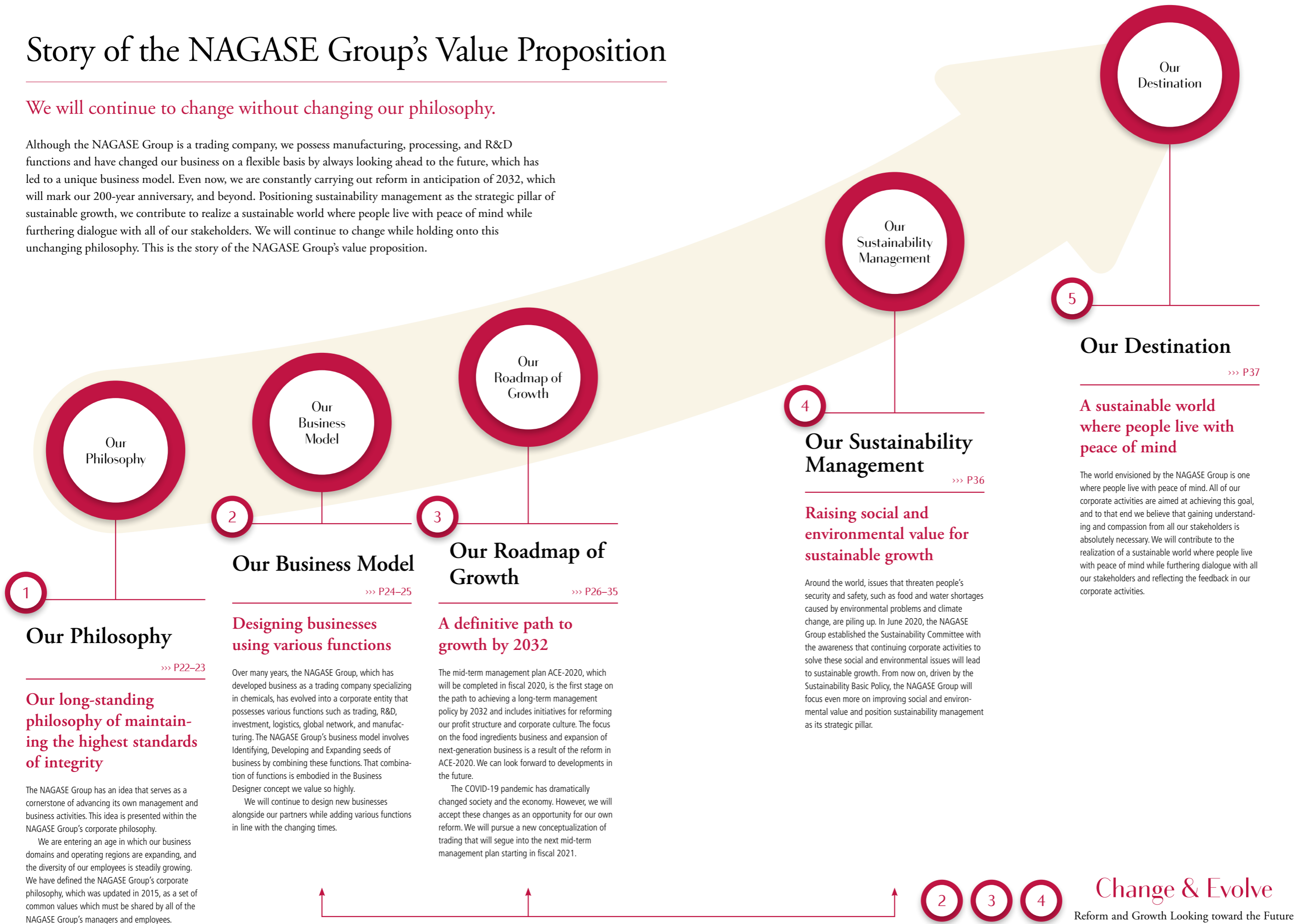


Story of the NAGASE Group's Value Proposition

We will continue to change without changing our philosophy.

Although the NAGASE Group is a trading company, we possess manufacturing, processing, and R&D functions and have changed our business on a flexible basis by always looking ahead to the future, which has led to a unique business model. Even now, we are constantly carrying out reform in anticipation of 2032, which will mark our 200-year anniversary, and beyond. Positioning sustainability management as the strategic pillar of sustainable growth, we contribute to realize a sustainable world where people live with peace of mind while furthering dialogue with all of our stakeholders. We will continue to change while holding onto this unchanging philosophy. This is the story of the NAGASE Group's value proposition.



1

Our Philosophy

>>> P22-23

Our long-standing philosophy of maintaining the highest standards of integrity

The NAGASE Group has an idea that serves as a cornerstone of advancing its own management and business activities. This idea is presented within the NAGASE Group's corporate philosophy.

We are entering an age in which our business domains and operating regions are expanding, and the diversity of our employees is steadily growing. We have defined the NAGASE Group's corporate philosophy, which was updated in 2015, as a set of common values which must be shared by all of the NAGASE Group's managers and employees.

2

Our Business Model

>>> P24-25

Designing businesses using various functions

Over many years, the NAGASE Group, which has developed business as a trading company specializing in chemicals, has evolved into a corporate entity that possesses various functions such as trading, R&D, investment, logistics, global network, and manufacturing. The NAGASE Group's business model involves Identifying, Developing and Expanding seeds of business by combining these functions. That combination of functions is embodied in the Business Designer concept we value so highly.

We will continue to design new businesses alongside our partners while adding various functions in line with the changing times.

3

Our Roadmap of Growth

>>> P26-35

A definitive path to growth by 2032

The mid-term management plan ACE-2020, which will be completed in fiscal 2020, is the first stage on the path to achieving a long-term management policy by 2032 and includes initiatives for reforming our profit structure and corporate culture. The focus on the food ingredients business and expansion of next-generation business is a result of the reform in ACE-2020. We can look forward to developments in the future.

The COVID-19 pandemic has dramatically changed society and the economy. However, we will accept these changes as an opportunity for our own reform. We will pursue a new conceptualization of trading that will segue into the next mid-term management plan starting in fiscal 2021.

4

Our Sustainability Management

>>> P36

Raising social and environmental value for sustainable growth

Around the world, issues that threaten people's security and safety, such as food and water shortages caused by environmental problems and climate change, are piling up. In June 2020, the NAGASE Group established the Sustainability Committee with the awareness that continuing corporate activities to solve these social and environmental issues will lead to sustainable growth. From now on, driven by the Sustainability Basic Policy, the NAGASE Group will focus even more on improving social and environmental value and position sustainability management as its strategic pillar.

5

Our Destination

>>> P37

A sustainable world where people live with peace of mind

The world envisioned by the NAGASE Group is one where people live with peace of mind. All of our corporate activities are aimed at achieving this goal, and to that end we believe that gaining understanding and compassion from all our stakeholders is absolutely necessary. We will contribute to the realization of a sustainable world where people live with peace of mind while furthering dialogue with all our stakeholders and reflecting the feedback in our corporate activities.

2 3 4

Change & Evolve

Reform and Growth Looking toward the Future

1

Our Philosophy

The NAGASE Group works toward sustainable growth and raising corporate value with an eye toward 2032—its 200th anniversary—and beyond. In the 188 years since our founding, our business domains and operating regions have expanded, and the diversity of our employees has steadily grown. Amidst these changes, we have defined the NAGASE Management Philosophy, NAGASE Vision and NAGASE Way as a set of common values for all Group employees. By embodying these common values in our daily activities, each of us helps realize a sustainable world where people live with peace of mind.

NAGASE Management Philosophy

We recognize our responsibility to society and offer beneficial products and services while maintaining the highest standards of integrity. Through our growth, we will contribute to society and enrich the lives of our employees.

NAGASE Management Philosophy

The NAGASE Vision

To realize a sustainable world where people live with peace of mind, each of us embodies our value proposition, “Identify, Develop and Expand” through daily activities.

Strengths/
Characteristics

- Maintaining the highest standards of integrity for almost 200 years
- Working with partners to enable new businesses
- Driving new technologies with knowledge and experience
- Staying a step ahead of the market to actively offer solutions

Value Proposition

- We “Identify, Develop and Expand” new businesses
 1. Identify: We discover untapped business opportunities
 2. Develop: We convert opportunities into customer value
 3. Expand: We deliver solutions to multiple fields and regions

Vision for the Future

- We will contribute to a sustainable world where people live with peace of mind

NAGASE Vision

The NAGASE Way

- Always be customer-oriented.
- Always be a creative challenger.
- Always use the power of the NAGASE Group.
- Always think globally and act locally.
- Always think systematically and act speedily.

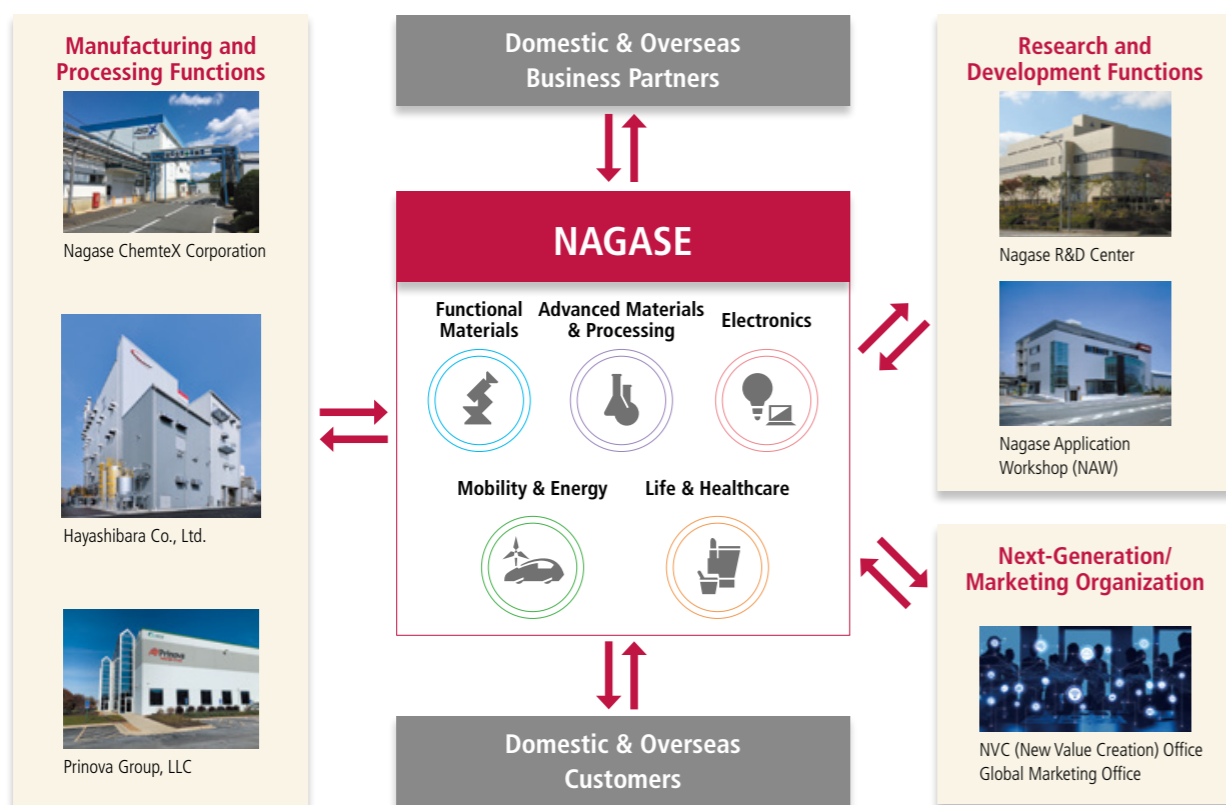
NAGASE Way

2

Our Business Model

Business Model

Structure of NAGASE's Business



A Business Designer that Fully Utilizes the NAGASE Group's Various Functions

The NAGASE Group is a unique corporate group that owns research facilities and manufacturing companies within the Group while acting as a trading company that specializes in chemicals. We develop global business for a variety of industries including dyes/pigments, coating materials/inks, surfactants, office automation (OA), electrical equipment, home electronics, automobiles, LCDs, semiconductors, pharmaceutical/medical applications, cosmetics and functional food ingredients. The NAGASE Group is noted for its broad product development which extends from upstream to downstream operations; it is through this development that the number of business partners both domestically and overseas has increased to nearly 9,000.

In addition to various manufacturing and processing functions such

as Nagase ChemteX Corporation, Hayashibara Co., Ltd. and Prinova, we also possess R&D functions such as the Nagase R&D Center, Nagase Application Workshop (NAW) and NVC (New Value Creation) Office.

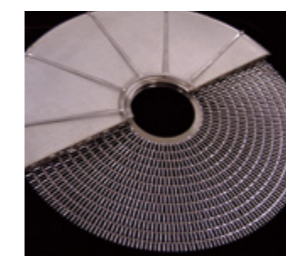
These various "functions" allow us to string each one together to create new businesses. As a Business Designer that goes beyond the framework of a specialized trading company, we develop unique businesses that set us apart from competitors.



Story 1

Focusing on the LCD field, which requires high capabilities, since the early days of the market. Growth of filters business made possible by broad customer network.

Nagase Filter Co., Ltd. is a Group company whose mainstay product is Denafilter™, a stainless-steel filter used for removing (filtering) foreign particles from raw materials such as molten polymers. The business was



Denafilter™

created with a focus on the patented TP retainer technology that makes up the filter's mesh structure. This filter is primarily used in film production lines for food packaging and industrial usage. We were one of the first companies to

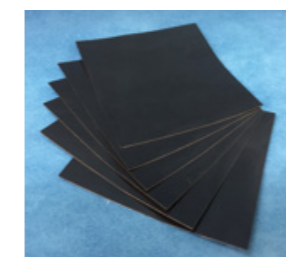
notice the potential of a market for optic films for LCDs, which were not selling well at the time, and so we worked on furthering sales activities and boosting the functionality of the product. Together with Nagase ChemteX, we developed cleaning technology, which clears blockages so the filter can be reused, and built a factory. Meanwhile, we made steady business developments, such as introducing testing equipment to Nagase Application Workshop and problem-solving together by actually using the filters with the customer's plastics. In 2006, we incorporated OEM companies for business expansion and will continue to utilize the broad business domain of the NAGASE Group moving forward. We also plan to develop business in fields such as oil and gas.

Investment and Manufacturing	Detected the potential for patenting, and made the business into a subsidiary at the appropriate time
Trading	Anticipated changes in the electronics market and quickly concentrated efforts in the LCD field
Global Network	Rapid overseas expansion using the NAGASE Group's network

Story 2

Epoxy Sheets: Changed the manufacturing process of smartphone parts. Unique technology aimed at customers' latent needs.

Epoxy sheet is a remarkable material that maintains the adhesiveness and heat resistance of epoxy resins while forming a sheet shape that is easy to process. When Nagase ChemteX began development in 2000,



Epoxy Sheet

most epoxy resins used in the manufacturing of electrical components for communication through devices like cellphones came in liquid form. The NAGASE Group developed and marketed a sheet that would allow hollow sealing (creating a hollow structure in which the resin does not enter) of the electrical components, which did not work well with the

liquid epoxy. This sheet was the first of its kind in the world.

Epoxy sheet made from hollow sealing material was an unconventional product, and the technology exceeded our customers' expectations. Therefore, it was strategically positioned as a technology that distinguishes NAGASE's strengths from its competitors. By accurately assessing problems through communication with customers, we have developed and proposed epoxy sheets that are incorporated into the customer's manufacturing process. Through introduction of the epoxy sheet, manufacturing processes were simplified, the cost of producing peripheral parts was lowered, and downsizing was achieved. This led the epoxy sheet to become the de facto standard for a subset of parts manufacturing, and it developed through NAGASE's network to its main customers in Europe, North America and Asia.

Trading	Sales capabilities with in-depth knowledge of precision molded parts and manufacturing processes, and collaboration with partner companies
Manufacturing	Willingness to develop new, unconventional products and technological ability to bring those ideas to fruition
Global Network	Expanded to Asia, Europe and North America through the NAGASE Group's network

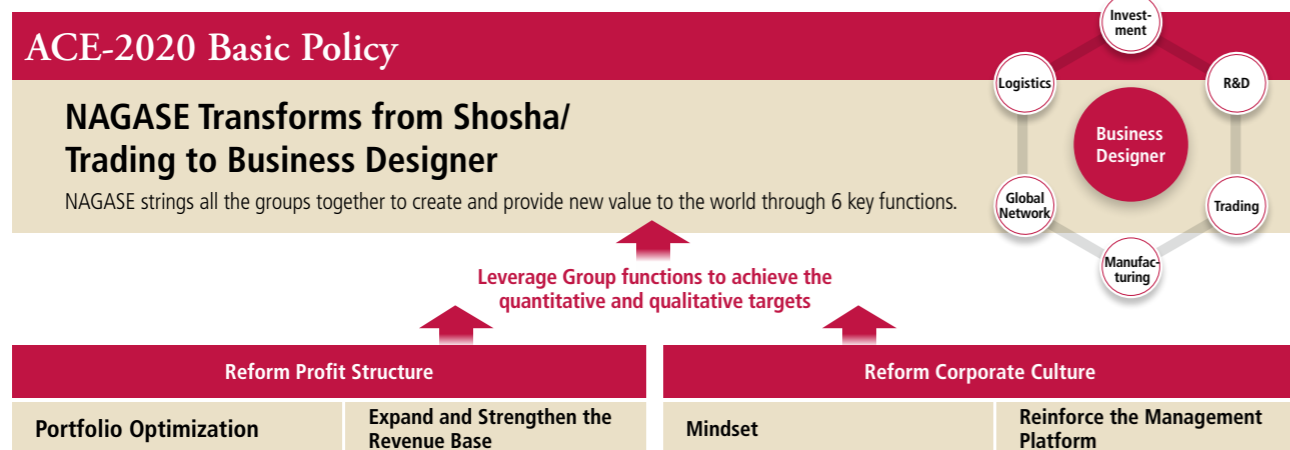
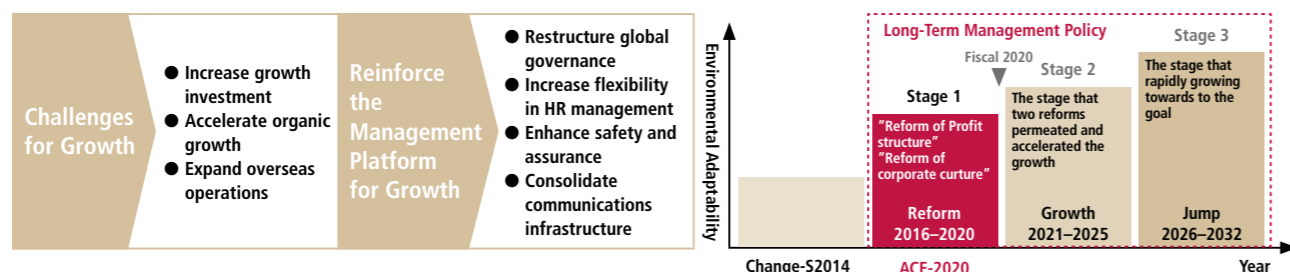
3

Our Roadmap of Growth

Long-Term Management Policy

In the lead up to 2032, which marks our 200th anniversary, the NAGASE Group formulated a long-term management policy and initiated the mid-term management plan ACE-2020 as the first stage to achieve the goal*. In fiscal 2020, the final year of ACE-2020, we will swiftly handle changes in needs due to the spread of COVID-19 while continuing to pursue our targets.

* Normalization of the profit level is more than three times greater than the fiscal year ended March 31, 2015



For a New Paradigm in the Post-Coronavirus World

We will accept the dramatic environmental changes as an opportunity for reform, and work on creating new value for stakeholders from a long-term perspective.



Progress of KGI and KPI

KGI (Key Goal Indicator): Goal and index

KGI	FY2018	FY2019	FY2020 (planned)	FY2020 (goal)
Consolidated Net Sales	807.7 billion yen	799.5 billion yen	754.0 billion yen	1.0 trillion yen or more
Consolidated Operating Income	25.2 billion yen	19.1 billion yen	15.0 billion yen	30.0 billion yen or more
ROE	6.6%	4.9%	4.0%	6.0% or more

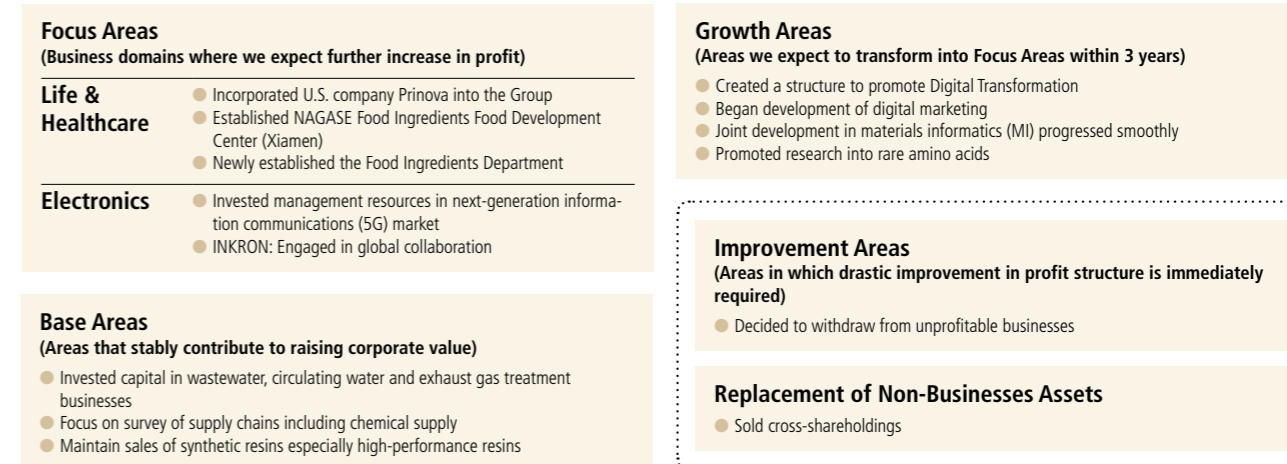
KPI (Key Performance Indicator): Factor index to achieve KGI

*1 The figures in this chart are all simple management accounting data, which is different from the figures disclosed on the consolidated financial statements.
*2 Total over five years

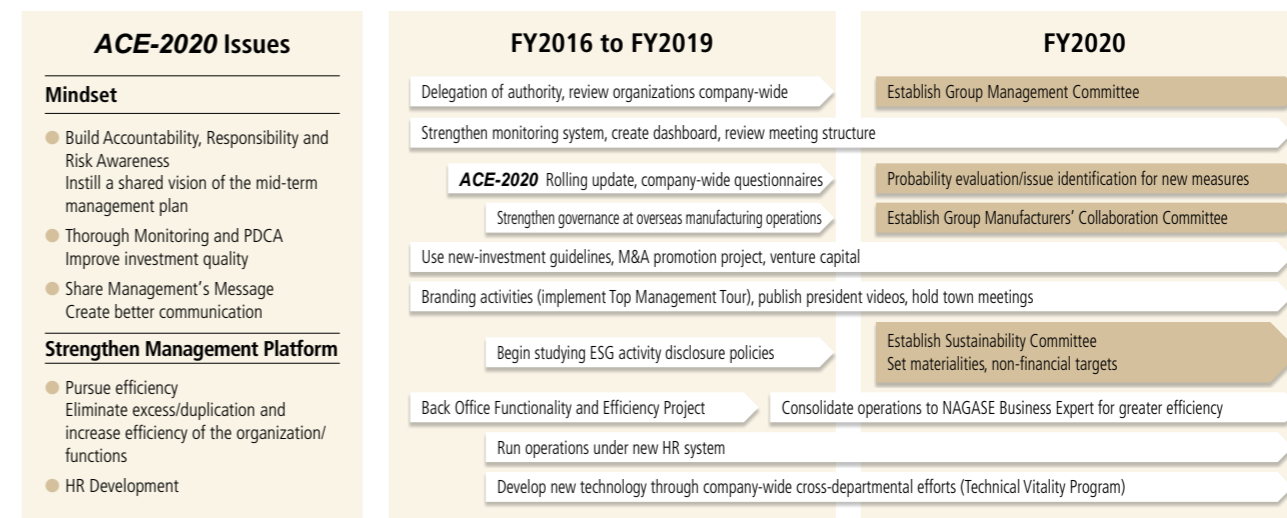
Reform/Strategy	Measures	KPI (Index)	FY2018	FY2019	FY2020 (planned)	FY2020 (goal)
Profit Structure Reform Indicator	Increase Focused Business (Portfolio Optimization)	Operating Income in Focus Area*1 Growing Investment Distribution Ratio in Focus Area	12.6 billion yen 82%	13.6 billion yen 96%	15.3 billion yen 64%	16.9 billion yen 35%
	Accelerate Globalization (Expand and Strengthen Profit Structure)	Overseas Group Sales*1 Sales Growth Rate in the Americas	405.3 billion yen 118%	406.7 billion yen 191%	462.8 billion yen 340%	600.0 billion yen 170%
	Increase Manufacturing Profitability (Expand and Strengthen Profit Structure)	Operating Income from Manufacturing*1 Break-Even Point Sales Ratio*1	11.6 billion yen 76%	11.0 billion yen 77%	11.4 billion yen 77%	14.4 billion yen 73%
Corporate Culture Reform Indicators	Pursue Efficiency (Strengthen Management Platform)	Consolidated Selling, General and Administrative Ratio	9.9%	10.7%	12.2%	9.4%
Financial Strategy Indicator	Investment	Growth Investment*2	32.4 billion yen	110.8 billion yen	128.0 billion yen	100.0 billion yen
	Financial Structure	Rating (R&I)	A	A	A or more	A or more

Reform Profit Structure (Fiscal year ended March 31, 2020)

Categorize businesses and implement strategies in each domain/Replace assets and redistribute resources



Reform Corporate Culture: Mindset/Strengthen Management Platform



Feature: New Developments in the Food Ingredients Business

Prinova, a company engaged in the sale and processing of U.S. food ingredients and which possesses a global network, was joined to the NAGASE Group in 2019, propelling NAGASE's overseas expansion of the food ingredients business in a major way. A new Food Ingredients Department was launched in April 2020. We will pursue synergy between Group companies such as Nagase ChemteX Corporation, which has processed enzymes for food ingredients, and Hayashibara Co., Ltd., which became a subsidiary in 2012, and accelerate business development.

Market

Focus Field in Food Ingredient Markets

The NAGASE Group is focused on the global food ingredient market. Around the world, there are growing needs for reliability of foods as well as a safe, healthy and abundant life. The NAGASE Group will work to address these needs. The Prinova Group, which became a member of the NAGASE Group in August 2019, holds the key to business development. Just like the NAGASE Group, Prinova is a hybrid company that wields both

trading and manufacturing functions. NAGASE will continue to handle diverse food ingredients through Prinova's global network, but first it will aim to expand the sports and lifestyle nutrition businesses in which Prinova has a substantial market share. NAGASE will also expand business in the processed food segments of baked goods, dairy products and processed meat through initiatives such as development of applications.

Target Food Ingredient Markets of the NAGASE Group



Strategy

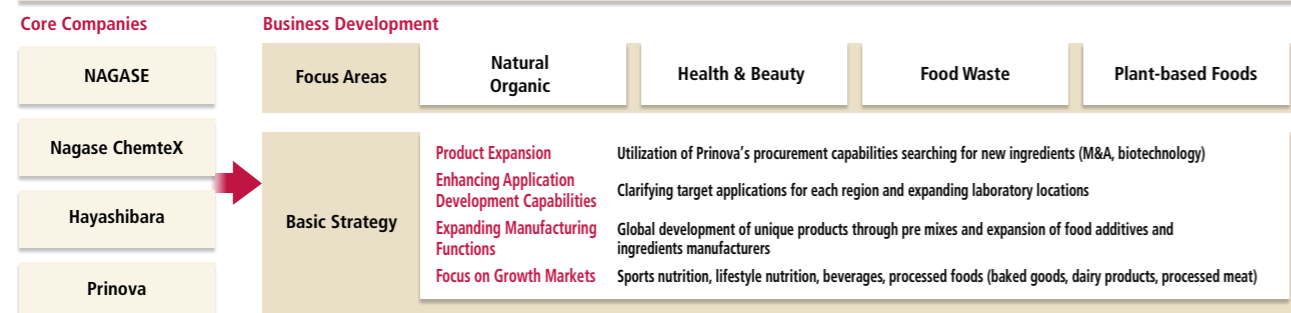
Business of Strategy for the Food Ingredients

The NAGASE Group's food ingredients business aims to contribute to people's healthy and abundant lifestyles through food. To that end, the

NAGASE Group will offer a wide variety of solutions using its procurement, R&D, manufacturing, processing and application development functions.

Overview of Strategy

To contribute to people's healthy and abundant lifestyles through food, the NAGASE Group will provide a wide variety of solutions using its procurement, R&D, manufacturing, processing and application development functions on a global scale.



Prinova's Contribution to NAGASE Group



In August 2019, the NAGASE Group welcomed Prinova to its Group as a new step toward overseas expansion of the food ingredients business.

● Impact on Business Portfolio

Through the acquisition of Prinova, Europe and the U.S. and Life & Healthcare segments will become more important within the NAGASE Group's overall business portfolio.

Only five months of sales figures have been consolidated in the fiscal year ended March 31, 2020, so the numbers still appear small. However, the percentage of sales occupied by the Americas in particular is growing, followed by Europe, which will also become a significant contributor. In sales by business segment, the importance of the Life & Healthcare segment, a focus area, will also increase significantly.

The NAGASE Group has established the Life & Healthcare segment as one of the focus areas in its mid-term management plan ACE-2020. We view this recent acquisition as an incredibly important and effective move to extend the food ingredients business, which will serve as the core of the management plan, expand overseas sales and build a business foundation in Europe and the U.S.

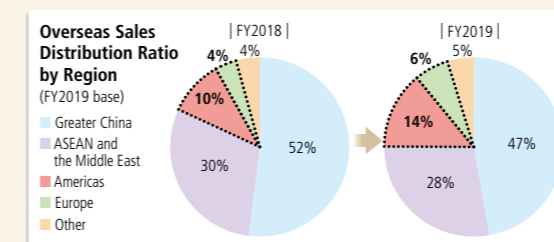
● Overview of Prinova

Prinova is based in Chicago, and has approximately 1,000 employees. The company has a history of more than 40 years, having been founded in 1978.

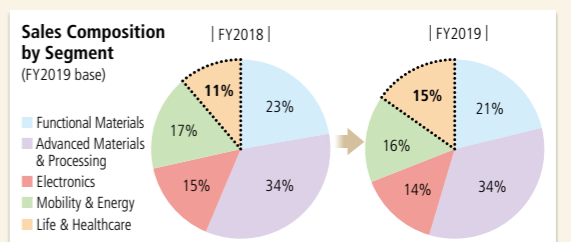


Prinova performs various operations from compounds to contract manufacturing. It also boasts a strong ability to develop flavors made by its flavorists.

- **Overview of Prinova Group LLC**
Company Name: Prinova Group LLC
Headquarters: Illinois, USA
Founded: 1978
- **Business Scale (fiscal year ended December 31, 2019)**
Sales: Approximately ¥82.0 billion
Operating Income: Approximately ¥4 billion
Number of Employees: Approximately 819
- **Factories**
U.S. (4), U.K. (1), China (1)
- **Sales Locations**
12 countries, including the U.S. and U.K.
- **Product Lines**
Food ingredients (Vitamins, amino acids, etc.)
Flavorings, premixes and contract work
Manufactured goods (Sports nutrition)
- **Business**
Sale of food ingredients and flavorings, manufacturing and processing of premixes, contracted manufacturing

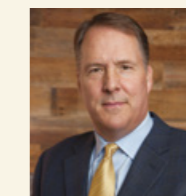


Note: Five months of sales consolidated in FY2019



Note: Five months of sales consolidated in FY2019

Prinova Accelerating group synergies in Europe, the U.S., and Asia



Donald K. Thorp
President

Prinova has a wide customer network throughout the food industry, and our value added services are key to the supply chain of our customers. Prinova's core competency is its industry knowledge and market expertise. It can be ingredient sourcing, R&D for blends & flavors or experience and relationships in the sports nutrition segment. This helps differentiate Prinova from its competitors.

The greatest opportunity that Prinova can utilize NAGASE's strength would be their global network. There are geographic

locations that NAGASE is currently operating that can be leveraged by existing Prinova operations to create synergies and cost savings.

Additionally, NAGASE's R&D network is also very impressive, we need to figure out how to use this expertise globally. Prinova has a very hard working and entrepreneurial culture that empowers employees to work effectively across different functional areas. We encourage our leaders to be proactive and to come up with ideas that lead to efficiencies and growth of our customers.

Action

Target Food Ingredients Markets of the NAGASE Group

1. Expansion of Food Additive Lineup

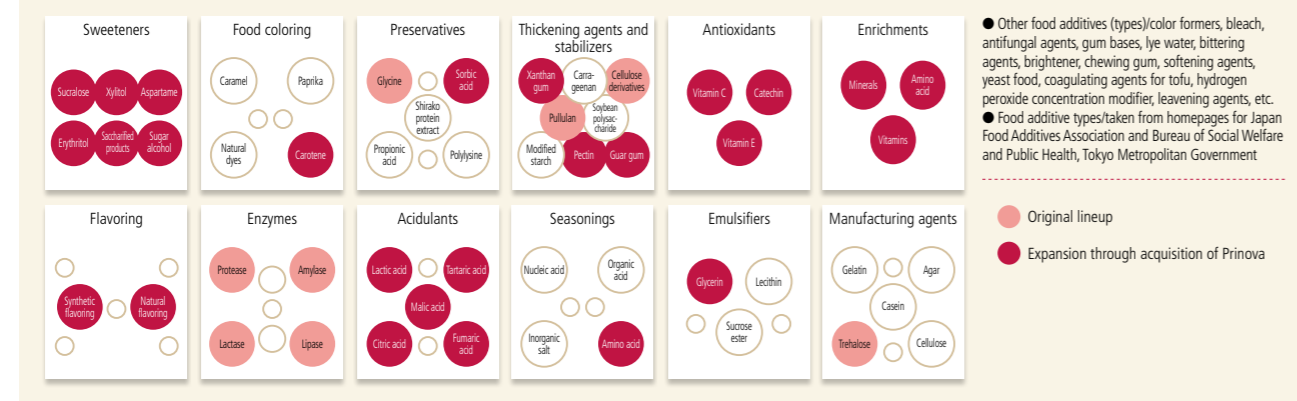
Through Prinova's participation in the NAGASE Group, our food additive lineup will be largely expanded, allowing for even greater business opportunities in the near future.

Up until now, the NAGASE Group has developed business in fields such as enzymes, manufacturing agents, preservatives, thickening agent and stabilizer mainly in Japan through collaboration with Nagase

ChemteX and Hayashibara. The domestic food additive market is said to be roughly ¥300 billion. Yet globally, the market is expanding to roughly ¥4.7 trillion. Moving forward, we will accelerate business in the global food additive markets, including those markets in which Prinova is already developing.

Food Additive Market Overseas: ¥4.7 trillion Domestic: ¥300 billion

(Source: IHS Markit)



2. Global Expansion of Premixes

The premix market, which supplies blended food ingredients, is currently said to be around ¥160 billion. Further global expansion is anticipated, as the market is expected to reach ¥230 billion in 2027.

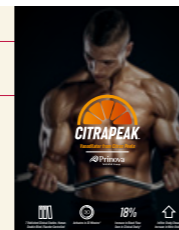
At the NAGASE Group, for now we will focus on the nutrition business, including sports nutrition, with a focus on Prinova, and aim to expand our market share. In terms of each region, we intend to expand

business in Latin America, China, and Southeast Asia. Following that, we will develop premixes with processed foods such as baked goods in China and Southeast Asia.

With regard to sports nutrition, we are also taking initial steps in the Japanese market. Moving forward, we will develop Japan's sports nutrition market in collaboration with Hayashibara and Nagase ChemteX.

CitraPeak™, a New Product Made Possible by Group Synergy

Glucosyl Hesperidin, which is manufactured and sold by Hayashibara, has been proven to improve blood flow, which is why in Japan it is mainly used as a supplement to treat cold sensitivity. This effect was combined with the knowledge that Prinova accumulated in the field of sports nutrition to create CitraPeak™, a sports nutrition ingredient that increases body heat and enhances performance by ingesting it prior to exercise. Development was launched in the U.S. in late 2019.



Developed at Overseas Application Laboratory

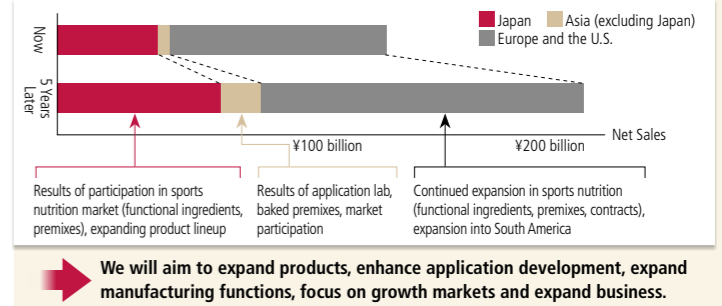
In 2019, the NAGASE Group established a laboratory in Xiamen, China as a base to globally develop its food ingredients business. Then in 2020, it established a laboratory in Singapore as a base to provide solutions using the NAGASE Group's food ingredients. We develop recipes and applications to meet the unique needs of each region and advance business around the world.



3. Outlook of the Food Ingredients Business

Recent sales for the NAGASE Group's food ingredients business are nearing ¥130 billion (Estimated scale for the fiscal year ending March 31, 2021). However, in the next five years we intend to expand our business scope by expanding products, enhancing application development, expanding manufacturing functions, and focusing on growth markets.

Outlook of NAGASE's Food Ingredients Business



Food Ingredients Business: A Core Company that Holds the Next Key to Growth

Hayashibara Co., Ltd.

We will continue to work on inventive development of new materials using our well-honed biotechnology capabilities and increase our presence in the global market.

Hayashibara Co., Ltd., which became a member of the NAGASE Group in 2012, provides ingredients for food, cosmetics, pharmaceuticals, health foods, and functional dyes as a core business in the Group's life sciences field.

Our core technologies are microorganism screening technology, substance production technology using microorganisms and enzymes, and technologies for discovering functions of materials. We will continue working hard to develop new materials while



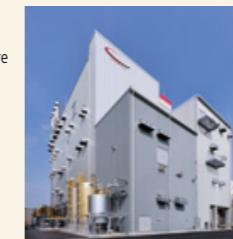
Naoki Yasuba
President and CEO

refining our core technologies. We produce unique functional carbohydrates using enzymes created by microorganisms. We then supply these carbohydrates as ingredients for foods, cosmetics, and pharmaceuticals in a wide range of markets in Japan and overseas, which has cemented our position as the world's leading brand of functional carbohydrates.

There is growing awareness of social issues such as climate change and food shortages. Amidst this, we sensed rapidly increasing expectations and demands to solve social issues through business activities in research development, manufacturing and dealings with business partners in the fiscal year ended March 31, 2020.

We will seize the momentum of the post-coronavirus era and share in the NAGASE Group's management philosophy of maintaining the highest standards of integrity. At the same time, we will continue working on research development and growth with "care" as our keyword to signify a compassionate and sustainable business.

- **Company Profile**
Company Name: Hayashibara Co., Ltd.
Headquarters: Okayama, Okayama Prefecture
Established: 1932
- **Business Scale (fiscal year ended March 31, 2020)**
Sales: ¥25.0 billion
Operating Income: ¥4.9 billion
Number of employees: 652
- **Manufacturing and Development Locations**
Okayama Plant I, Okayama Plant II, Okayama Functional Saccharide Plant, Fujita Plant, Fujita Pharmaceutical Plant, Fujisaki Institute, L'Plaza (as of March 2020)



Food Ingredients Business

We uniquely develop, manufacture and sell food ingredients and health food ingredients with high added value.

Main product: TREHA™
TREHA™ is a low-sweetness food ingredient with a clean finish. It has a wide range of functions, including prevention of starch retrogradation, protein denaturation, and freshness keeping. Because it retains good flavor and texture for a long time, it is used in Japan and overseas in a wide range of fields, such as processed foods, beverages, and food services including restaurants, catering, and delis.



Cosmetic and Pharmaceutical Material Business

We develop and manufacture unique high-value-added cosmetic and pharmaceutical ingredients.

Main product: AA2G™
AA2G™ is produced by the enzymatic binding of glucose to vitamin C. This enzymatic conversion makes AA2G™ stable when incorporated into cosmetics. This maintains its activity and provides resistance to discoloration and odors. When applied to the skin, AA2G™ is degraded by a natural enzyme to release vitamin C, resulting in cosmetics that promote brighter healthier looking skin. It is used in Japan and around the world.

Functional Dye Business

We develop and manufacture a wide variety of functional dyes as an organic synthesis specialist.

Main product: Dyes for the life sciences
Some functional dyes are known for having medicinal and/or bioactive functions. In addition, some dyes are used as cell staining dyes and have fluorescent properties. We are developing new medical and pharmaceutical applications using these functions.

Feature: Initiatives for Next-Generation Businesses

The NAGASE Group constantly strives to provide value that spurs innovations for comfortable lifestyles for future generations. We “Identify, Develop and Expand” technologies needed in the future. In this feature, we introduce the businesses the NAGASE Group has been focusing on for the next generation.

Case 1

Taking on Challenges in Next-Generation ICT Business

While data volume is increasing exponentially over information communications infrastructure due to IoT, the transition to 5G will bring ultra-fast speed, ultra-low latency and multiple simultaneous connections. 5G technology is an essential part of smart cities that deploy cutting-edge technologies, such as IoT and AI. Aiming to realize a sustainable world where people live with peace of mind, the NAGASE Group views growth in 5G-related business as a critically important business domain.

● New Markets Created by Smart Cities

Smart cities are communities that strive to achieve comfortable lifestyles while addressing future issues, such as environmental problems and declining birthrates in an aging population, embedding IoT, which connects things to the internet, into infrastructure and people’s lifestyles. IT and communications infrastructure, Industrial infrastructure, Transportation infrastructure and housing infrastructure all play central roles in smart cities. The NAGASE Group’s businesses can provide the various materials and technologies necessary for building this infrastructure, such as substrates used in mobile communications base stations, smartphones and other devices, as well as materials for antennas. The market for these communications-related materials is forecast to grow to ¥64.5 trillion by 2025.



Source: Fuji Chimera Research Institute, Inc.

● Strategy

The NAGASE Group’s strategy for the next-generation information communications business specifically aims to develop business in two ways.

The first is to expand the business of materials, processes or equipment for substrates in new base stations or various types of edge devices, including smartphones, security cameras and drones, due to development of new materials or processes.

The second, as an exit strategy, for example NAGASE could deliver energy-related products like rechargeable batteries and services for the homes and buildings that form the foundation of smart cities to contribute to realizing a more abundant society.

● Leveraging Group Synergies

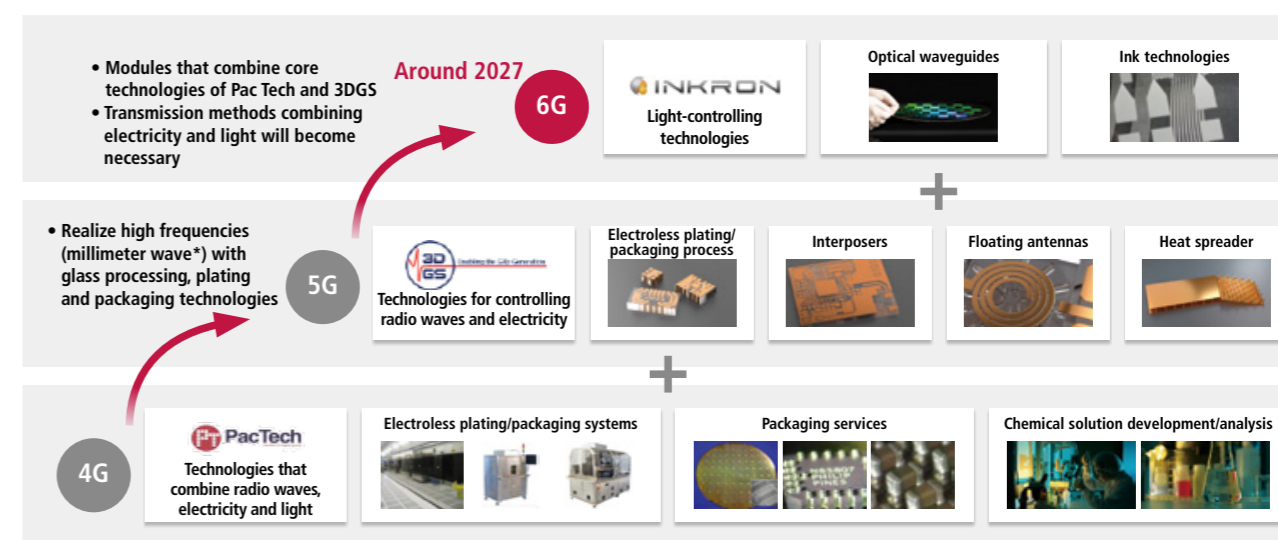
The NAGASE Group will develop business by leveraging the comprehensive strengths of Group companies around the world that excel in their own fields of 5G-related parts, materials and technologies, the breadth of which covers low dielectric materials, circuit formation technology, glass substrates, and glass passive components, which are essential for high-speed data transmission in 2025, when 5G will have permeated society and the contours of smart cities take shape.

Through M&A and internal close communication among group companies to date, the NAGASE Group has strengthened its relationship and will make synergy for developing materials in the information communications business. We believe a major key to future business

expansion will be collaboration among our subsidiaries Pac Tech-Packaging Technologies GmbH (Pac-Tech), a company in Germany with strengths in laser bonding technology and fine processing technologies; Finland-based Inkron Oy (INKRON), which excels in technologies that combine radio waves, electricity and light; and also partner 3D Glass Solutions, Inc. (3DGS) in the U.S., which has core technologies in 3D glass processing.

The NAGASE Group will develop core technologies while anticipating the major transition brought by 6G (6th generation mobile communications systems expected to be realized around 2027) technology in the future.

Core Technologies for 6G



* Millimeter waves are the fastest radio waves. Light transmits data faster than millimeter waves.

Aiming to Develop New Markets by Leveraging the NAGASE Group’s Diverse Management Resources

Takahiro Okumura
Executive Officer



To accelerate expansion of our 5G business, we invested in 3DGS (US) in 2018. 3DGS excels in 3D microfabrication with photosensitive glass, and its promising technologies will be expected useful in the development of base stations and communications modules.

The NAGASE Group’s R&D in next-generation information and communications is progressing with effective utilization of these diverse management resources spread across the world, Nagase ChemteX (Japan) and Engineered Materials Systems (US) specializing in for low dielectric materials for devices, Pac

Tech (Germany) specializing in circuit fabrication on silicon and glass substrates, Inkron (Finland) specializing in next-generation optical materials for 6G technology, and other several group companies in Asia. Moreover, we’re in alliance with chemical makers for material development by utilizing another expert function as the trading company.

On April 1, 2020, we launched the Advanced Information and Communications Project Team to come up with cross-organizational projects to drive the creation of new businesses among NAGASE group.

Case 2

NVC Office Creating the Core of NAGASE's Future Businesses



Started in April 2017, the New Value Creation (NVC) Office's mission is to spur innovation in the NAGASE Group and create new value, as its name states, that will become the core of future businesses through

collaboration across business divisions. The NAGASE Group intends to create new businesses and new value the world has not seen before.

● Position of the NVC Office in the NAGASE Group

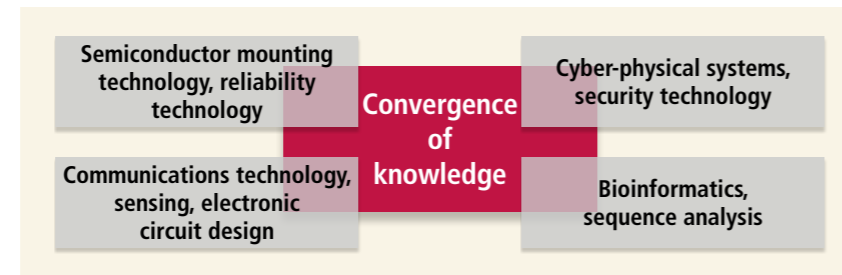
Before it created the NVC Office, the NAGASE Group had been a founding member of the IBM Research Frontiers Institute (RFI), a fundamental IT research consortium launched by IBM in the U.S. with the objective of facilitating R&D among companies from different sectors. The NVC Office was the culmination of ideas within the NAGASE Group that it needs an organization for disseminating information within the Group and to train human resources to create innovations across business divisions.

different fields of expertise. These four people bring their experiences in R&D at private-sector companies to a variety of discussions while respecting one another's opinions. Through these discussions, various business ideas emerge.

The primary role of the NVC Office is to create new businesses over timeframes of 5–10 years. With the slogan "Bio-Inspired Technologies," the NVC Office aims to create value with new ideas not seen before.

The driving force behind the NVC Office is the convergence of knowledge. Currently, it has four employees with engineering Ph.Ds in

Four Ph.D. Engineers' Fields of Expertise



NAGASE Technical Vitality Program in its Second Year

Yasumitsu Orii
GM, NVC Office and Executive Officer



The NAGASE Technical Vitality Program has entered its second year of activities for the technology community, taking a bottom-up approach to innovation in the NAGASE Group.

These cross-divisional activities are independently undertaken by various on-site employees on a voluntary basis. In its first fiscal year, the program had 50 participants who split into five working groups (WG), comprising next-generation wireless communications, additive manufacturing, materials informatics, health tech and business reforms through Digital Transformation

(DX). Employees from different backgrounds came together to pursue these activities, which lead to free-thinking ideas that span across the organization.

These activities have steadily produced results. The materials informatics WG was promoted to the corporate level, and in the second year, new WG were launched for next-generation sensors and biomimetics. The seeds of next-generation businesses are beginning to bud and grow.

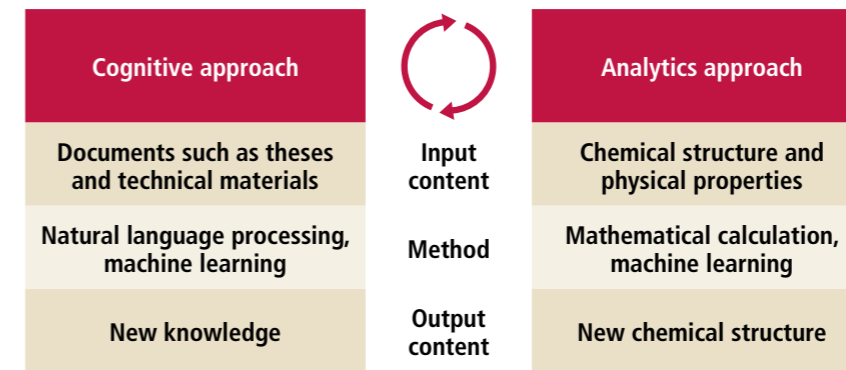
● Project

Launching Materials Informatics

Materials Informatics (MI) is a field of technology for developing new materials by combining the latest data processing technologies with materials science and we are currently moving ahead on joint development with IBM.

The NAGASE Group, which has a strong presence in the chemical field, also has overwhelming expertise in materials. It is the NAGASE Group's belief that using this knowledge in combination with engines equipped with the latest AI could contribute significantly to rationalizing new substance and new material development.

The Group's Nagase ChemteX and Hayashibara are already moving ahead on verification of this initiative and there are great expectations of the results. Following verification within the Group, we plan to start providing services to chemicals and biomaterials manufacturers.



Axonerve™ an Algorithmic Search Engine IP

Axonerve™ is a data search algorithm IP developed by NAGASE based on an idea from domestic research organizations. NAGASE developed this IP core for FPGA (Field-Programmable Gate Arrays) and is expanding its IP core licensing business.

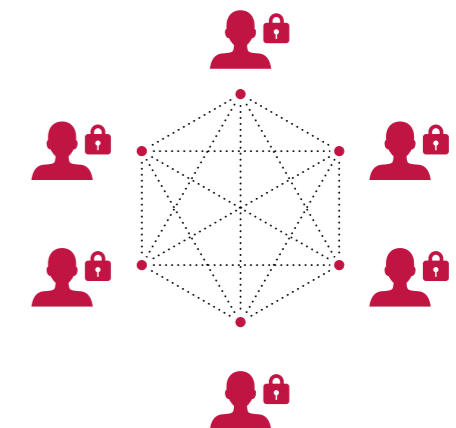
FPGAs are devices whose circuit configurations can be easily programmed. With this advantage, we will be developing a new market for acceleration of network virtualization and high-speed data processing for the 5G communication and data center application.



Blockchain System Development

Growing numbers of companies are exposed to new risks with the passage of time, such as the music or media industries exposed to the dangers of the copyright business or the medical or food industries where there are strong requirements for product traceability.

Under these circumstances, the NAGASE Group turned its focus to realizing highly reliable transactions through distributed ledgers enabled by blockchains for secure and traceable value exchange functions. This started a movement as a new undertaking in the NAGASE Group's DX that will preserve existing businesses and create further new businesses. The Blockchain Promotion Team was launched as a cross-divisional project in February 2020 and has started discussions on future commercialization.



4 Our Sustainability Management

Sustainability Management



Basic Policy

In its response to sustainability-related issues, the NAGASE Group starts with the spirit of integrity in the NAGASE Management Philosophy and its vision for society to realize a sustainable world where people live with peace of mind. We are aware that we can achieve sustainable growth by carrying on with corporate activities that help solve issues in society and the environment. NAGASE proactively addresses sustainability issues based on its Policy for Sustainability Activities.

1. Integrity in Business Activities

- We shall conduct our corporate activities in compliance with all applicable national and regional laws and regulations, and in keeping with societal norms and common sense.
- We shall strive to prevent corruption of all kinds and maintain healthy and proper relations with our partners and government entities.
- We shall strive to provide safe, high-quality products and services, and seek to maintain and improve the value to our customers and business partners.
- We shall safeguard the benefit to the consumer through maintaining and promoting fair and free competition.
- We shall strive toward rigorous management and protection of information about our customers and our company.

2. Positive Relations with Society

- We respect human rights and do not permit any sort of discriminatory conduct, and do not accept infringements of human rights such as forced labor or child labor.
- We respect the cultures and practices of national and regional societies, and maintain positive relations with society.
- We shall strive to ensure health, safety, and appropriate communication with our diverse stakeholders.
- We shall constantly pay detailed attention to sustainability among our suppliers, and shall work to make corrections should there be any doubt to their sustainability.
- We shall proactively disclose corporate information as appropriate.

3. Consideration for the Environment

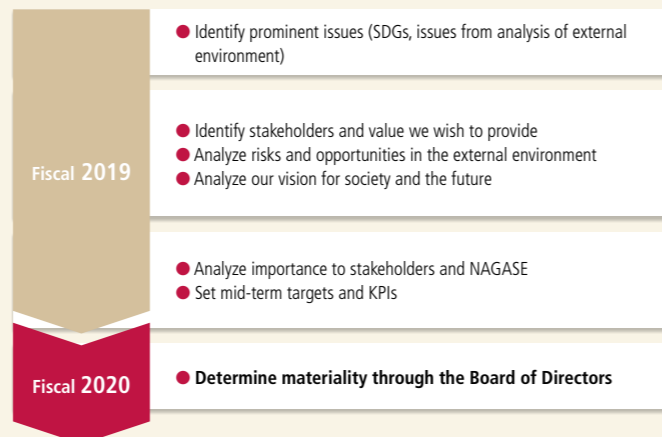
- We shall comply with national and regional environmental regulations.
- We shall contribute to the maintenance of the global environment, including limiting climate change, preventing contamination and promoting reduction in the environmental footprint of our business activities through suppression of greenhouse gas emissions and energy consumption.
- We shall, through environmentally conscious products and services, provide information to our customers about appropriate product usage, recycling, and disposal methods.
- We shall contribute broadly to society through environmental conservation activities in various countries and regions.
- We recognize the importance of biodiversity and shall strive to conserve ecosystems.

Note: Information about sustainability management is also available on our website. <https://www.nagase.co.jp/english/sustainability/>

The NAGASE Group's Process for Identifying Materiality (Priority Issues)

When identifying priority issues, the NAGASE Group screened for issues in its operations while analyzing the external business environment based on an awareness of the goals and targets of the SDGs that are shared by the planet and people. From among these issues, management identified issues of particularly high priority to both the NAGASE Group's businesses and its stakeholders. We identified our stakeholders and the value we intend to provide based on the society that the NAGASE Group envisions in the NAGASE Vision, and the results of an analysis of risks and opportunities arising from changes in the external environment.

In the next mid-term management plan beginning in fiscal 2021, key performance indicators (KPI) will be set along with medium- and long-term targets for these priority issues. In addition, we aim to sustain growth through constructive dialogue with our stakeholders, disclosing our progress toward these goals.



5 Our Destination

NAGASE's Goals

NAGASE Groups Vision for the Future



A sustainable world where people live with peace of mind

The NAGASE Group's vision for society is to realize a sustainable world where people live with peace of mind, as described in the NAGASE Vision. All of our corporate activities aim to realize this vision, while contributing to value propositions for everyone. To achieve this vision, we will seek to engage more deeply in dialogues with our stakeholders, and reflect everyone's opinions in our corporate activities, to take us one step closer to realizing the type of society that we should aim to be.



For Employees

Value Proposition

- Work environments that are safe and facilitate work, where all employees can positively and enjoyably engage in work with motivation
- A corporate group that employees and their families are proud of

Communication

- Disseminate information through the intranet and Group newsletters
- Training and seminars
- Employee awareness surveys and interviews
- Hold labor management meetings
- Conduct inner branding activities (Top Management Tours), stream videos of the president message, hold town hall meetings

For Business Partners

Value Proposition

- Deepen our understanding of partners and build cooperative relationships with them to pursue a wide range of possibilities
- Solutions for social issues that the entire value chain should undertake

Communication

- Disseminate information through integrated reports, official company website and social media
- Clarify basic aims for sustainability
- Set up channel for receiving inquiries
- Exchange information at conferences, etc.

For Society and Consumers

Value Proposition

- Ethical management that complies with laws and regulations
- Business activities that respect the rights, health and well-being of people in the supply chain
- Products and services to realize a sustainable world where people live with peace of mind

Communication

- Programs that give back to society and volunteer activities
- Dialogue with local residents
- Support for the Nagase Science and Technology Foundation
- Assistance for the Grand Contest on Chemistry for High School Students
- Operating assistance for the Hayashibara Museum of Art

For Shareholders

Value Proposition

- Foster trust and reassurance with highly transparent management structure and timely and accurate information disclosure
- Improve both social and economic value, maximize corporate value by constantly creating new businesses

Communication

- Shareholders' Meeting
- Conferences/briefings for institutional investors and analysts
- Publish information through disclosure documents, press releases, integrated reports, shareholder newsletters and the official company website
- Provide information to ESG investors
- Individual meetings and overseas roadshows