make the system more available, thereby ensuring the health and safety of employees. We have also increased the value of telecommuting by raising its efficiency using online platforms. Some employees work at remote offices converted from company housing.

The use of flexible and staggered work hours programs enables employees to avoid commuter rush hours.

(2) Changes in meetings

We have abolished large meetings and regular meetings. Instead, we often hold small meetings to share and discuss information in a timely manner. With a limitation of up to 10 members and 50 minutes per meeting, we hold both in-person and online meetings. By innovating the way to prepare for, operate, and facilitate a meeting, we promote speedy decision-making and implementation.

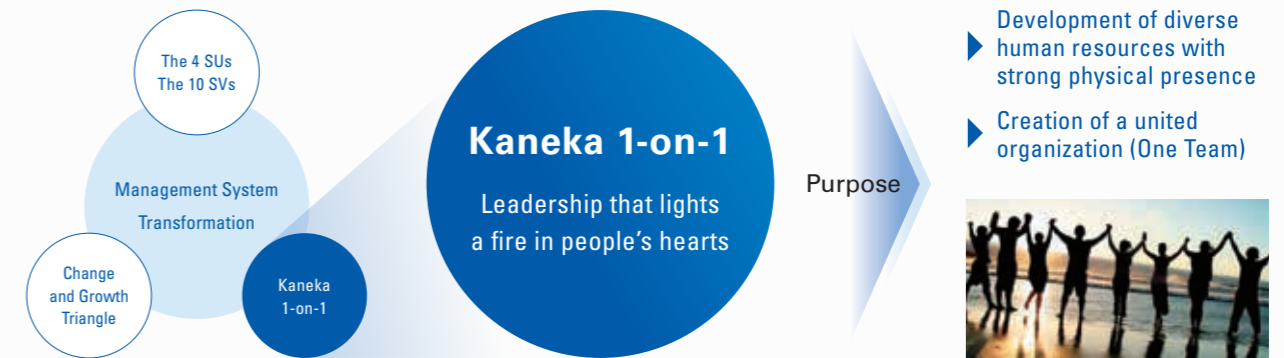
(3) Revision of the working environment

To ensure a safe working environment, we conduct body temperature checks, provide partitions and anti-septic solution, and secure social distancing through a non-territorial office system.

In association with changes in meetings, we have increased spaces for small meetings and have promoted standing meetings by removing some chairs from meeting rooms. We are seeking to create a working environment adapted to a new way of working.

Kaneka 1-on-1

“Kaneka 1-on-1” lighting a fire in people’s hearts



- I. Set the business goals and implement
- II. Communicate with each boss about progress for goals

Kaneka 1-on-1 involving all employees

1-on-1 communication with a boss
Communication for enhancing personal job performance and growth



Regular team meetings
Meetings organized by organization administrators



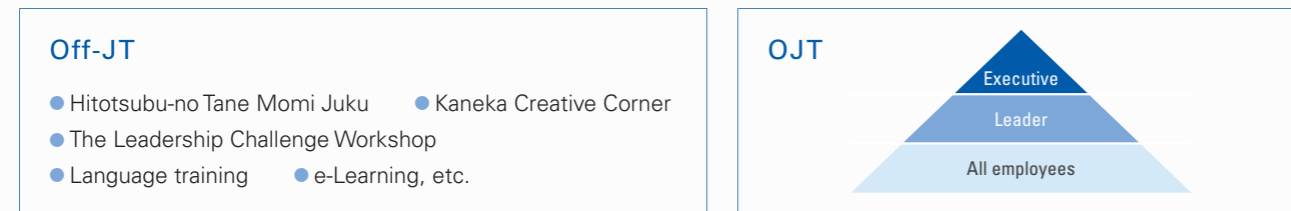
The growth of people and the results of work are like the two sides of a coin. We aim to realize human resource development and goal achievement through Kaneka 1-on-1. To create a more united organization as One Team, we have expanded the system to involve all employees.

In Kaneka 1-on-1 involving all employees, we promote frequent 1-on-1 communication with one's boss and regular meetings on a smallest unit (team) basis to enhance collaboration and information sharing and

resolve issues together, aiming to increase organizational power. Through communication and team meetings, we deepen mutual trust and encourage autonomous and voluntary behavior to reinforce human resource development and organizational power.

Moreover, to enhance the coaching ability of bosses, we hold skill-up workshops for them, measure their effects through surveys and hearings, and provide feedback to improve value communication.

Development of Human Resources and Leaders Centered on "Kaneka 1-on-1"



We conduct training programs for employees, including those at group companies in and outside Japan, to develop future executive candidates and leaders who will strongly lead businesses and operations. Some

participants in the programs have been appointed to division chief and executive positions at overseas group companies.

Development of Leaders

Program Name	Content	Fiscal 2017 No. of participants	Fiscal 2018 No. of participants	Fiscal 2019 No. of participants	Total from the start of the program No. of participants
Hitotsubu-no Tane Momi Juku	Lectures and exercises by the top management and first-class instructing staff targeted at future leaders and management personnel	12	12	12	61
Kaneka Creative Corner	Lectures and exercises by the top management and first-class instructing staff targeted at future leaders of national staff	12	12	Not implemented	34
The Leadership Challenge Workshop	Acquiring and practicing leadership skills and follow-up	(outside Japan) 24	(outside Japan) 21	(outside Japan) 36	(outside Japan) 464
		(in Japan) 236	(in Japan) 288	(in Japan) 187	(in Japan) 1,138



Toward the Active Participation of Diverse Workforce

We are trying to resolve various social issues as a Trial & Error experiment driven company. Considering that new ideas are generated from conflicts between and respect for different values, we promote active participation of diverse personnel with high motivation and leadership skills in the workplace, regardless of age, gender, or nationality.

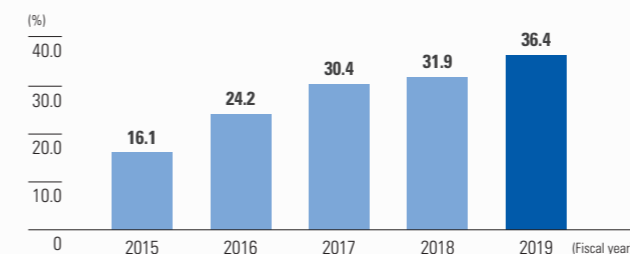
Active Promotion of Female Employees

Women's power is essential to business growth. We have hired more women in all fields, including food, health, and SNS-based marketing. More female employees play a central role in a newly established sales promotion section for Kaneka Ubiquinol and other sections.

The percentage of women among new recruits (from universities and technical colleges) is increasing yearly. We promote the active appointment of female managers to nurture future leaders in business and management.

We will more actively promote female recruitment and manager appointment based on action plans to provide useful solutions for society, making use of diverse values in business.

Percentage of Women Among New Recruits (from Universities and Technical Colleges)



Use of Senior Employees

Amid a decrease in the working population, we need to retain highly motivated and skilled personnel, in anticipation of the advent of the 100-year lifespan. To ensure that senior employees after retirement age can work with motivation regardless of age, we have shifted to a job-specified re-employment system.

In the new system, senior employees design a second career based on their experience and skills through in-house job matching. To support them, we are creating a career design training program for employees in their 50s.

We will create a system that helps senior employees use their experience and expertise to form a new career and increase their willingness to work.

Implementation of Career Development and Life Design Support Activities

Program Name	Fiscal 2017 No. of participants (No. of training sessions)	Fiscal 2018 No. of participants (No. of training sessions)	Fiscal 2019 No. of participants (No. of training sessions)
Career-design training	382	272	139
Life-design training	63 (7)	75 (6)	— (*1)

*1 A life planning booklet was distributed to employees.

Hiring and Support of Employees with Various Nationalities

Of about 11,000 employees in the Kaneka Group, about 3,000 employees of foreign nationality are engaged in operations worldwide in line with our global business expansion.

We have introduced a hiring system that recruits new graduates in spring and October to hire more employees of foreign nationality. To smoothly accept them, we provide a Japanese learning program, promote OJT jointly conducted by the Human Resources Department and the relevant division, and conduct regular interviews to boost their retention.

We also focus on developing future global leaders by having them gain experience in countries other than their home country through the Study Abroad Program and the Overseas Trainee Dispatch Program.

Employment of Persons with Disabilities

The employment rate of persons with disabilities at Kaneka in fiscal 2019 was 2.21%. We are providing them with more work opportunities, including pickup and delivery work, greening and cleaning of plants, computerization of documents, and in-house creation of business cards.

We will create a welcoming workplace, expand occupational fields, and support employment efforts by group companies to increase their employment rate throughout the Kaneka Group.

Efforts for Wellness

Basic Policy

We define ESG management as “Wellness First” health management. To make the world more wellness-first, we aim to ensure that individual employees in the Kaneka Group lead vibrant and colorful lives and work with enthusiasm through efforts to build their physical and mental health.

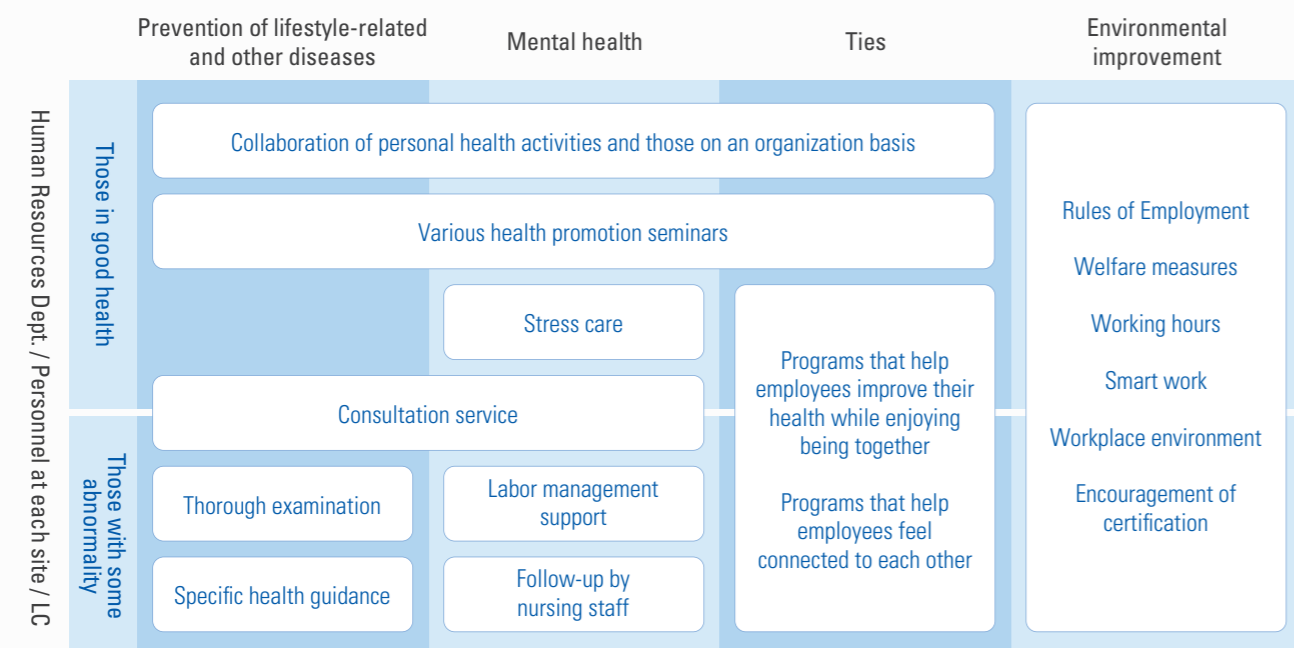
In a virus era, it is important that all employees work together to create a healthy and vigorous workplace where they can play a positive role and to build an ever-evolving work culture. We believe this leads to the implementation of our mission “Kaneka thinks ‘Wellness First’”.

Framework for Health Promotion

We will promote the health of employees and their family members and build a healthy organization and workplace from three perspectives: (1) prevention of lifestyle-related and other diseases, (2) mental health, and (3) ties. We will also implement various programs that they can enjoy together, feeling connected to each other.

Listening to employees’ views, we will offer health promotion programs through cooperation between the company, the health insurance society, and the labor union and through value communication.

Framework for Health Promotion



Mother Center for Wellness “KANEKA Wellness Center” to Be Newly Established

In November 2020, we decided to establish the KANEKA Wellness Center [Design supervision: Mr. Kengo Kuma*2] at the Takasago Manufacturing Site as a place to accelerate health promotion (construction completion scheduled for 2022).

At the Center, classroom lectures on healthy diet, sleep, and exercise and hands-on seminars, including physical training and yoga, will be offered. Through these programs, we will help employees develop a considerate attitude and deepen ties with their families and colleagues, their body and mind, and our health food products. We thereby aim to decrease those with some abnormality by half and reduce to

zero those with mental problems.

We plan to provide health promotion programs and devices developed at the Center to other business sites to help Kaneka Group employees and their family members maintain their physical and mental health. We will also offer health information and events for local residents through the Center to deepen ties and communication with them and help them improve their health.

*2 An architect and designer active around the world who is associated with designing the New National Stadium, the main stadium for the 2020 Tokyo Olympic and Paralympic Games.



Conceptual drawing of the KANEKA Wellness Center (exterior from the sky and interior) : Courtesy of © Kengo Kuma and Associates

Mental Health Care

Mental health care activity is necessary to maintain employees’ mental health. We provide interview opportunities with experts at the Health Consultation Room, a telephone consultation service in cooperation with the health insurance society, and health care to those with high stress levels who were identified through stress checks launched in 2016. We also are continuing efforts to improve the workplace environment by identifying issues at each workplace through stress check group analysis. We are seeking to ensure that individual employees can work in good mental health with colleagues.

- Improving the group analysis method at each workplace (adding new stress check items, such as work engagement and unity at the workplace, to conventional items)
- Enhancing the consulting system for loan employees in and outside Japan
- Improving education and training programs and online contents for providing information

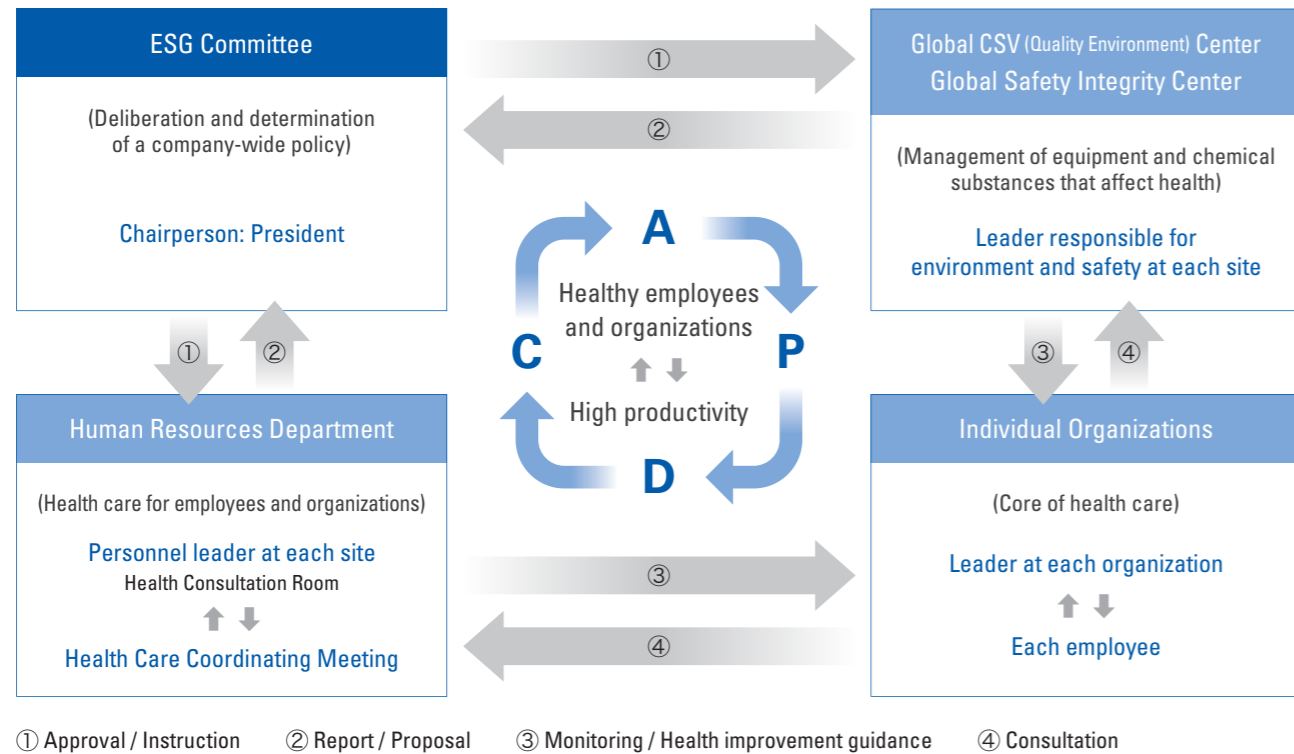


System toward Health Maintenance and Promotion

The ESG Committee determines measures to resolve health issues, and each employee and organization, the safety division, the Health Consultation Room (industrial physicians and nursing staff), the health insurance

society, the labor union, the personnel at each site, the general affairs division, and the human resources division work together to implement the CAPD cycle while maintaining value communication.

▶ System toward Health Maintenance and Promotion



At the closing ceremony of the long-distance relay race "Run, Run, Run. kaneka 2019"

Enjoying Exercise and Deepening Ties through "Run & Walk"

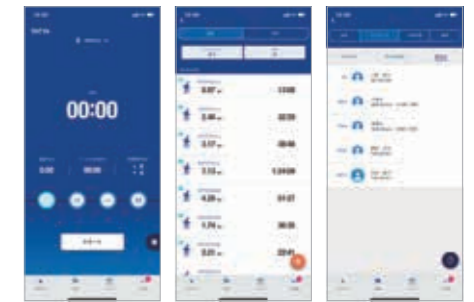
We consider it important that all employees in the Kaneka Group and their family members lead colorful lives in good health, mentally and physically.

To this end, we provide various opportunities to help individual employees raise their health awareness and change their behavior so that they can improve self-care awareness and establish a healthy lifestyle. Many employees actively participate in these activities.

- The long-distance relay race "Run, Run, Run. kaneka 2019" (launched in 2015) was held, gathering employees and their families from Kaneka group companies in and outside Japan and partner companies, with 2,699 people entering the race.
- While various activities were restricted due to the COVID-19 pandemic, we held "Run & Walk 2020 in kaneka," a race between five-member teams that could be entered online. A total of 1,576 employees (89 teams in the running section; 230 teams in the walking section) ran and walked at nearby places for a month while remotely communicating with each other.
- We sponsored the Hokkaido Marathon (fiscal 2019).
- We won the Runners Award hosted by the Runners' Foundation for the first time as a company for a Group-wide long-distance relay race, sponsorship of the Hokkaido Marathon, support for participants, and a marathon training program targeting even beginners.
- The Kashima Manufacturing Site was certified as a Sports Yell Company by the Japan Sports Agency for its health promotion activities in fiscal 2019 (for two consecutive years from fiscal 2018).
- The Takasago and Shiga Manufacturing Sites offered smart meals, certified as healthy diets, at their canteens.
- We supported various health initiatives for those who wish to start some form of exercise and try to run a marathon to enhance health awareness, maintain and improve fitness, and increase physical strength.
 - Implementation of an online marathon training session and seminar.
 - Provision of hands-on programs, such as a health seminar by a RIZAP trainer, an office yoga program, and a seminar on sleep.
 - Abolition of office smoking areas and prohibition of smoking during working hours to eliminate passive smoking.



Long-distance relay race "Run, Run, Run. kaneka 2019"



Running distance measured using the smartphone application "TATTA," which enables to check team members' distance, and encourage each other



Online running training session that connects each runner online



Office yoga program is useful to increase work efficiency, improve health, and relieve stress