

 **NAGASE**  
**NAGASE & CO.,LTD.**

**Osaka Head Office** : 1-1-17, Shinmachi, Nishi-ku,  
Osaka City, Osaka 550-8668, Japan  
Tel: (81) 6-6535-2114

**Tokyo Head Office** : 5-1, Nihonbashi-Kobunacho, Chuo-ku,  
Tokyo 103-8355, Japan  
Tel: (81) 3-3665-3021

**Nagoya Branch Office** : 3-14-18, Marunouchi, Naka-ku,  
Nagoya City, Aichi 460-8560, Japan  
Tel: (81) 52-963-5615



**Integrated Report 2018**

Year ended March 31, 2018





# Bringing it all together

## About this Report

The NAGASE Group Slogan is "Bringing it all together." This slogan inspires us 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.

This integrated report is our opportunity to communicate to our stakeholders, providing financial and non-financial information related to the NAGASE Group as a business organization, our issues, and our mid- and long-term strategies in a single, integrated publication.

We intend to continue to evolve this report as an effective tool to communicate our activities for improving the NAGASE Group corporate value over the medium and long term.

In creating this report, we referred to version 1.0 of the International Integrated Reporting Framework issued in December 2013 by the International Integrated Reporting Council.

# Contents

Integrated Report 2018

## About the NAGASE Group

- 2 NAGASE by the Numbers
- 4 Management Philosophy and the NAGASE Vision
- 6 NAGASE Group Businesses
- 8 The NAGASE Group: Changes and Challenges
- 10 How We Create Corporate Value
- 12 Valuable Products and Services
- 14 13-Year Financial Highlights
- 16 Annual Topics

## Leading Us to the Future

- 18 Message from the President
- 24 Our Board
- 26 Corporate Governance

## Performance by Segment

- 32 At a Glance
- 34 Functional Materials
- 36 Advanced Materials & Processing
- 38 Electronics
- 40 Automotive & Energy
- 42 Life & Healthcare

## Unique Products

- 44 Global Network
- 46 Regional Overview
- 50 Main Manufacturing and Processing Functions
- 54 Major R&D Functions

## Critical Initiatives for Sustainable Growth

- 57 Human Rights, Employment Practices
- 60 Environment
- 62 Fair Business Practices
- 64 For Consumer Safety and Security
- 65 Community Involvement and Development

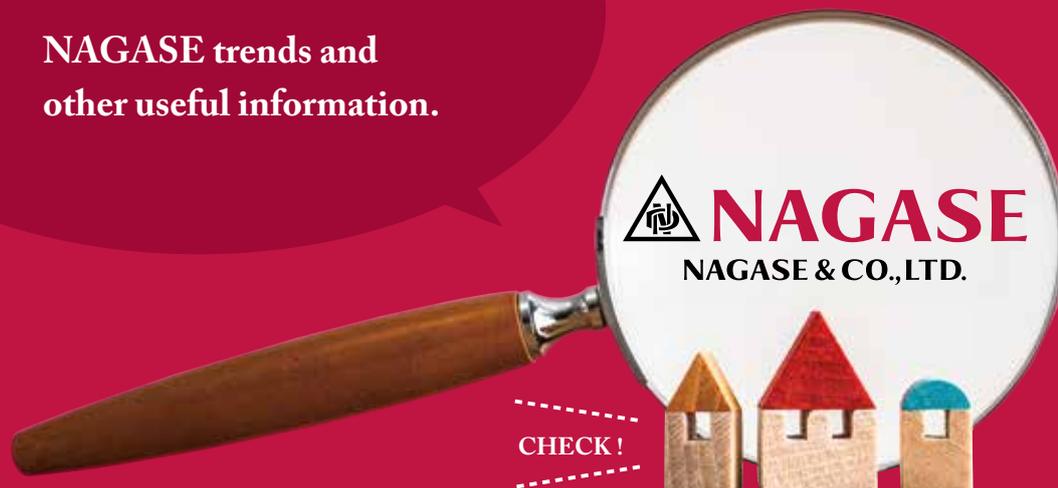
## Financial and Corporate Information

- 66 Financial Foundation Supporting Business Growth
- 68 Management's Discussion and Analysis of Operations and Finances
- 76 Consolidated Financial Statements
- 102 Consolidated Subsidiaries, Affiliates and Offices
- 106 Corporate Information
- 107 Investor Information

## Forward-Looking Statements

Non-historic information contained in this integrated report related to NAGASE Group revenue and profit plans, strategies, assumptions, etc., are forward-looking statements that entail elements of risk and uncertainty. Actual earnings may differ significantly from forecasts due to changes in these elements. Accordingly, the reader is cautioned to refrain from placing undue reliance on such future forecasts contained in this document. Elements that could impact earnings results are not necessarily limited to those explicitly noted in this document.

NAGASE trends and  
other useful information.



## 200 Years in Business

# 2032

Establishing the NAGASE brand  
heading toward 200 years in business.

P.4-5



## Consolidated Operating Income

# ¥30 billion or more

We launched our *ACE-2020* mid-term  
management plan in 2016.

By the fiscal year  
ending March 2021,  
we will normalize ¥30 billion  
or more in consolidated  
operating income.



## Consolidated Net Sales

# ¥783.9 billion

Consolidated net sales of ¥783.9 billion for the fiscal year ended March 2018. Strong financial underpinning; issuer rating of A.



## Manufacturing Companies

(as of March 31, 2018)

# 14 Countries 48 Companies

Practical answers to customer needs through research and manufacturing functions.

P.50-56



## Overseas Sales to Net Sales

# 49.6%

Network spanning 26 countries and regions and 101 companies; overseas sales account for 49.6% of consolidated net sales.

(FYE March 2018)

P.44-49



## Consolidated Employees

(as of March 31, 2018)

# 6,312

A diverse employee base engaged in NAGASE business worldwide.



## A sense of values shared within the NAGASE Group



The NAGASE Group works toward sustainable growth and improving corporate value.

We have defined the NAGASE Management Philosophy, NAGASE Vision, and The NAGASE Way (employee behavioral guidelines) as a set of common values for the Group in our project of developing a global brand.

Our slogan of “Bringing it all together” represents our commitment to encompassing all aspects of our business as one, including our business domains, operating regions and countries, people, products, technologies, and services.

This slogan inspires us to realize a sustainable world where people live with peace of mind, each of us embodies our value proposition, Identify, Develop and Expand, through our daily activities.

## 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 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

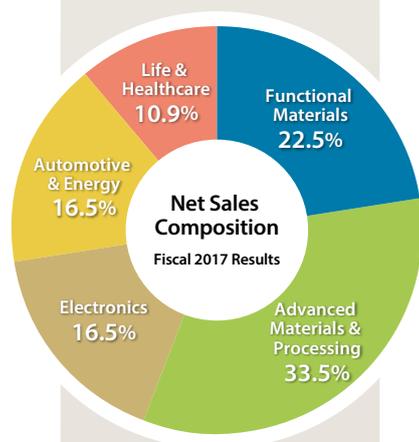
## “The NAGASE Way”

- 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 Group Businesses

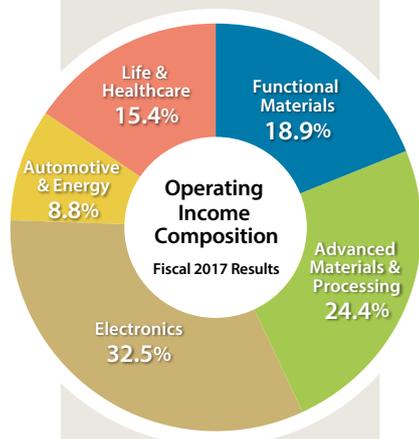
Consolidated  
Net Sales

¥783.9  
billion



Consolidated  
Operating Income

¥24.1  
billion



## Functional Materials



### Performance Chemicals Business

#### <Overview>

The Performance Chemicals Business leverages Group manufacturing and R&D functions to provide a broad range of goods and services to the global market, from general-purpose petrochemical products to high-value-added products. The department consists of a raw materials business for the paints and inks industry and a raw materials business for the urethane industry, each of which is recognized as an established leader in its respective market.

#### <Main Products and Services>

Resins, raw materials for resins, pigments, solvents, and additives for paints and inks, urethane materials, flame retardants, release agents

#### <Customer Industries>

Paints and inks, urethane

### Speciality Chemicals Business

#### <Overview>

The Speciality Chemicals Business has a long and successful history, serving more than 2,000 customers in the plastic materials and additives, industrial oil materials, plating chemicals, water processing agents, photoresist materials, fluorochemicals, silicone, 3D, and other industries. Today, the department handles more than 10,000 different products. We are working to expand into new fields as we keep our eyes on the underlying technologies of our business partners.

#### <Main Products and Services>

Petrochemical products, plastic materials and additives, chemicals for paper manufacturing, raw materials for industrial oil solutions, surfactants and surfactant raw materials, fluorochemicals, silicone materials, plating chemicals, electronics chemicals and polymer filters

#### <Customer Industries>

Petrochemicals, plastics, electronic materials, semiconductors, industrial oil, surfactants, organic synthetics, etc.



## Advanced Materials & Processing



### Colors & Advanced Processing Business

#### <Overview>

This business traces its roots back to the dyeing business at the very founding of our company. The department consists of four main product groups: digital printing supply, colors & additives, functional film materials, and polymer products. We established a new Group Development Team to work with other departments and affiliated companies in order to cover a wider range of industries. This team promotes cross-organizational development activities, working to uncover new businesses opportunities, mainly in the trading sphere, in Japan and overseas.

#### <Main Products and Services>

Pigments/additives, auto body repair paint, digital print processing materials, dyestuffs, fiber processing agents, copolyester resins, functional sheets and films, organic transparent conductive materials

#### <Customer Industries>

Paper manufacturing/thermal paper, cosmetics and toiletries, office equipment and electronic equipment, sheets and films, printing and print materials, fiber processing, auto body paint

### Polymer Global Account Business

#### <Overview>

The Polymer Global Account Business provides plastics, packaging materials, equipment and facilities to the domestic and international office automation (OA), electric and electronics, and consumer electronics industries. The greatest strength of this department is the sheer number of local staff who maintain networks in Asia-Pacific, as well as their wealth of experience and knowledge. The department continues to create new plastics businesses through cooperative efforts, reflecting NAGASE Group growth strategies.

#### <Main Products and Services>

Functional resins, general-purpose resins, auxiliaries, packaging materials, plastic-related equipment, devices and moldings

#### <Customer Industries>

Office automation, electrical and electronics, consumer electronics, home appliances, housing and construction materials, packaging materials



## Electronics



### Electronic Chemicals Business

#### <Overview>

The Electronic Chemicals Business provides unique products and services for the electronics industry, including formulated epoxy resins, photolithography materials, chemical management equipment, semiconductor equipment, and other proprietary products and services. The department answers the needs of the Japanese and overseas markets, focusing on high-value-added products produced by Group manufacturing companies. The department strives for high profitability, integrating trading and Group manufacturing functions.

#### <Main Products and Services>

Formulated epoxy resins and related products, photolithography materials for the production of semiconductors and liquid crystal displays, siloxane materials, chemical management equipment for liquid crystal display production processes, semiconductor manufacturing equipment and wafer bumping services

#### <Customer Industries>

Electronic components, semiconductors, heavy electric machinery, displays, automotive, aircraft, environment and energy

### Electronic Materials Business

#### <Overview>

The Electronic Materials Business sells materials and components to smartphone and wearables brand owners, as well as to the display device and silicon wafer industries. Manufacturing functions include business in liquid crystal glass processing, flame-resistant insulation/thermal conductive sheets, and polyimide films.

#### <Main Products and Services>

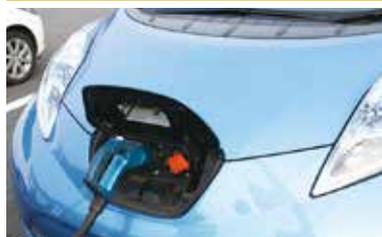
Flexible display materials, OLED materials, silicon wafer processing materials, liquid crystal glass processing, touch panel components, optical films, electronic paper materials, materials for smartphone and tablet cases, flame-resistant insulation/thermal conductive sheets, lenses, LED chips, precision abrasives

#### <Customer Industries>

Smartphones, displays, silicon wafers, TVs, LED lighting, electronic components



## Automotive & Energy



### Automotive Solutions Business

#### <Overview>

The Automotive Solutions Business operates in the global automotive industry, which is experiencing increasingly rapid growth. Here, we make the most of our superior global network to expand sales of raw materials and products in global markets, particularly China, ASEAN, and North America. At the same time, we are working to improve Group manufacturing functions to offer greater levels of safety, security, comfort, and environmental friendliness demanded by society now and in the future. In doing so, we plan to contribute to the new automobile society and grow our business at the same time.

#### <Main Products and Services>

Commodity plastics and engineering plastics for automotive interior, exterior, and functional components; automotive interior, exterior, and functional components; high-function materials (decorative and weight-saving); devices; molds and dies; high-function materials and components for car electronics

#### <Customer Industries>

Automotive and automotive parts industries

### Energy Business

#### <Overview>

The Energy Business deals in lithium ion battery (LiB) systems, photovoltaic (PV) modules, and energy management systems (EMS), which connect these products. This business devises marketing strategies that anticipate future needs, using and sharing information covering all aspects of the business from upstream to downstream in each infrastructure market. The business also develops and sells LED optical wireless communications equipment for the safe, stable control of infrastructure equipment.

#### <Main Products and Services>

Raw materials for lithium ion battery (LiB), photovoltaic (PV) modules, LiB systems, PV materials, applied products in energy management systems, independently powered systems, LED optical communications equipment, wireless communications modules

#### <Customer Industries>

Batteries, photovoltaics, automotive and automotive parts, construction, logistics, lighting, commercial facilities, public facilities, etc.



## Life & Healthcare



### Life & Healthcare Products Business

#### <Overview>

The Life & Healthcare Products Business sets its sights on contributing to food, beauty, and health as a member of the Life & Healthcare Segment. This business is developing high-value-added products that help people live better and healthier lives, leveraging the group's comprehensive strengths in trading, R&D, and manufacturing and processing in the global food materials, pharmaceutical/medical materials, fragrance and cosmetics materials, household products materials, and agriculture, fisheries, and livestock fields.

#### <Main Products and Services>

Functional food ingredients (functional saccharides, enzymes, health food materials, and food additives), fragrances/cosmetics and household product materials (whitening agents, moisturizing agents, UV absorbers, activators, antibacterial agents, and chelates), pharmaceuticals (active pharmaceutical ingredients [APIs], clinical trial APIs, intermediates, raw materials, formulations, additives), in-vitro diagnostics, medical materials and equipment, materials for agriculture, fisheries, and livestock (agricultural chemicals and materials, feed and feed additives)

#### <Customer Industries>

Foods, pharmaceuticals and medical, diagnostic drugs, fragrances and cosmetics, household products, agricultural, fisheries and livestock

### Beauty Care Products Business

On April 1, 2017, the Beauty Care Products Department transferred to Nagase Beauty Care Co., Ltd. to generate greater efficiency.

For more, see the Nagase Beauty Care website.

<https://nbc.jp/>

# Changes and Challenges

NAGASE & CO., LTD. is a chemicals trading firm, founded in Kyoto, Japan in 1832. The NAGASE Group began as a specialized sales agent securing exclusive contracts to sell industry-leading products from around the world in Japan. Over the years, we have leveraged our technology and information gathering expertise—as well as our global network—to transform our business into a hybrid model offering superior manufacturing, processing, and R&D functions as well as trading company services. Looking forward to our 200th anniversary in the year 2032, we are creating a platform for sustainable growth.

Accelerating growth in Asia and other markets overseas

## Initiatives with Leading Overseas Manufacturers

In the 1900s, we signed sales representative agreements with Eastman Kodak and General Electric



## Overseas Network

We established branches and local entities in Japan and overseas, building the foundations of our business



- 1832 Nagase founded in Kyoto as a dyestuffs trading concern  
Sales of dyestuffs, starches and funori seaweed
- 1898 Head office moved to Osaka
- 1900 Established business ties with Basel Chemical Co. of Switzerland (now Ciba Specialty Chemicals Ltd.)
- 1901 Opened office in Lyon
- 1911 Established Tokyo branch office
- 1913 Opened offices in London and New York
- 1917 Established Nagase Shoten Company (from sole proprietor to corporation)
- 1923 Established business ties with Eastman Kodak Co. of the United States
- 1930 Concluded an exclusive distributorship agreement with Union Carbide and Carbon Corp. of the United States
- 1938 Established Teikoku Chemical Industries Co., Ltd.
- 1964 Listed Company shares on the Osaka Securities Exchange
- 1968 Concluded an exclusive distributorship agreement with General Electric Co. of the United States



Osaka head office at incorporation in December 1917



Right: Nagase-CIBA Ltd. in 1971  
Left: Newly completed Tokyo branch office building (October 1969)

- 1970 Established Nagase-CIBA Ltd. (now Nagase ChemteX Corporation) jointly with Ciba-Geigy Ltd.  
Listed Company shares on the Tokyo Stock Exchange
- 1971 Established Nagase (Hong Kong) Ltd. and Nagase America Corporation  
Established Engineering Plastics, Ltd. jointly with General Electric Co.
- 1972 Established Nagase Medicals Co., Ltd.
- 1975 Established Nagase Singapore (Pte) Ltd.
- 1977 Established Nagase Biochemicals, Ltd.
- 1980 Established Nagase Chemicals, Ltd.  
Established Nagase (Europa) GmbH
- 1981 Established Nagase (Malaysia) Sdn. Bhd.
- 1985 Established Seoul branch office
- 1988 Established Nagase (Taiwan) Co., Ltd.
- 1989 Established Nagase (Thailand) Co., Ltd.  
Established Nagase Science and Technology Foundation  
Tokyo branch office became a head office;  
adoption of Osaka/Tokyo two head office system

Toward  
Our 200th  
Anniversary

Expanding  
manufacturing  
base and R&D  
centers

### Stronger Manufacturing, Processing, and R&D Functions

A chemicals trading company building a strong reputation in manufacturing, processing, and research and development



- 1990** Established Sofix Corporation, a U.S.-based color former production joint venture  
Set up the Nagase R&D Center in Kobe  
Established joint venture Nagase Wahlee Plastics Corporation (Taiwan)
- 1997** Established Nagase Philippines Corporation  
Established Shanghai Nagase Trading Co., Ltd.  
Established Nagase Engineering Service Korea Co., Ltd.
- 1998** Established PT. Nagase Impor-Ekspor Indonesia  
Established Shanghai Hua Chang Trading Co., Ltd.
- 2000** Changed the name of Nagase-CIBA, Ltd. to Nagase ChemteX Corporation
- 2001** Nagase ChemteX, Nagase Chemicals, Teikoku Chemical Industries, and Nagase Biochemicals merged to Nagase ChemteX Corporation  
Closed the Seoul branch office and established Nagase Korea Corporation
- 2002** Established Guangzhou Nagase Trading Ltd.  
Established Nagase ChemteX (Wuxi) Corporation
- 2004** Established NWP International Trading (Shenzhen) Co., Ltd.
- 2005** Established Totaku Industries Suzhou Co., Ltd.  
Established Nagase Electronics Technology Co., Ltd.  
Established Nagase Philippines International Services Corporation
- 2006** Acquired stock of semiconductor manufacturing equipment maker Pac Tech-Packaging Technologies GmbH  
Established Nagase India Private Ltd.
- 2007** Established Nagase Application Workshop
- 2008** Established Sakai Sales Office  
Established Nagase Vietnam Co., Ltd.
- 2009** Established Dubai branch office
- 2012** Acquired stock of Engineered Materials Systems, Inc., U.S.-based maker of formulated epoxy resins  
Acquired stock of Hayashibara Co., Ltd. (Okayama, Japan)  
Established local entity in Brazil
- 2014** Completion of NAGASE Global HR Development Center

### Beyond the Traditional Trading Firm Framework

Beyond the trading firm business offering new value as a "Business Designer"



**2015** Created NAGASE Long-Term Management Policy

**2016** Start of Mid-Term Management Plan *ACE-2020*

**2017** Established New Value Creation Office  
Converted Inkron Oy into a subsidiary  
Launch of Nagase Business Expert Co., Ltd.  
Acquired stock of DAITAI KAKO CO., LTD.  
Acquired stock of Fitz Chem LLC (USA)

## 2032 200th Anniversary

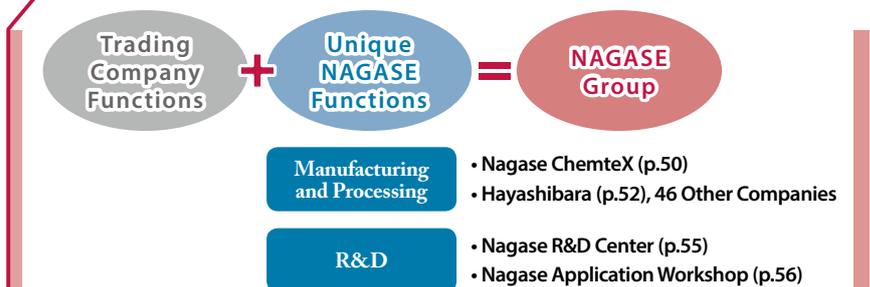
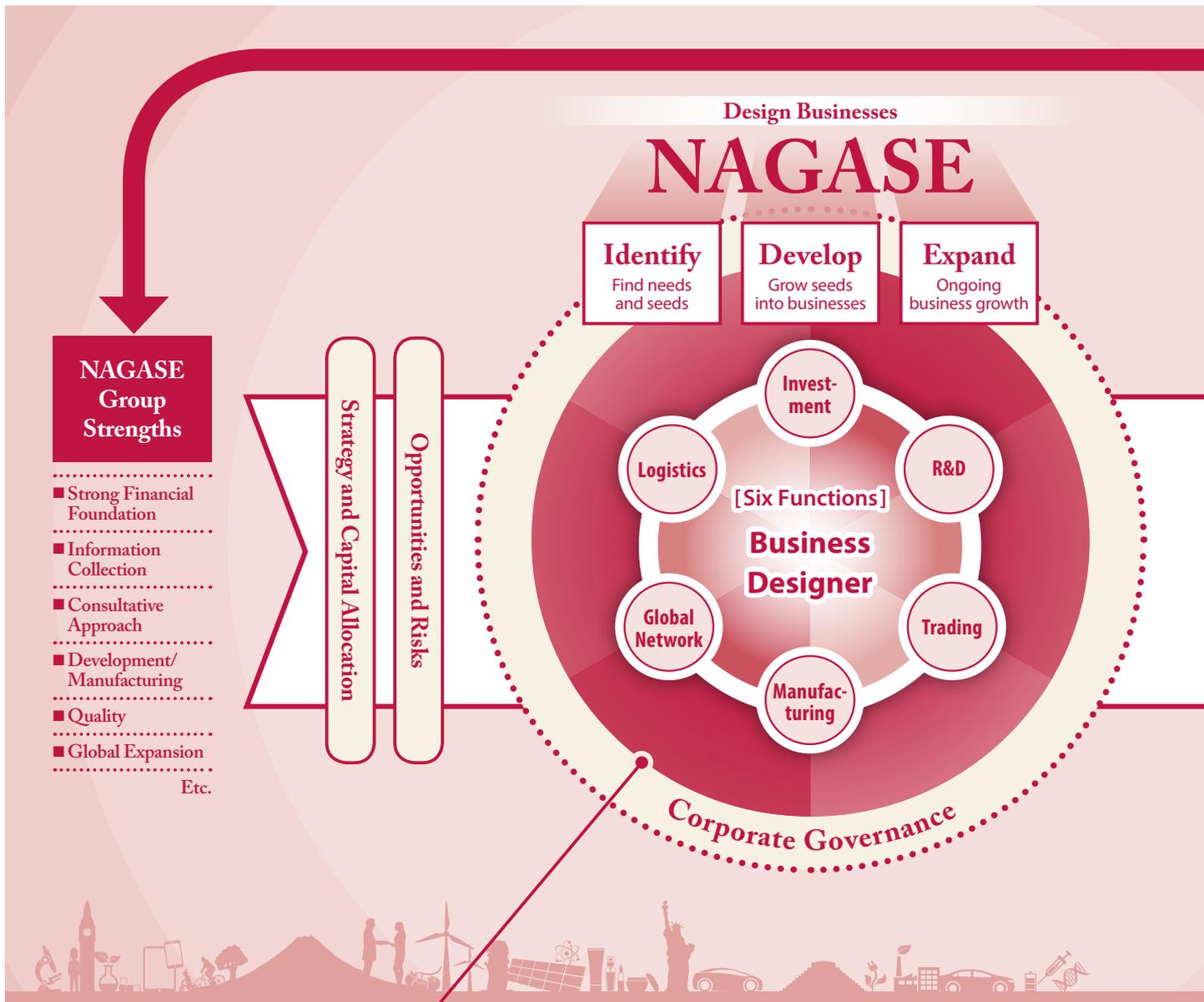


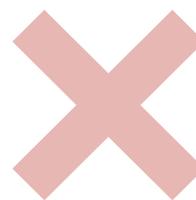
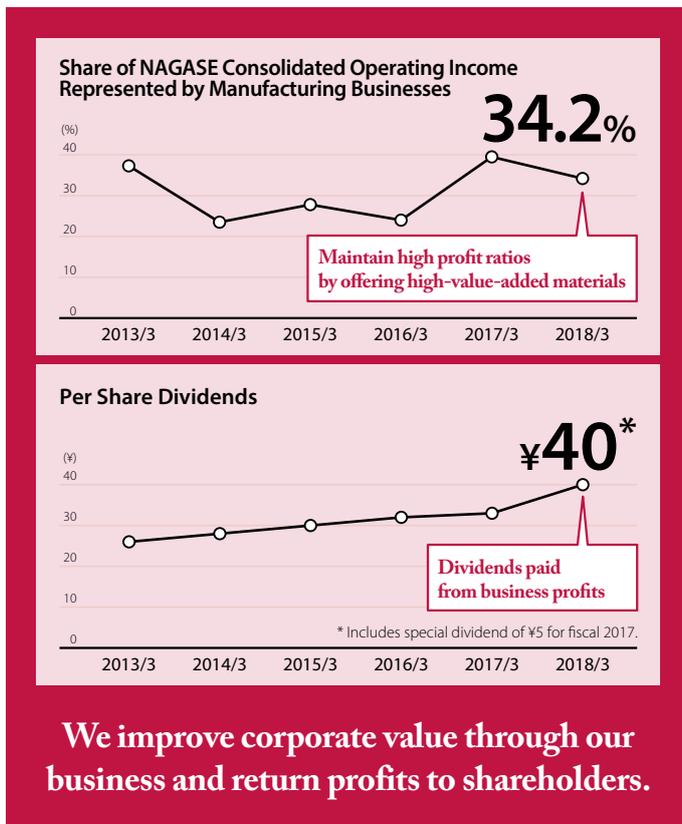
Top Left: Nagase Application Workshop  
Top Right: Hayashibara Co., Ltd. (functional saccharides manufacturing plant)  
Bottom: Nagase R&D Center

# How We Create Corporate Value

## A Unique Business Model that Extends Beyond the Traditional Trading Firm Framework

The NAGASE Group offers sustainable value to society as a “*Business Designer*” that conceives and builds businesses through six synergistic functions: Trading, R&D, Investment, Logistics, Global Network, and Manufacturing.





**We contribute to creating a sustainable world where people live with peace of mind.**

Supporting industry through materials and finished products

Supporting beauty and health

A Sustainable World Where  
People Live with Peace of Mind

## Delivering Valuable Products and Services on the Global Stage



### Functional Materials



#### Coating Raw Materials

Coating raw materials sold by NAGASE are used in automobile bodies and other applications.



#### Urethane Materials

High-density, flexible urethane materials sold by NAGASE are used in car seat cushions.



#### Denafilter™

Manufacture and sale of Denafilter™, a filtration system used in the manufacturing process of high-quality films for packaging and optical applications.



### Advanced Materials & Processing



#### Color Formers

Manufacture and sale of dyes used in thermal paper applications, including cash register receipts, tickets, and labels.



#### Copolyester Resin (Tritan™)

A copolyester resin resistant to temperatures greater than 100°C. Free of phenol A, a suspected hormone disruptor, it is expected to find use as a substitute for glass (tableware, etc.) and medical applications.

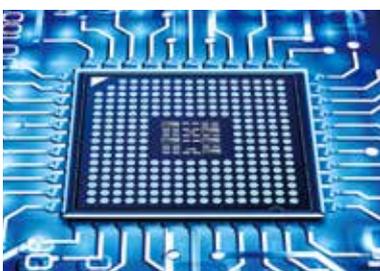


#### Engineering Plastics

Sales of functional resins used in office equipment, electric and electronic products, etc.

NAGASE delivers value that contributes to creating a sustainable world where people live with peace of mind. This value is represented in everything from raw materials for plastic materials and additives, functional polymers, and plastic products to functional food ingredients and pharmaceutical raw materials and intermediates. We will continue to grow as we work together closely with our customers in producing products and services of value.

 **Electronics**



**Semiconductor-Related Products**

Sales of encapsulants for semiconductors, photolithography materials, manufacturing equipment, wafer bumping services.



**Epoxy Resins**

Manufacture and sale of high-performance resins for use in electronic components, wind power generation, solar cells, aircraft, optical components, etc.



**Liquid Crystal, Flexible Display, Organic EL Materials**

Sale of high-heat-resistant polyimide film, OLED materials, chemicals, and equipment for smartphones, wearables, and TV industries.

 **Automotive & Energy**



**Car Electronics**

Solutions for new materials, components, and technologies for next-generation environmental applications.



**Materials for Next-Generation Vehicles**

Technological support and sales of components and new materials required by car multimedia, sensors, and self-driving systems.



**Home Energy Management System**

In-house development and sale of eneEase™ home energy management system (HEMS).

 **Life & Healthcare**



**Pharmaceuticals/Medical**

Manufacture and sale of pharmaceutical raw materials and anti-cancer drugs.



**Fragrances/Cosmetics**

Manufacture and sale of fragrances and cosmetics materials, products, and health foods.



**Foods**

Manufacture and sale of functional saccharides, enzymes, and other food and health food materials.

# 13-Year Financial Highlights

NAGASE & CO., LTD. and Consolidated Subsidiaries (Years Ended March 31)

(Millions of yen)

	2006/3	2007/3	2008/3	2009/3	2010/3	2011/3	
	WIT21		WIT2008		"CHANGE"11		
	Investment Amount: ¥23.7 billion	Investment Amount: ¥27.7 billion			Investment Amount: ¥107.4 billion		
<b>Performance (Accounting Fiscal Year)</b>							
Net Sales	¥ 648,023	¥ 701,321	¥ 764,755	¥ 715,238	¥ 603,949	¥ 660,213	
Segments	Functional Materials (formerly Chemicals)	222,282	247,094	267,836	248,461	237,124	253,290
	Advanced Materials & Processing (formerly Plastics)	229,278	244,681	274,660	253,029	192,569	222,100
	Electronics	132,086	150,796	163,833	153,255	117,591	133,640
	Automotive & Energy	—	—	—	—	—	—
	Life & Healthcare (formerly Healthcare/Other)	56,404	53,556	56,489	58,905	55,542	50,247
	Other	7,972	5,191	1,934	1,585	1,121	934
Region	Domestic	388,470	410,789	432,813	394,874	360,382	389,379
	Overseas	259,553	290,532	331,942	320,364	243,567	270,833
Gross Profit	67,640	73,639	80,506	71,527	65,415	73,008	
Operating Income	17,596	21,669	23,063	12,522	13,128	18,732	
Profit Attributable to Owners of the Parent	12,892	13,567	10,005	5,808	7,537	12,823	
<b>Financial Condition</b>							
Total Assets	¥ 396,773	¥ 422,859	¥ 419,869	¥ 340,968	¥ 368,088	¥ 375,336	
Equity Capital	196,620	205,083	200,554	184,599	195,344	201,516	
Interest-Bearing Debt	24,834	20,491	33,342	31,340	21,886	27,125	

(Yen)

## Per Share Data:

Net Income (Basic)	¥ 100.32	¥ 105.84	¥ 77.86	¥ 45.17	¥ 58.64	¥ 99.76
Net Assets	1,535.70	1,597.27	1,559.97	1,435.88	1,519.61	1,568.04
Cash Dividends	15	18	17	16	16	22
Payout Ratio (%)	14.9	17.0	21.8	35.4	27.3	22.1
Shareholders' Equity Dividend Rate (%)	1.06	1.15	1.08	1.07	1.08	1.42

(%)

## Ratios:

Overseas Sales to Net Sales	40.1	41.4	43.4	44.8	40.3	41.0
Manufacturing Ratio (Operating Income)	20.5	22.3	24.4	15.5	35.4	29.0
Operating Margin (Operating Income/Net Sales)	2.7	3.1	3.0	1.8	2.2	2.8
Return on Equity (ROE)	7.1	6.8	4.9	3.0	4.0	6.5
Net Worth Ratio	49.6	48.5	47.8	54.1	53.1	53.7
Debt Equity Ratio (Times)	0.13	0.10	0.17	0.17	0.11	0.13

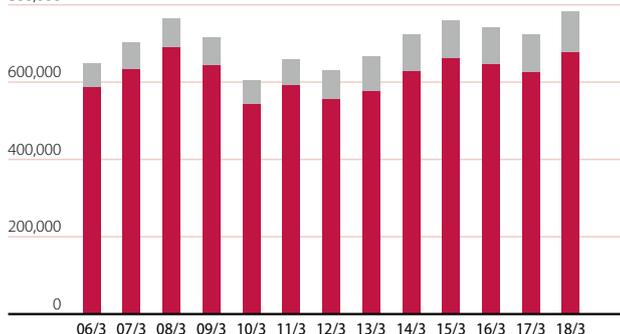
(Note 1) At the beginning of fiscal 2009, the Company moved its information and functional materials businesses handling materials related to insulating materials and fluoroplastic-related materials from the Electronics segment to the Chemicals segment. Businesses handling surface detection machines for functional films and sheets have been moved under the Plastics segment.

(Note 2) At the beginning of fiscal 2012, the NAGASE Group reorganized its four business segments into five business segments (Functional Materials, Advanced Materials & Processing, Electronics, Automotive & Energy, and Life & Healthcare) to more fully reflect the respective positions of each business in the value chain. For comparative purposes, fiscal 2011 figures have been calculated using the new business segments. The Colors & Imaging Department formerly under the Chemicals segment has been moved under the Advanced Materials & Processing segment. The Automotive & Energy segment was organized out of the Automotive Solutions Department (belonging to the Plastics segment) and the Energy Business Office, which was launched as an integrated entity from the Environment & Energy Office (under Other) and the Energy Device Office.

## Net Sales

■ Trading Business ■ Manufacturing Business

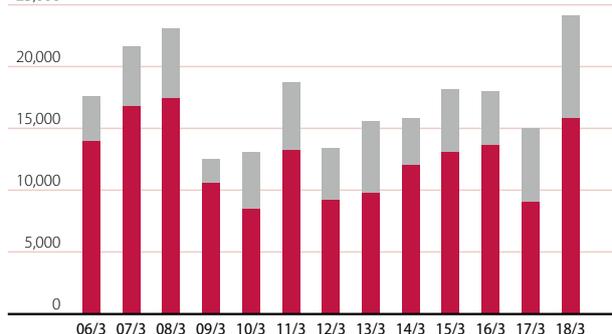
(Millions of Yen)  
800,000



## Operating Income

■ Trading Business ■ Manufacturing Business

(Millions of Yen)  
25,000



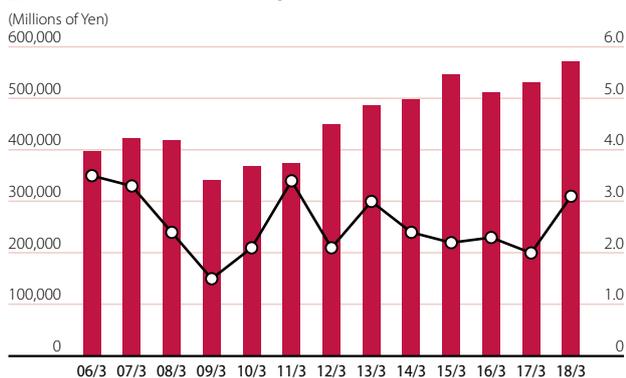
(Millions of yen)

2012/3	2013/3	2014/3	2015/3	2016/3	2017/3	2018/3
<b>Change-S2014</b>			<b>ACE-2020</b>			
Investment Amount: ¥41.1 billion			Investment Amount: ¥13.7 billion		Investment Amount: ¥32.6 billion	
¥ 631,854	¥ 666,272	¥ 723,212	¥ 759,713	¥ 742,194	¥ 722,384	¥ 783,933
177,126	167,017	169,973	168,238	157,149	153,546	176,068
217,929	214,214	239,224	254,165	255,505	242,609	262,831
110,495	125,014	137,026	149,947	127,926	127,722	129,324
76,113	83,068	99,441	109,851	115,351	112,956	129,708
49,170	76,116	76,810	76,609	85,571	84,904	85,371
1,018	841	737	900	689	644	629
366,369	361,971	372,939	374,208	363,038	369,365	395,428
265,484	304,301	350,272	385,505	379,155	353,019	388,504
71,628	82,583	88,936	91,991	91,663	91,503	102,675
13,427	15,578	15,789	18,153	18,024	15,030	24,118
8,570	14,182	11,663	11,318	12,316	10,331	17,175
¥ 450,842	¥ 486,747	¥ 498,141	¥ 546,525	¥ 512,081	¥ 530,775	¥ 571,445
204,706	228,505	246,723	281,398	273,963	290,217	303,636
88,710	98,425	92,828	98,493	87,560	82,046	86,173
(Yen)						
¥ 66.69	¥ 111.31	¥ 91.86	¥ 89.10	¥ 96.96	¥ 81.65	¥ 136.34
1,592.87	1,803.31	1,942.20	2,215.18	2,156.67	2,301.10	2,424.97
24	26	28	30	32	33	40
36.0	23.4	30.5	33.7	33.0	40.4	29.3
1.52	1.52	1.50	1.44	1.46	1.48	1.69
(%)						
42.0	45.7	48.4	50.7	51.1	48.9	49.6
31.3	37.3	23.5	27.8	24.3	39.5	34.2
2.1	2.3	2.2	2.4	2.4	2.1	3.1
4.2	6.5	4.9	4.3	4.4	3.7	5.8
45.4	46.9	49.5	51.5	53.5	54.7	53.1
0.43	0.43	0.38	0.35	0.32	0.28	0.28

(Note 3) At the beginning of fiscal 2013, the Automotive & Energy segment was organized by combining the former Automotive Solutions Department (under the Plastics segment) and the former Energy Business Office, which was an integrated entity combining the Environment & Energy Office (under the Other segment) and the Energy Device Office.

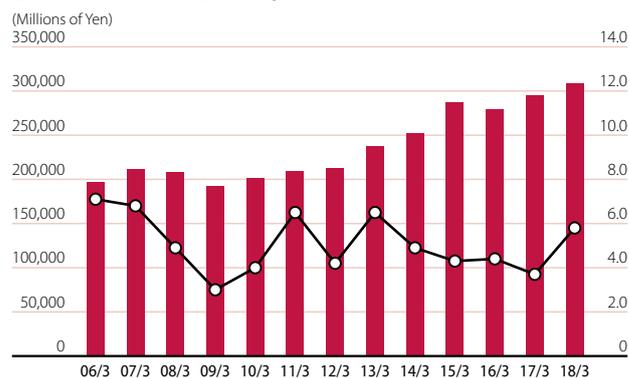
### Total Assets/ROA

■ Total Assets (left scale) ○ ROA (right scale)



### Net Assets/ROE

■ Net Assets (left scale) ○ ROE (right scale)



# Highlights in FY2017

**NAGASE & CO., LTD.**

The foundational technology behind NAGASE's proprietary N-StePP™ biotechnology won the Topics Award at the 2017 meeting of the Japan Society for Bioscience, Biotechnology, and Agrochemistry

**Nagase ChemteX Corporation**

INKRON LIMITED became a subsidiary; NAGASE expands business in display, touch sensor, and wearables markets

May



**NAGASE & CO., LTD.**

eneEase™ energy storage system, jointly developed with Murata Manufacturing Co., Ltd., used in public housing for disaster victims in Onagawa Town, Miyagi Prefecture

September

April 2017 >>



July

**NAGASE & CO., LTD.**

Launch of shared service center Nagase Business Expert Co., Ltd. to perform indirect operations under contract for the group

**NAGASE & CO., LTD.**

DAITAI KAKO CO., LTD. share acquisition brings NAGASE into downstream coatings market

August

**NAGASE & CO., LTD.**

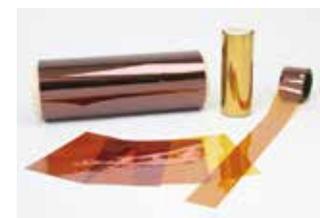
Establishment of heat-resistant polyimide film production and sales joint venture with Toyobo Co., Ltd. announced; bolsters flexible display business

**Nagase America Corporation**

Acquisition of U.S. chemicals firm Fitz Chem LLC

**Nagase (Europa) GmbH**

New branch office in Lyon, France to sell raw materials to cosmetics companies and collaborate with testing organizations and universities



XENOMAX® high-heat-resistant polyimide film



Lyon Branch (France)

**NAGASE & CO., LTD.**

**Pat!naLock™-Σ reactive paint developed; effective against acidic corrosive environments**

**NAGASE & CO., LTD.**

**Guangzhou Nagase Trading Ltd.**

**Announcement of joint venture with China's Shenzhen Kedali Industry Co., Ltd. and ATECS Corporation in Guangdong; expands components business for alternative-energy automobiles**



Signed agreement to establish Huizhou Sanli Three Synergy Precision Co., Ltd. in China

November

» March 2018

February

**NAGASE & CO., LTD.**

**¥500 million investment in OLED venture Kyulux, Inc.; supporting world-first technology and participating in OLED display market**



Light-emitting material developed by Kyulux, Inc.

**NAGASE & CO., LTD.**

**Repurchased own shares via off-auction repurchase trading (ToSTNeT-3)**

March

**NAGASE & CO., LTD.**

**Additional investment in MINDA KYORAKU LTD., joint venture established with major Indian auto components maker UNO MINDA Group; expanding supply capacity in the Indian market**



MINDA KYORAKU LTD. (India)

Message from the President

**We raise the bar  
to perform beyond expectations.**

Representative Director and President

朝倉 研二

Kenji Asakura

July 2018



# We look ahead of the times, contributing to society by creating new value.

## Looking Back on Fiscal 2017

### Higher sales achieved across all segments

The NAGASE Group achieved record-high consolidated net sales and operating income for fiscal 2017, the second year under our **ACE-2020** mid-term management plan. Every business segment outperformed the prior year in terms of net sales, including our Functional Materials, Advanced Materials & Processing, Electronics, Automotive & Energy, and Life & Healthcare segments. The last time we recorded all-time highs in operating income was fiscal 2007. I am extremely proud that we have set a new high after 10 years.

Part of our success was due to outside factors, including a strong general market for chemicals and the impact of favorable foreign exchange and oil prices. I also want to recognize our employees, who took responsibility for their work, completed their tasks and helped us achieve strong earnings. We are beginning to see the results of NAGASE Group employees worldwide embracing **ACE-2020** targets, using the PDCA cycle to achieve our goals.

## ACE-2020 Progress

### Signs of progress, but further to go

In 2015, we drafted our long-term management policy to reach a level of tripled profits prior to our 200th anniversary in 2032. The first stage of this plan we called the Reform Stage. Our five-year **ACE-2020** mid-term management plan, formed in 2016, was built on the twin pillars of *Reform of Profit Structure* and *Reform of Corporate Culture*.

Fiscal 2018 is the mid-point of this five-year plan, and we realize we have further to go to achieve these reforms. There are signs of progress. However, our goal still lies ahead, and measures to bridge the gap will play an important role. We consider fiscal 2018 to be a rolling start on our mid-term management plan. We are strengthening the potential to reach our goals, and we will maintain our speed and complete focus on our targets.

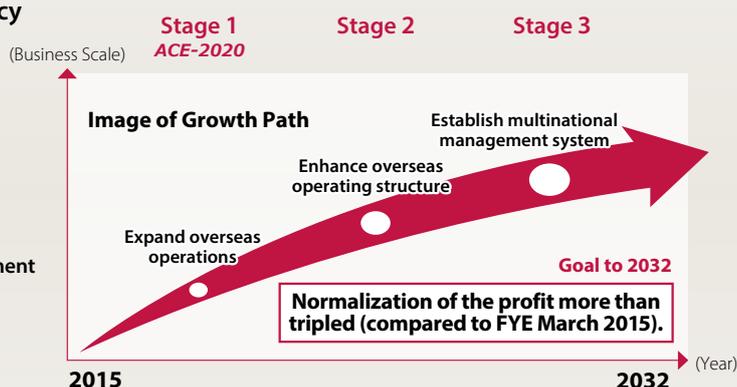
### Summary of the Long-Term Management Policy

#### Challenges for Growth

- Increase growth investment
- Accelerate organic growth
- Expand overseas operations

#### Reinforce the Management Platform for Growth

- Restructure global governance
- Increase flexibility in HR management
- Enhance safety and assurance
- Consolidate communications infrastructure



KGI (Key Goal Indicator)

KGI	FY2016	FY2017	FY2018 (planned)	FY2020
Consolidated Net Sales	722.3 Billion Yen	783.9 Billion Yen	828.0 Billion Yen	1.0 Trillion Yen or more
Consolidated Operating Income	15.0 Billion Yen	24.1 Billion Yen	25.5 Billion Yen	30.0 Billion Yen or more
ROE	3.7%	5.8%	6.0%	6.0% or more

KPI (Key Performance Indicator) Factor index to achieve KGI

Reform/Strategy	Measures	KPI (Index)	FY2016	FY2017	FY2018 (planned)	FY2020
Profit Structure Reform Indicator	Increase Focused Business (Portfolio Optimization)	Operating Income in Focus Area*	11.9 B Yen	13.1 B Yen	13.3 B Yen	16.9 B Yen
		Growing Investment Distribution Ratio in Focus Area	46%	52%	59%	35% ≤
	Accelerate Globalization (Expand and Strengthen Profit Structure)	Overseas Group Sales*	350.2 B Yen	389.0 B Yen	405.1 B Yen	600.0 B Yen
		Sales Growth Rate in the Americas	90%	103%	110%	170%
Increase Manufacturing Profitability (Expand and Strengthen Profit Structure)	Operating Income from Manufacturing*	9.0 B Yen	11.4 B Yen	11.5 B Yen	14.4 B Yen	
	Break-Even Point Sales Ratio*	76%	76%	77%	73%	
Corporate Culture Reform Indicator	Pursue Efficiency (Strengthen Management Platform)	Consolidated Selling, General and Administrative Ratio	10.6%	10.0%	9.9%	9.4%
Financial Strategy Indicator	Investment	Growth Investment	8.2 B Yen	** 23.5 B Yen	** 42.3 B Yen	** 100.0 B Yen
	Financial Structure	Rating (R&I)	[A]	[A]	[A] or more	[A] or more

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

ACE-2020 Basic Policy ① Reform Profit Structure

▶ **Portfolio Optimization** – Categorize businesses into four areas (Growth, Focus, Base, Improvement) to drive growth and maximize resource efficiencies

■ Investing in Life & Healthcare, Electronics

We have categorized our Life & Healthcare and Electronics businesses as two focus areas. The Americas, where we expect market growth, represent a priority for resource allocation intended to grow profitability. During fiscal 2017, we made several aggressive moves, including investment activities, laying a foundation for the future.

Cases	Major Developments in Focus Areas
	<b>Life &amp; Healthcare</b> <ul style="list-style-type: none"> <li>Established new branch in Lyon, France to expand cosmetics business in Europe</li> <li>Invested in PeptiStar, Inc., owner of next-generation drug design technologies</li> </ul> <b>Electronics</b> <ul style="list-style-type: none"> <li>Established Xenomax - Japan Co., Ltd., a joint venture with Toyobo Co., Ltd. for the manufacture and sales of high-heat-resistant polyimide film</li> <li>Invested in Kyulux, Inc., owner of next-generation OLED technologies</li> <li>Converted Inkron Oy (leading brand of next-generation materials for displays, semiconductors) into a subsidiary</li> <li>Consolidated Taiwan liquid crystal glass thin processing business to China</li> </ul>

## Expand and Strengthen Revenue Base

- Accelerate global expansion to grow sales overseas
- Improve manufacturing company profitability, develop new businesses

### ■ Business investment to generate synergies

I always tell employees that *Identify* is the most important part of the NAGASE vision to *Identify*, *Develop*, and *Expand*. And, this awareness has taken deeper hold, as our investment during fiscal 2017 took us into more comprehensive businesses, generating dynamic synergies beyond our expectations.

As one means to improve the profit-generating capacity in our manufacturing business, we acquired DAITAI KAKO CO., LTD., a manufacturer and seller of special paints and other products. We also made progress in the construction of the Kanto/Oyama Plant (Oyama City, Tochigi Prefecture) of TOTAKU INDUSTRIES, INC., a company that deals in pipes and other plastic products. Our unique Pat!naLock™ reactive paint found new applications as Pat!naLock™-Σ, expected to perform well in the thermal power plant and other infrastructure markets. This new version of Pat!naLock™ was developed in partnership with Kansai Electric Power, Kyoto Materials, and Mitsubishi Hitachi Power Systems.

#### Cases

#### Improving Manufacturing Company Profitability

- Constructed TOTAKU INDUSTRIES, INC. Kanto/Oyama Plant
- Acquisition of DAITAI KAKO CO., LTD., entry into downstream coatings markets
- Developed Pat!naLock™-Σ

### ■ Our G6000 global initiatives and issues

During fiscal 2017, we acquired U.S. chemical distributor Fitz Chem LLC (via Nagase America Corporation), making Fitz Chem a wholly owned subsidiary of Nagase America. The Fitz Chem geographical reach ranges from the U.S. Midwest to the South. The company sells raw materials for its mainstay paints and inks customers. The company also sells raw materials for personal care and home care products, adhesives, and industrial raw materials for resin compounds. With Fitz Chem now a member, we expect the NAGASE Group global business to reach a new stage in evolution.

During fiscal 2017, the businesses of our partner companies and investees made steady progress, contributing to group growth. However, we have noted as *Future Matters* that these businesses have yet to make significant contributions to net sales as provided under *G6000*. Business models and circumstances in each country and region differ from those in Japan. Accordingly, the NAGASE Group is working to appoint local CEOs and to delegate authority to these individuals. As we accelerate our global expansion, we expect to see locally hired talent rise to top management positions in their respective countries.

#### Cases

#### Global Initiatives

- U.S.: Acquired chemicals distributor Fitz Chem LLC
- China: Wuxi Chenghong Electronic Chemicals Co., Ltd. set up new entity in Mianyang, Sichuan Province
- China: Established Huizhou Sanli Three Synergy Precision Co., Ltd.
- Taiwan: Consolidated liquid crystal glass thin processing business to China
- India: Made additional investment in MINDA KYORAKU, joint venture with major automaker

## ACE-2020 Basic Policy ② Reform Corporate Culture

### Mindset

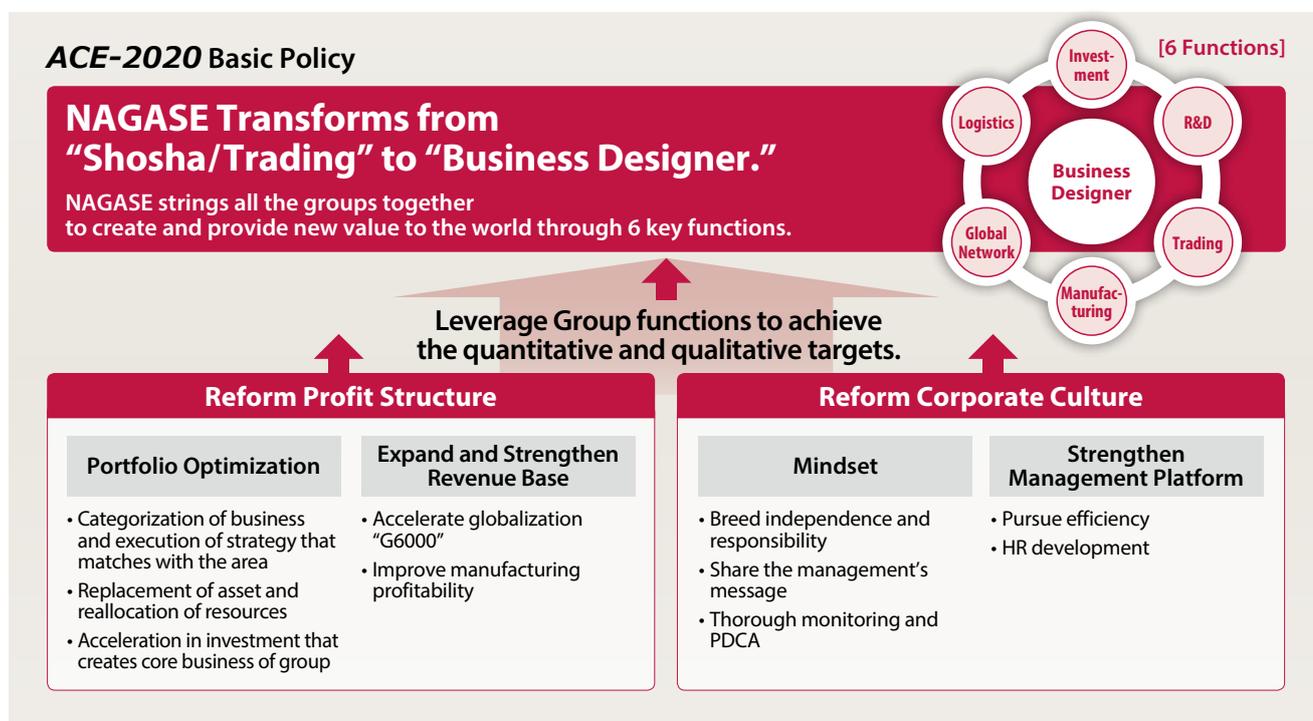
- Foster accountability, responsibility, and risk awareness
- Share top messages, engage in consistent monitoring and PDCA

### Strengthen Management Platform

- Pursue efficiencies, human resource development

If we are satisfied in doing business as usual, we will never reach our desired destination. This is a message that I believe is resonating with every group employee. With greater individual awareness, we see stronger coordination across our divisions. We have also seen a positive change in the language and attitude within the group. In my annual new year address, I share a key phrase I want employees to keep in mind. In 2017, that phrase was *Speed Up*. For 2018, the phrase is *Raise the Bar*. *Raise the Bar* encourages us to be confident in going after more ambitious goals, always moving forward. I will continue to create opportunities to meet employees at their place of work, talking with them directly in my own words.

We will also hold study groups, use internal portal websites, create video messages, publish posters, and use other means to close the gap in mindset between management and the front lines of our businesses. We began holding Top Management Tours in January 2016, sending our chairman, vice chairman, and president to NAGASE locations around the world. To date, we have held more than 180 Top Management Tour events. We will continue interactions that lead to individual growth and a sense of accomplishment in our employees around the world.



## Into the Future

### Not just a trading company, but a *Business Designer*

A business model consisting solely of trading company functions cannot fully respond to this era of radical change. At the NAGASE Group, we use the term *Business Designer* to describe the type of company we want to become. While our main activities have been based in trading and chemicals, we will extend beyond those categories, integrating six functions on a higher level: Trading, R&D, Investment, Logistics, Global Network, Manufacturing. We will engage actively in designing businesses, without placing limits on ourselves. We must create new businesses and systems at the speed of technological innovation, continuing sustainable growth.

In April 2017, we established the New Value Creation Office. This office is engaged in projects that include the use of AI to conduct materials searches. We expect to see concrete results from these projects in fiscal 2018. This is just one way in which we will establish our identity as a company that provides society with new value through AI and other new technologies.

## For Sustainable Growth

### Accelerating cross-organization ESG disclosures

Fiscal 2018 will be a new phase of ESG at the NAGASE Group. We have practiced CSR-related disclosure for some time. However, we recognize the need to collect internal information and revise our disclosure practices from the standpoint of ESG investment, which is a rapidly growing part of the social awareness.

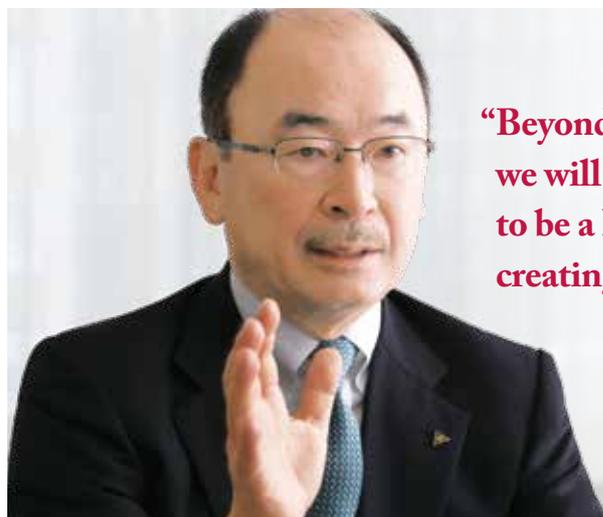
Accordingly, our Corporate Planning Division will take the lead in setting up a cross-organization team that will share information with division general managers and affiliates. The primary consideration of the NAGASE Group is in running our business. In the context of ESG, we must begin our approach with our businesses as they stand today. We are preparing our group to comply with ESG, SDGs, and other social demands, as we design businesses that are useful to society in terms of sustainability. This includes environmental business initiatives, particularly as related to our energy business.

ESG and SDGs are matters we must take seriously to continue to exist as a member of society. Our universal and unchanging management philosophy to maintain good and fair-business practices is a standard by which we make decisions related to ESG, compliance, and more.

## To Our Shareholders and Investors

### Meeting expectations

Our number one goal is the execution of **ACE-2020**. When we first set our goals, people inside and outside our company wondered whether we were stretching too far. Looking at our fiscal 2017 performance, I think these goals can be achieved. I am confident in our growth vector, and I believe we will continue to be a corporate group that rises to meet expectations. We will not stand still. We will set and achieve ambitious goals, weaving the threads of our long-held businesses into the future. As we continue to reform and reach for our vision, we thank you for your understanding and support of the NAGASE Group.



**“Beyond our trading company roots, we will continue to be a Business Designer, creating new value for society.”**

# Our Board

(as of June 22, 2018)

## Sustainable corporate value through management and disclosure accountability



### Directors



1. Representative Director and Chairman  
**Hiroshi Nagase**

2. Director and Vice Chairman  
**Reiji Nagase**

3. Representative Director, President and CEO  
**Kenji Asakura**

4. Representative Director and Senior Managing Executive Officer  
**Mitsuro Naba**  
Corporate Administration

5. Director and Managing Executive Officer  
**Osamu Morishita**

Manufacturing  
Osaka Region  
Energy Business Office  
Special Projects

6. Director and Managing Executive Officer  
**Ichiro Wakabayashi**  
Sales & Marketing

7. Director and Executive Officer

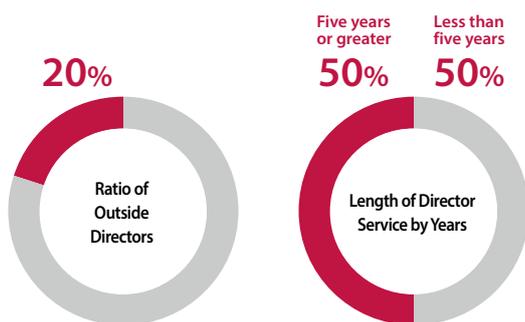
**Takanori Yamauchi**

GM, BPR & Administration Division  
GM, Legal Division  
Information Technology Division  
Human Resources & General Affairs Division

8. Director and Executive Officer

**Masaya Ikemoto**

Group Companies  
GM, Corporate Planning Division  
New Value Creation Office



#### 9. Outside Director

##### Hiddenori Nishi

- 1975 Joined KAGOME CO., LTD.
- 2000 Director, KAGOME CO., LTD.
- 2003 Director and Executive Officer, KAGOME CO., LTD.
- 2005 Director and Managing Executive Officer, KAGOME CO., LTD.
- 2008 Director and Senior Managing Executive Officer, KAGOME CO., LTD.
- 2009 Representative Director and President, KAGOME CO., LTD.
- 2014 Representative Director and Chairman, KAGOME CO., LTD.
- 2016 Chairman of the Board, KAGOME CO., LTD.
- 2018 Retired from KAGOME CO., LTD.

#### 10. Outside Director

##### Nobumasa Kemori

- 1980 Joined Sumitomo Metal Mining Co., Ltd.
- 2006 Managing Executive Officer and Director, Sumitomo Metal Mining Co., Ltd.
- 2007 Representative Director and President, Sumitomo Metal Mining Co., Ltd.
- 2013 Representative Director and Chairman, Sumitomo Metal Mining Co., Ltd.
- 2016 Director and Chairman, Sumitomo Metal Mining Co., Ltd.
- 2017 Executive Adviser, Sumitomo Metal Mining Co., Ltd.

### Audit & Supervisory Board Members



**Audit & Supervisory Board Member**  
**Kenichi Matsuki**



**Audit & Supervisory Board Member**  
**Masanori Furukawa**



**Outside Audit & Supervisory Board Member**  
**Nobuyuki Shirafuji**

- 1984 Joined the Sumitomo Bank, Ltd. (currently Sumitomo Mitsui Banking Corporation)
- 2003 General Manager of the London Group of Global Corporate Investment Dept. of Sumitomo Mitsui Banking Corporation and Sumitomo Mitsui Banking Corporation Europe Limited
- 2006 General Manager of Credit Dept., Europe, Middle East and Africa Division (London) of Sumitomo Mitsui Banking Corporation and Sumitomo Mitsui Banking Corporation Europe Limited
- 2013 General Manager of Credit Review Dept. of Sumitomo Mitsui Banking Corporation
- 2016 Retired from Sumitomo Mitsui Banking Corporation  
Audit & Supervisory Board Member, NAGASE & CO., LTD.



**Outside Audit & Supervisory Board Member (part-time)**  
**Gan Matsui**

- 1980 Prosecutor, Tokyo District Public Prosecutors Office
- 1990 Prosecutor, Tokyo District Public Prosecutors Office (Special Investigative Squad)
- 2005 Director, Special Trial Department, Tokyo District Public Prosecutors Office
- 2010 Assistant Public Prosecutor, Osaka High Public Prosecutors Office
- 2012 Chief, Criminal Investigations, Supreme Public Prosecutors Office
- 2014 Chief Prosecutor, Yokohama District Public Prosecutors Office
- 2015 Superintending Prosecutor, Fukuoka High Public Prosecutors Office
- 2016 Japan Federation of Bar Associations (Member, Tokyo Bar Association) Yaesu Sogo Law Office
- 2018 Audit & Supervisory Board Member, NAGASE & CO., LTD.

### Executive Officers

##### Akihiko Isono

Managing Executive Officer  
Nagase ChemteX Corporation

##### Naoki Yasuba

Managing Executive Officer  
Hayashibara Co., Ltd.  
Nagase R&D Center

##### Mitsuru Kanno

Executive Officer  
CEO, Nagase (Europa) GmbH

##### Masatoshi Kamada

Executive Officer  
CEO, Greater China  
COO, Nagase Business Management & Planning (Shanghai) Co., Ltd.

##### Yasuhiro Mihara

Executive Officer  
GM, Speciality Chemicals Department

##### Takahiro Okumura

Executive Officer  
GM, Electronic Chemicals Department

##### Kusuo Ota

Executive Officer  
GM, Colors & Advanced Processing Department  
Nagase Application Workshop

##### Hiroyuki Ueshima

Executive Officer  
GM, Automotive Solutions Department  
Nagoya Branch

##### Koichi Sagawa

Executive Officer  
GM, Polymer Global Account Department

##### Akira Takami

Executive Officer  
GM, Finance Division  
GM, Accounting Division

##### Takayuki Masuda

Executive Officer  
CEO, ASEAN and India

# Corporate Governance

<p>Director Term of Service</p> <hr/> <p><b>One Year</b> (same for outside directors)</p>	<p>Number of Independent Directors</p> <hr/> <p><b>4</b> (all outside directors)</p>	<p>Institutional Format</p> <hr/> <p>Corporation with Board of Directors and Audit &amp; Supervisory Board Members (Audit &amp; Supervisory Board)</p>	<p>Total Number of Directors</p> <hr/> <p><b>10</b></p>
<p>Number of Outside Directors</p> <hr/> <p><b>2</b></p>	<p>Executive Officer System Adopted</p> <hr/> <p><b>Yes</b></p>	<p>Total Number of Audit &amp; Supervisory Board Members</p> <hr/> <p><b>4</b></p>	<p>Number of Outside Audit &amp; Supervisory Board Members</p> <hr/> <p><b>2</b></p>
<p>Number of Board of Directors Meetings</p> <hr/> <p><b>16</b></p> <p>(Attendance by Outside Directors) Mr. Hidenori Nishi, 100% Mr. Nobumasa Kemori, 100% (Attendance by Outside Audit &amp; Supervisory Board Members) Mr. Nobuyuki Shirafuji, 100%</p>	<p>Compensation Committee</p> <hr/> <p><b>Yes</b></p>	<p>Number of Audit &amp; Supervisory Board Meetings</p> <hr/> <p><b>16</b></p>	<p>Independent Auditor</p> <hr/> <p><b>Ernst &amp; Young ShinNihon LLC</b></p>

## Compliance with the Corporate Governance Code (as of July 1, 2018)

We have complied with all aspects of the Corporate Governance Code since fiscal 2016.

To improve corporate value over the medium and long term, we believe that it is important to continually assess and verify our status, beyond simply creating the systems and structures. We are committed to continuing the improvement of our corporate governance.

With the fiscal 2018 revision of the Corporate Governance Code, we are taking another look at each provision to achieve even more effective and appropriate corporate governance.

Please refer to our corporate governance report for more information.

## Basic Approach

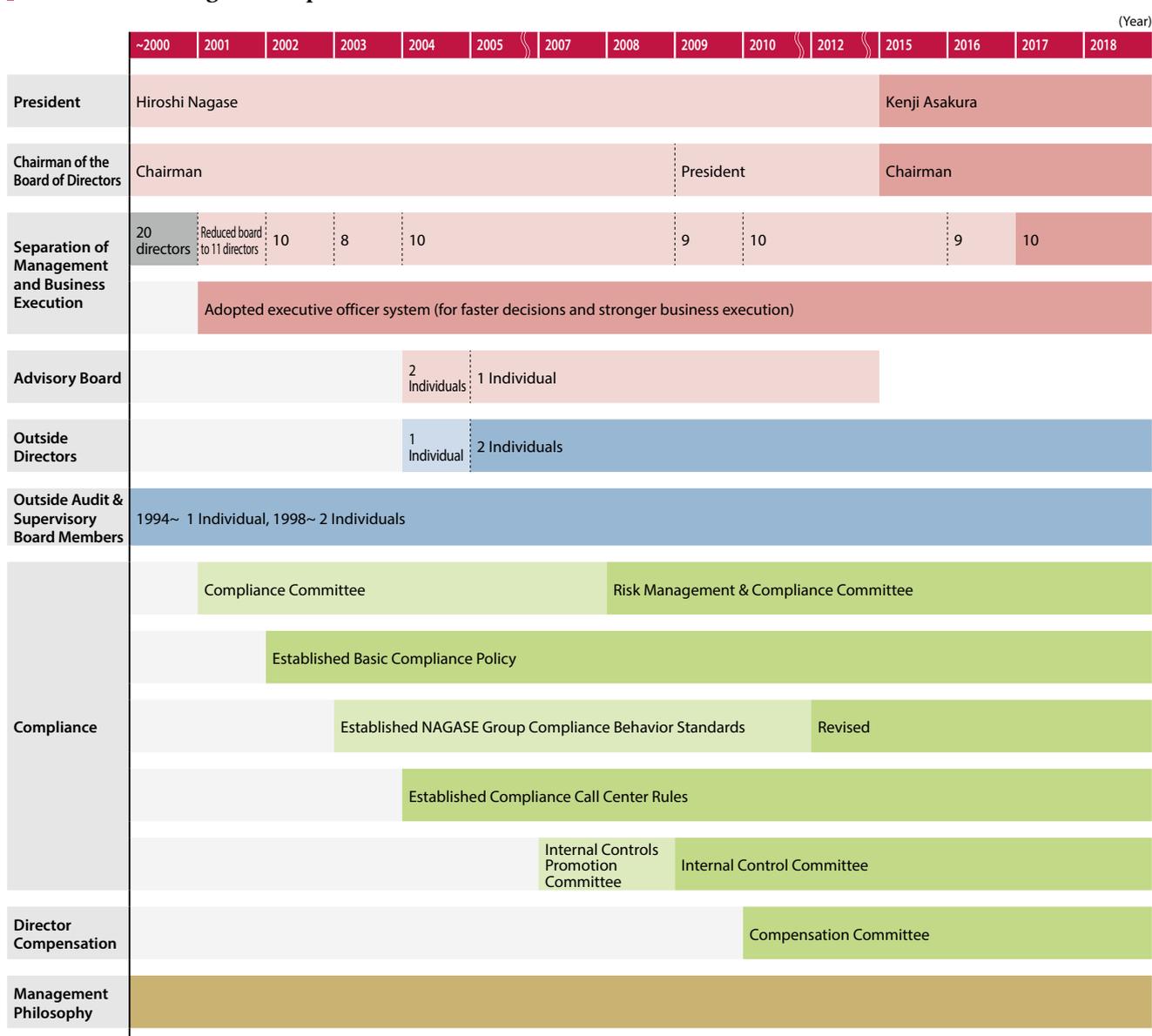
The NAGASE Management Philosophy states that “We recognize our responsibility to society and offer beneficial products and services while maintaining the highest standards of integrity. Through our growth, we will contribute to society and enrich the lives of our employees.”

Building upon this philosophy, the NAGASE Vision makes a promise to our stakeholders. Our vision states, “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.”

To put these principles and vision into practice, we established a framework for sustainable growth in any business climate. This framework of our long-term management policy includes Challenges for Growth and Reinforce the Management Platform for Growth. We are improving our corporate value over the medium and long term guided by this framework.

We believe that rapid decision-making, execution, and transparency are essential for us to accomplish these initiatives as we engage in strengthening our corporate governance.

### Initiatives to Strengthen Corporate Governance



## Governance System

Under a corporate system that adopts an Audit & Supervisory Board, NAGASE introduced the executive officer system in June 2001. The Company's current management framework consists of 10 directors (including 2 outside directors), 17 executive officers (6 of whom concurrently serve as directors), and 4 Audit & Supervisory Board Members (including 2 outside Audit & Supervisory Board Members). NAGASE has also established the following committees to reinforce its corporate governance function.

### NAGASE's Corporate Governance System

#### 1 Board of Directors

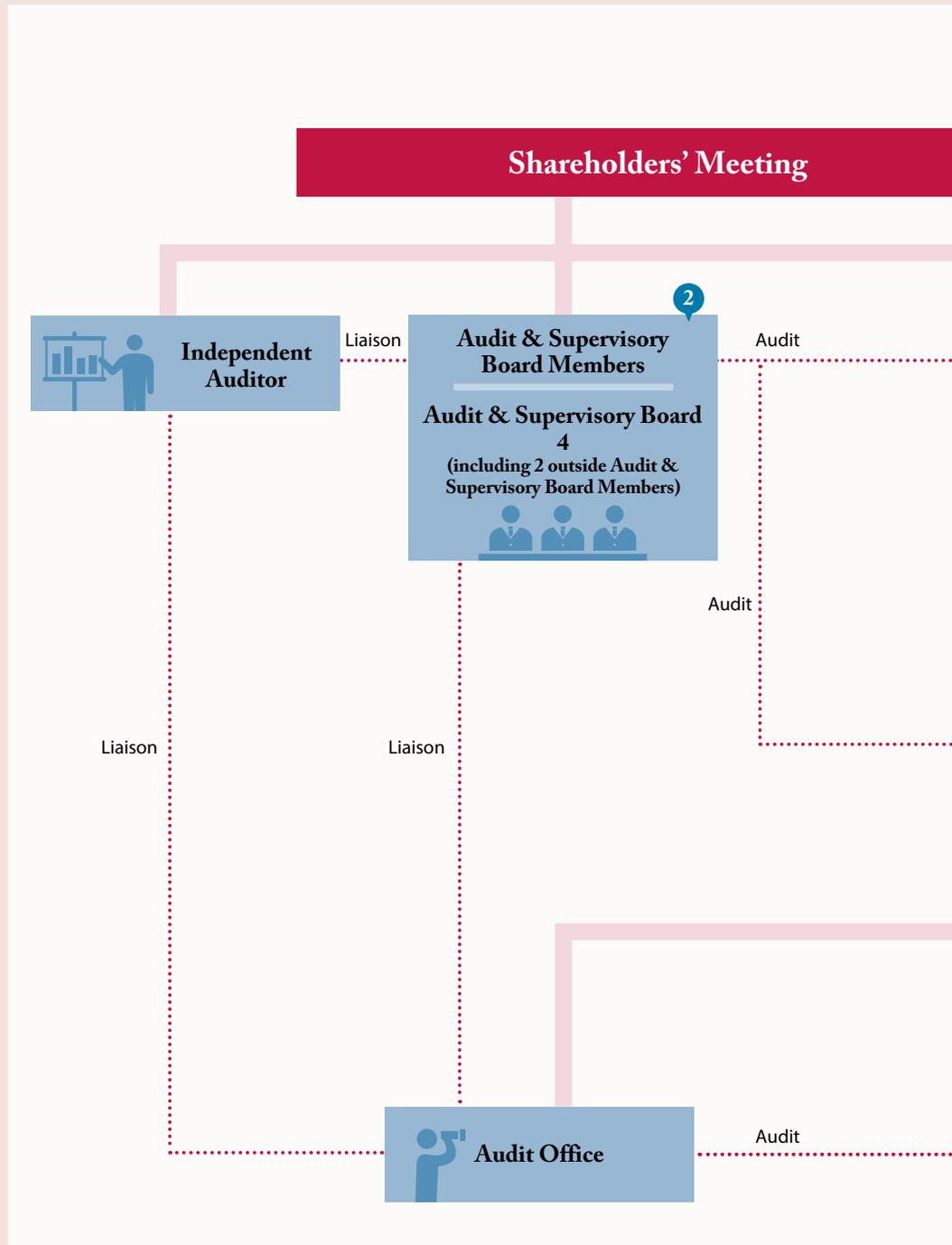
The Board of Directors is clearly positioned as the body in charge of making decisions on management policies and strategies, and it supervises the execution of operations. Holding a regular monthly meeting, the Board of Directors reviews and formulates measures regarding important decisions and tracks business performance.

#### 2 Audit & Supervisory Board/Audit & Supervisory Board Members

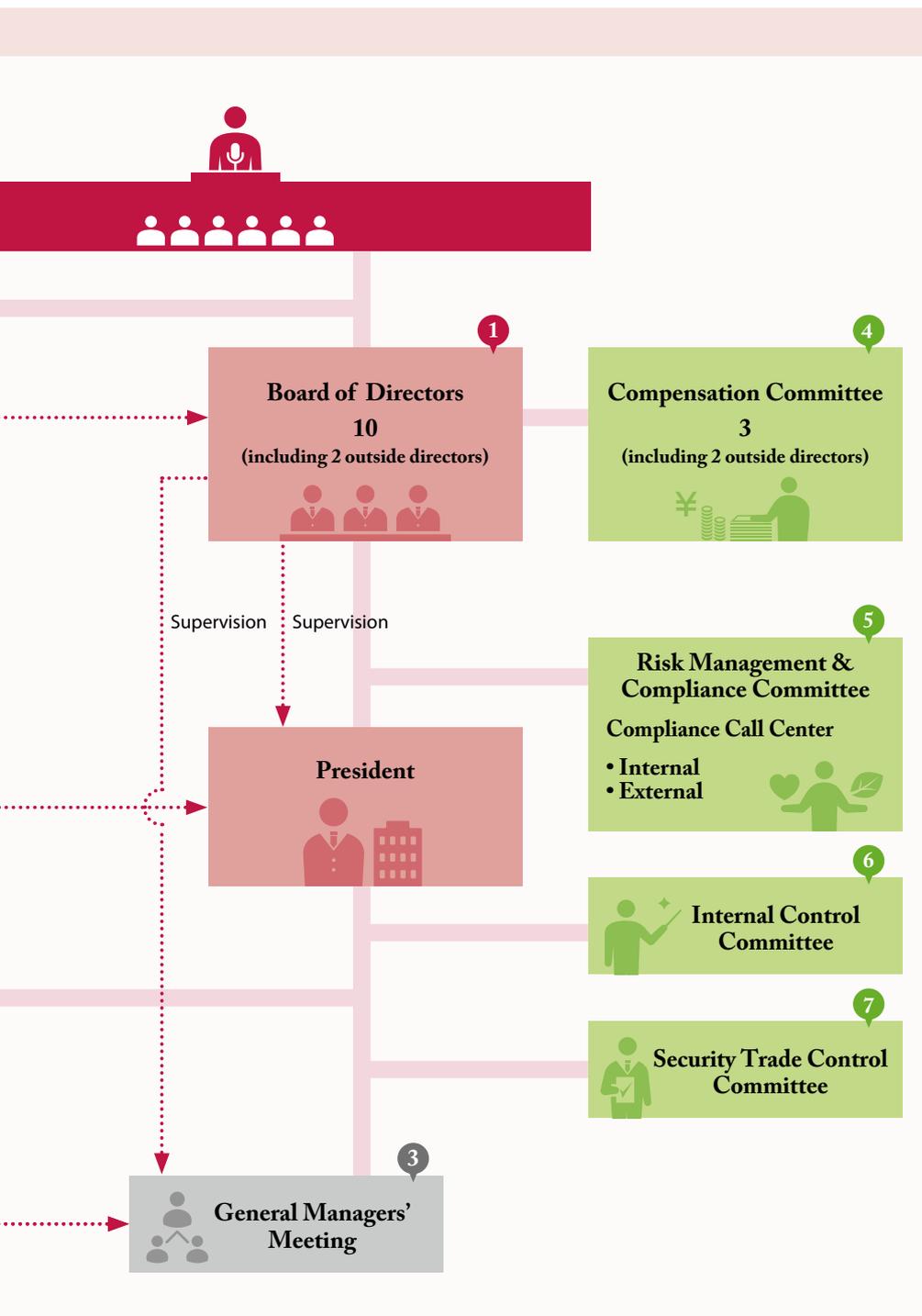
In accordance with audit policy and standards for responsible work set at Audit & Supervisory Board meetings, Audit & Supervisory Board Members attend important meetings, such as Board of Directors meetings, and conduct audits of the execution of duties of directors based on reports solicited from subsidiaries on an as-needed basis.

#### 3 Executive Officers

Executive officers attend General Managers' Meetings, where each department provides a status report, which is discussed by meeting attendees before an action plan is formulated.



Under the executive officer system, the NAGASE corporate governance system collaborates various internal committees to appoint outside directors and members to the Audit & Supervisory Board as well as to reinforce its corporate governance system. Having secured supervision and auditing functions that operate from diversified perspectives, including from outside the Company, NAGASE believes the current corporate governance system is more rational than ever. We will increase our efforts to further reinforce our corporate governance system to secure the trust of our stakeholders.



#### 4 Compensation Committee

With the majority of its members made up of outside directors, the Compensation Committee ensures the objectivity and transparency of the Company's directors and executive officers in the decision-making process regarding compensation by screening the appropriateness of every compensation level and the compensation system to report and make recommendations to the Board of Directors.

#### 5 Risk Management & Compliance Committee

As a consultative body for the Board of Directors, the Risk Management & Compliance Committee establishes and strengthens risk management and compliance systems that cover not only legal compliance but also corporate ethics. The committee also maintains ISO environmental management standards and promotes energy conservation initiatives.

#### 6 Internal Control Committee

The Internal Control Committee documents the Company-wide internal control conditions and financial statement preparation process to further enhance its financial reporting credibility, while maintaining and strengthening a structure to carry out evaluation and improvements.

#### 7 Security Trade Control Committee

The Security Trade Control Committee thoroughly complies with export related laws and regulations in relation to foreign currency exchange and foreign trade for its trading of cargos and technologies covered by such laws and regulations.

## Director Compensation

Director compensation (excluding outside directors and Audit & Supervisory Board Members) consists of a basic salary commensurate with the position and performance incentives (bonuses). The Company calculates compensation based on director compensation rules, contingent upon approval by the board of directors. Performance incentives (bonuses) reflect individual performance based on the Goal Management System after a basic payment amount is decided, based on Company earnings for the period in question.

The Compensation Committee, a majority of whom are outside directors, assesses the validity of compensation standards and systems, reporting to and advising the board of directors. This ensures improved objectivity and transparency in the director compensation decision-making process.

### Total Director Compensation by Title/Total Compensation by Type/Number of Eligible Directors

(Millions of yen)

Title	Total Compensation	Total Compensation by Type		Number of Eligible Directors
		Basic Compensation	Bonus	
Directors (excluding Outside Directors)	391	227	164	8
Audit & Supervisory Board Members (excluding Outside Audit & Supervisory Board Members)	44	44	0	3
Outside Officers	50	49	0	4

### Important Matters regarding Employee Bonuses for Employees Also Serving as Directors

(Millions of yen)

Total Compensation	Number of Eligible Directors	Comments
39	4	Paid in an amount equivalent to employee bonus.

## Audit System

### [Status of Audit by Internal Auditors]

The Audit Office is in charge of internal audits, including audits to assess the appropriateness and efficiency of the Company's business activities, including those of subsidiaries, based on internal auditing rules. The Audit Office is staffed by nine employees, including certified internal auditors (CIA), qualified internal auditors (QIA), and other individuals who possess specialized knowledge in internal audits.

### [Status of Audit by Audit & Supervisory Board Members]

Four Audit & Supervisory Board Members (including two outside Audit & Supervisory Board Members) who have a considerable amount of knowledge about finance and accounting conduct Audit & Supervisory Board Members' audits. The Audit & Supervisory Board meets regularly every month to receive reports from Audit & Supervisory Board Members regarding the status and results of audits. The Audit & Supervisory Board also received reports from the board of directors and independent auditor regarding the performance of their duties. Each Audit & Supervisory Board Member

works to communicate with the board of directors, Audit Office, and other employees in keeping with the Audit & Supervisory Board Members' audit standards set by the Audit & Supervisory Board and with auditing policies and plans. Audit & Supervisory Board Members audit the performance of duties by the board of directors, attending meetings of the board of directors and other important meetings and seeking reports, if needed, from subsidiaries.

### [Status of Audit by Independent Auditor]

Independent audits are performed in a fair and impartial manner by a total of 36 audit staff, including the following specified limited liability partners, as well as other certified public accountants.

Certified Public Accountants		Auditing Firm
Specified limited liability partners	Mikio Konishi	Ernst & Young ShinNihon LLC
	Hideo Yamamoto	
Managing partners	Yasuhiro Takada	

### [Coordination among Internal Auditors, Audit & Supervisory Board and Independent Auditor]

The Audit Office and Audit & Supervisory Board Members exchange information as appropriate regarding internal audits and audits of domestic and overseas affiliates. The office and auditors hold meetings periodically to report and exchange opinions on audit results, as well as to enhance the quality and efficiency of audits.

Audit & Supervisory Board Members and the independent auditor collaborate in a wide range of functions. They trade opinions on their perceptions of risk, and routinely meet regarding individual incidents. When necessary, Audit & Supervisory Board Members observe site visits and audit reviews performed by the independent auditor. Audit & Supervisory Board Members meet each quarter with the independent auditor to hear reports about the results of audits and reviews. At these meetings, they also learn the independent auditor's auditing plans and audit status.

## Independence Standards and Policies for Outside Directors and Audit & Supervisory Board Members

NAGASE & CO., LTD. selects candidates for outside director in accordance with the standards of independence stipulated by the Financial Instruments Exchange, and who have the ability to identify issues from a perspective representing the interests of stakeholders and society at large. The Company selects candidates for outside Audit & Supervisory Board Member who have a wealth of knowledge and experience in a variety of fields, and who have the ability to conduct audits from a standpoint of neutrality and objectivity.

The Company has designated a total of four outside directors and Audit & Supervisory Board Members as independent: Mr. Hidenori Nishi and Mr. Nobumasa Kemori as outside directors, and Mr. Nobuyuki Shirafuji and Mr. Gan Matsui as outside Audit & Supervisory Board Members.

Category	Name	Reason for Appointment	Attendance at FYE March 2018 Board Meetings	Concurrent Titles/Responsibilities
Outside Directors	Hidenori Nishi	Hidenori Nishi has been involved in the management of KAGOME CO., LTD. for many years and possesses advanced knowledge and extensive experience regarding corporate management. He will use this knowledge and experience to make proposals concerning the Company's overall management from a perspective of familiarity with industry and is expected to enhance the Company's corporate governance.	16/16	Chairman, Japan Cannery Association
	Nobumasa Kemori	Nobumasa Kemori has been involved in the management of Sumitomo Metal Mining Co., Ltd. for many years and possesses advanced knowledge and extensive experience regarding corporate management. He will use this knowledge and experience to make proposals concerning the Company's overall management from a perspective of familiarity with industry and is expected to enhance the Company's corporate governance.	16/16	Executive Adviser, Sumitomo Metal Mining Co., Ltd. Outside Director, JFE Holdings, Inc.
Outside Audit & Supervisory Board Members	Nobuyuki Shirafuji	Nobuyuki Shirafuji possesses a wide range of knowledge based on his many years of overseas experience in financial institutions. He also has many years of experience in audits and audit departments, possessing considerable knowledge regarding finance and accounting. Accordingly, we believe he will properly perform his duties as an outside Audit & Supervisory Board Member.	16/16	N/A
	Gan Matsui	Gan Matsui has a wealth of experience in legal circles and considerable knowledge of compliance and governance. Accordingly, we believe he will properly perform his duties as an outside Audit & Supervisory Board Member.	—	Attorney, Yaesu Sogo Law Office Outside Audit & Supervisory Board Member, Orient Corporation Outside Audit & Supervisory Board Member, Totetsu Kogyo Co., Ltd. Outside Director, Audit and Supervisory Committee, GLOBERIDE, Inc.

(Note) The number of Board of Directors meetings noted above does not include resolutions made in writing.

## Policies Related to Company Information Disclosure

Pursuant to the NAGASE Group Compliance Behavior Standards, we engage in ongoing communications with society and our stakeholders through timely disclosure of truly important information over appropriate channels. We are mindful that all corporate activities remain within the bounds of socially accepted norms.

This basic philosophy guides us as we conduct timely, appropriate, and fair disclosure of information through investor relations activities, public relations programs, and websites for our shareholders and investors to improve management transparency and accountability.

See "Timely Disclosure System" on our corporate website for more.

### Major Investor Relations Activities during Fiscal 2017

Activity	No. of Events	Comments
Conferences/briefings for institutional investors and analysts	2	Financial results disclosure, forecasts, special topics (year-end, interim)
Individual investor conferences/meetings	10	Conducted at branches of securities companies
Overseas roadshows	1	President and CFO traveled overseas to meet directly, have discussions with institutional investors
Overseas conferences	1	Participation in conferences sponsored by securities companies

## Business Continuity Planning

### Fiscal 2017 Results

During the fiscal year ended March 2018, we held disaster-preparedness drills (fire drills) in July (Tokyo and Osaka Head Offices) and August (Nagoya branch office). In February (Tokyo Head Office) and March (Osaka head office, Nagoya branch office), we practiced initial responses to a major disaster scenario for our Fire Prevention Head Office, Facilities Confirmation Team, Information Systems Team, and Logistics confirmation Team.

In the event of a large-scale disaster making the continued use of our Tokyo Head Office unfeasible, we have the option of using the NAGASE Global HR Development Center (opened May 2014 in Sendagaya, Tokyo) as a backup office. During December 2017, we implemented disaster prevention BCP response training.

### Fiscal 2018 Initiatives

As in fiscal 2017, we will continue to conduct emergency response training to improve initial response quality and speed. We will conduct disaster prevention BCP training for the NAGASE Global HR Development Center (backup office location) to improve our disaster preparedness and response.

# At a Glance



## Functional Materials



Performance Chemicals Department P. 34

Speciality Chemicals Department P. 35



## Advanced Materials & Processing



Colors & Advanced Processing Department P. 36

Polymer Global Account Department P. 37



## Electronics

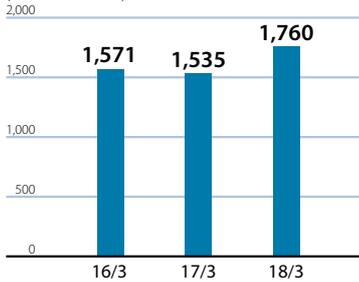


Electronic Chemicals Department P. 38

Electronic Materials Department P. 39

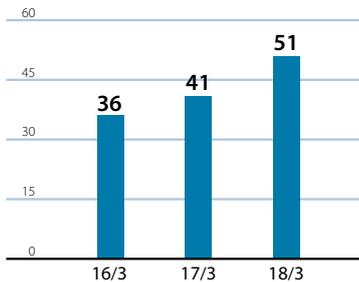
### Net Sales

(¥ hundred million)



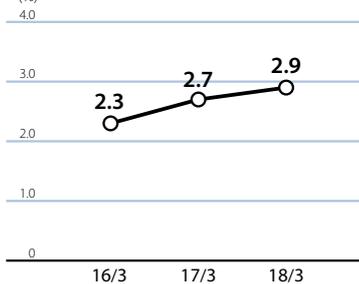
### Operating Income

(¥ hundred million)



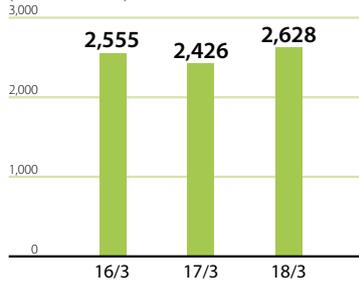
### Operating Margin

(%)



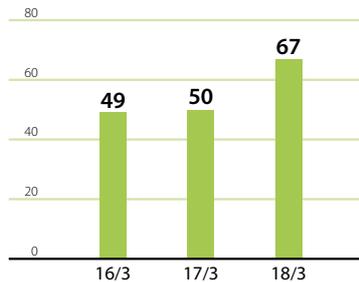
### Net Sales

(¥ hundred million)



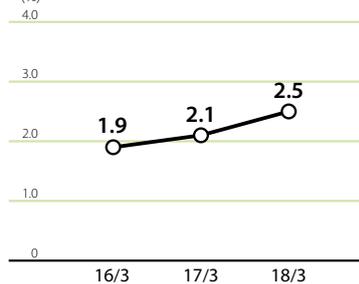
### Operating Income

(¥ hundred million)



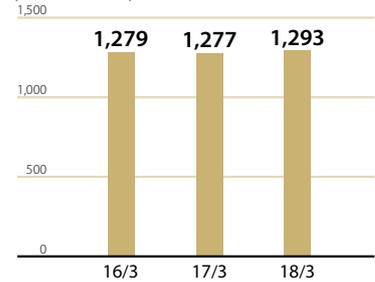
### Operating Margin

(%)



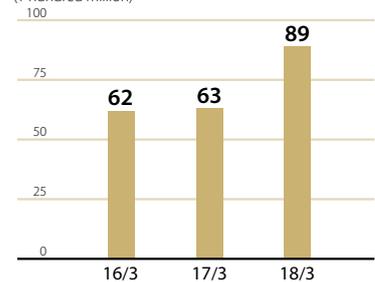
### Net Sales

(¥ hundred million)



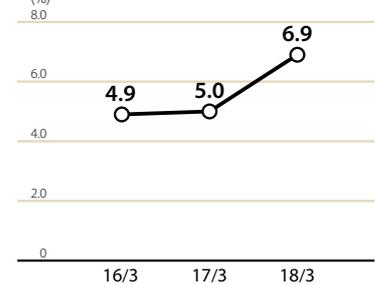
### Operating Income

(¥ hundred million)



### Operating Margin

(%)





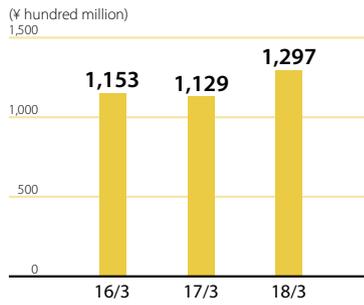
## Automotive & Energy



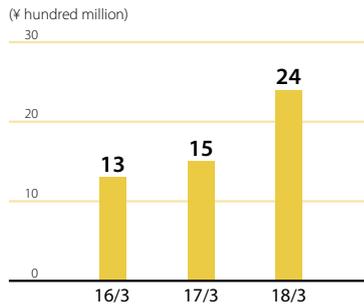
**Automotive Solutions Department** P. 40

**Energy Business Office** P. 41

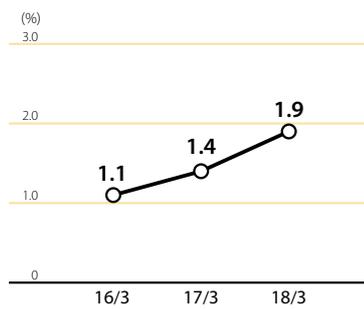
### Net Sales



### Operating Income



### Operating Margin



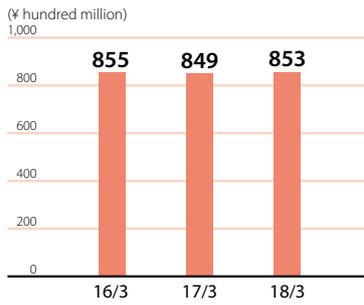

## Life & Healthcare



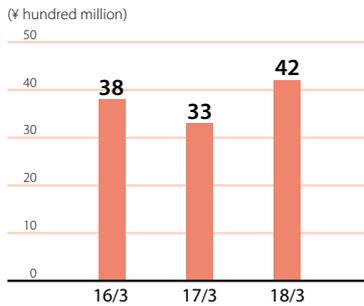
**Life & Healthcare Products Department** P. 42

**Beauty Care Products Business** P. 43

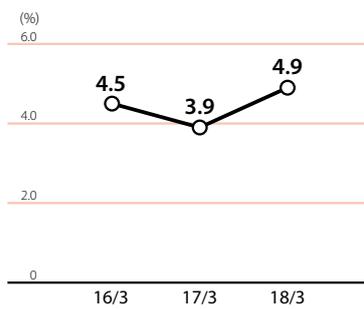
### Net Sales



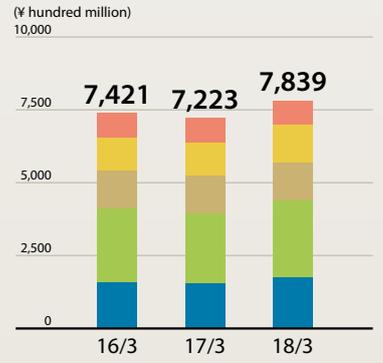
### Operating Income



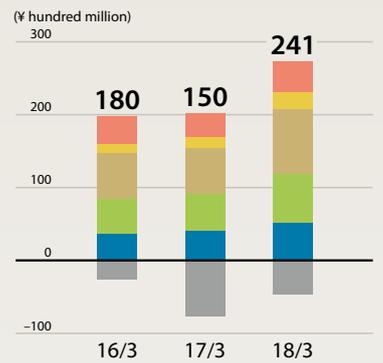
### Operating Margin



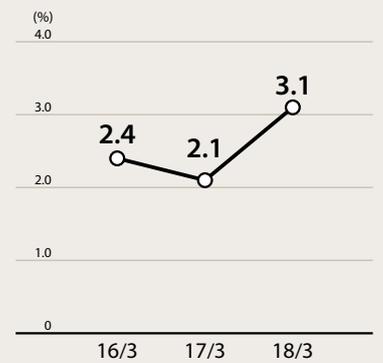
## Net Sales by Segment



## Operating Income by Segment



## Operating Margin



# Performance by Segment

Functional Materials

## Performance Chemicals Department

### Major Manufacturers

- Toyo Quality One Ningbo Co., Ltd.
- Guangzhou Kurabo Chemicals Co., Ltd.
- Toyo Quality One (Guangzhou) Co., Ltd.
- PT. Toyo Quality One Indonesia
- TQ-1 de MEXICO S.A. de C.V.
- Light Chemical (Changzhou) Co., Ltd.
- Cytech Products Inc.
- DAITAI KAKO CO., LTD.



GM, Performance Chemicals Department  
**Tamotsu Isobe**

### NAGASE Market Strengths and the Business Environment

	Strengths	Business Environment
Paints and Inks Industry	<ul style="list-style-type: none"> <li>■ Organization and staff specialized in the global paints and inks industry</li> <li>■ Domestic and overseas sales channels</li> <li>■ Unique solutions as a trading company with R&amp;D, manufacturing, and processing functions</li> </ul>	<ul style="list-style-type: none"> <li>■ Growing demand for paints and inks in overseas markets</li> <li>■ Business growth with local (non-Japanese) customers overseas</li> </ul>
Urethane Industry	<ul style="list-style-type: none"> <li>■ Strong customer pipeline supported by consultative sales</li> <li>■ Packaged sales of various urethane materials</li> <li>■ Overseas sales network</li> </ul>	<ul style="list-style-type: none"> <li>■ Growing demand for urethane in emerging countries</li> <li>■ Accelerating customer (Japanese companies) entry in overseas markets</li> <li>■ Higher awareness of energy conservation, the environment, and bio-based chemistry</li> </ul>

## Fiscal 2017 Strategies and Results

Fiscal 2017 marked the second year of our **ACE-2020** mid-term management plan. During the year, the Performance Chemicals Department pursued three key measures: (1) Build a stronger domestic business foundation, (2) Strengthen overseas business, and (3) Cultivate new businesses.

To strengthen our overseas business, we acquired U.S. chemical distributor Fitz Chem LLC, gaining a foothold to grow our coating raw materials business.

As part of our efforts to cultivate new businesses, we acquired DAITAI KAKO CO., LTD., a medium-sized paint manufacturer. Here, we have secured a manufacturing base to build on our strengths in developing new materials.

Our urethane business continues to grow, as we sell raw materials through global joint ventures and other channels. We continue to develop synergies by working with partners, beyond raw materials sales.

Our department recorded higher sales and profits, owing to our two acquisitions, a recovery in Japanese raw materials sales due to environment regulations in China, soaring prices for naphtha and other raw materials, and other contributing factors.

## Fiscal 2018 Strategies

During the third year of **ACE-2020**, we will continue to pursue our three key measures, growing our business by leveraging the NAGASE Group network and value chain.

Our focus for overseas growth will be North America, as we align with Fitz Chem to build sales of Japanese

functional materials in the region. We also plan to develop new products and grow sales of urethane mold release agents through Cytech Products Inc., our joint venture in North America.

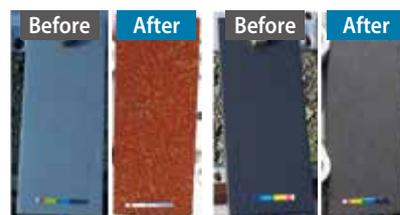
In new business development, we are working to penetrate the market with our Pat!naLock™ reactive coating, registered with NETIS (New Technology Information System) in 2017. We are also establishing a business for our carbon hybrid™ coating system.

We will cooperate faster with our domestic customers (partners) to build a stronger presence in the coating and urethane industries.

### TOPICS New Pat!naLock™ Reactive Paint



Using rust prevention by the protective rust is a new concept not found in current anti-rust paint. Based on this concept, we developed a reactive paint that brings a new dimension in maintenance management. We can inhibit the progression of common rust by creating a dense protective rust layer (Patina) when applied to a steel surface to be coated.



In 2018, this technology received the Second Annual Infrastructure Maintenance Award

**Bare Steel PatinaLock®**

## Speciality Chemicals Department

### Major Manufacturers

- Nagase ChemteX Corporation
- Nagase Filter Co., Ltd.



Executive Officer  
General Executive, Functional Materials Segment  
GM, Speciality Chemicals Department

**Yasuhiro Mihara**

### NAGASE Market Strengths and the Business Environment

Strengths	Business Environment
<ul style="list-style-type: none"> <li>■ Strong trust relationship with customers</li> <li>■ Material development capabilities along with advancement of EV, IoT, 5G, and other technologies</li> <li>■ Unique technology-oriented sales and innovation, utilizing information from the value chain</li> <li>■ Experience in a variety of diverse chemical products, tailored to customer needs, from general purpose to speciality</li> </ul>	<ul style="list-style-type: none"> <li>■ AI technology research in the chemical industry</li> <li>■ Restructuring in the petrochemical industry (including biochemicals)</li> <li>■ Increasing need for high-function, high value-added products</li> <li>■ Trends in chemical manufacturing prompted by environmental regulations in China</li> <li>■ Stricter global environmental regulations (Paris Agreement, etc.)</li> </ul>

### Fiscal 2017 Strategies and Results

As we worked to realize our vision to reform our profit structure during the second year of our **ACE-2020** mid-term management plan, we saw a definite change in employee value perception and attitude. As a result, we achieved targets and delivered higher profits in our core businesses, including compounding technologies, organic synthesis technologies, and polymer technologies.

Operations have stabilized at the new Nagase Filter Co., Ltd. Fukui Plant. In addition to filter manufacturing technology, we have developed unique cleaning technology that will offer new value to customers.

### Fiscal 2018 Strategies

To completely reform our profit structure during the third year of **ACE-2020**, we will continue to invest in businesses and work on alliances with business partners, striving to deliver early successes for new businesses.

We also plan to bolster development activities in our Nagase ChemteX market development team, newly formed in 2017. We will use our global marketing resources to find more sales in existing markets.

#### TOPICS

### Growing Businesses that Comply with Stricter Global Environmental Regulations Building a Circular Economy and Contributing to the Global Environment ~Supporting Customer ESG Investment~



In Singapore, where the government has instituted a carbon tax, NAGASE has adopted REARTH™ (product by MORIKAWA INDUSTRIES CORPORATION) for affected companies. REARTH contributes to reduced CO<sub>2</sub> emissions and lower costs.

We have also adopted the wastewater treatment system developed by Aience Limited. This system solves several customer issues, reducing related electricity and treatment costs, while increasing total treatment capacity.



MORIKAWA INDUSTRIES CORPORATION REARTH™



Aience Limited Aquablaster™

## Colors & Advanced Processing Department

### Major Manufacturers

- Fukui Yamada Chemical Co., Ltd.
- Sofix LLC
- Nagase ChemteX Corporation
- Hayashibara Co., Ltd.
- Totaku Industries, Inc.
- Kotobuki Kasei Corporation
- ON Textile Chemicals (Shanghai) Co., LTD.



Executive Officer  
GM, Colors & Advanced Processing Department  
Nagase Application Workshop

**Kusuo Ota**

### NAGASE Market Strengths and the Business Environment

	Strengths	Business Environment
Digital Printing Supply Industry	<ul style="list-style-type: none"> <li>■ Manufacturing bases</li> <li>■ Highly specialized global network</li> </ul>	<ul style="list-style-type: none"> <li>■ Changing market needs for customers overseas and among advanced economies (industry digitalization/paperless, online sales, etc.)</li> </ul>
Colors & Additives Industry	<ul style="list-style-type: none"> <li>■ Relationships with top manufacturers, customers</li> <li>■ Expertise in colors and dispersion processing</li> <li>■ Ability to distribute a wide variety of products, small-batch sales</li> </ul>	<ul style="list-style-type: none"> <li>■ Needs and expanding market for decorative materials and distributed processing</li> <li>■ Overseas expansion of Japan-based customers</li> </ul>
Polymer Products Industry	<ul style="list-style-type: none"> <li>■ Personnel with international experience and expertise in films, resins, molding, and masterbatches industries</li> <li>■ Relationships with suppliers that have strong product lineups</li> <li>■ Information resources at numerous top-class business partners</li> </ul>	<ul style="list-style-type: none"> <li>■ Diversification and polarization of needs</li> <li>■ Increasing awareness of safety and environmentally conscious products</li> <li>■ Growth of medical, diagnostics, and nursing care markets</li> </ul>

### Fiscal 2017 Strategies and Results

Despite weakness in functional film materials, functional dyes, and construction materials during fiscal 2017, we recorded strong results in other businesses, including color pigments, copolyester resins, and thermal-related products. As a result, the Colors & Advanced Processing Department recorded higher sales and profits for the year.

We accelerated cross-department projects between sales and development teams. We reorganized sales teams in order to strengthen focus on key fields for resin sales. We will continue to use the PDCA cycle in development projects, defining clear paths toward commercialization.

### Fiscal 2018 Strategies

The Colors & Advanced Processing Department exists mid-stream in the value chain as a part of the Advanced Materials & Processing segment. From our position, we are able to match upstream seeds and downstream needs for markets, industries, and our clients.

During fiscal 2018, we plan to execute on the Identify and Develop concepts of the NAGASE Vision, focusing on business matching activities to find new business opportunities.

We intend to conduct fundamental trading company activities to delve deeper into the core businesses within the digital printing supply, colors and additives, functional film materials, and resin processing businesses in our department.

We will also seek potential opportunities to expand commercial rights for strategic products (pigments, additives, and resins) outside the borders of Japan.

At the same time, we will strive to improve our abilities as a vendor to provide trading +  $\alpha$  (basic and added value) functions that offer solutions to a variety of issues with which our customers struggle.

Further, we intend to strengthen cooperative business activities for cross-organization projects involving our department and NAGASE affiliates across a wide range of industries.

We believe that personal, cross-department networks promote communications and perspectives based on different business experiences. We will leverage these networks to bring the power of our integrated business to bear and to strengthen our capacity to design businesses. These advancements will be an important link in training future business leaders in our department.

#### TOPICS Copolyester Resin Tritan™

We expect to grow sales of copolyester resins as these products are embraced throughout the world as part of a trend to avoid environmental issues. We will engage in a number of measures to raise the profile of our copolyester resins among our customers and end users in the Japanese market.



Copolyester Resin Tritan™

## Polymer Global Account Department

### Major Manufacturers

- Setsunan Kasei Co., Ltd.
- Dainichi Color Vietnam Co., Ltd.



Executive Officer  
GM, Polymer Global Account Department  
**Koichi Sagawa**

### NAGASE Market Strengths and the Business Environment

	Strengths	Business Environment
Resin Sales Business	<ul style="list-style-type: none"> <li>■ Expanding sales network in Asia-Pacific and other regions (personnel, offices, logistics bases)</li> <li>■ Abundant national staff with experience and expertise</li> <li>■ Spec-in functions for end users</li> <li>■ Size and number of transactions with Japanese and non-Japanese affiliated customers</li> <li>■ Strong partnerships with leading suppliers in Japan and around the world</li> </ul>	<ul style="list-style-type: none"> <li>■ Growing business opportunities in inland China and newly emerging countries in the Asia-Pacific region</li> <li>■ Increasing local spec business</li> <li>■ Business reorganization among suppliers</li> </ul>

### Fiscal 2017 Strategies and Results

Strong performance in Japan, China, and Southeast Asia resulted in higher sales and profits for fiscal 2017.

Sales of plastics grew significantly, despite a challenging environment of tight supply. Some of this growth was due to our handling products being used as main materials in new products offered by our strong-selling customers.

In China, we saw greater adoption of our products in focus areas (office equipment, appliances, game devices, electric and electronics). New applications of our materials in products related to the rapidly evolving AI, IoT, and other technology innovations also had a positive impact on performance.

In Southeast Asia, we recorded significant sales growth, securing new business that was transferred from China, while driving more sales in our existing local spec business.

In Japan, we provided expanded logistics functions at our sales subsidiaries, resulting in higher sales of plastics. Sales of high-performance films rose, while greater earnings among affiliated manufacturing companies also contributed to earnings in a significant way.

As a whole, fiscal 2017 was a year in which we built a stronger foundation for our businesses as we head into the final year of **ACE-2020**. This progress was due in part to new projects with major suppliers, as well as new business with major customers.

### Fiscal 2018 Strategies

Fiscal 2018 marks the third year of our **ACE-2020** mid-term management plan. We see this year as a year to make a

dramatic step forward.

We intend to continue establishing market superiority for our core resin sales business by leveraging the NAGASE Group network.

In our compound business, we plan to deliver even greater levels of profits for existing businesses, while growing sales of our own high-value-added Denapolymer™ product.

We will delve deeper to grow sales in our packaging materials business leveraging the strengths of our overseas manufacturing affiliates and ability to offer feature-rich, differentiated products focused on the end user.

As a department, we plan to look outside Asia for new business, seeking new investment opportunities and reforming our profit structure.

### TOPICS Proprietary Denapolymer™ Compound

Wholly owned subsidiary Setsunan Kasei Co., Ltd. launched its own Denapolymer™ brand of products. Denapolymer™ is a result of the company's strengths in resin processing technologies. We will also work to create a record of success for unique, differentiated products, particularly our HS80 Series of high sliding polyethylene.

Molded products in the HS80 Series of high sliding polyethylene



**Denapolymer™**

## Electronic Chemicals Department

### Major Manufacturers

- Nagase ChemteX Corporation
- Nagase ChemteX (Wuxi) Corporation
- Engineered Materials Systems, Inc.
- Wuxi Chenghong Electronic Chemicals Co., LTD.
- Nagase Techno-Engineering Co., Ltd.
- Pac Tech-Packaging Technologies GmbH
- Nagase Engineering Service Korea Co., Ltd.
- Inkron Oy



Executive Officer  
GM, Electronic Chemicals Department  
**Takahiro Okumura**

### NAGASE Market Strengths and the Business Environment

	Strengths	Business Environment
<b>Electronic Components (Communication Devices) Industry</b>	<ul style="list-style-type: none"> <li>Epoxy sheet encapsulant materials maintain a large market share among communication device applications; these materials are based on unique Nagase ChemteX advanced formulation technologies</li> </ul>	<ul style="list-style-type: none"> <li>Growth in the communication device markets of China and emerging economies</li> <li>Expanding next-generation high-speed communications networks</li> </ul>
<b>Semiconductor Industry</b>	<ul style="list-style-type: none"> <li>Total solutions provided through Nagase ChemteX high-value-added materials and Pac Tech Group subcontracting services and equipment</li> </ul>	<ul style="list-style-type: none"> <li>Increasing demand in new fields, including 5G, IoT, AI, automobiles, medical equipment, etc.</li> </ul>
<b>Display Industry</b>	<ul style="list-style-type: none"> <li>Advanced technological capabilities in high-grade chemicals and chemical management equipment</li> <li>Optical materials based on special siloxane</li> </ul>	<ul style="list-style-type: none"> <li>Growing market for liquid crystal displays/OLEDs in China</li> <li>Growth of 8K displays</li> </ul>
<b>Heavy Electric Machinery Industry (Electricity/Railways)</b>	<ul style="list-style-type: none"> <li>Fifty years of strong market share in high-performance, highly reliable materials markets in Japan</li> </ul>	<ul style="list-style-type: none"> <li>Rising global demand for infrastructure, particularly among the emerging economies</li> </ul>
<b>Energy &amp; Environment Industry</b>	<ul style="list-style-type: none"> <li>Group network capable of building upon a history of successes in automobiles, aircraft, rail cars, and wind power generation to overseas markets</li> </ul>	<ul style="list-style-type: none"> <li>Growing demand for lightweight composite materials</li> </ul>

### Fiscal 2017 Strategies and Results

Our epoxy business recorded higher sales for liquid formulated epoxy (de facto standard for semiconductor packaging), materials for automotive/electronic components, and sealants for displays.

Our photolithography business experienced growth at our chemical manufacturing company bases in China, while sales in our chemical management equipment business in China and Korea were strong.

Our Pac Tech business contributed significantly to earnings through electronics component production equipment sales for new smartphone devices.

### Fiscal 2018 Strategies

The goal of the Electronic Chemicals Department for the final year of the NAGASE Group mid-term management plan is to integrate and optimally allocate technologies among our locations to supply high-value-added products through proprietary NAGASE technologies, contributing to the success of our local communities and customers.

We have determined target markets by industry for the core Nagase ChemteX epoxy business, recording solid results in every geographical region. Towards further global expansion, we intend to construct new manufacturing bases in Europe, following our projects in China and North America.

In our photolithography business, we intend to expand Nagase ChemteX production bases for high-valued-added products in the Chinese market, expanding our presence in the market for displays and the market for semiconductors,

which is expected to grow over the long term.

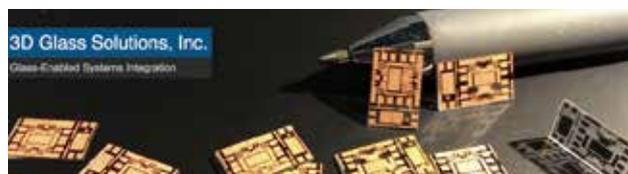
We will strengthen the research and development functions in the United States for our Pac Tech business to create new technologies for semiconductor packaging. As well, we plan to advance our business in the Chinese market for wafer bumping services, and semiconductor manufacturing equipment.

The Electronic Chemicals Department will engage in a worldwide rollout of total solutions based on proprietary NAGASE Group technologies, stepping up the creation of businesses that provide special value to our customers.

### TOPICS Equity Investment in 3DGS Strengthens Presence in 5G Market



3D Glass Solutions, Inc. is a specialty glass processing design and manufacturing company with development and production based in Albuquerque, New Mexico, USA. We plan to work with 3D Glass Solutions to create new business in next-generation semiconductors via the global expansion of the company's 5G high-frequency products. At the same time, we intend to integrate semiconductor-related technologies of the NAGASE Group with 3D Glass Solutions products.



## Electronic Materials Department

### Major Manufacturers

- Nagase Electronics Technology (Xiamen) Co., Ltd.
- SunDelta Corporation
- Xenomax - Japan Co., Ltd.



GM, Electronic Materials Department  
**Takeshi Takada**

### NAGASE Market Strengths and the Business Environment

	Strengths	Business Environment
Smartphone and Display Businesses	<ul style="list-style-type: none"> <li>■ Core customer communication capabilities through global bases</li> <li>■ Brand owner ~EMS~ Components~ Business relationships with material manufacturers</li> <li>■ Highly professional global workforce</li> </ul>	<ul style="list-style-type: none"> <li>■ While the market is growing, the focus of growth has shifted away from the advanced nations toward the developing nations</li> <li>■ Ongoing specialization/integration in smartphones, smart watches, smart speakers, MR*1, AR*2, VR*3, etc.</li> <li>■ Greater penetration of IoT in industry; smartphones with built-in sensors for information processing/AI becoming more important</li> </ul>
Silicon Wafer Industry	<ul style="list-style-type: none"> <li>■ NAGASE global network</li> <li>■ Strong positioning in Japanese process materials</li> </ul>	<ul style="list-style-type: none"> <li>■ IoT creating growth in industry overall</li> <li>■ Chinese semiconductor companies stepping up investment; stronger presence in the future</li> </ul>
Display Industry	<ul style="list-style-type: none"> <li>■ Ability to handle many products; high barriers to entry</li> <li>■ Highly professional global workforce</li> </ul>	<ul style="list-style-type: none"> <li>■ China, Korea, and Taiwan have become global centers for LCD panels</li> <li>■ Full-scale development and investment in flexible displays, including OLED and micro LED</li> </ul>

\*1 Mixed Reality \*2 Augmented Reality \*3 Virtual Reality

### Fiscal 2017 Strategies and Results

During fiscal 2017, we consolidated our liquid crystal glass processing business in China, generating big gains in profitability. We recorded lower revenues and higher profits for the year. While silicon wafer processing materials showed robust growth, sales of materials for displays and smartphones were lower.

Our business investments included a joint venture to manufacture and sell high-heat-resistant polyimide film. We also invested in a venture developing and selling materials to boost the luminous efficiency of OLED.

### Fiscal 2018 Strategies

We have three defined goals under the **ACE-2020** mid-term management plan: shift to growth businesses, create business through investment, and exercise true global management.

We are bolstering our marketing of OLED and flexible display materials to shift to growth businesses. We are also working to grow sales of silicon wafer production-related materials in China, as well as to develop new products.

To create business through investment, we continue to look at opportunities to create new business in the fields of functional materials, unique processing technologies, and IoT.

#### TOPICS

### Xenomax - Japan Co., Ltd.: Joint Venture with Toyobo Co., Ltd. to Manufacture and Sell High-Heat-Resistant Polyimide Film



XENOMAX® polyimide film offers among the best heat tolerance and dimensional stability performance in the world. Used as a replacement for glass, this film is thinner, lighter, unbreakable, and bendable when used in sensor substrates and flexible display panels such as OLED, electronic paper, or micro LEDs. Our goal is to reach full operations as quickly as possible to take advantage of these properties.



\* XENOMAX® is a registered trademark to Toyobo Co., Ltd.

XENOMAX®

#### TOPICS

### Investment in Kyulux, Inc. OLED Venture



Kyulux, Inc. is a startup supported by Kyushu University. The university is the world's first successful developer of thermally activated delayed fluorescence (TADF), an OLED material. TADF, without the use of rare metals like iridium, could result in an OLED that achieves blue light, excellent color purity, low cost, and better energy efficiency. NAGASE brings its global network to partners as it aims to promote TADF all over the world.



TADF (thermally activated delayed fluorescence)

# Automotive Solutions Department

**Major Manufacturers**

- Sanko Gosei Technology (Thailand) Ltd.
- Automotive Mold Technology Co., Ltd.
- KN Plotech America Corporation
- Tokai Spring Mfg. (Foshan) Co., Ltd.
- MINDA KYORAKU LTD.
- Huizhou Sanli Three Synergy Precision Co., Ltd.



Executive Officer  
GM, Automotive Solutions Department,  
Nagoya Branch

**Hiroyuki Ueshima**

**NAGASE Market Strengths and the Business Environment**

	Strengths	Business Environment
Automotive Interior Industry	<ul style="list-style-type: none"> <li>■ Complete supply chain, from materials to products</li> </ul>	<ul style="list-style-type: none"> <li>■ Growing business opportunities with non-Japanese OEM enterprises, including the U.S. Big Three and Chinese OEM</li> </ul>
Components Industry	<ul style="list-style-type: none"> <li>■ Total solutions matching NAGASE resources in the electric and electronics industries with the needs of the automobile industry</li> </ul>	<ul style="list-style-type: none"> <li>■ Expanding business opportunities related to HMI*1, ADAS*2, xEV</li> </ul>
Global Resin Industry	<ul style="list-style-type: none"> <li>■ Strong global network, including expatriate assignees and local staff. Long-standing relationships with Japanese and non-Japanese suppliers; strong customer base</li> </ul>	<ul style="list-style-type: none"> <li>■ Growing business opportunities in engineering plastics, taking advantage of emissions regulations, replacing metal with plastic, and offering higher-level design</li> </ul>

\*1 HMI: Human-Machine Interface  
\*2 ADAS: Advanced Driver-Assistance Systems

## Fiscal 2017 Strategies and Results

Fiscal 2017 was the second year under our **ACE-2020** mid-term management plan. Market conditions were very challenging, as NAGASE felt the negative impact of trouble at a commodity plastics plant in Japan, non-qualified inspection problems, and other issues. Despite these issues, we enjoyed strong demand for engineering plastics and EV-related components, which drove increases in domestic revenue and profits. Outside Japan, the slowing of the interior trim business caused revenue to decline in Korea and North America. In China, strong production of automobiles boosted our business with Japanese automobile manufacturers. In Southeast Asia, the automobile market recovered in Thailand. Overall, the department recorded higher revenue and profits.

## Fiscal 2018 Strategies

In fiscal 2018, we will step up development in new areas of car electronics in Japan, China, Europe and the U.S. We will also work to grow our Human-Machine Interface (sensors, car multimedia) and xEV (inverters, batteries) businesses. Our overseas regional strategy calls for active development in the Indian market and for non-Japanese customers in China. These are two regions where we expect significant growth. Outside Japan, we plan to bolster efforts among non-Japanese customers, especially in Europe, the U.S., and China. We are also working to expand sales of interior components, car multimedia products, and high-function materials. Finally, we are considering foreign joint ventures with partners who manufacture components.

**TOPICS** Joint Venture in China (Huizhou Sanli Three Synergy Precision Co., Ltd.)



In China, the market for new energy vehicles, including electric vehicles (EV), plug-in hybrid electric vehicles (PHEV), and fuel cell vehicles (FCV), is expected to grow rapidly. We plan to begin operations of a new joint venture designed to produce and sell electric drive components for these types of vehicles during fiscal 2018.



Concept (red frame)

**TOPICS** Proposing Super Engineering Plastics to Replace Metal Components



NAGASE meets the needs of next-generation vehicles through collaborations with specific partners. Engineering plastics designed with particularly outstanding performance are known as super engineering plastics. We are approaching customers with solutions that replace metal components with these plastics.



## Energy Business Office

Major Manufacturer  
• CAPTEX Co., Ltd.



GM, Energy Business Office  
**Kiyoshi Sato**

### NAGASE Market Strengths and the Business Environment

	Strengths	Business Environment
<b>Battery Industry</b>	<ul style="list-style-type: none"> <li>Ability to handle both batteries/PV and systems/materials</li> <li>The NAGASE network</li> <li>Engineering support functions</li> </ul>	<ul style="list-style-type: none"> <li>Promotional policies for renewable energy; electric power deregulation; new emerging markets overseas; future government subsidies</li> </ul>
<b>PV Industry</b>	<ul style="list-style-type: none"> <li>Ability to handle both batteries/PV and systems/materials</li> <li>Fabless business responding quickly to market changes without the need for a factory</li> </ul>	<ul style="list-style-type: none"> <li>Promotional policies for renewable energy; electric power deregulation; new emerging markets overseas</li> <li>Governmental ZEH (zero-energy house) policies</li> </ul>
<b>Automotive/Components Materials Industry</b>	<ul style="list-style-type: none"> <li>NAGASE Group sales channels</li> </ul>	<ul style="list-style-type: none"> <li>CO<sub>2</sub> reduction regulations; ZEV (zero emissions vehicle) regulations in the U.S.</li> <li>Increase in EVs</li> </ul>
<b>Commercial Facilities Logistics Industry</b>	<ul style="list-style-type: none"> <li>Historically strong connections with the logistics industry from our background in lighting equipment sales</li> </ul>	<ul style="list-style-type: none"> <li>Adoption of the My Number (social security number) system Personal Information Protection Act</li> </ul>

## Fiscal 2017 Strategies and Results

Our battery materials business has been winning new customers for cathode and anode materials, anode copper foil, and more. We have expanded the range of products we handle. As a result, sales rose 156% higher than the previous fiscal year.

In our smart systems business, we focused on sales of home energy management devices. Our late start and delay in building sales channels, however, resulted in sales lower than initially anticipated. On the other hand, we have expanded sales channels significantly. Our products have been picked up by a prominent PV equipment manufacturer and will also be handled by other brands. Further, products now connect to other energy management devices, which provides another sales channel.

Field operation tests combining our optical wireless communications technology with surveillance cameras took place at several shopping malls during the year. Truly, this was a year of dramatic progress toward practical applications. We expect to make more great strides forward in fiscal 2018 with investments in long-distance technology and large-capacity models.

## Fiscal 2018 Strategies

The Energy Business Office is helping build smart society infrastructure via innovations in home, industrial, transportation, IT, and communications infrastructure.

In fiscal 2018, we will channel our effort into sales of the eneEase™ home energy management device. The Japanese

government has called for 50% of new residential construction to be zero-energy houses (ZEH) in 2020. By 2030, that number would rise to 80%. The Ministry of Land, Infrastructure, Transport and Tourism, Ministry of the Environment, and Ministry of Economy, Trade and Industry have announced a joint policy to promote ZEHs. NAGASE is focusing on building our sales and after-sales network, developing our business by creating and proposing new energy businesses.

### TOPICS Initiatives toward Sustainable Development Goals (SDGs)

NAGASE has started initiatives to meet Sustainable Development Goals (SDGs), a United Nations program becoming more prominent internationally. We are developing businesses with a particular goal of clean energy and livable cities.



\* In this integrated report, we use special logo marks to identify targets provided in TOPICS for each business and overseas base of operations.

## Life & Healthcare Products Department

### Major Manufacturers

- Hayashibara Co., Ltd.
- Nagase ChemteX Corporation
- Nagase Medicals Co., Ltd.



GM, Life & Healthcare Products Department

**Yoshihiro Shimizu**

### NAGASE Market Strengths and the Business Environment

	Strengths	Business Environment
Fragrances/ Cosmetics	<ul style="list-style-type: none"> <li>■ Wide range of activities (from fragrances and cosmetics to household items)</li> </ul>	<ul style="list-style-type: none"> <li>■ Major Japanese cosmetics firms expanding overseas</li> </ul>
Pharmaceuticals/ Medical	<ul style="list-style-type: none"> <li>■ Manufacture of highly active injections of formulation developments function</li> </ul>	<ul style="list-style-type: none"> <li>■ Government policies encouraging generic pharmaceuticals</li> </ul>
Foods	<ul style="list-style-type: none"> <li>■ Global network of NAGASE Group</li> </ul>	<ul style="list-style-type: none"> <li>■ Trust in the "Made in Japan" label</li> </ul>
Regulation	<ul style="list-style-type: none"> <li>■ Organization to comply with global &amp; domestic regulations</li> </ul>	<ul style="list-style-type: none"> <li>■ Policies promoting Japanese food ingredients and industry of medical materials</li> </ul>

### Fiscal 2017 Strategies and Results

The Life & Healthcare Products Department continued to focus on foods and beverages, fragrances, cosmetics and toiletries, and pharmaceuticals and medical materials. As a result, we made solid progress in fiscal 2017 toward achieving our **ACE-2020** targets.

In the food materials area, we took steps to differentiate our products successfully from competitors in Northeast Asia, helping us achieve our goals. In fragrances and cosmetics, Japanese manufacturers (our major customers) have benefitted from international e-commerce. In turn, we experienced strong sales of raw materials to these customers, reaching department goals. In pharmaceuticals and medical materials, certain segments of the medical care field have been a challenge. However, we secured business in the growing generic pharmaceuticals market, which helped us significantly outperform our goals in total. We also strengthened the functions of our Global Regulatory & Pharmaceutical Affairs Office.

### Fiscal 2018 Strategies

We continue to establish a reputation for NAGASE as a leading biocompany following 3 core strategies, 1) Global, 2) Innovation, and 3) Sustainability, to achieve the targets set in mid-term management plan **ACE-2020**.

In the food materials field, in order to further streamline, we integrated our domestic and overseas saccharine business operation into Hayashibara Co., Ltd. We also intend to utilize resources in our enzyme business overseas and seek M&A opportunities.

We will also look to increase the ratio of sales from fragrances and cosmetics outside Japan. To this end, we have established a new office in Lyon, France. We are also working with new NAGASE Group company Fitz Chem LLC in America.

In pharmaceuticals, we will continue to focus on the growing market for generics in Japan. Meanwhile, we will rebuild and establish a footing for our medical care business within the NAGASE Group.

#### TOPICS Investment in PeptiStar, Inc.

NAGASE has invested in PeptiStar, Inc., and we are working in cooperation with Shikoku Nucleic Acids Chemistry Co., LTD. These initiatives are expanding our focus rapidly from conventional low molecular weight drugs to the biopharmaceuticals of the future.



## Nagase Beauty Care Co., Ltd.



Representative Director and President  
Nagase Beauty Care Co., Ltd.

**Masahiro Yoshino**

### NAGASE Market Strengths and the Business Environment

	Strengths	Business Environment
Direct Sales Industry	<ul style="list-style-type: none"> <li>A 50-year history in direct sales; a 500-person organization of NAGASE dedicated fans/managers (sales agents); support for women-owned businesses (women's organizations)</li> </ul>	<ul style="list-style-type: none"> <li>Declining birthrate and aging population, spread of e-commerce, health-consciousness and growing health industry, rising desire for safe and reliable options</li> </ul>

### Fiscal 2017 Strategies and Results

During fiscal 2017, our direct sales business transferred all functions of NAGASE & CO., LTD. to Nagase Beauty Care Co., Ltd. (NBC). NBC now covers the full range of functions from manufacturing to sales. In fiscal 2017, we implemented our Three Arrows strategy. The first arrow involves a change of direction, turning us back to our focus on sales. The second arrow is training the next generation of managers. Finally, the third arrow is to run business under the direct control of the head office. On the product side, we reformulated the *Belmash* drink (health food). We also launched a new makeup line, WIZ D, as well as skin care product QACT for younger customers. AUTOLIFTER, our main beauty serum, received a full update during the year. As the average age of our members rises, however, demand continues to fall. As a result, we recorded another year of falling revenues.

### Fiscal 2018 Strategies

We will continue to execute our Three Arrows strategy introduced in fiscal 2017. To address the arrow of prioritizing sales in fiscal 2018, we plan to improve the skills of our sales agents. These plans include updating our sales system, revising the Nagase Brush-Up training system, and instilling the NAGASE sales formula. We will also introduce a new exercise, nutrition, and rest initiative that will go beyond selling products, offering various services and events. This effort will help customers achieve total beauty, as we offer *Activity, Beauty, Youth, and Health* that extends

beauty and health for many more years, especially for seniors. This in turn will sharpen our appeal to younger customers and coming generations.



"WIZ D" Base makeup

### TOPICS Excellence Award Received at Presentation of Fermented Ginseng-CD Research

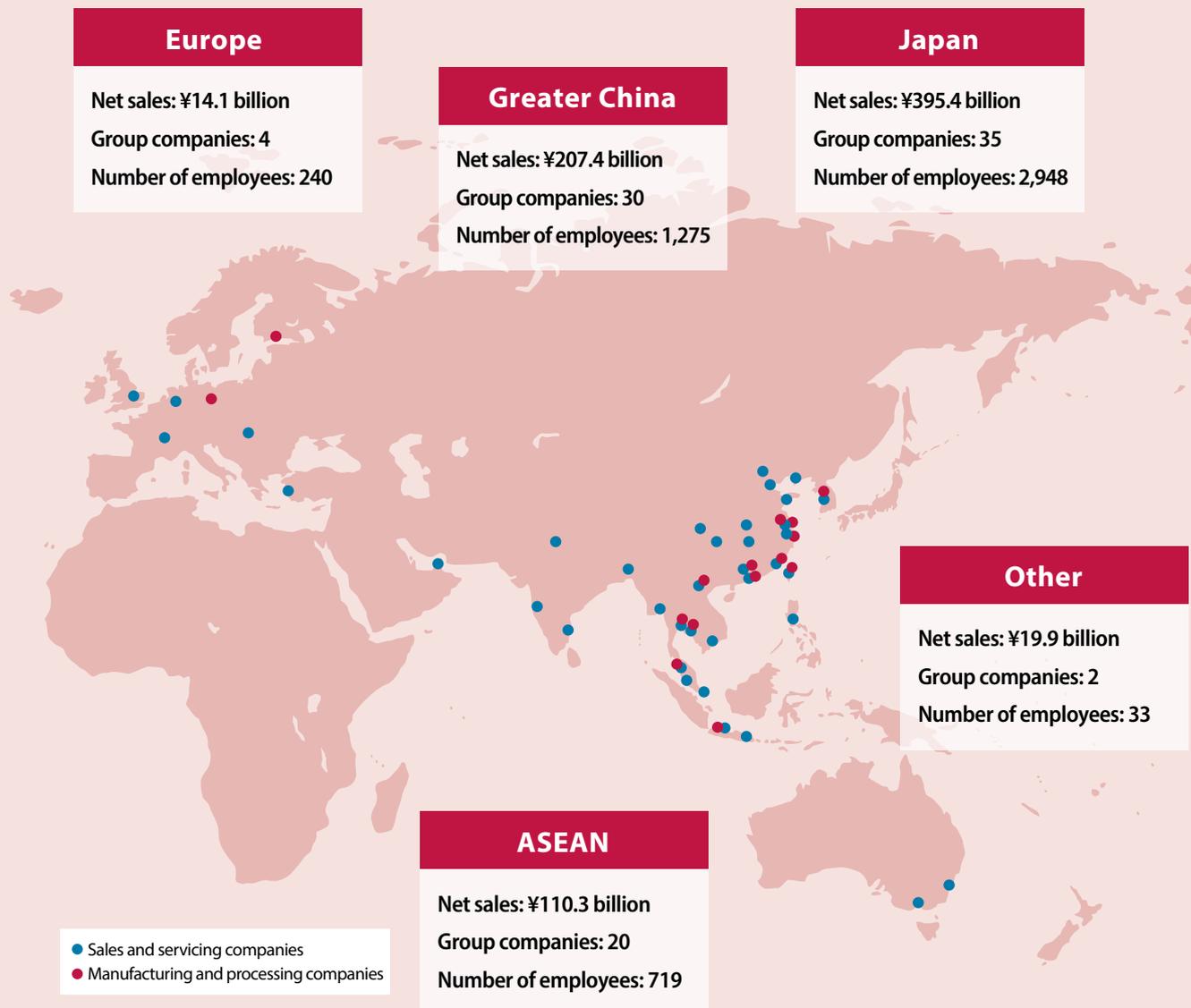


Together with Fukuoka University, we have been researching Alzheimer-type dementia. The research, which looked at the effectiveness of Fermented Ginseng-CD, a food material independently developed by NBC, won an excellence award at the 34th conference of the Medical and Pharmaceutical Society for WAKAN-YAKU.

# Global Network

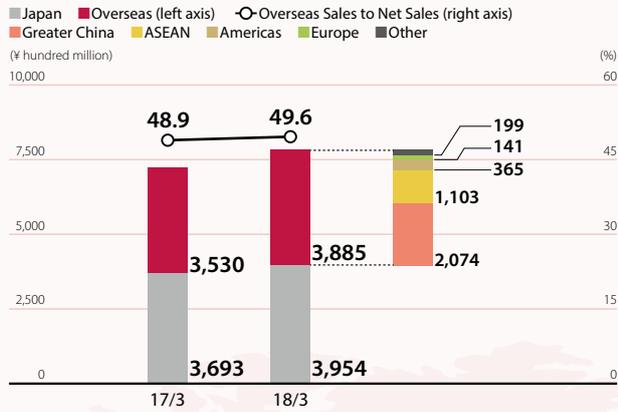
Built on a foundation of chemistry, the NAGASE Group is engaged in global business across a wide spectrum of industries, including dyes/pigments, coating materials/inks, surfactants, office automation, electrical equipment, electronics, automobiles, LCDs, semiconductors, pharmaceutical/medical applications, cosmetics, and functional food ingredients.

Since our founding, we have grown to become an influential global technology and information network with 101 companies in 26 countries and regions and 6,312 employees worldwide as of the fiscal year ended March 2018. Today, overseas revenues represent 49.6% of our total business.



# Drive Global Business

### Net Sales by Region (Japan/Overseas) and Overseas Sales to Net Sales



### Americas

Net sales: ¥36.5 billion  
 Group companies: 10  
 Number of employees: 236

\* As of March 2018  
 \* Employees in the consolidated corporate group

# Forward

## Aiming for ¥600 Billion in Total Overseas Group Sales

Launched in 2016, our **ACE-2020** mid-term management plan defines two pillars for growing and expanding revenues:

- 1 Accelerate Globalization
- 2 Improve Manufacturing Profitability

### 1 Accelerate Globalization

Aim for ¥600 billion\* in total overseas Group sales through 2020. Search and execute growth investment (M&A) that matches with the market strategy of the designated area and accelerate the business development to expand business (especially focused in North America).

\* Figures represent total sales (simple sum) for overseas local entities rather than sales by region.

### 2 Improve Manufacturing Profitability

Creating a scenario and human resources development which focuses on overseas market expansion (overseas marketing and production).

## Greater China



Executive Officer  
Greater China CEO  
Nagase Business Management &  
Planning (Shanghai) Co., Ltd. COO

**Masatoshi Kamada**

The NAGASE Group operates sales subsidiaries, manufacturing subsidiaries, and services subsidiaries across more than 40 locations in Greater China (China, Hong Kong, and Taiwan). Our basic stance is to contribute to group profit growth by capturing more internal demand and by creating locally based businesses. At the same time, we will work in partnership with leading companies and leverage the comprehensive strengths of the NAGASE Group to build global businesses between our locations.

### Major Market Trends

The Chinese automobile industry is enjoying stable growth. Technology trends in the electronics industry, which includes displays and other products, continued to advance, as our business in office equipment and home appliances experienced ongoing growth in inland China. The semiconductor industry is another one in which growth is expected. As well, internal demand in China grows yearly for products in the life and healthcare industry, including the environment, food products, and medical care sectors.

### Fiscal 2017 Results

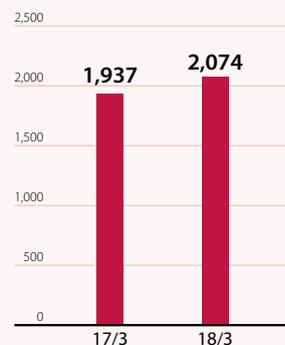
Fiscal 2017 sales of materials for displays and smartphones grew, while business in plastics and other products for automobiles and semiconductor-related materials performed well. The polyimide film and glass lamination processing businesses began operations in Taiwan, which contributed to profitability.

Nagase ChemteX Corporation's formulated epoxy resins business was impacted by the high cost of raw materials during the second half of the fiscal year. Wuxi Chenghong Electronic Chemicals Co., Ltd. reported strong sales of chemical solutions for the liquid crystals business, while the company launched a new production base in Mianyang, Sichuan Province in September 2017.

Our PV business in the environmental field grew significantly. In the food products field, the Hayashibara products business (TREHA™, etc.) increased hiring of new employees in connection with improvements in technological services.

### Net Sales

(¥ hundred million)



### Fiscal 2018 Strategies

In the resin sales business, we continue to expand our business area by leveraging our group network, boosting initiatives with our major suppliers. In the automotive field, we will work with interior and decorative components and increasingly handle power systems and batteries for new energy vehicles as well as display components.

In the electronics field, we are taking advantage of local production, focusing our energy on application development and sales expansion. Another priority is next-generation displays like OLED\*1 and electronic paper. In semiconductors, we plan to expand NAGASE Group products and materials developed by our partners, while we speed up growth in our functional materials business.

In our food business, we see a growing awareness of the safety and sense of security offered by TREHA™. We will work to grow the high-end market by offering more technological services. Our environmental business is one where we expect growth. Here, we will focus on sales of PV materials, as well as solutions related to equipment for measuring, condensing, recovering, and incinerating VOCs\*2. We will also propose more solutions for aqueous printing ink and systems and effluent treatment equipment.

\*1 OLEDs: Organic Light-Emitting Diodes \*2 VOCs: Volatile Organic Compounds

### TOPICS Business Development in Growing Chinese Markets

Wuxi Chenghong Electronic Chemicals Co., Ltd. deals in chemical solutions for liquid crystal and semiconductor markets. During fiscal 2017, the company established Mianyang Chenghong Electronics Co., Ltd. in Mianyang, Sichuan Province. We expect significant growth in the liquid crystal and semiconductor markets, and we are adding to the number of production bases in west-central and southern China. We will leverage the new company as a joint venture with a local Chinese enterprise to further develop our chemical solutions business.



Concept (red frame)

## ASEAN and the Middle East



Executive Officer  
ASEAN and India CEO  
**Takayuki Masuda**

Export industries grew sharply in the region, buoyed by a strong world economy. Domestic demand for automobiles in Thailand and Indonesia showed only slight growth; however, as standards of living rise, industries related to food and personal care prospered in each country. Singapore, Malaysia, and Thailand—leading nations of ASEAN—are introducing new measures to advance industry, develop human resources, and attract industry as they aim to be among the world’s most industrialized nations. In the more populated countries of Indonesia, the Philippines, and Vietnam, on the other hand, industry is diversifying. China’s Silk Road Economic Belt strategy, also known as the One Belt and One Road Initiative, and open economy means India is growing more important in terms of both markets and supply.

### Major Market Trends

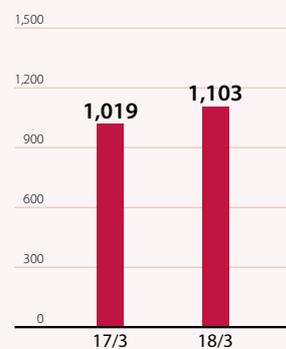
In China, rising labor costs and environmental problems have led to regulations on production. Changes in trade barriers in the U.S. and other countries are forcing leading chemical, electrical equipment, solar panel, and other industries in Japan and the rest of the world to shift and expand production in ASEAN nations. Regions with a high population of young people have shown an increase in domestic demand-oriented industries in terms of quantity and quality of food, lifestyle goods, apparel, and medical care. In India, Japanese automobile manufacturers have made major investments, while others are beginning to enter the country. In the Middle East, clouds have arisen over hopes of an open economy in Iran. However, the country is moving to develop new industries for the post-oil era.

### Fiscal 2017 Results

Fiscal 2017 was a strong year for NAGASE, with sales and profits both rising sharply over the previous year. Vietnam made a particularly notable contribution to sales. Businesses transferring in from China and other countries had a positive effect here, as did growing trade with local Vietnamese firms. The strong chemicals market in the region also supported sales growth, while the comparatively strong local currency gave a boost to profits.

### Net Sales

(¥ hundred million)



### Fiscal 2018 Strategies

This year will be a particularly important one for achieving the targets set in our **ACE-2020** mid-term management plan. During the year, we will expand our core businesses through close communication with our business partners to offer services that satisfy them. We will also create joint projects with prominent local enterprises in every field in every country, as we work toward creating sustainable businesses. At the same time, we will not skimp on investing in local staff to develop our human resources in the region.

### TOPICS

#### Comprehensive Cooperative Arranges with Hanoi City for Medical Care and Other Businesses

The mayor of Hanoi, Vietnam visited our Tokyo head office in June 2017, observing a demonstration of our colorectal cancer examination equipment. Over the past few years, a number of projects in health and environment have been underway in Hanoi. In response to rising demand, Nagase Vietnam has launched a variety of products and systems related to life and healthcare and chemicals, while building deeper cooperative relationships.



The mayor of Hanoi and other guests visited our Tokyo head office

Europe



Executive Officer  
Nagase (Europa) GmbH CEO  
**Mitsuru Kanno**

Growth rates for the EU beat expectations last year as the transition from economic recovery to expansion continues. It is estimated to have grown by 2.4% in 2017, the fastest pace in a decade. Domestic demand is set to remain the main growth engine in 2018 whereas investments continuing to recover, although a trade warfare between Europe, the U.S. and China may become apparent.

Major Market Trends

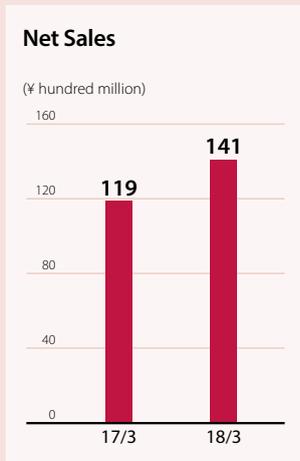
New ecological requirements for clean labels as well as the evolution of computing and digitization will have a significant impact on everyday objects. Europe is becoming green and environmentally friendly with biotechnology as a driving force. Consumers are requesting clean labels and energy saving products to protect the environment. As these new trends require new developments, European companies have started looking for biostartups to save time and money in R&D. Additionally, EVs have become popular, and new competitors will enter the traditional automotive industry.

Fiscal 2017 Results

Results for fiscal 2017 are close to the highest record in our history. Except for our color former business which suffered from requirements imposed by EU legislation regarding environmental protection, all business units exceeded our targets significantly. The steadily growing pharma business and new business in the field of car electronics contributed the greatest share of profit.

Fiscal 2018 Strategies

Regionally driven investments as a second business orientation will be one of our future measures to support our traditional import business of chemicals from Japan. We will make top investment priorities to bio-based technologies. In parallel, we intend to set up new business channels for advanced products, imported via our NAGASE network.



TOPICS

New Branch Office in Lyon (France) to Focus on Cosmetic Applications



3D Skin Model: Bioprinted Skin from Labskin Creations

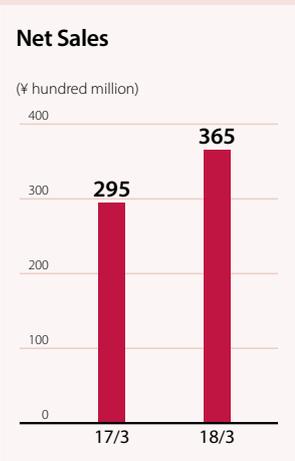
Lyon is one of the global hot spots in terms of the cosmetic industry. Here, where all the major players have their laboratories and R&D centers, we have started introducing our cosmetic ingredients from Japan. For better acceptance and approvals, we are preparing evaluations based on an artificial 3D skin model.



Americas



Nagase America Corporation CEO and COO  
Nagase do Brasil Comercio de Produtos Quimicos Ltda. CEO  
Nagase Enterprise Mexico S.A. de C.V. CEO  
**Ryuichi Uchida**



TOPICS

Acquisition of U.S. Chemicals Distributor



Fitz Chem Sales Territory

While the U.S. experiences continued stable growth, Mexico garners more attention as a manufacturing center, while South America holds much potential for future business. Here in the Americas, the NAGASE Group operates four sales companies (seven locations) and six Group manufacturing companies. During 2017, we acquired shares of a chemicals distributor, expanding group sales functions within the region.

◎ Major Market Trends

While volume remains high, fewer automobiles were made in the U.S. than the year before. Our policy going forward will be to focus on eco-friendly businesses and producing all types of components and raw materials locally. We will also turn our attention toward food materials in response to lifestyle changes, as consumers become increasingly health-conscious. Here, we will step up our marketing activities not only in North America, but also in Central and South America.

Fiscal 2017 Results

Our mainstay automotive solutions business continued to perform well. At the same time, we have grown our businesses in new fields such as 3D printing. In the emerging markets, our Mexican business is growing steadily. Our business is also expanding in South America, in Brazil, especially, but also in neighboring countries like Argentina. We have invested to expand our North American speciality chemicals business, where we project growth going forward. These investments have contributed greatly to our business growth in the Americas.

Fiscal 2018 Strategies

Our business portfolio strategy will consist of replacing assets and concentrating resources on focus businesses. We will develop business that better meets the needs of our customers by expanding in emerging markets in Central and South America, handling a wider range of NAGASE Group products, and promoting a project to transition some products to local production. We also intend to increase locally directed business by solidifying the business infrastructure and building synergies with the firms in which we have invested. Finally, we will boost investment support and shared services functions in the region to strengthen our management infrastructure.

The NAGASE Group acquired shares of Fitz Chem LLC, a chemical distributor with a 30-year history. This acquisition was spurred by our belief that the U.S. speciality chemicals field will grow in the future. Additionally, the purchase brought NAGASE a customer base of more than 1,000 firms and a North American sales and distribution network. We will use this platform going forward to expand our business in this market.



Korea



Nagase Korea Corporation CEO and COO  
Hideharu Yamazaki

Korea represents an important market internationally. An export-based economy, the country's top corporations are achieving remarkable growth through investment and globally oriented, speed-based management. Korea is positioned with superior access to the EU, the U.S., China, and ASEAN through free trade agreements, and the country has had a history of success in entering emerging markets.

◎ Major Market Trends

Mass production of ultra-high-speed memory has begun in the semiconductor industry, and 3D memory technology has led to the foundation of a new stage for growth. The expanding adoption of OLEDs\* in smartphones has grown the market for displays. Korea holds a near-monopolistic share of the global market for small- and medium-format OLEDs, and the country is making strides in the development of flexible screens.

\* OLEDs: Organic Light-Emitting Diodes

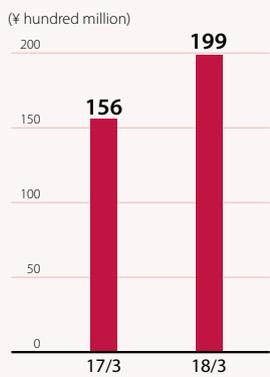
Fiscal 2017 Results

Sales of NAGASE Group products related to semiconductors, electronic components, and displays increased. Particularly as Korean firms expand into Asia, Europe, and the Americas, NAGASE has collaborated actively with overseas subsidiaries, giving us a launch pad for the next leap forward.

Fiscal 2018 Strategies

Our goal is to contribute to the profits of the NAGASE Group by creating and growing Korean-led businesses. In addition to our business in electronics, sales of Life & Healthcare segment products (particularly Hayashibara products) are expanding. At the same time, we are building a foundation from which to sell our Korean-made resins. Focusing on these products, we plan to strengthen ties with local NAGASE entities in every region, seeing a future in which Korean-led businesses grow. In particular, we have focused on Vietnam for greater development. We will be moving forward with promising projects there.

Net Sales



TOPICS Growing Korean-Led Businesses

In Korea, our aim is to transition from spec-in activities to global expansion, handling more NAGASE Group products and other products related to businesses in which Korean companies have a special affinity (OLED-related materials, semiconductor processing materials, battery materials, cosmetics raw materials, etc.).



# Main Manufacturing and Processing Functions

## Nagase ChemteX Corporation



Nagase ChemteX Corporation  
Representative Director and President

**Akihiko Isono**

Nagase ChemteX Corporation is a chemical manufacturer supplying unique products in the fields of electronics, environment, energy, and biotechnology. We have developed high-performance and high-added-value products that meet the needs of our customers, making good use of original core technologies accumulated over time. We expand our businesses furthermore as the central manufacturer of the NAGASE Group, leading the way in occupational safety and regulatory management.

### © Major Market Trends

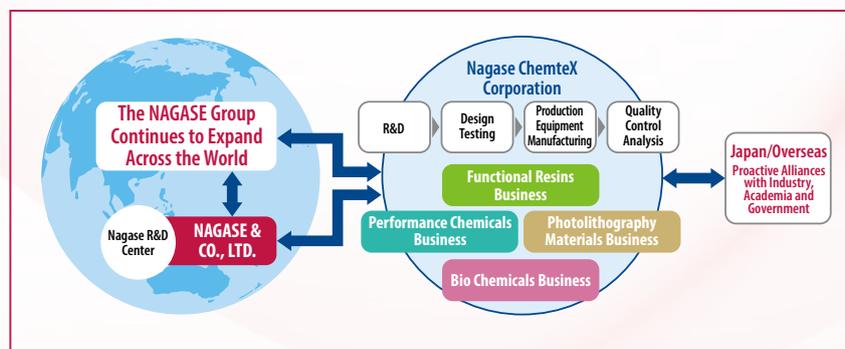
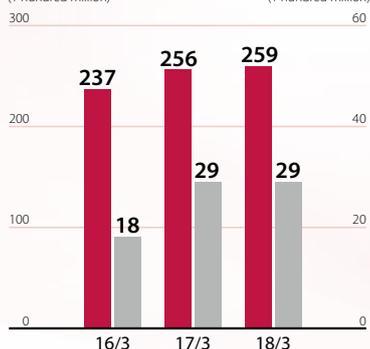
The electronics sector has seen a softening in the smartphone market and ongoing contraction in the large format LCD panel market. The market for semiconductors in the electronic devices sector has been growing, pushing strong sales of related products as well. We expect to see greater demand for enzyme production in our food business in response to the rapid growth of Foods with Function Claims market.

### Net Sales/Operating Income

■ Net Sales (Left scale) ■ Operating Income (Right scale)

(¥ hundred million)

(¥ hundred million)



### Fiscal 2017 Results

Net sales for fiscal 2017 amounted to ¥25.96 billion (1% year-on-year increase), while operating income came in at ¥2.96 billion (0.3% year-on-year increase). Sales of sheet encapsulation for hollow packages for high-frequency devices and conductive coating materials in

the electronics market were weak, but sales of photolithography materials performed well. As a result, both sales and operating income increased modestly compared to the prior year.

### Production Systems

We are working to streamline production by improving the accuracy of our production plans and production efficiency. In November 2017, we launched a safety training program based on years of service, the goal of which is to continue to improve awareness of safety issues. We will be rolling this training out to other group manufacturers. We have achieved significant plant wastewater treatment cost reductions through full-scale operation of the sludge volume reduction equipment we installed in March 2017.



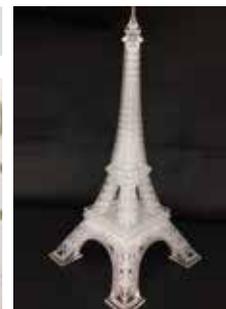
Safety training  
(walking on unstable surfaces)

## New Business Development

We reorganized our Research and Development Dept., which is now called the New Business Development Dept. This office is making strong moves to commercialize products in our focused business fields. We have also established a new planning section improved planning functions, including coordination and cooperation with universities and companies both in Japan and overseas. During fiscal 2017, we started new business about materials for additive manufacturing, including supplying resins for 3D printers. We also began supplying samples of low-temperature sintered-type ink for wiring applications. In the biomaterials field, we worked on development for new polymer materials that form bioinspired surfaces, supplying samples of these products to customers.



Low-temperature sintered wiring ink printing test



High-definition modeling with 3D printer resin

## Fiscal 2017 Operations

### Functional Resins Business

We are expanding our reach in the fields of the environment, energy savings, and semiconductors through advanced epoxy formulation technology. Sales of electronic car components, coating materials for chip components and new liquid sealants for semiconductor packages have increased. We are also focusing on developing new functional materials and new applications for these products, working on joint development with various external organizations.

### Photolithography Materials Business

The Photolithography Materials Business is engaged in development and manufacturing activities based on the technology developed in the chemical business, the front-end processing for liquid crystals and semiconductors. Fiscal 2017 sales rose, mainly due to growth in removers, developers for displays and removers for semiconductors. We also recorded strong performance in photoresist sales. Meanwhile, our product lineup in mid-end processes for semiconductors expanded during the year. We set up a second manufacturing base in China and established a supply system to meet new demand.



No. 2 Plant in China

### Performance Chemicals Business

Our Performance Chemicals Business is engaged in product development and manufacturing activities for high-function materials based on organic synthesis, polymerization, and compounding technologies. Fiscal 2017 sales of epichlorohydrin derivatives and organic chemical products were strong, driving higher profits. Our conductive materials business grew, thanks mainly to stronger relationships with innovation partners driving steady progress in new development projects for peripheral display applications and light control film applications.



Light-controlling film

### Bio Chemicals Business

In foods, Nagase ChemteX focuses on confectionery, bakery, egg, and lecithin applications. Here, we are expanding our new product lineup. We have also moved beyond Japan, growing the scale of our business overseas with an emphasis on our proprietary enzymes.

Our core lactase product has been a significant contributor to sales growth through our entry into Kosher and Halal markets and production yield improvements.



Food enzyme applications

## Fiscal 2018 Strategies

In the first two years of the **ACE-2020** mid-term business plan, Nagase ChemteX completely reorganized our business division system. We have created a stronger organization by improving our internal value change and reducing costs consistently. The fiscal year ending March 2019 will be the third year of this plan. During the

year, we will expand our existing business and create new business by changing from a materials-supply business to a solutions-supply business and exploring the acquisition of technologies and production bases.

# Hayashibara Co., Ltd.



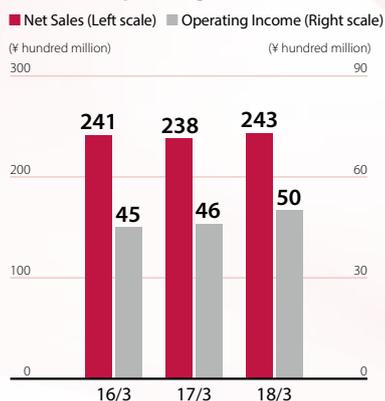
Hayashibara Co., Ltd.  
Representative Director and President  
**Naoki Yasuba**

The Hayashibara Saccharides Business leverages saccharide products produced using biotechnology in the foods, cosmetics, pharmaceuticals, and other markets. Our Fine & Wellness Business draws on organic synthesis technologies to provide products in photography, displays, and other commercial fields, as well as in the life science domains, including pharmaceuticals and in-vitro diagnostics.

◎ Major Market Trends

Our B to B customers give our products high marks not only for their physical properties, but also for their functionality. Our product line extends widely from the food and cosmetics markets to the medical and industrial fields. In our food business, we have been proactive in creating a systematic review process necessary for compliance with the rules for Food for Specified Uses and the rules for Foods with Function Claims. This is just one of the ways in which we are building a support structure for customer product development.

Net Sales/Operating Income



Line of dyes saccharide products



Functional dyes (fluorescent dyes)

Fiscal 2017 Results

Net sales for fiscal 2017 amounted to ¥24.39 billion, which was a 2% increase compared to the prior year. This increase was mainly due to growth in functional materials and a recovery in inbound demand.

On the other hand, operating income rose 9% to ¥5.03 billion, mainly due to controlled manufacturing costs arising from lower main raw materials and energy costs.

Production Systems

We began operations of two new plants to replace the former Okayama Plant I. We also completed work to expand the production capacity of the Okayama Functional Saccharide Plant, T Building, which produces TREHA™. We will establish a reliable global supply system for high-quality products, promoting food safety and quality assurance in line with global standards.

In addition to making advances in manufacturing process improvements and energy efficiencies through our own engineering methods, we have also adopted quality control systems based on FSSC 22000 (food safety), ISO 9001 (quality assurance), and Good Manufacturing Practice (GMP). To answer customer requests from overseas, we are making progress toward Kosher and Halal certification.



Okayama Functional Saccharide Plant, T Building (TREHA™ production)



FSSC 22000 (International Food Safety System Certification) Certificate

## Research and Development Organization

Microorganism screening technologies derived from years of expertise have put us on course to developing purpose-driven research into new enzymes and the development of new saccharides using enzymes. We collect evidence about market needs through our own survey system, working closely with our customers to bring new products and applications to the market quickly. Meanwhile, we are active in registering our intellectual assets, building a structure that allows our customers to use our products with confidence. We are also making advancements in research and development in coordination with Nagase ChemteX and the Nagase R&D Center.



Research Division: Laboratory

Osaka Industrial Research Association: Industrial Technology Award



## Fiscal 2017 Operations

### Saccharides Business

The Japanese food industry is our core market in our Saccharides Business. Here, demand has been very strong for our mainstay TREHA™, SUNMALT™, and HALLODEX™ products. Meanwhile, the market has recognized the antioxidant effects of high-performance Ascofresh™, as well as the neutral lipid reduction and improved blood circulation effects of Hayashibara Hesperidin S. We are gratified to see more cases of adoption of these products in their respective markets. We are seeing a steady increase in the number of customers using the new soluble dietary fiber Fibryxa™ (isomaltodextrin). Fibryxa™ was the first new product introduced by Hayashibara since reorganizing the company.

The market for overseas food businesses is attracting the entry of several Chinese manufacturers. Despite the increased competition, we saw an increase in new orders for our products.

The cosmetic ingredients market has seen somewhat of an increase in domestic sales thanks to a recovery in inbound demand. Demand overseas, however, remained sluggish.

In the medical and pharmaceutical market, pullulan sales have been strong, owing in part to rising demand for capsule applications.



Pastry Seminar



Soluble Dietary Fiber Fibryxa™ pullulan and pullulan capsules

### Fine & Wellness Business

While the Fine & Wellness Business saw lower sales of photography and printing plates and other dyes for commercial use during the year, sales of in-vitro diagnostics and other life science products were strong. In response to anticipated growth in polarizing plates and other products, Hayashibara is developing pigments for the display market. Meanwhile, sales of Class III pharmaceutical LUMIN™-A recovered, outperforming the prior year. This was the result of creating a stronger working relationship with our sales agents.



LUMIN™-A digital signage (Okayama city hall)



LUMIN™-A Website

## Fiscal 2018 Strategies

Under the **ACE-2020** mid-term management plan, we are executing a basic strategy of pursuing clear growth markets and regions globally. We intend to integrate our domestic and overseas sales organizations in the food products market, develop new applications, and expand our product lineup for customers overseas customers, where the market is growing. We have also made advancements in developing applications and validating functions for our functional products in preparation for market introduction.

On the production side, we are strengthening Okayama as a technical development and production center. At the same time, we are studying the potential for overseas production from the standpoint of materials procurement and competitive advantage.

On the research and development front, we have made progress in developing our existing ingredients and other materials based on exploration for proprietary ingredients. Here, our goal is to contribute to the creation of a healthier and happier society.

# Major R&D Functions

## NVC (New Value Creation) Office



Manager, NVC (New Value Creation) Office  
**Yasumitsu Orii**

The NVC Office was established in April 2017 to promote NAGASE Group innovation and build core businesses of the future that will create new value. The office assesses trends in the IT industry, including IoT and AI, planning and developing mechanisms for businesses not currently part of the NAGASE Group. These mechanisms will be deployed to the various business divisions for implementation.

In January 2017, we started participating as a founding member in the IBM Research Frontiers Institute (RFI), an IT fundamental research consortium established by IBM to promote R&D initiatives involving companies in different industries.

### ◎ Organizational Goals

- Using technology obtained from the RFI consortium with IBM, we will build new businesses that look ahead five to ten years in the future.
- We will take stock of trends in hardware technologies that support AI and IoT to ensure that we always stay one step ahead of paradigm shifts.

### ◎ Organizational Structure

- We will build a flexible organization that benefits from synergistic effects between the business divisions, group companies, and partner companies.

## Major Projects

### Project ①

#### Fusion of Biology and Electronics

Energy consumption is coming into sharper focus as an issue related to the use of information technology driven by big data and AI. When considering low-power consumption, we must focus on how to apply mechanisms of the human brain to electronics. Through the RFI consortium, the NVC Office is working on the development of bio-inspired technology that integrates biology and electronics. These activities include contributions to the development of low-power devices that mimic the human brain and products that feature biomimicry applications.

### Project ②

#### Market Development for “Axonerve™,” a Semiconductor Intellectual Property Core (IP Core)

Large-scale, real-time data processing is increasingly important at data centers that support technological innovations such as AI, IoT, and 5G networks. High-speed hardware processing has been a major trend over the past few years.

The NVC Office is collaborating with FPGA vendors and development platform vendors to open a market for a FPGA-based hardware accelerator that uses Axonerve™ IP Core.

Axonerve™ is a semiconductor intellectual property core (supported by Japanese academic research organizations and our own work) specializing in search/query function.

## Future Direction

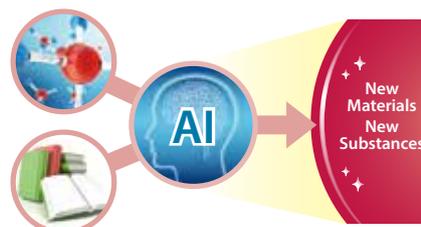
The NAGASE Group has built a network in cooperation with a variety of materials manufacturers. Although Japanese materials manufacturers are in a strong position worldwide, they lag behind in development and research using IT (AI). The NVC Office will lead

the industry, creating our own IP. We are advancing new technologies through the construction of AI-based materials informatics systems and the integration of biology and electronics.

### TOPICS Pursuing the Potential of Materials Informatics

Materials informatics (MI) is a technology attracting major attention in the field of materials. MI holds the potential to reduce materials development time and cost significantly, potentially leading to the discovery of innovative new materials. The key to exploring new materials lies in how to gather data from research institutions and companies that have accumulated large amounts of data over the years, and how to turn the information gleaned from this data into knowledge.

The NVC Office is participating in the Accelerated Materials Discovery project of the RFI consortium as one means of engaging with this issue. This project has been advancing two approaches based on AI. The cognitive approach reads an amount of information from literature, turning them into knowledge. The *cognitive approach* captures data obtained and converts it into usable knowledge. The *analytical approach* theoretically estimates structure and physical property values from a predictive model. The NVC Office is working closely with IBM's three laboratories to master their cutting-edge technologies, building a system NAGASE will be able to use in the near future.



## Nagase R&D Center



GM, Nagase R&D Center  
**Xiaoli Liu**



Nagase R&D Center



Patent certificate  
for ergothioneine  
fermentation production

The Nagase R&D Center functions to advance bio-related businesses from the earliest stages of research development. Our mission is to use proprietary fermentation technologies for innovation in the production of safe, secure, eco-friendly chemicals and materials. In doing so, the center will continue to create seeds of new businesses. The underlying concept of our research is *unavailable made available in a sustainable way*.

### ◎ Main Functions

- Development of Proprietary Bio-Related Technologies: Integrate advanced technologies and knowledge across a wide range of academic fields (N-STEPP®: Nagase Streptomyces Technology for Precious Products)
- New Business Planning and Development: Use biotechnologies for the efficient production of valuable materials with low environmental impact (biochemicals, functional materials fields)
- Assessment and adoption of bio-related technologies

### ◎ Technologies

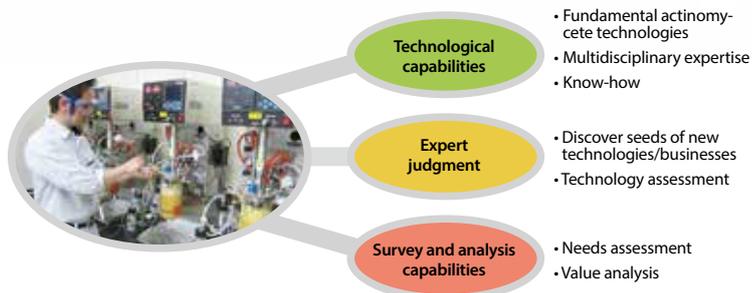
- Fundamental Technologies: Genetic engineering, metabolic engineering, fermentation engineering, bioprocess engineering, bioinformatics
- Core Technologies: Materials production technologies using actinomycetes, strain improvement technologies utilizing metabolic engineering

### Achievements in Fiscal 2017

- Established a fermentation production method for the amino acid ergothioneine, a stable, safe, and powerful antioxidant (patented)
- Developed a production method for metal-encapsulated, cage-shaped proteins (patent pending)
- Presented a paper on the development of an OTR simulator for culture tanks at the 83rd Annual Meeting of the Chemical Engineering Society
- Presented a paper jointly with Hiroshima University at an academic conference on the production of substances using Aurantiochytrium at the 69th Annual Meeting of the Biotechnology Society of Japan and the Japan Association of Agricultural Chemistry Conference 2018
- Cleared milestone (proof of concept) in the fermentation production of biocolors
- Succeeded in the fermentation production of functional cosmetics materials

### Fiscal 2018 Strategies

The Nagase R&D Center is dedicated to creating a sustainable world where people live with peace of mind. To this end, we develop microbial fermentation technologies, based on multidisciplinary fields in synthetic biology. At the same time, we continue to propose new ideas to commercialize these technologies, planting seeds that we hope will one day become new businesses. In fiscal 2018, we will collaborate with partners inside and outside our corporate group to rapidly commercialize the functional ingredients and materials currently in development.



### Intellectual Property Administration and Usage

The intellectual property team within the Nagase R&D Center collaborates with the intellectual property support team at corporate headquarters to secure the outcomes of research and technological development activities in the center as intellectual property. At the same time, the team proposes patent strategies for use in future businesses, conducting research and development as business strategy.

	Fiscal 2017		Cumulative (through fiscal 2017)	
	In Japan	Overseas*2	In Japan	Overseas*2
Patent applications*1	6	2	891	442
Patents*1	4	0	210	208

\*1 Number made under the names of Nagase & Co., Ltd. and Nagase Beauty Care Co., Ltd. Licenses and other intellectual property rights are not included.

\*2 Figures include applications for international patents.

## Nagase Application Workshop



GM, Nagase Application Workshop

**Tetsuya Asakawa**

The Nagase Application Workshop (NAW) is the testing and evaluation arm of the NAGASE Group for plastics and coatings. NAW tests and accumulates information about new technologies, serving as an antenna monitoring new trends in technology. We advance proprietary foundational technology development, working with group manufacturing companies to help create new businesses.

### ◎ Main Functions



#### 1. Plastics

Plastic material analysis using twin-screw extruders, injection molding machines, and various analytic equipment; compound formulation, prototypes of formed products, and materials analysis [Equipment] Twin-screw extruders (15mm, 18mm, 26mm); injection molding machines (80t and 110t); T-die extruder press, forming machine, analysis equipment, measurement equipment, etc.



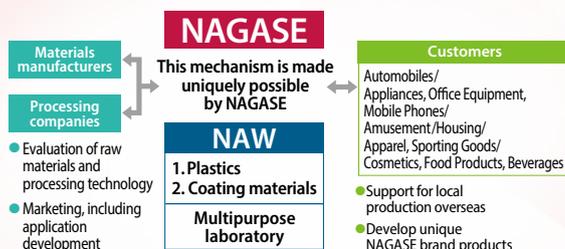
#### 2. Coating materials

Coating material analysis using various processing equipment, evaluation and analysis equipment, development of formulation of paint and ink formulation, prototyping and property evaluation [Equipment] Dry coating booth dispersing machine (paint conditioner, horizontal type, vertical type bead mill), UV irradiation machine drying oven, various environmental testing machines



#### 3. Multipurpose laboratory

The NAW serves as an incubator for new business development within the NAGASE Group, receiving expert staff from divisions and affiliated companies on a temporary basis. This increases the speed of business development through the effective use of technical support available through NAW facilities and staff.



### Development History

Throughout fiscal 2017, we received inquiries and requests from customers, materials manufacturers, and processing companies based on our reputation for conducting applied technology development that meets true market needs. We received representatives from more than 200 companies, in addition to more than 300 requests for testing and development. Intellectual property activities included 13 patent applications\* and eight acquisitions of rights (six in Japan, two overseas). In addition, we actively pursued collaboration with companies inside and outside the NAGASE Group, universities, and other external research institutes.

\* Number of projects during fiscal 2017. Projects listed under the Nagase Application Workshop name do not include licenses or other intellectual properties.

#### Plastics

- Develop plastic materials for molding with automotive industry parts makers (Tier 1, Tier 2). Weight savings, high-grade treatment, improvement in scratch resistance, etc.
- Development of high sliding polyethylene featuring superior processing characteristics
- Development of transparent, highly rigid plastics for use in cosmetics, medical products, and food applications

#### Coatings

We proposed new formulations to answer global needs, including PatnaLock™, a reactive paint that suppresses rust using rust; a carbon hybrid coating system that dramatically reduces paint VOC\*, and new coating raw materials

\* VOC: Volatile organic compounds

### Fiscal 2018 Policies

The NAW works with customers and suppliers as development partners in the plastics and coatings fields. Through these activities, we add new levels of support for technical sales, contributing to the real and perceived value of the NAGASE name.

During fiscal 2018, we plan to speed up our cooperative business development with other divisions and affiliated companies in Japan and overseas. In particular, we are targeting the commercialization of a

carbon hybrid™ coating system and a high sliding polyethylene, among other projects.

Our goal is to uncover new elemental technologies and functional materials earlier than any other company in the world, contributing to growth in our markets. We will develop useful formulations and create proprietary NAGASE Group technologies that we can suggest as effective solutions to our customers.

### TOPICS Introduction of Liquid-Repellent Nanocoating Device Made by P2i Ltd

NAW installed the P2i Ltd liquid-repellent nanocoating device in the NAW facility, where NAW will be able to conduct demonstrations and create samples in Japan. This technology is mainly used for smartphones; however, NAGASE intends to expand applications to headphones and other electronics, medical equipment, and other new fields.

In recent years, smartphones have developed with slimmer form factors, narrower frames, and 3D shapes. Treating these devices with mechanical protection against liquids has become much more difficult. The pulsed plasma vapor deposition technology patented by P2i applies a liquid-repellent coating to both the interior and exterior of three-dimensional objects, providing protection for the entire device. At the same time, treated devices are protected from corrosion due to water, salt, oils, humidity, etc., that may seep into the device's PCBA and other components.



## Human Rights, Employment Practices

### Respect for Human Rights

The NAGASE Group has a Code of Conduct which defines our respect for human rights and our refusal to discriminate against individuals or groups in any manner. As a corporate group doing business around the globe, the NAGASE Group respects the history, culture, and customs of every region, and we do not engage in harassment or discrimination based on race, creed, gender, religion, nationality, language, physical characteristics, wealth, or place of birth. This Code of

Conduct is available in Japanese, English, Chinese, and German, distributed as a booklet and available through our corporate intranet for the reference of all Group employees. We require every NAGASE Group employee to comply with this Code of Conduct. In the event of an incident of discrimination, the Group will take immediate steps to investigate the situation, acting to help the affected individual(s) and to prevent any recurrence.

### Diversity

#### Basic Stance on Diversity

The NAGASE Group believes that diversity is an important part of overall corporate strategy. Respect for the ideas and views of a diverse range of employees encourages more dynamic internal discussions and leads to new ideas that become the source of competitive advantage in the market. This in turn leads to the growth of both the NAGASE Group and each individual employee.



#### Diversity Initiatives

Our diversity initiatives began in earnest in fiscal 2008 with the launch of the Diversity Promotion Committee. During fiscal 2017, we took the opportunity to think about the future of diversity in the NAGASE Group under the banner of developing a roadmap based on our vision of the future. We began creating a roadmap to carry us through the medium term. We continue to promote diversity within our organization through strong management directives, group training, and other initiatives.

### Themes for Diversity Promotion

#### 1. Internal education

- ① Periodic messages from top management and broadcasts of related information
- ② Instill the NAGASE Management Philosophy, NAGASE Vision, and NAGASE Way deeply into NAGASE Group employees

#### 2. Diversity in organizations and individuals

- ③ Improve global communications
- ④ Support employees' career development
- ⑤ Continue employing non-Japanese people and women as main career track staff and improve our corporate culture

#### 3. Develop good places to work

- ⑥ Instill awareness and activate initiatives for continuity and productivity improvements
- ⑦ Support employees who are dealing with home care or other challenges



## Work-Life Balance

### Basic Stance on Work-Life Balance

We believe that work-life balance is a critical part of respecting diversity. Establishing a workplace environment in which it is easy for employees from wide variety of backgrounds to work enables achieving a working style that has a balance between professional and private lives, providing benefits to both the company and the individual. We are reforming mindsets and establishing systems to accomplish this goal.

### Work-Life Balance Initiatives

The monthly meeting of the employee-management Health Committee includes discussions related to flexible work schedules, encouraging paid time off, and reducing overtime. The committee uses results of workplace surveys as a basis for employee-management talks regarding creating a more enjoyable workplace environment.

## Human Resource Development

### The NAGASE Group HR Development Policy

#### • The NAGASE Group Approach to HR Development

NAGASE Group HR development programs consist of an organized combination of on-the-job and off-the-job training. On-the-job training lets employees experience real-world work in a variety of roles to gain new knowledge and skills. Off-the-job training also involves training and gaining skills through both formal lectures and self-directed learning.

The NAGASE Group promotes on-the-job training, while at the same time ensuring employees are able to learn knowledge and skills for their continued growth. These programs include rank-specific training for young staff, training for managers, and position-specific training to ensure staff have the necessary knowledge and skills to perform their work.

#### • Organization-Wide HR Development to Promote Group Function

We hold group joint training by job title and sponsor ongoing training for local staff, engaging in global unified human resource development programs that bring the comprehensive functions of the NAGASE Group to bear.

### Major Policies

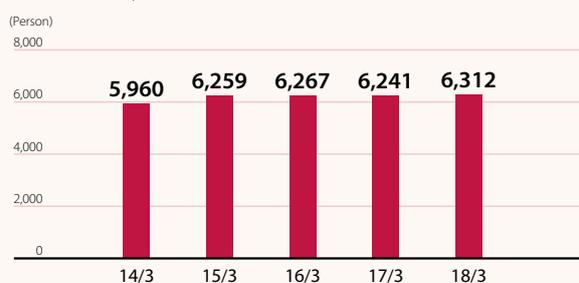
#### • Strengthening Management Capabilities and Operating Skills and Fostering Globally Proficient Personnel

We have emphasized the following three points among our various development policies. We will continue to revise Group education and training programs according to changes in the external business environment and NAGASE Group strategy.

① Promote globalization	<ul style="list-style-type: none"> <li>Assign employees to overseas entities</li> <li>Send employees to overseas business school</li> <li>Provide cross-cultural training</li> <li>Offer English language training support</li> </ul>
② Train managers	Improving awareness in competitive environment (send employees to business school or MBA basic training, etc.)
③ Instill shared values	<ul style="list-style-type: none"> <li>Provide shared value workshops in rank-specific training</li> <li>Offer shared value workshops for managers</li> <li>Conduct surveys regarding shared value</li> </ul>

### Group Company Employees

(Consolidated companies)



#### Using the NAGASE Global HR Development Center

We opened the NAGASE Global HR Development Center in May 2014 (Sendagaya, Tokyo). The Center serves as a base for human resource training in support of sustainable growth for the group. During fiscal 2017, we used the facility for meetings (joint division council meetings, global meetings, mid-term plan council meetings) and training (HR training, group company training, intern training, etc.). A total of 4,496 people used the center, including 1,172 room nights and 156 training meetings.

### Number of Participants in Main Training Programs

Training Program	Fiscal 2015	Fiscal 2016	Fiscal 2017
Rank-Specific Training	796	699	547
Overseas Training	19	11	15
Selective Training	8	20	7
Business Leadership Program for Overseas National Staff	37	36	33

### Staff Development Program

Title/Role	Management			National Staff	Title/Role	Specialist		
	Required Training	Selective Training	Voluntary Training			Required Training	Selective Training	Voluntary Training
Division Manager and Higher		Business School (Japan, Overseas)	Business School (Japan)	NAGASE Management Program	Division Manager and Equivalent		Business School (Japan)	Business School (Japan)
Division Manager Candidates, Section Managers	Career Development Training II Management Training	NAGASE Management Program New Section Manager Training			General Management Program	Section Manager and Equivalent		



Title/Role	Career Development			National Staff
	Required Training	Selective Training	Voluntary Training	
Section Managers, Manager Candidates	Career Development Training I	Overseas Business On-the-Job Training	MBA Basic Education Program	Basic Management Program
Section Manager Candidates	MBA Basic Education Program Practical Training Leadership Training			
Section Staff	Follow-Up Training Basic Practical Skills Seminar Introductory Training			
Job Candidates	Job Candidate Training			

Title/Role	Assistant		
	Required Training	Selective Training	Voluntary Training
Section Staff	Promoted PA Training, PA Committee		
	Promoted AA Training		Professional Networking (With Other Industries)
	Business Improvement Program		
	Excel Training		
	Business Skills Training		
	Introductory Training		



Basic Management Program



Leadership Training

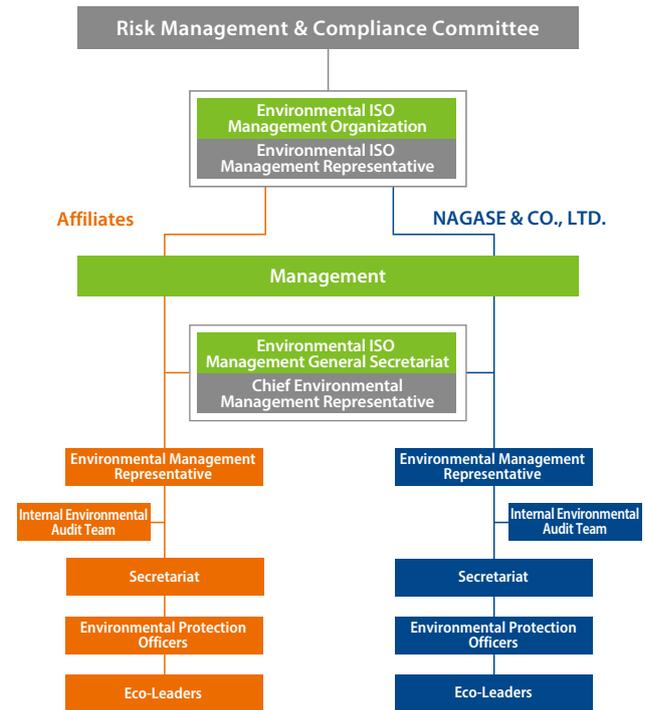
# Environment

## Environmental Management

### NAGASE Group Environmental Management Activities

The NAGASE Group began building an environmental management structure in May 1999 by establishing an Environmental Protection Committee, a role currently assumed by the Risk Management & Compliance Committee. The committee encouraged and supported certification for ISO 14001, an international standard for environmental management systems. Today, NAGASE & CO., LTD. operates an environmental ISO organization that includes six other group companies: Nagase Chemical, Nagase Plastics, Nagase Abrasive Materials, Nishinihon Nagase, Nagase Elex, and Nagase-OG Colors & Chemicals. Japan group companies Nagase ChemteX, Nagase Medicals, Totaku Industries, Nagase Techno-Engineering, Nagase Techno Service, and Fukui Yamada Chemical have received independent certification. We will continue activities to improve environmental management systems among certified group companies.

Environmental Management Structure



### Environmental Management Structure

We incorporate environmental management activities into our daily business activities. Specific activities include (1) promoting environmental businesses, (2) pursuing energy-efficient activities, and (3) improving operational efficiencies.

One example of our environmental businesses is using the technologies from our key environment and energy segment to develop and grow other businesses. We are building a system to quickly roll out products and services toward creating recycling-oriented and low-carbon societies.

One example of energy-efficient activities is the Nagase Energy Calculation Online System, or NECO System.

We began operating this system in August 2008. The NECO System uses logistics voucher data to calculate domestic cargo transport volumes, helping reduce our environmental footprint through logistics efficiencies.

In addition to calculating annual cargo transport volume and CO<sub>2</sub> emissions, the system analyzes optimal transport routes to reduce CO<sub>2</sub>, aiding our efforts to reduce energy used in transportation.

We are also taking action in our headquarters building to conserve energy and resources.

## Environmental Policy

### ① Comply with all environmental laws, regulations and other rules

We will observe all environmental laws, municipal bylaws, environmental regulations and other rules as we conduct our business activities.

### ② Develop businesses that give full consideration to environmental issues

We will conduct our business activities in full awareness of the need to preserve the ecosystem and protect the environment, and we will make every possible effort to give full consideration to the environment within the limits of technological and economic feasibility.

### ③ Fulfill our responsibilities as a good corporate citizen

As a good corporate citizen, we will work together with public institutions, industries, and local communities to promote environmental conservation measures that are suitable for the NAGASE Group.

### ④ Environmental management systems and continuous improvement

The NAGASE Group has set environmental targets to achieve our environmental policies. Further, we have established and operate an environmental management system, striving for continuous improvement.

### ⑤ Disclose and make the relevant parties fully aware of our Environmental Policy

We will disclose our Environmental Policy to the public and make all who work for the NAGASE Group fully aware of its contents.

## Reducing Our Ecological Footprint

In line with the Revised Act on the Rational Use of Energy, NAGASE & CO., LTD. has been designated as a specified corporation by the Bureau of Economy, Trade and Industry, as our energy usage exceeds fixed levels. Consequently, since 2011, we have compiled data on the amount of energy consumed at every facility, formulating medium- and long-term energy reduction plans and submitting regular reports to the Bureau of Economy, Trade and Industry.

We adopted and operate a building energy management system (BEMS) at our Tokyo head office building and Nagoya branch office. We automated controls and energy conservation operations during summer peak usage times to keep environmental settings within target levels.

### Activities Undertaken by Nagase ChemteX

The NAGASE Group manufacturing subsidiary Nagase ChemteX engages in environmental activities under the slogan, "We are a green company and want to help make the world greener." During fiscal 2017, the company engaged in energy savings activities to improve energy output by at least 1% through initiatives such as equipment, manufacturing process, and operating rules.

The company was able to sell CO<sub>2</sub> emissions saved through conservation activities through the J-Credit Scheme. The J-Credit Scheme is an initiative of the Ministry of the Environment to reduce greenhouse gas emissions.

## Environmental Performance Data

### Electricity Usage

	Fiscal 2015	Fiscal 2016	Fiscal 2017
Electricity Usage (kWh)	6,110,367	6,131,628	6,068,534

### Waste and Recycling

	Fiscal 2015	Fiscal 2016	Fiscal 2017
Waste (t)	217	189	194
Recycling (t)	183	154	156
Recycling (Ratio)	84.1%	81.7%	80.6%

Participating Companies: NAGASE & CO., LTD.  
Period: April 2015 to March 2018

### CO<sub>2</sub> Output

	Fiscal 2015	Fiscal 2016	Fiscal 2017
CO <sub>2</sub> Output (t-CO <sub>2</sub> )	2,494	3,196	3,094

### Paper Usage

	Fiscal 2015	Fiscal 2016	Fiscal 2017
Paper Usage (1,000 sheets)	6,007	5,431	3,916
Paper Usage (t)	25.8	23.4	16.7

### CO<sub>2</sub> Output from Logistics Activities

	Fiscal 2015	Fiscal 2016	Fiscal 2017
CO <sub>2</sub> Output (t-CO <sub>2</sub> )	1,787	1,840	2,044



## Fair Business Practices

### Risk Management and Compliance

#### Identify, Understand, and Control Risk

The Company established the Risk Management & Compliance Committee to monitor risk management and compliance. The committee has defined functions and authority, operating under a structure of clear roles and responsibilities.

The Risk Management & Compliance Committee formulates the NAGASE Basic Compliance Policy, using regular workshops and other initiatives to ensure corporate activities are strictly in line with the NAGASE Group Code of Conduct. Should an illegal act or other issue be discovered at NAGASE & CO. or a group company, such should be reported immediately to the Risk Management & Compliance Committee, which shall report promptly to the Board of Directors and the Audit & Supervisory Board/Audit & Supervisory Board Members. In addition, the Company has introduced an internal reporting system whereby employees and others can report or discuss issues directly.

In January 2015, we established Crisis Management Guidelines. These rules are part of a structural and communications system that allows us to quickly and properly respond as a cohesive organization, gathering information, providing reports, and issuing instructions in the event of a crisis that affects business continuity.

#### Fair Business Practice Initiatives

##### ● Basic Approach

The risk of cartel enforcement, particularly surcharges, under the Antimonopoly Act can have a major impact on a business. Accordingly, the NAGASE Group actively conducts education activities, mainly for our manufacturing companies.

Moving forward, we will continue to educate our employees about laws related to fair business practices, particularly those regulations deemed most necessary. We intend to strengthen our approach to the prevention of bribery of foreign public officials with respect to Japan's Unfair Competition Prevention Act. We also plan to continue educating employees worldwide regarding bribery prevention regulations, reflecting considerations of extraterritorial application of the U.S. Foreign Corrupt Practices Act and the UK Bribery Act.

#### Basic Compliance Policy

The NAGASE Group is a member of society and, as such, it is our duty to behave in a manner in keeping with this role by maintaining good and fair business practices and providing society with the goods and services it needs. Through continued growth and development, NAGASE can improve the welfare of its employees, while making a contribution to society. Based on this corporate philosophy, NAGASE has adopted and will implement the following Basic Compliance Policy.

This policy defines the behavior standards that NAGASE and its officers and employees will observe as it carries out its various business activities. Officers and employees of NAGASE must behave in accordance with these behavior standards and endeavor to disseminate them to those within the corporate organization, especially those with whom they work. If circumstances arise in which there is a risk that these behavior standards may be compromised, officers and employees must work to resolve problems without delay, and to improve operations by identifying the causes of problems and taking steps to prevent recurrences.

- ① Compliance with laws, regulations and internal rules and regulations
- ② Elimination of anti-social elements
- ③ Provision of goods and services that are useful to society
- ④ Respect for the qualities and individuality of employees
- ⑤ Disclosure of information to stakeholders
- ⑥ Preserving the global environment
- ⑦ Senior Management Responsibilities

#### Basic Compliance Policy

🌐 <https://www.nagase.co.jp/english/csr/compliance/policy/>

##### ● Education Activities (2017–)

Implementation	Targets	Content/Attendance
November–December 2017	NAGASE Group worldwide Officers, employees	E-Learning compliance awareness surveys related to Compliance Behavior Standards (revised October 2017), etc.
December 2017	Hayashibara Co., Ltd. Officers, employees	Subcontract Act compliance seminars Held once each in Tokyo and Okayama
February 2018	Hayashibara Co., Ltd. Employees	Antimonopoly Act compliance seminars Held once each in Sapporo and Fukuoka
February–March 2018	NAGASE & CO., LTD., certain affiliated companies Section managers	Compliance seminars conducted by rank Held once each in Tokyo and Osaka

## Specific Measures Taken for Individual Risks

### ● Product Safety and Quality Control

According to the NAGASE Group Product Safety Principles formulated in October 2008, we strive to ensure the safety of NAGASE Group products through rules and education regarding group-wide quality management and product safety assurance.

As NAGASE changes business models from being sales agents to manufacturing/processing and manufacturer investment, we will be called upon increasingly to assume responsibility for quality assurance. To assist in this area, the Quality Management Section of the Legal Division provides management of vendors and manufacturing contractors, support to group manufacturing companies, and internal education.

Product Safety Principles

◎ <https://www.nagase.co.jp/english/csr/compliance/product-safety-principles/>

### ● Security Trade Controls

NAGASE has set up our own Security Trade Control Committee to determine security trade control rules and implement other export controls appropriately. The Security Trade Control Committee works to understand the export control situation, follow the latest revisions to the Foreign Exchange and Foreign Trade Control Law, and ascertain a detailed picture of export controls across the entire group, while formulating related group policies. The Item Compliance Management Council is in charge of directing and educating each business division and group company in matters and statute updates determined by the Security Trade Control Committee. It is the responsibility of the Item Compliance Management Council to protect the Company and affiliates against the risk of illegal acts with respect to export controls.

### Specific Management Framework

All information about our export products, technologies, and overseas customers is stored in our proprietary Product Management System. We confirm whether certain products or technologies are subject to restriction under the rules of the Foreign Exchange and Foreign Trade Control Law and the U.S. Export Administration Regulations. Only those products approved by the Item Compliance Management Section are put into the system as products allowed for export.

Going one step beyond mere adherence to the law, we define policies for the entire NAGASE Group associated with security trade controls that, as a rule, prohibit trade of products that are military-related items or that have military applications.

### Efforts to Promote Personnel Development

Every year, the practical business of security trade controls becomes ever more complex. To keep pace with developments, the NAGASE Group encourages its employees—primarily

those involved in export operations—to become Security Trade Control Associates by taking the exam offered by the Center for Information on Security Trade Controls (CISTEC). As of March 2018, NAGASE had 856 qualified STC Associates in 21 Group companies. We hold internal security trade control training for all NAGASE employees, as well as lectures for domestic subsidiaries and affiliates, and overseas subsidiaries, providing global group human resource development related to export management.

### ● Regulatory Compliance in Products

International society is becoming more concerned about environment- and safety-related issues. At NAGASE, we continue to improve product-related compliance and centralized information management, including management of chemical products. All products we deal in are subject to the management system administered by the Item Compliance Management Section within the Logistics Management Division. This allows us to comply properly with any laws or regulations that affect our products.

### Specific Compliance Framework

The NAGASE Group monitors related laws for the chemical components and regulated effects of new products we plan to introduce to the market. Information related to these products is managed within the aforementioned Product Management System database, shared group-wide. We are members of the Japan Chemical Industry Association, the Japan Chemical Exporters and Importers Association, and other industry organizations. Through these relationships, we have access to information regarding chemical regulations. We are a member of the Joint Article Management Promotion-consortium (JAMP), and we use MSDSplus, AIS, and other specialized tools related to products containing chemical substances, as we endeavor to pass on accurate information to relevant parties.

### Strategic Approach to International Chemical Management (SAICM)

The action plan adopted at the 2002 World Summit on Sustainable Development—also known as the Johannesburg Summit—is aimed at ensuring that, by the year 2020, chemicals are produced and used in ways that minimize significant adverse impacts on the environment and human health. In accordance with this policy, the entire world is adopting more strict and standardized regulations concerning chemical management.

These legal and regulatory developments affect the finished products produced by manufacturers. Therefore, one of the important functions of the NAGASE Group is to provide relevant information to our customers. Accordingly, we anticipate global regulatory trends related to chemical management, working with our overseas subsidiaries to educate, provide instructions, and adopt product management systems. In this way, we facilitate the global management of information related to chemical substances in the products we handle.



## For Consumer Safety and Security

The NAGASE Group deals in more than just chemical products. We also manufacture and sell enzymes and other food products and cosmetics under strict quality management and effective sales systems. In this section, we introduce Nagase ChemteX Corporation and Nagase Beauty Care Co., Ltd., two group companies that focus on the security, safety, and trust of our customers.

### Green Company Initiatives

Nagase ChemteX provides core manufacturing functions for the NAGASE Group. Nagase ChemteX is engaged in two pillars of environmental management based on ISO 14001: Green Company (aiming to be a company that does not negatively impact the environment) and Green Technologies and Products (reducing the overall impact of society on the environment by developing and manufacturing environmentally friendly products).

In recent years, the company has paid particular focus on green procurement, or not using hazardous chemical substances subject to intensified regulations worldwide (substances restricted under the RoHS Directive, substance of very high concern regulated under REACH, etc.). The company strives to provide products that customers can use with safety and confidence throughout the product life cycle.

© <http://www.nagasechemtex.co.jp/en/environment/index.html>

### Food Safety and Security

Nagase ChemteX believes contributing to customer food safety and security is one of the most important callings they have. The company's Fukuchiyama Plant, which manufactures food additives and health food materials, provides the highest in safe and quality manufacturing as a member of the food chain, from the acceptance of raw materials and manufacturing to quality assurance and product delivery. These practices incorporate ISO 9001, Food Additive Good Manufacturing Practices, and FSSC 22000 (voluntary adoption).



Nagase Chemtex  
Fukuchiyama Plant

### Cosmetics Safety and Security

#### ● Basic Approach

Nagase Beauty Care sells direct to the consumer through an organization of independent sales agents. Because these products are cosmetics and health foods that come into direct contact with the human body, the company must practice product quality management under the strictest quality standards. Our highest priority is to provide our valued customers with safe, secure products and services.

#### ● Specific Initiatives

Our research and development pursues herb sciences and technology, selecting materials from a variety of plants, seeking out those that combine safety and functionality. The plant materials coming out of our research are used as the raw materials of end products, which are in turn subject to strict quality management systems in connection with the production process.

Nagase Beauty Care has established an after-sales support office, which answers customer questions about their purchases. We use the direct feedback from this office to improve the quality of our products and services.





## Community Involvement and Development

The NAGASE Group Management Philosophy reminds us that we are a member of society and that we must strive to contribute to society.

We engage in a variety of social contribution activities under this banner.

### ■ Nagase Science and Technology Foundation

We believe in the importance of fundamental research in the organic chemistry and biochemistry fields, and that offering subsidies through research and development and international exchange leads to the advancement of science and technology. As part of our contribution to socioeconomic progress, we established the Nagase Science and Technology Foundation in 1989. Current programs include research grants to researchers and other subsidies. To date, the Nagase Science and Technology Foundation has helped finance 492 research projects, provided support for 178 international exchange programs (program terminated during fiscal 2004), and contributed a total of ¥1.27 billion to further science.



▶ <https://www.nagase-f.or.jp/>

### ■ TABLE FOR TWO Initiative

NAGASE & CO., LTD. supports the TABLE FOR TWO charity. A donation of ¥20 per meal taken in the corporate cafeteria, which provides school lunches to children in Africa. The company matches employee donations to TABLE FOR TWO, which has reached a cumulative total of ¥2,917,280 (as of April 2018).



Source: TABLE FOR TWO

▶ <http://jp.tablefor2.org/>

### ■ SCRUM JAPAN PROGRAM

NAGASE & CO., LTD. supports the SCRUM JAPAN PROGRAM, a program operated by the Japan Rugby Football Union to foster human resources through the sport of rugby. This program promotes rugby to elementary, junior high, and high school students, who represent Japan's future leaders. Through rugby, these children learn the spirit of the sport: Courage, trust, responsibility, determination, cooperation, and loyalty.



▶ [https://www.rugby-japan.jp/scrum\\_japan\\_program/](https://www.rugby-japan.jp/scrum_japan_program/)

### ■ Hayashibara Museum of Art

NAGASE Group company Hayashibara Co., Ltd. provides operational support for the Hayashibara Museum of Art. The museum houses a collection of Japanese and other East Asian paintings, crafts, and other items collected by the late Ichiro Hayashibara. The museum also exhibits furnishings inherited from the estate of the feudal Ikeda clan of the Okayama Domain. The goal of the museum is to contribute to research of cultural assets and improve the culture of the region and of Japan.



▶ <http://www.hayashibara-museumofart.jp/>

### ■ Participation in the Living Architecture Museum Festival

NAGASE & CO., LTD.'s Osaka head office is a registered cityscape resource of Osaka City. Every year, NAGASE participates in the Living Architecture Museum Festival in Osaka, helping promote the city as an attraction.



▶ <https://ikenchiku.jp/>

### ■ Community Contribution

NAGASE & CO., LTD. employees volunteer their time (cleaning, removing protective straw mats from trees, etc., at Hamarikyū Gardens, etc.) participating in the activities of Chuo Planet (Chuo-ku/Tokyo Social Contribution Committee).

### ■ Blood Donation Activities

Employees participate in blood drives in Tokyo and Osaka twice yearly. In fiscal 2017, nearly 150 NAGASE employees donated blood.

# Financial Foundation Supporting Business Growth



Through our **ACE-2020** initiatives, we are building a foundation for business growth and globalization, reaching toward sustainable growth and development.

Representative Director and  
Senior Managing Executive Officer

**Mitsuro Naba**

## Basic Policy

Our **ACE-2020** mid-term management plan guides us through the five years to the fiscal year ending March 2021. Our goals under this plan are to reach at least ¥1 trillion in consolidated net sales, at least ¥30 billion in consolidated operating income, and an ROE of at least 6% through two distinct reforms: Reform of Profit Structure and Reform of Corporate Culture. We use improved return on invested capital (ROIC) as a benchmark, focusing on measures that contribute to an improved net income ratio (before taxes) and ROIC. We follow five key performance indicators to help us achieve our goals, achieve sustainable growth, and increase corporate value. These indicators are *Increase Focused Business, Accelerate Globalization, Increase Manufacturing Profitability, Pursue Efficiency, and Build a Strong Financial Structure*.

## Capital Procurement

Under **ACE-2020**, we expect to invest ¥100 billion over five years to grow our businesses. For fiscal 2017, our investments amounted to ¥18.6 billion. We will source our investment

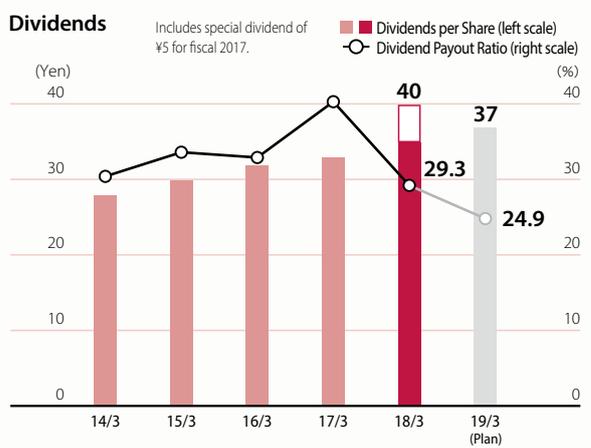
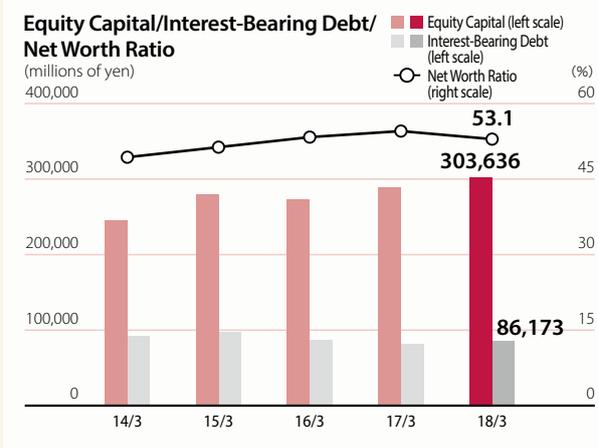
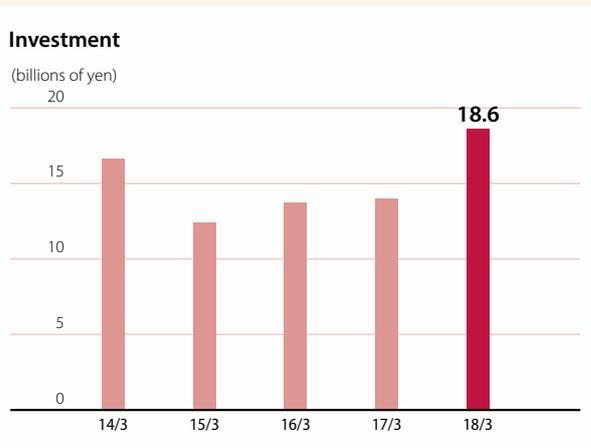
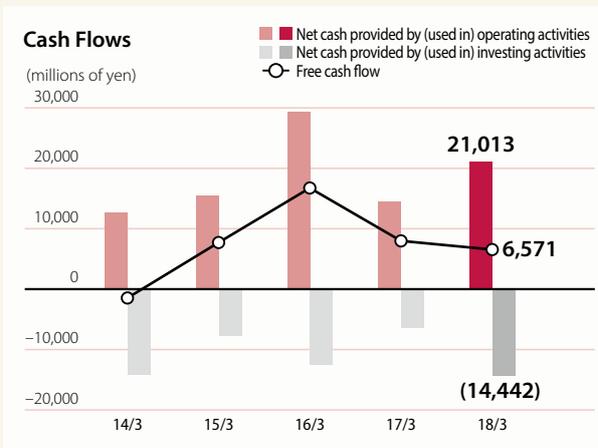
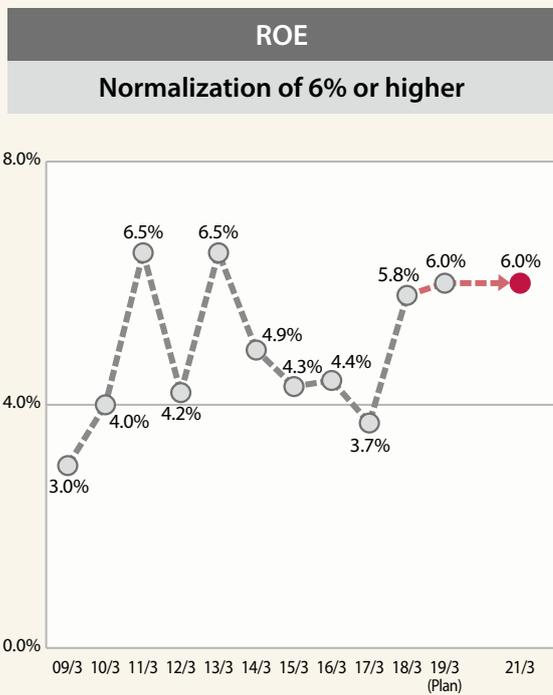
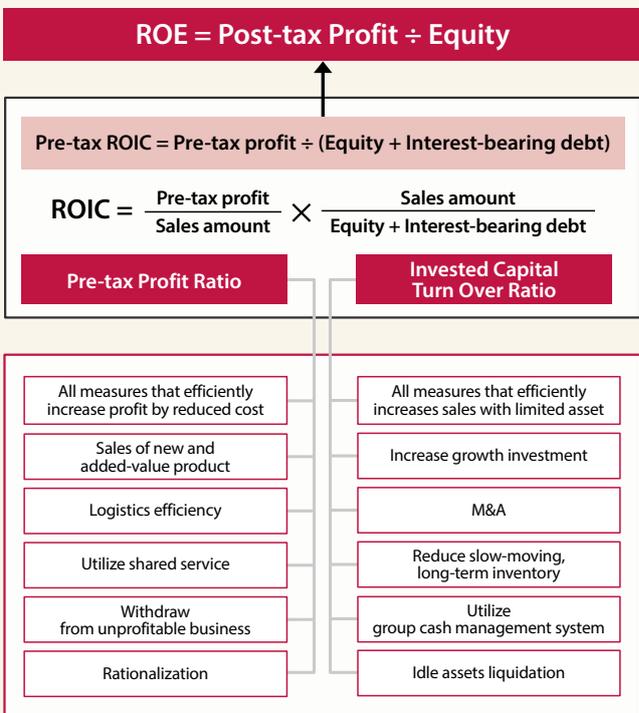
capital and working capital mainly from operating cash flows and interest-bearing debt. At the same time, efficient use of working capital and asset replacement will serve to preserve our strong financial foundation, a particular strength of NAGASE & CO., LTD. We have established an R&I (Rating and Investment Information, Inc.) rating of A or higher as an indicator of our financial strength.

## Return of Profits to Shareholders

Our basic policy is to continue paying a stable dividend to our shareholders in line with our consolidated results as we improve our earnings power and management structure. We look to improve per-share dividends based on considerations of the consolidated payout ratio and consolidated dividend to equity ratio.

Our initial forecast for fiscal 2017 dividends was ¥35 per share. However, we raised that figure to ¥40 per share (including a special dividend of ¥5), based on our most recent earnings and financial condition. For fiscal 2018, we forecast a ¥37 per share dividend.

### Numerical Targets under ACE-2020



# Six-Year Summary

NAGASE & CO., LTD. and Consolidated Subsidiaries (Fiscal years ended March 31, 2013–2018)

	Millions of yen						Thousands of U.S. dollars (Note 1)
	2013	2014	2015	2016	2017	2018	2018
<b>For the Fiscal Year:</b>							
Net Sales	¥666,272	¥723,212	¥759,713	¥742,194	¥722,384	<b>¥ 783,933</b>	<b>\$7,378,887</b>
Domestic	361,971	372,939	374,208	363,038	369,365	<b>395,428</b>	<b>3,722,026</b>
Overseas	304,301	350,272	385,505	379,155	353,019	<b>388,504</b>	<b>3,656,852</b>
Gross Profit	82,583	88,936	91,991	91,663	91,503	<b>102,675</b>	<b>966,444</b>
Operating Income	15,578	15,789	18,153	18,024	15,030	<b>24,118</b>	<b>227,014</b>
Profit before Income Taxes and Non-Controlling Interests	19,458	18,353	18,989	15,239	16,100	<b>24,049</b>	<b>226,365</b>
Profit Attributable to Owners of the Parent	14,182	11,663	11,318	12,316	10,331	<b>17,175</b>	<b>161,662</b>
<b>As of the Fiscal Year-End:</b>							
Total Assets	¥486,747	¥498,141	¥546,525	¥512,081	¥530,775	<b>¥ 571,445</b>	<b>\$5,378,812</b>
Net Assets	237,806	251,892	287,500	279,149	295,198	<b>308,804</b>	<b>2,906,664</b>
Interest-Bearing Debt	98,425	92,828	98,493	87,560	82,080	<b>86,173</b>	<b>811,116</b>
Share Price (Yen)	1,147	1,275	1,573	1,237	1,551	<b>1,805</b>	<b>16,990</b>
Market Value	158,754	176,470	200,413	157,604	197,610	<b>229,971</b>	<b>2,164,637</b>
Number of Shares Issued and Outstanding (Thousands of Shares)	138,408	138,408	127,408	127,408	127,408	<b>127,408</b>	—
Number of Shareholders	6,921	6,984	6,781	7,338	10,394	<b>11,357</b>	—
Number of Employees	5,897	5,960	6,259	6,267	6,241	<b>6,312</b>	—

	Yen						U.S. dollars (Note 1)
	2013	2014	2015	2016	2017	2018	2018
<b>Per Share Data</b>							
Profit Attributable to Owners of the Parent	¥ 111.31	¥ 91.86	¥ 89.10	¥ 96.96	¥ 81.65	<b>¥ 136.34</b>	<b>\$ 1.28</b>
Net Assets	1,803.31	1,942.20	2,215.18	2,156.67	2,301.10	<b>2,424.97</b>	<b>22.83</b>
Cash Dividends	26.00	28.00	30.00	32.00	33.00	<b>40.00</b>	<b>0.38</b>
<b>Ratio</b>							
Operating Margin (Operating Income/Net Sales) (%)	2.3	2.2	2.4	2.4	2.1	<b>3.1</b>	—
Ratio of Profit before Income Taxes and Non-Controlling Interests to Net Sales (%)	2.9	2.5	2.5	2.1	2.2	<b>3.1</b>	—
Return on Sales (ROS) (%)	2.1	1.6	1.5	1.7	1.4	<b>2.2</b>	—
Total Assets Turnover (Times)	1.4	1.5	1.5	1.4	1.4	<b>1.4</b>	—
Return on Assets (ROA) (%)	3.0	2.4	2.2	2.3	2.0	<b>3.1</b>	—
Return on Equity (ROE) (%)	6.5	4.9	4.3	4.4	3.7	<b>5.8</b>	—
Shareholders' Equity Ratio (%)	46.9	49.5	51.5	53.5	54.7	<b>53.1</b>	—
Debt to Equity Ratio (Times)	0.43	0.38	0.35	0.32	0.28	<b>0.28</b>	—
Current Ratio (%)	184.4	187.2	187.0	200.1	192.9	<b>184.5</b>	—
Interest Coverage Ratio (Times) (Note: 2)	15.46	15.80	17.86	18.69	16.31	<b>20.02</b>	—

Note: 1. U.S. dollar amounts have been translated from yen, for convenience only, at the rate of ¥106.24=U.S. \$1.00, the approximate rate of exchange prevailing on March 31, 2018.

Note: 2. Interest coverage ratio is calculated as (operating income + interest income + dividend income) / interest expense.

# Management's Discussion and Analysis of Operations and Finances

## Business Lines and Scope of Consolidation

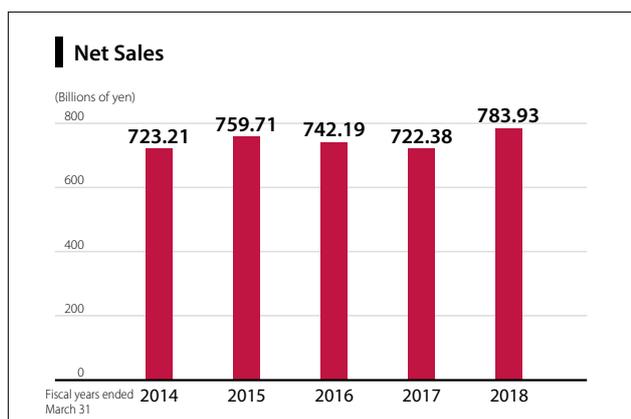
The NAGASE Group, led by NAGASE & CO., LTD. ("the Company" or "NAGASE"), imports and exports a diverse array of products and engages in domestic transactions. In addition, the group manufactures and sells products and provides services. These businesses are conducted by 101 affiliated companies consisting of 70 subsidiaries and 31 affiliates. The NAGASE scope of consolidation includes 61 companies, as well as 22 affiliates accounted for by the equity method.

## Overview of Results

### ■ Net Sales

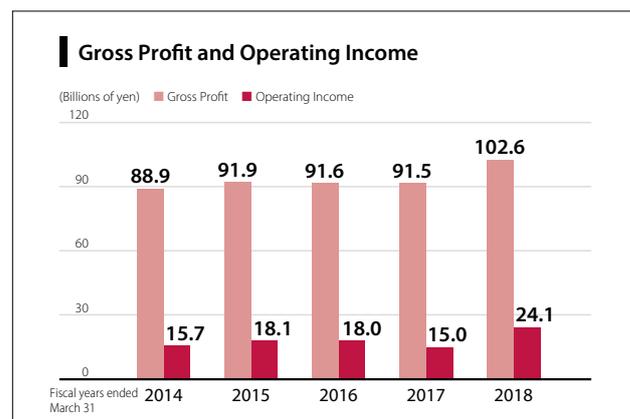
The Japanese economy continued to recover throughout the fiscal year, supported by factors including improved corporate earnings, strong personal consumption driven by favorable employment and payrolls, and stable capital investment. The global economy continued to experience a gradual recovery, despite risks related to exchange rate fluctuations and market conditions impacted by national financial and trade policies. The overall global economy was supported by continued growth in the United States, China, and among the emerging economies.

In this environment, the Company recorded domestic sales of ¥395.42 billion (+7.1% year on year) for the consolidated fiscal year. Overseas sales, impacted by the comparatively weak yen compared to the prior year, rose to ¥388.5 billion (+10.1%). In total, the Company recorded a record-high ¥783.93 billion in net sales, an increase of 8.5%.

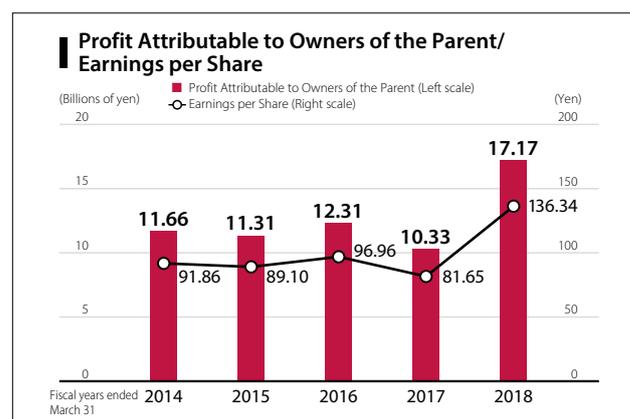


### ■ Gross Profit and Profit Attributable to Owners of the Parent

Gross profit rose in concert with sales gains, amounting to ¥102.67 billion (+12.2%) for the fiscal year. Operating income amounted to ¥24.11 billion (+60.5%), mainly due to lower retirement benefit expenses associated with amortization of actuarial losses. The Company recorded ordinary income ¥25.98 billion (+58.8%) and profit attributable to owners of the parent ¥17.17 billion (+66.2%). All profit indicators marked record highs for the consolidated fiscal year in the history of the Company.



The Company recorded profit before income taxes of ¥24.0 billion (49.3% increase year on year) with a ratio of profit before income taxes to net sales of 3.1%, which was a 0.9-point increase compared to the prior fiscal year. Profit attributable to owners of the parent amounted to ¥17.17 billion (66.2% increase). Return on sales increased by 0.8 points to 2.2%. Earnings per share was ¥136.34, compared to ¥81.65 in the prior year.



## Management's Discussion and Analysis of Operations and Finances

### Results by Business Segment

#### Functional Materials

Fiscal years ended March 31	(Millions of yen)	
	2017	2018
Sales to Customers	¥153,546	<b>¥176,068</b>
Segment Income	4,185	<b>5,170</b>
Segment Assets	72,576	<b>87,905</b>
Depreciation and Amortization	476	<b>456</b>
Amortization of Goodwill	—	<b>133</b>
Goodwill	—	<b>3,276</b>
Investments in Equity Affiliates	1,716	<b>2,478</b>
Increase in Property, Plant, and Equipment and Intangible Fixed Assets	297	<b>243</b>

The Functional Materials segment recorded higher sales in both domestic and overseas markets.

The Performance Chemicals Business recorded higher sales due to improved sales of coating raw materials and urethane materials, spurred by strong automotive production in Japan and overseas. Another contributing factor was a jump in sales associated with the Company's acquisition of a distributor in the United States.

The Specialty Chemicals Business recorded higher sales overall. Sales of fluorochemicals, electronics chemicals, and raw materials for industrial oil solutions were higher for the semiconductor and other electronics industries in Japan. Overseas, sales were higher for electronics chemicals and other products.

As a result, the segment recorded sales of ¥176.06 billion for the year, representing a ¥22.52 billion (+14.7%) increase compared to the prior consolidated fiscal year. Segment operating income grew ¥980 million (+23.6%), reaching ¥5.17 billion for the year.

#### Advanced Materials & Processing

Fiscal years ended March 31	(Millions of yen)	
	2017	2018
Sales to Customers	¥242,609	<b>¥262,831</b>
Segment Income	5,093	<b>6,700</b>
Segment Assets	121,346	<b>134,977</b>
Depreciation and Amortization	809	<b>645</b>
Amortization of Goodwill	—	—
Goodwill	—	—
Investments in Equity Affiliates	1,394	<b>1,482</b>
Increase in Property, Plant, and Equipment and Intangible Fixed Assets	3,561	<b>2,817</b>

The Advanced Materials & Processing segment recorded lower sales in both domestic and overseas markets.

The Colors & Advanced Processing Business recorded higher sales as a whole, driven by growth in plastic resins for industrial and packaging applications, dyes/additives, and digital print processing materials in Japan. Overseas, strong sales of print-related business products contributed to higher overall performance.

The Polymer Global Account Business mainly sells plastics to the office equipment, appliance, and video game device markets. Sales were higher overall, driven by growth in Japan, Greater China, and ASEAN.

As a result, the segment recorded sales of ¥262.83 billion for the year, representing a ¥20.22 billion (+8.3%) increase compared to the prior consolidated fiscal year. Segment operating income grew ¥1.6 billion (+31.5%), reaching ¥6.7 billion.

#### Electronics

Fiscal years ended March 31	(Millions of yen)	
	2017	2018
Sales to Customers	¥127,722	<b>¥129,324</b>
Segment Income	6,333	<b>8,917</b>
Segment Assets	65,610	<b>70,149</b>
Depreciation and Amortization	2,524	<b>2,454</b>
Amortization of Goodwill	41	<b>112</b>
Goodwill	627	<b>1,296</b>
Investments in Equity Affiliates	2,318	<b>2,751</b>
Increase in Property, Plant, and Equipment and Intangible Fixed Assets	1,825	<b>1,834</b>

The Electronics segment recorded an increase in sales for the year, driven by strong performance at our manufacturing subsidiaries in Japan and overseas.

The Electronic Chemicals Business recorded higher sales due to growth in photolithography materials and equipment-related sales, as well as strong performance of formulated epoxy resins for the electric and electronics industries.

The Electronic Materials Business recorded lower sales compared to the prior fiscal year. This decrease was due to declines in processed materials sales associated with smartphone model changeovers.

As a result, the segment recorded sales of ¥129.32 billion for the year, representing a ¥1.6 billion (+1.3%) increase compared to the prior consolidated fiscal year. Segment operating income grew ¥2.58 billion (+40.8%), reaching ¥8.91 billion for the year.

#### Automotive & Energy

Fiscal years ended March 31	(Millions of yen)	
	2017	2018
Sales to Customers	¥112,956	<b>¥129,708</b>
Segment Income	1,539	<b>2,415</b>
Segment Assets	46,258	<b>51,109</b>
Depreciation and Amortization	219	<b>249</b>
Amortization of Goodwill	—	—
Goodwill	—	—
Investments in Equity Affiliates	1,235	<b>1,231</b>
Increase in Property, Plant, and Equipment and Intangible Fixed Assets	284	<b>191</b>

The Automotive Solutions Business recorded higher sales, driven by factors including strong performance in our resins businesses in Japan, Greater China, and ASEAN.

As a result, the segment recorded sales of ¥129.7 billion for the year, representing a ¥16.75 billion (+14.8%) increase compared to the prior consolidated fiscal year. Segment operating income grew ¥870 million (+56.9%), reaching ¥2.41 billion for the year.

### Life & Healthcare

Fiscal years ended March 31	2017	2018
Sales to Customers	¥84,904	<b>¥85,371</b>
Segment Income	3,332	<b>4,216</b>
Segment Assets	98,221	<b>97,667</b>
Depreciation and Amortization	3,412	<b>3,552</b>
Amortization of Goodwill	1,502	<b>1,502</b>
Goodwill	22,407	<b>20,905</b>
Investments in Equity Affiliates	2,476	<b>2,601</b>
Increase in Property, Plant, and Equipment and Intangible Fixed Assets	4,906	<b>2,369</b>

The Life & Healthcare segment recorded net sales slightly higher compared to the prior fiscal year. While sales were lower domestically, the Company recorded higher sales overseas.

Sales of TREHA™ and other products to food ingredient makers in our Life & Healthcare Products Business were level, while sales in Europe and other regions overseas grew. Although the business recorded lower sales of AA2G™ to major customers in the skin care and toiletries field overseas, sales to major customers in Japan were higher. In the medical and pharmaceutical field, sales of pharmaceutical raw materials and intermediates, medical materials, and pharmaceutical business products all underperformed the prior year. As a result, the business recorded sales slightly higher compared to the prior year.

The Beauty Care Products Business, which includes sales of cosmetics and health foods, recorded lower sales, driven down due to weak performance across all product categories.

As a result, the segment recorded sales of ¥85.37 billion for the year, representing an increase of ¥460 million (+0.6%). Segment operating income grew ¥880 million (+26.5%), reaching ¥4.21 billion for the year.

### Others

No special matters to disclose.

## Financial Condition

### (Summary of Consolidated Cash Flows)

Cash and cash equivalents (Cash) increased ¥3.12 billion (+7.9%) compared to the end of the prior consolidated fiscal year, amounting to ¥42.85 billion. Cash provided by operating activities amounted to ¥21.01 billion, while cash used in investing activities came to ¥14.44 billion, and cash used in financing activities amounted to ¥3.16 billion. In addition, effects of exchange rate changes had a ¥170 million negative impact on Cash balances.

#### ■ Cash Flows from Operating Activities

Cash flows from operating activities for the consolidated fiscal year amounted to ¥21.01 billion. While the Company experienced a ¥11.96 billion decrease in Cash due to increased working capital and payments of ¥4.86 billion in income taxes, we also recorded income before profit before income taxes of ¥24.04 billion and cash reserved related to depreciation and amortization in the amount of ¥9.29 billion.

#### ■ Cash Flows from Investing Activities

Cash used in investing activities during the consolidated fiscal year amounted to ¥14.44 billion. This result was mainly due to cash outlays of ¥7.21 billion for the purchase of property, plant and equipment and intangible fixed assets, as well as outlays of ¥5.99 billion for the acquisition of the stock of a subsidiary in connection with a change in the scope of consolidation.

#### ■ Cash Flows from Financing Activities

Cash used in financing activities for the consolidated fiscal year amounted to ¥3.16 billion. This result was mainly due to cash outlays of ¥10.0 billion and ¥4.28 billion for redemption of bonds and dividend payments, respectively. These outlays were in excess of a net ¥5.0 billion increase in commercial paper and ¥8.3 billion in proceeds from long-term loans.

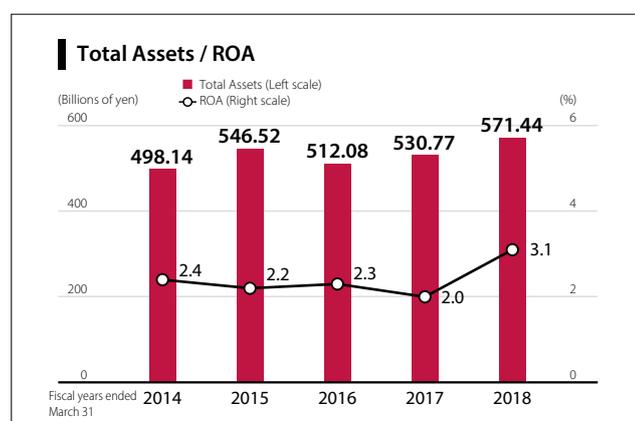
### Cash Flow Summary

Fiscal years ended March 31	2014	2015	2016	2017	2018
Cash Flows from Operating Activities	¥ 12,721	¥15,474	¥ 29,376	¥ 14,527	<b>¥ 21,013</b>
Cash Flows from Investing Activities	(14,171)	(7,732)	(12,600)	(6,518)	<b>(14,442)</b>
Cash Flows from Financing Activities	(11,833)	(3,205)	(12,822)	(10,592)	<b>(3,161)</b>

## Summary of the Consolidated Balance Sheet

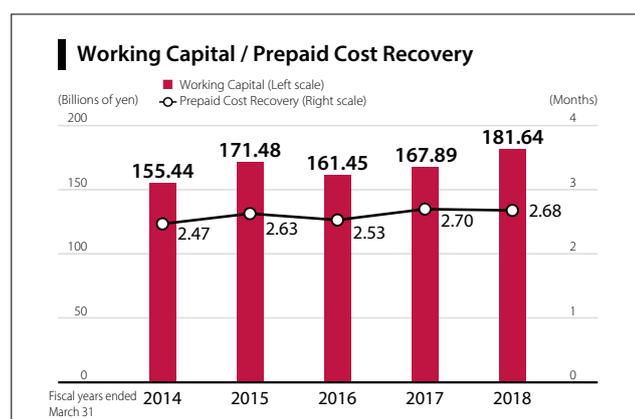
### ■ Assets

As of the end of the consolidated fiscal year, current assets amounted to ¥356.1 billion. This represents an increase of ¥34.89 billion compared to the end of the prior consolidated fiscal year, an increase due mainly to increases in accounts receivable and inventories. Non-current assets amounted to ¥215.33 billion, up ¥5.77 billion. This increase was mainly due to increases in fair values of shares retained and goodwill recorded by the Company during the period. As a result of these various factors, total assets increased ¥40.67 billion to ¥571.44 billion as of the end of the consolidated fiscal year.



### ■ Liabilities

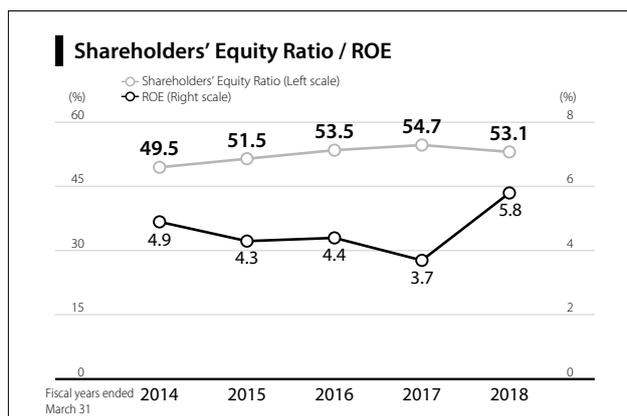
Liabilities amounted to ¥262.64 billion, a ¥27.06 billion increase compared to the end of the prior consolidated fiscal year. This increase was mainly due to increases in accounts payable and short-term loans, which exceeded redemptions of bonds.



### ■ Net Assets

Net assets amounted to ¥308.8 billion, up ¥13.6 billion. This increase was mainly due to ¥17.17 billion in profit attributable to owners of the parent and an increase in net unrealized holding gain on securities.

As a result, the Company recorded a shareholders' equity ratio of 53.1%, down 1.6 points compared to the end of the prior consolidated fiscal year.



## Capital Investment

During the fiscal year, the NAGASE Group recorded ¥9.42 billion in capital investment (including purchases of intangible fixed assets). This amount included ¥2.36 billion in capital investment at the Kanto/Oyama Plant of Totaku Industries, Inc. (Advanced Materials & Processing segment).

The group used cash on hand and funds procured from external sources for capital investments.

Reportable Segments	(Millions of yen)
Functional Materials	¥ 243
Advanced Materials & Processing	2,817
Electronics	1,834
Automotive & Energy	191
Life & Healthcare	2,369
Others	1,965
<b>Total</b>	<b>9,423</b>

## Research Costs

The NAGASE Group develops new technologies and products originating from our marketing activities. We also engage in research and development activities for the purpose of generating and sharing technological information. These activities bring the comprehensive power of the group to bear in creating new businesses.

The New Value Creation Office was established in April 2017 (under the corporate segment) to promote innovation within the group and create new value. The office serves as a core driver of future business for the NAGASE Group.

Through the Research Frontiers Institute consortium with IBM, the New Value Creation Office works on bio-inspired technology that integrates biology and electronics. These activities include contributions to the development of AI-based information retrieval systems

(accelerated material discovery), the development of low-power devices (brain-inspired devices), and the development of products that feature biomimicry applications.

The Nagase R&D Center conducts foundational technology research and proposes research topics for the biotechnology-related businesses operated by the NAGASE Group. At present, the Nagase R&D Center is working to help create a global-scale bioeconomy society through process innovation (*Unavailable Made Available*) to facilitate high-efficiency production of plant- and animal-derived rare and useful substances, which have been traditionally difficult to synthesize. The center is leveraging our own core technologies (N-StePP<sup>®</sup>: Technology for breeding and fermenting actinomycetes) and other foundational technologies to accomplish this goal. Examples include algae-derived ultraviolet absorbing substances (mycosporine-like amino acids), proteins in human and animal blood (ferritin), unusual antioxidative amino acids (ergothioneine) contained in mushrooms and wheat varieties, biodyes, and other functional substances unique to actinomycetes. The center is developing these useful substances to be applied across a wide range of functional foods, cosmetics, and industrial products. The center also applies for patents and registrations of numerous foundational and peripheral technologies. In this way, the Nagase R&D Center fulfills its mission to develop and utilize foundational biotechnologies, inventing products that will lead the NAGASE Group into the future.

The Nagase Application Workshop (NAW) is home to specialized equipment and expert staff capable of conducting raw materials analysis, application development, and final product formulation for plastics and coating materials. The NAW supports the NAGASE Group trading company differentiation strategy by combining materials and processing technologies from business partners and group manufacturing companies. This combination of materials and processes produce solutions that respond to market needs identified through the marketing functions of the NAGASE Group network. The NAW accurately formulates new elemental technologies and functional materials, developing these technologies and materials into solutions for our customers. Here, the workshop coordinates closely with NAGASE divisions and group companies to explore the potential for new businesses.

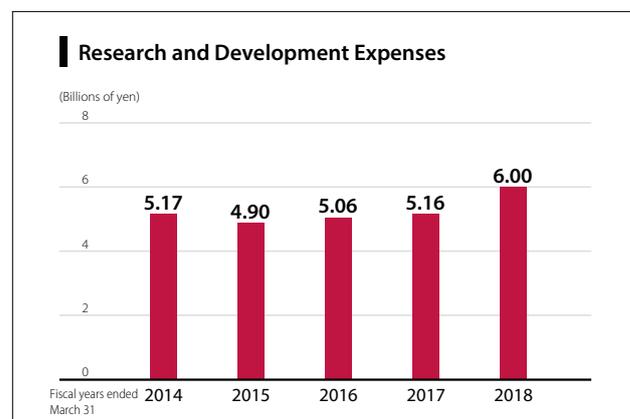
In addition to its existing businesses, Nagase ChemteX Corporation has launched next-generation manufacturing projects, including the supply of resins for 3D printers. The company also began supplying samples of low-temperature sintered-type ink for wiring applications. In the biomaterials field, Nagase ChemteX began development for new polymer materials that form biomimetic surfaces, supplying samples of these products to customers.

In our Electronics segment, INKRON LIMITED (converted to a subsidiary in this consolidated fiscal year) and two other subsidiaries have been using unique siloxane synthesis technologies to develop coating materials offering a wide range of refractive index compatibility, ranging from a low of 1.25 to a high of more than 1.8.

Nagase ChemteX uses nanoparticle dispersion technologies, mass-production technologies, and complementary synergies with quality control systems developed over many years to contribute to customer innovations by supplying leading-edge materials for next-generation optical devices on a global scale.

Hayashibara Co., Ltd. continues research and development activities for the use of TREHA<sup>™</sup> and other functional saccharides in everything from foods, cosmetics, and pharmaceuticals/medicines to applications in agricultural and industrial fields. The company is accelerating development activities for mainstay products Fibryxa<sup>™</sup> and Hayashibara Hesperidin S for applications in Foods with Function Claims and other uses. Hayashibara is searching for new enzyme-producing bacteria related to saccharides, moving forward with research and development related to products created through unique enzymes. As the company considers patents and intellectual property strategy for new materials, it also continues to study manufacturing methods for functional saccharides with the potential of becoming mainstay products for the next generation. Activities include market analysis, suggestions for effective uses, and applications development. Meanwhile, the NAGASE Group is making use of Hayashibara's extensive library of functional dyes, looking to develop products and new applications in commercial fields, such as photo and printing plates, as well as in life science fields, including pharmaceuticals and in-vitro diagnostics. The NAGASE Group incurred a total of ¥9.42 billion in research and development expenses for the consolidated fiscal year.

\* Abbreviation of Nagase Streptomyces Technology for Protein/Precious Products, a NAGASE registered trademark in Japan.



## Outlook for the Year Ending March 31, 2019

In Japan, personal spending is expected to remain strong throughout the next fiscal year, buoyed by an improving picture in domestic employment and payrolls. And also, the general global business environment is expected to continue to perform well, supported by strength in the United States, China, and the emerging economies of the world, while uncertainties remain in connection with exchange rate fluctuations resulting from national financial policies and economic friction resulting from protectionism, as well as geopolitical risks related to North Korea and the Middle East.

For the year ending March 2019, we forecast consolidated net sales of ¥828 billion (+5.6% year on year), operating income of ¥25.5 billion (+5.7%), ordinary income of ¥27.5 billion (+5.8%), and profit attributable to owners of the parent in the amount of ¥18.6 billion (+8.3%).

## Management's Discussion and Analysis of Operations and Finances

These forecasts have been developed based on a currency conversion rate of ¥105 to the US dollar.

(Announced on May 2, 2018)

	(Millions of yen)			
	Net sales	Operating income	Ordinary income	Profit attributable to owners of the parent
Year ending March 31, 2019 (Projected)	828,000	25,500	27,500	18,600
Year ended March 31, 2018 (Actual)	783,933	24,118	25,982	17,175
Change	+5.6%	+5.7%	+5.8%	+8.3%

### Profit Sharing Policy

#### ■ Dividend Policy

Our basic policy is to continue paying a stable dividend to our shareholders in line with our consolidated results as we improve our earnings power and management structure. We look to improve per-share dividends based on considerations of consolidated payout ratio and consolidated dividend to equity ratio. We also plan to use funds from internal reserves effectively in our business growth and to build a stronger management function.

The NAGASE Group declared a year-end dividend of ¥23 per share based on this policy, a ¥1 increase compared to the prior fiscal year with an additional ¥5 per share special dividend reflecting the group's consolidated performance and financial position for the fiscal year. As a result, the scheduled full-year cash dividend will amount to ¥40 per share, including the special ¥5 yen per share special dividend.

We forecast a full-year regular dividend of ¥37 per share for the next fiscal year, ¥2 higher than the prior year. This dividend will consist of an ¥18 per-share interim dividend and a ¥19 per-share year-end dividend.

May 2, 2018. Forecasts in connection with the Group's future performance are subject to a variety of risks and uncertainties including those outlined as follows. As a result, readers are advised that actual results may differ from projections.

### Operating and Other Risks

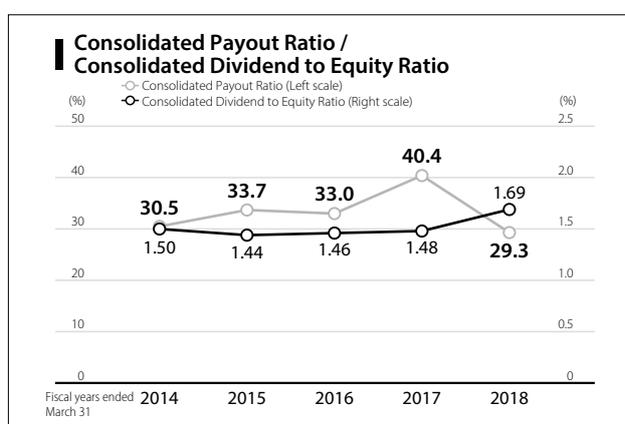
The NAGASE Group is engaged in trading, marketing, research and development, manufacturing and processing in six business segments across the world: Functional Materials, Advanced Materials & Processing, Electronics, Automotive & Energy, Life & Healthcare, and Other.

The nature of these businesses entails various risks that may have a material effect on investment decisions. We provide a discussion of the major risks below.

Any forward-looking statements are based on management decisions as of the end of fiscal year under review.

### (1) Overall Operating Risk

The NAGASE Group is engaged in activities that rely on the use of chemicals across a wide spectrum of products and services through our Functional Materials, Advanced Materials & Processing, Electronics, Automotive & Energy and Life & Healthcare business. These products and services include dyes/pigments, coating materials/inks, surfactants, OA, electrical equipment, home electronics, automobiles, LCDs, semiconductors, and pharmaceutical/medical applications. Accordingly, significant changes in domestic and international commercial chemicals industry could affect the NAGASE Group's earnings and financial condition.



### (2) Product Market Conditions

The NAGASE Group handles extensive petrochemicals manufactured from naphtha in our Functional Materials, Advanced Materials & Processing, and Automotive & Energy segments. Raw materials markets and demand-supply balance are two factors that result in unique market circumstances for each of our products. Fluctuations in these factors could affect our revenues and profits in related product lines. Also, some products manufactured by the Group use raw materials derived from grains. Raw materials costs fluctuate widely due to changes in grain market prices; we may not be able to pass on increased raw materials costs through higher sales prices, which could affect our profits in related product lines.

### (3) Impact of Fluctuations in Foreign Currency Exchange Rates

The NAGASE Group conducts import/export as well as non-trade business transactions denominated in foreign currencies. Fluctuations in currency markets have a significant impact when prices are converted to yen. While the Group executes exchange contract hedges for these transactions to minimize exchange rate risk to the greatest extent possible, currency exchange rate fluctuations could have a significant impact on Group earnings and financial conditions. The NAGASE Group owns foreign-domiciled corporations whose financial statements are prepared using local currencies. The conversion of these currencies to Japanese yen for consolidated reporting purposes entails currency conversion risk due to fluctuating exchange rates.

#### (4) Impact of Fluctuations in Interest Rates

The NAGASE Group obtains funds for operating and investing activities through loans from financial institutions; some of these loans are interest-bearing debt including variable interest terms. The Group reduces interest rate fluctuation risk related to variable interest loans by utilizing interest-rate swap contracts. Group earnings and financial conditions may be affected by future interest rate trends. Interest rate fluctuations cause variations in discount rates used for retirement benefit obligations and plan asset investment income, impacting NAGASE Group business performance and financial position.

#### (5) Risks Involved in Operating Overseas

A significant and increasing percentage of NAGASE Group sales and production takes place overseas in locations such as Greater China, ASEAN, the Americas, and Europe. While NAGASE Group management keeps a close eye on local trends and conditions in order to respond appropriately, unforeseen events stemming from local government regulations, business customs, or other influences could have an impact on Group business performance and financial condition.

#### (6) Impact of Changes in Stock Prices

The NAGASE Group maintains a portfolio of marketable securities, primarily equity shares of companies doing business with the Group. These equity investments are subject to share price fluctuation risks. As a matter of policy, the NAGASE Group reduces risk by continuously reviewing and reorganizing its shareholdings. However, changes in share prices could impact Group earnings and financial condition. A decline in share prices could damage the value of pension plan assets managed by the Group, increasing retirement benefit costs and thereby reducing Group profits.

#### (7) Counterparty Credit Risk

The NAGASE Group extends credit to domestic and overseas purchasers in connection with various transactions. As a matter of policy, the NAGASE Group reduces credit risk by obtaining guarantees, collateral, and insurance, etc. according to the financial condition of the purchaser. Although the NAGASE Group strives to ensure stable, uninterrupted product procurement, financial weakness or bankruptcies among suppliers or others could damage the Group's ability to procure goods. Such circumstances could have an impact on the Group's earnings and financial condition.

#### (8) Risk of Investments

The NAGASE Group engages in investment activities to establish new companies, to invest in equipment at manufacturing subsidiaries, and to acquire other business entities. These types of investment activities involve certain risks, including the risk of failing to recover investments in cases where the Company is not able to record profits at initially planned levels, the risk that additional funding may be required, and the risk that the Group will not be able to withdraw from investments according to the desired timing and method. The NAGASE Group strives to reduce risk in this area. Decisions to invest in new businesses are made after a careful study of the viability of business plans and profitability. At the same time, the Group regularly monitors the performance of existing investments. However, even

these management initiatives cannot completely negate potential investment risk, and such risk may have an impact on Group earnings and financial condition.

#### (9) Risk of Asset Impairment

The NAGASE Group owns non-current assets such as business assets in manufacturing subsidiaries and goodwill. These assets entail the risk of impairment loss if asset value declines. The NAGASE Group records impairment losses when deemed necessary. However, even greater impairment losses may be incurred as a result of deteriorating business profits or other factors in the future, which may have an impact on Group business performance and financial condition.

#### (10) Product Quality Risk

The NAGASE Group operates the Nagase R&D Center and manufacturing subsidiaries to offer high-value-added products to our customers. We pay detailed attention to the quality of the technologies and products that bear the name of NAGASE and our affiliates. We also bear manufacturers' liability for imported products, products manufactured on a contract basis, etc. Accordingly, the Group treats these products with the same attention to detail and quality as if they were made in our own facilities. However, product defects could result in cessation of sales and/or product recalls, exposing the NAGASE Group to liability for damages, which could have an impact on Group earnings and financial conditions.

#### (11) Risks Related to Product Laws

The NAGASE Group imports, exports, and sells domestically a wide variety of chemicals and other products for a broad range of uses. To maintain international peace and safety, the chemicals and other items we export are subject to different laws, including the Foreign Exchange and Foreign Trade Control Law and the Export Trade Control Order. Imports and domestic sales are subject to the Chemical Substances Control Law and other related statutes, as well as similar regulations in foreign jurisdictions. To ensure compliance, the Group has established internal Security Trade Control Regulations and Chemical/Product Control Regulations. However, a violation of such laws and statutes could result in restrictions on Group business activities, having an impact on Group earnings and financial condition.

#### (12) Risks of Natural Disasters

The NAGASE Group has put emergency response systems in place, including the creation of a business contingency plan, the adoption of safety confirmation systems, the creation of a disaster-response manual, earthquake-response measures, disaster-response training, and other measures to deal with natural disasters. However, as we conduct business across a great number of countries and regions, we are exposed to the risk of major natural disasters, H1N1 influenza and other communicable diseases, and other emergencies that could disrupt our supply chain. Such disruptions could prevent us from selling our products or damage the manufacturing capabilities of important Group facilities. Such interruptions would result in opportunity loss, and could have a significant impact on Group earnings and financial condition.

# Consolidated Balance Sheet

NAGASE & CO., LTD. and Consolidated Subsidiaries (March 31, 2018 and 2017)

ASSETS	Millions of yen		Thousands of U.S. dollars (Note 1)
	2018	2017	2018
<b>Current assets:</b>			
Cash and time deposits (Notes 14 and 21)	¥ 43,303	¥ 39,830	\$ 407,596
Notes and accounts receivable (Note 14)	225,999	206,846	2,127,250
Inventories (Note 4)	73,671	63,120	693,439
Deferred tax assets (Note 11)	2,783	2,375	26,195
Other current assets	10,953	9,681	103,097
Less allowance for doubtful accounts	(602)	(638)	(5,666)
Total current assets	356,109	321,215	3,351,930
<b>Property, plant and equipment, at cost</b> (Notes 5 and 6):			
Land	21,154	21,939	199,115
Buildings and structures	58,016	54,911	546,084
Machinery, equipment and vehicles	82,437	83,372	775,951
Leased assets	530	532	4,989
Construction in progress	784	1,874	7,380
	162,922	162,630	1,533,528
Less accumulated depreciation	(95,697)	(95,011)	(900,762)
Property, plant and equipment, net (Note 22)	67,225	67,619	632,765
<b>Investments and other assets:</b>			
Investments in securities (Notes 7 and 14):			
Unconsolidated subsidiaries and affiliates	8,116	7,788	76,393
Other	92,287	86,759	868,665
	100,403	94,548	945,058
Long-term loans receivable	109	482	1,026
Goodwill (Note 22)	25,478	23,034	239,816
Technology-based assets	12,215	13,791	114,976
Asset for retirement benefits	—	1	—
Deferred tax assets (Note 11)	1,614	1,524	15,192
Other assets (Note 6)	8,389	8,846	78,963
Less allowance for doubtful accounts	(101)	(289)	(951)
Total investments and other assets	148,110	141,940	1,394,108
Total assets (Note 22)	¥571,445	¥530,775	\$5,378,812

LIABILITIES AND NET ASSETS	Millions of yen		Thousands of U.S. dollars (Note 1)
	2018	2017	2018
<b>Current liabilities:</b>			
Notes and accounts payable (Note 14)	¥118,028	¥102,076	\$1,110,956
Short-term loans (Notes 8 and 14)	31,934	28,162	300,584
Current portion of long-term loans and finance lease obligations (Notes 8 and 14)	11,126	3,582	104,725
Commercial papers (Notes 8 and 14)	5,000	—	47,063
Current portion of bonds (Notes 8 and 14)	—	10,000	—
Accrued income taxes (Note 11)	1,738	1,849	16,359
Deferred tax liabilities (Note 11)	44	37	414
Accrued expenses	3,250	3,095	30,591
Accrued bonuses for employees	5,451	4,512	51,308
Accrued bonuses for directors and executive officers	274	171	2,579
Other current liabilities	16,191	13,006	152,400
Total current liabilities	193,040	166,494	1,817,018
<b>Long-term liabilities:</b>			
Bonds (Notes 8 and 14)	20,000	20,000	188,253
Long-term loans and finance lease obligations (Notes 8 and 14)	18,112	20,335	170,482
Deferred tax liabilities (Note 11)	16,365	13,503	154,038
Liability for retirement benefits (Note 10)	14,518	14,625	136,653
Other long-term liabilities	603	617	5,676
Total long-term liabilities	69,600	69,082	655,120
<b>Contingent liabilities</b> (Note 18)			
<b>Net assets:</b>			
<b>Shareholders' equity</b> (Note 12):			
Common stock:			
Authorized—346,980,000 shares			
Issued— 127,408,285 shares in 2018 and 2017	9,699	9,699	91,293
Capital surplus	11,158	11,590	105,026
Retained earnings (Note 23)	232,534	219,721	2,188,761
Treasury stock, at cost (Note 13)—2,195,966 shares in 2018 and 1,287,366 shares in 2017	(3,114)	(1,337)	(29,311)
Total shareholders' equity	250,278	239,674	2,355,779
<b>Accumulated other comprehensive income:</b>			
Net unrealized holding gain on securities (Note 7)	50,773	47,683	477,909
Deferred (loss) gain on hedges (Note 14)	(15)	4	(141)
Translation adjustments	2,917	3,129	27,457
Retirement benefit liability adjustments (Note 10)	(317)	(274)	(2,984)
Total accumulated other comprehensive income	53,358	50,542	502,240
<b>Non-controlling interests</b>	5,168	4,981	48,645
Total net assets	308,804	295,198	2,906,664
Total liabilities and net assets	¥571,445	¥530,775	\$5,378,812

See notes to consolidated financial statements.

# Consolidated Statement of Income

NAGASE & CO., LTD. and Consolidated Subsidiaries (Years ended March 31, 2018 and 2017)

	Millions of yen		Thousands of U.S. dollars (Note 1)
	2018	2017	2018
Net sales (Note 22)	¥783,933	¥722,384	\$7,378,887
Cost of sales	681,258	630,881	6,412,444
<b>Gross profit</b>	<b>102,675</b>	91,503	<b>966,444</b>
Selling, general and administrative expenses (Note 16)	78,557	76,472	739,430
<b>Operating income</b> (Note 22)	<b>24,118</b>	15,030	<b>227,014</b>
Other income (expenses):			
Interest and dividend income	1,791	1,812	16,858
Interest expense	(1,294)	(1,032)	(12,180)
Equity in earnings of affiliates	921	217	8,669
Gain on sales of shares of a subsidiary	84	—	791
Gain on sales of investments in securities (Note 7)	8	2,006	75
Loss on sales of shares of a subsidiary and affiliates	0	(290)	0
Loss on devaluation of investments in securities	(12)	(106)	(113)
Gain on sales of property, plant and equipment	50	239	471
Loss on sales of property, plant and equipment	(419)	(60)	(3,944)
Loss on disposal of property, plant and equipment	(168)	(227)	(1,581)
Loss on impairment of fixed assets (Notes 6 and 22)	(847)	(1,398)	(7,973)
Loss on reduction of property, plant and equipment	(212)	(290)	(1,995)
Gain on bargain purchase	229	—	2,155
Subsidy income	288	314	2,711
Loss on discontinued operation	(462)	—	(4,349)
Loss on step acquisitions	(294)	—	(2,767)
Other, net	269	(112)	2,532
<b>Profit before income taxes</b>	<b>24,049</b>	16,100	<b>226,365</b>
Income taxes (Note 11):			
Current	5,358	5,020	50,433
Deferred	1,098	417	10,335
<b>Profit</b>	<b>17,592</b>	10,662	<b>165,587</b>
Profit attributable to:			
Non-controlling interests	(417)	(330)	(3,925)
<b>Owners of parent</b>	<b>¥ 17,175</b>	¥ 10,331	<b>\$ 161,662</b>

See notes to consolidated financial statements.

# Consolidated Statement of Comprehensive Income

NAGASE & CO., LTD. and Consolidated Subsidiaries (Years ended March 31, 2018 and 2017)

	Millions of yen		Thousands of U.S. dollars (Note 1)
	2018	2017	2018
<b>Profit</b>	<b>¥17,592</b>	¥10,662	<b>\$165,587</b>
Other comprehensive income (Note 9):			
Net unrealized holding gain on securities	3,083	10,602	29,019
Deferred (loss) gain on hedges	(19)	14	(179)
Translation adjustments	(14)	(1,223)	(132)
Retirement benefit liability adjustments	(43)	1,895	(405)
Share of other comprehensive income (loss) of affiliates accounted for by the equity method	50	(152)	471
	3,055	11,135	28,756
<b>Comprehensive income</b>	<b>¥20,648</b>	¥21,798	<b>\$194,352</b>
Total comprehensive income attributable to:			
Owners of parent	¥20,101	¥21,622	\$189,204
Non-controlling interests	547	175	5,149

See notes to consolidated financial statements.

# Consolidated Statement of Changes in Net Assets

NAGASE & CO., LTD. and Consolidated Subsidiaries (Years ended March 31, 2018 and 2017)

About the NAGASE Group

Leading Us to the Future

Performance by Segment

Unique Products

Critical Initiatives for Sustainable Growth

Financial and Corporate Information

Millions of yen												
	Common stock	Capital surplus	Retained earnings	Treasury stock, at cost	Total shareholders' equity	Net unrealized holding gain on securities	Deferred gain (loss) on hedges	Translation adjustments	Retirement benefit liability adjustments (Note 10)	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
<b>Balance at April 1, 2016</b>	¥ 9,699	¥ 11,615	¥ 213,572	¥ (230)	¥ 234,657	¥ 37,074	¥ (9)	¥ 4,411	¥(2,169)	¥ 39,305	¥ 5,185	¥ 279,149
Profit attributable to owners of parent	—	—	10,331	—	10,331	—	—	—	—	—	—	10,331
Cash dividends	—	—	(4,050)	—	(4,050)	—	—	—	—	—	—	(4,050)
Purchases of treasury stock	—	—	—	(1,107)	(1,107)	—	—	—	—	—	—	(1,107)
Disposition of treasury stock	—	0	—	0	0	—	—	—	—	—	—	0
Changes in parent's ownership interest due to transactions with non-controlling interests	—	(25)	—	—	(25)	—	—	—	—	—	—	(25)
Changes resulting from merger with an unconsolidated subsidiary	—	—	0	—	0	—	—	—	—	—	—	0
Decrease in retained earnings resulting from changes in scope of equity method	—	—	(132)	—	(132)	—	—	—	—	—	—	(132)
Other changes	—	—	—	—	—	10,609	14	(1,281)	1,895	11,236	(204)	11,032
<b>Balance at April 1, 2017</b>	<b>9,699</b>	<b>11,590</b>	<b>219,721</b>	<b>(1,337)</b>	<b>239,674</b>	<b>47,683</b>	<b>4</b>	<b>3,129</b>	<b>(274)</b>	<b>50,542</b>	<b>4,981</b>	<b>295,198</b>
Profit attributable to owners of parent	—	—	17,175	—	17,175	—	—	—	—	—	—	17,175
Cash dividends	—	—	(4,287)	—	(4,287)	—	—	—	—	—	—	(4,287)
Purchases of treasury stock	—	—	—	(1,776)	(1,776)	—	—	—	—	—	—	(1,776)
Disposition of treasury stock	—	0	—	0	0	—	—	—	—	—	—	0
Changes in parent's ownership interest due to transactions with non-controlling interests	—	(431)	—	—	(431)	—	—	—	—	—	—	(431)
Changes resulting from merger with an unconsolidated subsidiary	—	—	(6)	—	(6)	—	—	—	—	—	—	(6)
Decrease in retained earnings resulting from changes in scope of consolidation	—	—	(67)	—	(67)	—	—	—	—	—	—	(67)
Decrease in retained earnings resulting from changes in scope of equity method	—	—	(1)	—	(1)	—	—	—	—	—	—	(1)
Other changes	—	—	—	—	—	3,090	(19)	(212)	(42)	2,815	187	3,002
<b>Balance at March 31, 2018</b>	<b>¥9,699</b>	<b>¥11,158</b>	<b>¥232,534</b>	<b>¥(3,114)</b>	<b>¥250,278</b>	<b>¥50,773</b>	<b>¥(15)</b>	<b>¥2,917</b>	<b>¥ (317)</b>	<b>¥53,358</b>	<b>¥5,168</b>	<b>¥308,804</b>

Thousands of U.S. dollars (Note 1)												
	Common stock	Capital surplus	Retained earnings	Treasury stock, at cost	Total shareholders' equity	Net unrealized holding gain on securities	Deferred gain (loss) on hedges	Translation adjustments	Retirement benefit liability adjustments (Note 10)	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
<b>Balance at April 1, 2017</b>	<b>\$91,293</b>	<b>\$109,093</b>	<b>\$2,068,157</b>	<b>\$(12,585)</b>	<b>\$2,255,968</b>	<b>\$448,823</b>	<b>\$ 38</b>	<b>\$29,452</b>	<b>\$(2,579)</b>	<b>\$475,734</b>	<b>\$46,884</b>	<b>\$2,778,596</b>
Profit attributable to owners of parent	—	—	161,662	—	161,662	—	—	—	—	—	—	161,662
Cash dividends	—	—	(40,352)	—	(40,352)	—	—	—	—	—	—	(40,352)
Purchases of treasury stock	—	—	—	(16,717)	(16,717)	—	—	—	—	—	—	(16,717)
Disposition of treasury stock	—	0	—	0	0	—	—	—	—	—	—	0
Changes in parent's ownership interest due to transactions with non-controlling interests	—	(4,057)	—	—	(4,057)	—	—	—	—	—	—	(4,057)
Changes resulting from merger with an unconsolidated subsidiary	—	—	(56)	—	(56)	—	—	—	—	—	—	(56)
Decrease in retained earnings resulting from changes in scope of consolidation	—	—	(631)	—	(631)	—	—	—	—	—	—	(631)
Decrease in retained earnings resulting from changes in scope of equity method	—	—	(9)	—	(9)	—	—	—	—	—	—	(9)
Other changes	—	—	—	—	—	29,085	(179)	(1,995)	(395)	26,497	1,760	28,257
<b>Balance at March 31, 2018</b>	<b>\$91,293</b>	<b>\$105,026</b>	<b>\$2,188,761</b>	<b>\$(29,311)</b>	<b>\$2,355,779</b>	<b>\$477,909</b>	<b>\$(141)</b>	<b>\$27,457</b>	<b>\$(2,984)</b>	<b>\$502,240</b>	<b>\$48,645</b>	<b>\$2,906,664</b>

See notes to consolidated financial statements.

# Consolidated Statement of Cash Flows

NAGASE & CO., LTD. and Consolidated Subsidiaries (Years ended March 31, 2018 and 2017)

	Millions of yen		Thousands of U.S. dollars (Note 1)
	2018	2017	2018
<b>Operating activities:</b>			
Profit before income taxes	¥ 24,049	¥ 16,100	\$ 226,365
Adjustments to reconcile profit before income taxes to net cash provided by operating activities:			
Depreciation and amortization other than amortization of goodwill	9,295	9,381	87,491
Amortization of goodwill	1,748	1,543	16,453
Loss on impairment of fixed assets	847	1,398	7,973
Gain on bargain purchase	(229)	—	(2,155)
Loss on step acquisitions	294	—	2,767
Subsidy income	(288)	(314)	(2,711)
Loss on reduction of property, plant and equipment	212	290	1,995
Loss on discontinued operation	462	—	4,349
(Decrease) increase in liability for retirement benefits	(210)	3,297	(1,977)
Interest and dividend income	(1,791)	(1,812)	(16,858)
Interest expense	1,294	1,032	12,180
Exchange (gain) loss, net	(309)	345	(2,909)
Gain on sales of investments in securities, investments in capital, shares of subsidiaries and affiliates, and investments in capital of subsidiaries and affiliates, net	(92)	(1,690)	(866)
Changes in operating assets and liabilities:			
Notes and accounts receivable	(17,382)	(11,885)	(163,611)
Inventories	(9,610)	(1,017)	(90,456)
Notes and accounts payable	15,024	5,198	141,416
Other, net	1,623	(792)	15,277
Subtotal	24,937	21,075	234,723
Interest and dividends received	2,235	2,235	21,037
Interest paid	(1,292)	(1,045)	(12,161)
Income taxes paid	(4,865)	(7,737)	(45,793)
Net cash provided by operating activities	21,013	14,527	197,788
<b>Investing activities:</b>			
Purchases of property, plant and equipment	(6,679)	(10,667)	(62,867)
Proceeds from sales of property, plant and equipment	1,360	976	12,801
Purchases of intangible fixed assets included in other assets	(539)	(867)	(5,073)
Purchases of investments in securities	(1,603)	(1,825)	(15,088)
Proceeds from sales of investments in securities	105	4,658	988
Purchases of investments in capital	(54)	(53)	(508)
Purchases of shares of subsidiaries resulting in change in scope of consolidation	(5,994)	—	(56,419)
Proceeds from sales of shares of subsidiaries resulting in change in scope of consolidation	207	293	1,948
Decrease in short-term loans receivable included in other current assets, net	108	434	1,017
(Increase) decrease in time deposits, net	(242)	274	(2,278)
Subsidy income	288	314	2,711
Other, net	(1,400)	(54)	(13,178)
Net cash used in investing activities	(14,442)	(6,518)	(135,938)
<b>Financing activities:</b>			
Increase in short-term loans, net	3,632	3,232	34,187
Increase in commercial papers, net	5,000	—	47,063
Proceeds from long-term loans	8,301	950	78,134
Repayments of long-term loans	(3,117)	(9,182)	(29,339)
Redemption of bonds	(10,000)	—	(94,127)
Purchase of treasury stock	(1,776)	(1,107)	(16,717)
Cash dividends paid	(4,287)	(4,050)	(40,352)
Cash dividends paid to non-controlling interests	(275)	(254)	(2,588)
Payments for purchases of shares of subsidiaries not resulting in change in scope of consolidation	(606)	(151)	(5,704)
Other, net	(30)	(29)	(282)
Net cash used in financing activities	(3,161)	(10,592)	(29,753)
<b>Effect of exchange rate changes on cash and cash equivalents</b>	(175)	(596)	(1,647)
<b>Net increase (decrease) in cash and cash equivalents</b>	3,234	(3,180)	30,441
<b>Cash and cash equivalents at beginning of the year</b>	39,730	42,900	373,965
<b>Decrease in cash and cash equivalents resulting from exclusion of a subsidiary from consolidation</b>	(111)	—	(1,045)
<b>Increase in cash and cash equivalents resulting from merger with unconsolidated subsidiaries</b>	4	10	38
<b>Cash and cash equivalents at end of the year (Note 21)</b>	¥ 42,857	¥ 39,730	\$ 403,398

See notes to consolidated financial statements.

# Notes to Consolidated Financial Statements

NAGASE & CO., LTD. and Consolidated Subsidiaries (March 31, 2018)

## 1. BASIS OF PREPARATION

The accompanying consolidated financial statements of NAGASE & CO., LTD. (the "Company") and consolidated subsidiaries are prepared on the basis of accounting principles generally accepted in Japan, which are different in certain respects as to the application and disclosure requirements of International Financial Reporting Standards, and have been compiled from the consolidated financial statements prepared by the Company as required by the Financial Instruments and Exchange Act of Japan.

In preparing the accompanying consolidated financial statements, certain reclassifications and rearrangements have been made to the consolidated financial statements issued domestically in order to present them in a format which is more familiar to readers outside Japan.

Certain amounts in the prior year's consolidated financial statements have been reclassified to conform to the current year's presentation. Such reclassifications had no effect on consolidated profit or net assets.

## 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

### (a) Principles of Consolidation

The accompanying consolidated financial statements include the accounts of the Company and companies that it controls directly or indirectly. Affiliates over which the Company exercises significant influence in terms of their operating and financial policies have been accounted for by the equity method. All significant intercompany balances and transactions have been eliminated in consolidation.

Certain subsidiaries were excluded from the scope of consolidation because the effect of their sales, net profit or loss, total assets and retained earnings on the accompanying consolidated financial statements was immaterial. The unconsolidated subsidiaries and affiliates not accounted for by the entity method were excluded from the scope of application of the equity method, because their profit or loss and retained earnings attributable to the Company's interest were not material to the consolidated financial statements.

For consolidation purposes, the financial statements of the consolidated subsidiaries whose fiscal year end date differs from that of the Company have been included in consolidation based on a provisional statement of accounts for a full fiscal year ending March 31.

Unrealized intercompany gains among the Company and the consolidated subsidiaries have been entirely eliminated and the portion attributable to non-controlling interests has been charged to non-controlling interests.

### (b) Foreign Currency Translation

All monetary assets and liabilities denominated in foreign currencies are translated into yen at the rates of exchange in effect at the balance sheet date, except that receivables and payables hedged by qualified foreign currency forward exchange contracts are translated at the corresponding contract rates. All other assets and liabilities denominated in foreign currencies are translated at their historical rates. Gain or loss on each translation is credited or charged to income.

Revenue and expense items arising from transactions denominated in foreign currencies are generally translated into yen at the rates in effect at the respective transaction dates. Foreign exchange gain or loss is credited or charged to income in the period in which such gain or loss is recognized for financial reporting purposes.

The U.S. dollar amounts in the accompanying consolidated financial statements have been translated from yen amounts solely for the convenience of the reader, as a matter of arithmetic computation only, at ¥106.24 = U.S.\$1.00, the rate of exchange prevailing on March 31, 2018. This translation should not be construed as a representation that the yen amounts have been, could have been, or could in the future be, converted into U.S. dollars at the above or any other rate.

As permitted by the Financial Instruments and Exchange Act of Japan, amounts of less than one million yen for the years ended March 31, 2018 and 2017 have been omitted. Consequently, the totals shown in the accompanying consolidated financial statements for the years ended March 31, 2018 and 2017 (both in yen and in U.S. dollars) do not necessarily agree with the sum of the individual amounts.

The balance sheet accounts of the overseas consolidated subsidiaries are translated into yen at the rates of exchange in effect at the balance sheet date, except that the components of net assets excluding non-controlling interests, net unrealized holding gain on securities, and deferred gain or loss on hedges are translated at their historical exchange rates. Revenue and expense accounts are translated at the average rates of exchange in effect during the year. Adjustments resulting from translating financial statements whose accounts are denominated in foreign currencies are not included in the determination of net income but are reported as "Translation adjustments" as a component of accumulated other comprehensive income or loss in the accompanying consolidated balance sheets.

### (c) Cash and Cash Equivalents

Cash and cash equivalents consist of cash on hand, demand deposits, and short-term investments which are readily convertible to cash and subject to an insignificant risk of any change in their value, which were purchased with an original maturity of three months or less.

### (d) Inventories

Inventories are stated at the lower of cost or net selling value, cost being determined primarily by the moving-average method.

### (e) Investments in Securities

Securities are classified into three categories: trading securities, held-to-maturity debt securities or other securities. Trading securities, consisting of debt and marketable equity securities, are stated at fair value. Gain and loss, both realized and unrealized, are credited or charged to income. Held-to-maturity debt securities are stated at their amortized cost. Marketable securities classified as other securities are carried at fair value with any changes in unrealized holding gain or loss, net of the applicable income taxes, reported as a separate component of accumulated other comprehensive income or loss. Non-marketable securities classified as other securities are carried at cost determined by the moving-average method.

### (f) Property, Plant and Equipment and Depreciation (except for Leased Assets)

Property, plant and equipment are stated at cost.

Depreciation of property, plant and equipment is calculated by the straight-line method based on the estimated useful lives of the respective assets.

## Notes to Consolidated Financial Statements

The estimated useful lives of the principal assets are as follows:

Buildings (other than structures attached to the buildings)	15 to 50 years
Machinery and equipment	2 to 17 years

### (g) Intangible Assets (except for Leased Assets)

Technology-based assets recognized upon acquisition are amortized on a straight-line basis over 13 to 17 years.

Costs incurred for computer software obtained for internal use are capitalized and amortized on a straight-line basis over an estimated useful life of 5 years.

### (h) Goodwill

Goodwill is amortized over a period not exceeding 20 years on a straight-line basis. When immaterial, goodwill is charged to income as incurred.

### (i) Leased Assets

Leased assets under finance lease contracts which do not transfer ownership to the lessee are depreciated to a residual value of zero by the straight-line method over the respective lease terms.

### (j) Allowance for Doubtful Accounts

The Company and its consolidated subsidiaries provide allowances for doubtful accounts based on their historical experience of bad debts on ordinary receivables plus an additional estimate of probable specific doubtful accounts from customers experiencing financial difficulties.

### (k) Income Taxes

Income taxes are calculated based on taxable income and charged to income on an accrual basis. Deferred tax assets and liabilities are computed based on the temporary differences between the financial reporting and the tax bases of the assets and liabilities that will result in taxable or deductible amounts in the future. Computations of deferred tax assets and liabilities are based on the tax rates which have been enacted as of the balance sheet date. The Company and certain domestic consolidated subsidiaries have adopted the consolidated taxation system (the Company is the taxable entity), which allows companies to make tax payments on the combined profits of the parent company and its wholly owned domestic subsidiaries.

### (l) Accrued Bonuses for Employees

Accrued bonuses for employees are provided based on the estimated amount of bonuses to be paid to employees in the following fiscal year which is attributable to the current fiscal year.

### (m) Accrued Bonuses for Directors and Executive Officers

Accrued bonuses for directors and executive officers are provided based on the estimated amount of bonuses to be paid to directors and executive officers in the following fiscal year which is attributable to the current fiscal year.

### (n) Liability for Retirement Benefits

Liability for retirement benefits is provided based on the amount of the retirement benefit obligation less estimated pension plan assets at

the end of the fiscal year. The estimated benefit is attributed to each period based on the plan's benefit formula.

Prior service cost is charged to income in the fiscal year in which such cost is recognized for financial reporting purposes. Actuarial differences are principally credited or charged to income in the fiscal year following the fiscal year in which such differences are recognized for financial reporting purposes.

### (o) Derivatives and Hedging Activities

Derivatives positions are carried at fair value with any changes in unrealized gain or loss charged or credited to income, except for those which meet the criteria for deferral hedge accounting under which unrealized gain or loss is deferred as a component of net assets. Foreign currency receivables and payables hedged by qualified foreign currency forward exchange contracts are translated at the corresponding foreign exchange contract rates ("allocation method"). Interest-rate swaps which meet certain conditions are accounted for as if the interest rates applied to the swaps had originally applied to the underlying loans.

Derivative financial instruments are utilized principally in order to manage the risk arising from adverse fluctuation in foreign currency exchange rates and interest-rate swaps are also utilized to mitigate the risk of fluctuation in interest rates on loans. Hedging instruments are foreign currency forward exchange contracts, foreign currency deposits, foreign currency loans and interest-rate swaps. Hedged items are foreign currency receivables and payables, forecast transactions and interest rates on loans from financial institutions.

The Company and its consolidated subsidiaries (collectively, the "Group") manage derivative transactions in accordance with internal management rules. Under these rules, the Group conducts foreign currency forward exchange contracts within a range of actual demand of accounts receivable, accounts payable and actual transactions in foreign currencies. Execution and management of interest-rate swaps are based on internal management rules and hedged items of interest-rate swaps are identified by individual contracts.

The Company and certain consolidated subsidiaries assess the effectiveness of the hedging activities based on a comparison of the accumulated fluctuations of the hedged items and those of the hedging instruments in the period from the start of the hedging activities to the assessment date. However, with regard to interest-rate swaps which meet certain conditions, the evaluation of effectiveness is omitted.

### (p) Research and Development Costs

Research and development costs are charged to income when incurred.

### (q) Distributions of Retained Earnings

Dividends and other distributions of retained earnings are approved by the shareholders at a meeting held subsequent to the end of the fiscal year to which such distributions are applicable. The accompanying consolidated financial statements do not, however, reflect the applicable distributions of retained earnings as approved by the shareholders subsequent to the fiscal year end. (Refer to Note 23.)

## 3. ACCOUNTING STANDARDS ISSUED BUT NOT YET EFFECTIVE

### *Accounting Standard and Implementation Guidance for Revenue Recognition*

#### (a) Overview

On March 30, 2018, the ASBJ issued "Accounting Standard for Revenue Recognition" (ASBJ Statement No. 29) and "Implementation Guidance on Accounting Standard for Revenue Recognition" (ASBJ Guidance No. 30). The International Accounting Standards Board (hereinafter referred to as the "IASB") and the Financial Accounting Standards Board (hereinafter

referred to as the "FASB") in the United States co-developed comprehensive accounting standards for revenue recognition and issued "Revenue from Contracts with Customers" (IFRS 15 by the IASB and Topic 606 by the FASB) in May 2014. The ASBJ developed comprehensive accounting standards on revenue recognition and issued them in conjunction with the implementation guidance based on fact that IFRS 15 is applied from fiscal years starting on or after January 1, 2018 and Topic 606 is applied from fiscal years starting after December 15, 2017.

As the basic policy in developing accounting standards for revenue recognition, the ASBJ defined the accounting standard starting with incorporating the basic principle of IFRS 15 from a standpoint of comparability between financial statements, which is one benefit of ensuring consistency with IFRS 15. Furthermore, the ASBJ added alternative accounting treatment without impairing comparability when there are matters to be considered related to accounting practices, etc. common in Japan.

#### 4. INVENTORIES

Inventories at March 31, 2018 and 2017 are summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Merchandise and finished goods	¥67,681	¥58,162	\$637,058
Work in process	1,883	1,309	17,724
Raw materials and supplies	4,106	3,648	38,648
Total	¥73,671	¥63,120	\$693,439

#### 5. REDUCTIONS IN ACQUISITION COSTS DUE TO SUBSIDIES

The amounts of subsidies received from the national government and deducted from the acquisition costs of property, plant and equipment at March 31, 2018 and 2017 are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Buildings and structures	¥ 528	¥359	\$ 4,970
Machinery, equipment and vehicles	621	575	5,845
Total	¥1,150	¥935	\$10,825

#### 6. LOSS ON IMPAIRMENT OF FIXED ASSETS

Loss on impairment of fixed assets for the years ended March 31, 2018 and 2017 was as follows:

Major use	Classification	Area	Millions of yen		Thousands of U.S. dollars
			2018	2017	2018
Business-use assets for manufacturing and selling of functional dyes	Buildings and structures, machinery, equipment and vehicles, land, and intangible assets included in other assets	Chugoku	¥284		\$2,673
Business-use assets for processing of thin glass panels	Buildings and structures, machinery, equipment and vehicles, intangible assets included in other assets	Taoyuan, Taiwan	221		2,080
Business-use assets for processing and selling of plastic materials	Buildings and structures, machinery, equipment and vehicles, intangible assets included in other assets	Kinki	71		668
Business-use assets for developing and manufacturing of polymer film	Buildings and structures, machinery, equipment and vehicles	Kinki	168		1,581
Business-use assets for manufacturing and selling of rechargeable battery systems	Buildings and structures, machinery, equipment and vehicles, intangible assets included in other assets	Tokai	4		38
Business-use assets for developing and selling digital textile printing systems	Intangible assets included in other assets	Kinki	3		28
Idle assets	Land, building and structures	Kinki, Chugoku	92		866
Total			¥847		\$7,973

## Notes to Consolidated Financial Statements

Major use	Classification	Area	Millions of yen
			2017
Business-use assets for manufacturing and selling of color formers	Buildings and structures, machinery, equipment and vehicles, construction in progress, intangible assets included in other assets	Hokuriku	¥1,233
Business-use assets for manufacturing and selling of color formers	Machinery, equipment and vehicles	Tennessee, U.S.A.	15
Business-use assets for processing and selling of plastic materials	Buildings and structures, machinery, equipment and vehicles, intangible assets included in other assets	Kinki	85
Business-use assets for manufacturing and selling of rechargeable battery systems	Machinery, equipment and vehicles, intangible assets included in other assets	Tokai	38
Business-use assets for manufacturing and selling of polymer products	Buildings and structures	Tokai	17
Business-use assets for semiconductors and display devices	Buildings and structures, machinery, equipment and vehicles	Kanto	1
Idle assets	Land	Kinki	6
<b>Total</b>			<b>¥1,398</b>

The Company and its consolidated subsidiaries group fixed assets for business use principally based on its business management segment. They also group fixed assets to be disposed of and idle assets at each asset individually as smallest cash-generating units.

For the year ended March 31, 2018, due to decreasing profitability, the carrying values of certain fixed assets for business use were reduced to their recoverable amounts. As to idle assets, due to a declining fair value, the carrying fair values were reduced to their recoverable amounts.

The recoverable amounts were measured at net selling value or value in use. Net selling value was calculated based on the appraisal

value published by the tax authorities or the real estate appraisers, or estimated sales value.

For the year ended March 31, 2017, due to decreasing profitability on business-use assets, the carrying values were reduced to their recoverable amounts. As to idle assets, due to a declining fair value, the carrying values were reduced to their recoverable amounts.

The recoverable amounts were measured at net selling value or value in use. Net selling value was calculated based on the appraisal value published by the tax authorities or the real estate appraisers.

## 7. INVESTMENTS IN SECURITIES

(a) Marketable securities classified as other securities at March 31, 2018 and 2017 are summarized as follows:

	Millions of yen					
	2018			2017		
	Carrying value	Acquisition costs	Unrealized gain (loss)	Carrying value	Acquisition costs	Unrealized gain (loss)
Securities whose carrying value exceeds their acquisition costs:						
Equity securities	<b>¥88,219</b>	<b>¥16,475</b>	<b>¥71,743</b>	¥83,820	¥16,299	¥67,520
Securities whose carrying value does not exceed their acquisition costs:						
Equity securities	<b>792</b>	<b>870</b>	<b>(78)</b>	269	344	(74)
<b>Total</b>	<b>¥89,011</b>	<b>¥17,346</b>	<b>¥71,665</b>	<b>¥84,090</b>	<b>¥16,643</b>	<b>¥67,446</b>

	Thousands of U.S. dollars		
	2018		
	Carrying value	Acquisition costs	Unrealized gain (loss)
Securities whose carrying value exceeds their acquisition costs:			
Equity securities	<b>\$830,375</b>	<b>\$155,073</b>	<b>\$675,292</b>
Securities whose carrying value does not exceed their acquisition costs:			
Equity securities	<b>7,455</b>	<b>8,189</b>	<b>(734)</b>
<b>Total</b>	<b>\$837,829</b>	<b>\$163,272</b>	<b>\$674,558</b>

“Acquisition costs” in the above table represent the carrying value after recognizing impairment losses. For the year ended March 31, 2018, the Company and its consolidated subsidiaries did not recognize any impairment losses on valuation of marketable securities. For the year ended March 31, 2017, the Company and its consolidated subsidiaries recognized such impairment losses in the amount of ¥98 million.

(b) Securities classified as other securities for which market value was not determinable and not included in the table (a) at March 31, 2018 and 2017 are summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
	Carrying value	Carrying value	Carrying value
Market value not determinable:			
Unlisted equity securities	¥3,275	¥2,669	\$30,826
Total	¥3,275	¥2,669	\$30,826

(c) Proceeds from sales of, and gross realized gain and loss on, other securities for the years ended March 31, 2018 and 2017 are summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Proceeds from sales	¥14	¥2,401	\$132
Gain on sales	8	2,006	75
Loss on sales	—	25	—

## 8. SHORT-TERM LOANS, BONDS, LONG-TERM LOANS, COMMERCIAL PAPERS AND FINANCE LEASE OBLIGATIONS

Short-term loans at March 31, 2018 and 2017, principally represented loans and commercial papers in the form of deeds at weighted-average annual interest rates of 2.62% and 1.47% per annum, respectively.

Long-term loans, bonds and finance lease obligations at March 31, 2018 and 2017 consisted of the following:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Unsecured loans from banks and insurance companies, payable in Yen, U.S. dollars, RMB, and HK dollars due through 2023, at rates from 0.13% to 4.51%	¥ 28,974	¥ 23,601	\$ 272,722
Unsecured bonds in Yen, due 2017, at a rate of 0.442%	—	10,000	—
Unsecured bonds in Yen, due 2019, at a rate of 0.753%	10,000	10,000	94,127
Unsecured bonds in Yen, due 2022, at a rate of 0.539%	10,000	10,000	94,127
Lease obligations	264	316	2,485
	49,239	53,918	463,470
Less current portion	(11,126)	(13,582)	(104,725)
Total	¥ 38,112	¥ 40,335	\$ 358,735

The aggregate annual maturities of bonds, long-term loans and finance lease obligations subsequent to March 31, 2018 are summarized as follows:

Years ending March 31,	Millions of yen	Thousands of U.S. dollars
2019	¥11,126	\$104,725
2020	10,753	101,214
2021	1,009	9,497
2022	11,720	110,316
2023	14,522	136,691
2024 and thereafter	106	998
Total	¥49,239	\$463,470

In order to achieve more efficient and flexible financing, the Company has concluded line-of-credit agreements with certain financial institutions. The status of these lines of credit at March 31, 2018 and 2017 is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Lines of credit	¥10,000	¥10,000	\$94,127
Credit utilized	—	—	—

## Notes to Consolidated Financial Statements

### 9. OTHER COMPREHENSIVE INCOME

Reclassification adjustments and tax effects allocated to each component of other comprehensive income for the years ended March 31, 2018 and 2017 were as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Net unrealized holding gain on securities:			
Amount arising during the year	¥ 4,413	¥16,799	\$ 41,538
Reclassification adjustments for gains and losses realized in the statement of income	(4)	(1,884)	(38)
Amount before tax effect	4,409	14,915	41,500
Tax effect	(1,325)	(4,313)	(12,472)
Net unrealized holding gain on securities	3,083	10,602	29,019
Deferred (loss) gain on hedges:			
Amount arising during the year	(54)	121	(508)
Reclassification adjustments for gains and losses realized in the statement of income	25	(100)	235
Amount before tax effect	(28)	20	(264)
Tax effect	8	(6)	75
Deferred (loss) gain on hedges	(19)	14	(179)
Translation adjustments:			
Amount arising during the year	(14)	(1,108)	(132)
Reclassification adjustments for gains and losses realized in the statement of income	—	(159)	—
Amount before tax effect	(14)	(1,267)	(132)
Tax effect	—	44	—
Translation adjustments	(14)	(1,223)	(132)
Retirement benefit liability adjustments:			
Amount arising during the year	(376)	(369)	(3,539)
Reclassification adjustments for gains and losses realized in the statement of income	317	3,111	2,984
Amount before tax effect	(59)	2,742	(555)
Tax effect	15	(847)	141
Retirement benefit liability adjustments	(43)	1,895	(405)
Share of other comprehensive income (loss) of affiliates accounted for by the equity method:			
Amount arising during the year	50	(152)	471
Total other comprehensive income	¥ 3,055	¥11,135	\$ 28,756

### 10. RETIREMENT BENEFIT PLANS

#### (a) Outline of retirement benefit plans for employees

The Company and its domestic consolidated subsidiaries have defined benefit plans, i.e., defined benefit pension plans and lump-sum payment plans. Certain overseas consolidated subsidiaries also have defined benefit plans. Also, the Company and certain consolidated

subsidiaries have defined contribution pension plans. In addition to the retirement benefit plans described above, the Company and its consolidated subsidiaries pay additional retirement benefits under certain conditions.

#### (b) Defined benefit plans

The changes in the retirement benefit obligation for the years ended March 31, 2018 and 2017 are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Balance at the beginning of the year	¥33,512	¥32,993	\$315,437
Service cost	1,518	1,445	14,288
Interest cost	245	253	2,306
Actuarial differences	218	120	2,052
Retirement benefits paid	(1,493)	(1,316)	(14,053)
Changes in scope of consolidation	41	—	386
Other	(10)	16	(94)
Balance at the end of the year	¥34,031	¥33,512	\$320,322

The changes in plan assets for the years ended March 31, 2018 and 2017 are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Balance at the beginning of the year	¥18,888	¥18,932	\$177,786
Expected return on plan assets	378	395	3,558
Actuarial differences	(157)	(249)	(1,478)
Contributions by the Company and its consolidated subsidiaries	1,220	584	11,483
Retirement benefits paid	(815)	(782)	(7,671)
Other	(2)	7	(19)
Balance at the end of the year	¥19,513	¥18,888	\$183,669

The following table sets forth the funded status of the plans and the amounts recognized in the consolidated balance sheets as of March 31, 2018 and 2017 for the Company's and the consolidated subsidiaries' defined benefit plans:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Funded retirement benefit obligation	¥ 22,460	¥ 22,273	\$ 211,408
Plan assets at fair value	(19,513)	(18,888)	(183,669)
	2,947	3,384	27,739
Unfunded retirement benefit obligation	11,570	11,239	108,904
Net liability for retirement benefits in the balance sheet	14,518	14,624	136,653
Liability for retirement benefits	14,518	14,625	136,653
Asset for the retirement benefits	—	(1)	—
Net liability for retirement benefits in the balance sheet	¥ 14,518	¥ 14,624	\$ 136,653

The components of retirement benefit expenses for the years ended March 31, 2018 and 2017 are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Service cost	¥1,518	¥1,445	\$14,288
Interest cost	245	253	2,306
Expected return on plan assets	(378)	(395)	(3,558)
Amortization of actuarial differences	317	3,111	2,984
Retirement benefit expenses	¥1,702	¥4,414	\$16,020

Actuarial differences included in other comprehensive income (loss) (before tax effect) for the years ended March 31, 2018 and 2017 are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Actuarial differences	¥(59)	¥2,742	\$(555)

Unrecognized actuarial differences included in accumulated other comprehensive income (before tax effect) as of March 31, 2018 and 2017 are as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Unrecognized actuarial differences	¥(448)	¥(388)	\$(4,217)

The allocation of plan assets, by major category, as a percentage of total plan assets at fair value as of March 31, 2018 and 2017 is as follows:

	2018	2017
Bonds	64%	73%
Equity securities	19	17
Alternative investments*	15	—
Other	2	10
Total	100%	100%

\*"Alternative investments" consist of insurance-linked securities and private REITs.

The expected long-term rate of return on plan assets is determined as a result of consideration of both the portfolio allocation at present and in the future, and expected long-term rate of return from multiple plan assets at present and in the future.

The assumptions used in accounting for the above plans were as follows:

	2018	2017
Discount rate	0.8%	0.8%
Expected long-term rate of return on plan assets	2.0	2.1

## Notes to Consolidated Financial Statements

### (c) Defined contribution plans

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Contributions to defined contribution plans by the Company and its consolidated subsidiaries	¥283	¥287	\$2,664

## 11. INCOME TAXES

Income taxes applicable to the Company and its domestic consolidated subsidiaries consist of corporation, inhabitants' and enterprise taxes, which, in the aggregate, resulted in a statutory tax rate of approximately 30.9% for the years ended March 31, 2018 and 2017.

The effective tax rates reflected in the accompanying consolidated statements of income for the years ended March 31, 2018 and 2017 differ from the statutory tax rates for the following reasons:

	2018	2017
Statutory tax rates	30.9%	30.9%
Adjustments for:		
Expenses not deductible for income tax purposes	3.1	3.0
Dividends and other income deductible for income tax purposes	(9.2)	(6.9)
Net adjustment resulting from elimination of dividend income upon consolidation	8.3	8.8
Different tax rates applied at overseas subsidiaries	(3.8)	(3.1)
Tax credit	(1.6)	(2.1)
Amortization of goodwill	2.2	3.0
Valuation allowance	(5.0)	1.4
Other, net	1.9	(1.2)
Effective tax rates	26.8%	33.8%

The significant components of the Company's and its consolidated subsidiaries' deferred tax assets and liabilities at March 31, 2018 and 2017 are summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Deferred tax assets:			
Accrued bonuses for employees	¥ 1,436	¥ 1,202	\$ 13,517
Allowance for doubtful accounts	152	237	1,431
Unrealized gain on inventories	465	508	4,377
Accrued enterprise taxes	184	247	1,732
Tax loss carryforwards	3,832	3,555	36,069
Liability for retirement benefits	4,306	4,496	40,531
Investments in securities	1,007	1,114	9,479
Loss on impairment of fixed assets	1,107	1,338	10,420
Tax goodwill	6,321	8,444	59,497
Other	2,530	2,770	23,814
Gross deferred tax assets	21,345	23,916	200,913
Valuation allowance	(5,190)	(6,032)	(48,852)
Total deferred tax assets	16,154	17,884	152,052
Deferred tax liabilities:			
Technology-based assets	(3,720)	(4,204)	(35,015)
Deferred capital gain on property	(1,240)	(1,425)	(11,672)
Reserve for special depreciation	(302)	(354)	(2,843)
Undistributed earnings of subsidiaries and affiliates	(643)	(553)	(6,052)
Revaluation of land	(290)	(311)	(2,730)
Net unrealized holding gain on securities	(21,347)	(20,186)	(200,932)
Other	(620)	(490)	(5,836)
Total deferred tax liabilities	(28,165)	(27,526)	(265,107)
Net deferred tax liabilities	¥(12,011)	¥ (9,641)	\$(113,055)

## 12. SHAREHOLDERS' EQUITY

The Corporation Law of Japan (the "Law") provides that an amount equal to 10% of the amount to be disbursed as distributions of capital surplus (other than the capital reserve) and retained earnings (other than the legal reserve) be transferred to the capital reserve and the legal reserve, respectively, until the sum of the capital reserve and the legal reserve equals 25% of the capital stock account.

Such distributions can be made at any time by resolution of the shareholders, or by the Board of Directors if certain conditions are met.

The Company's capital reserve included in capital surplus at March

31, 2018 amounted to ¥9,634 million (\$90,681 thousand). In addition, the Company's legal reserve included in retained earnings at March 31, 2018 amounted to ¥2,424 million (\$22,816 thousand).

Under the Law, upon the issuance and sale of new shares of common stock, the entire amount of the proceeds is required to be accounted for as common stock, although a company may, by resolution of the Board of Directors, account for an amount not exceeding 50% of the proceeds of the sale of new shares as additional paid-in capital.

Movements in common stock during the years ended March 31, 2018 and 2017 are summarized as follows:

	Number of shares			
	2018			
	April 1, 2017	Increase	Decrease	March 31, 2018
Common stock	127,408,285	—	—	127,408,285

	Number of shares			
	2017			
	April 1, 2016	Increase	Decrease	March 31, 2017
Common stock	127,408,285	—	—	127,408,285

## 13. TREASURY STOCK

Movements in treasury stock during the years ended March 31, 2018 and 2017 are summarized as follows:

	Number of shares			
	2018			
	April 1, 2017	Increase	Decrease	March 31, 2018
Treasury stock	1,287,366	908,602	2	2,195,966

	Number of shares			
	2017			
	April 1, 2016	Increase	Decrease	March 31, 2017
Treasury stock	377,300	910,147	81	1,287,366

The increase in treasury stock consists of 900,000 shares resulting from the purchases of treasury stock by resolution of the Board of Directors, 7,549 shares resulting from the purchases of shares from untraceable shareholders, and 1,053 shares resulting from the purchases of shares of less than one voting unit for the year ended March 31, 2018. The decrease in treasury stock consists of 2 shares resulting from the disposition of shares of less than one voting unit for the year ended March 31, 2018.

The increase in treasury stock consists of 908,000 shares resulting from the purchases of treasury stock by resolution of the Board of Directors and 2,147 shares resulting from the purchases of shares of less than one voting unit for the year ended March 31, 2017. The decrease in treasury stock consists of 81 shares resulting from the disposition of shares of less than one voting unit for the year ended March 31, 2017.

## 14. FINANCIAL INSTRUMENTS

### (a) Policy for financial instruments

The Group invests excess funds in highly secure and short-term financial assets, whose principal is guaranteed to be recoverable. With regard to financing policy, short-term working funds are raised by bank borrowings or issuance of commercial papers and long-term funds are raised by bank borrowings and the issuance of bonds. The policy for derivative transactions is that those are utilized to mitigate the fluctuation risk related to foreign currency exchange rates arising from the receivables and payables denominated in foreign currencies, and fluctuation risk related to interest rates with respect to loans payable, and derivative transactions are not carried out for speculative purposes.

### (b) Types of financial instruments, related risk and risk management for financial instruments

Receivables such as trade notes and accounts receivable are exposed to customers' credit risks. With regard to this risk, the Group manages the settlement date by each customer, and establishes credit limits by

each customer based on the Group's internal credit rating policy and monitors outstanding balances. The Group establishes system under which the credit status by each customer is reviewed at least once a year and the sales limit amount updated as necessary.

In the cases of notes and accounts receivable or payable denominated in foreign currencies, foreign currency forward exchange contracts are used to hedge the risk of fluctuation. However, for foreign currency transactions denominated in the same currency involving either payables or receivables, foreign currency forward exchange contracts are used solely for the netted position.

Investments in securities are subject to market price fluctuation risk. However, these are mainly equity securities of other companies with which the Group has business relationships. The Group regularly monitors both their fair value and the financial condition of the issuer. The Group also reviews as needed the condition of its holdings with concern to the status of business and financial transactions.

## Notes to Consolidated Financial Statements

Short-term loans are raised primarily in connection with business activities. Long-term loans and bonds are taken out principally for the purpose of making capital spending, investments and financing. Loans with variable interest rates are subject to the risk of fluctuating interest rates. However, to reduce such risk, the Group utilizes derivatives (interest-rate swap transactions) as a hedging instrument.

Derivatives include foreign currency forward exchange contracts to manage fluctuation risk in foreign currency exchange rates and interest-rate swaps to manage fluctuation risk of interest rates related to the interest payments for bank loans.

In addition, notes and accounts payable and bank loans are exposed to liquidity risk. However, the Group manages such risk by monitoring the balance of inflow and outflow of cash and establishing liquidity on hand in excess of half of the amount of monthly net sales.

### (c) Fair value of financial instruments

The carrying value of financial instruments on the consolidated balance sheets, fair value and the differences as of March 31, 2018 and 2017, are shown in the following table. Financial instruments for which fair value is deemed extremely difficult to determine are not included.

	Millions of yen		
	2018		
	Carrying value	Fair value	Difference
Assets:			
Cash and time deposits	¥ 43,303	¥ 43,303	¥ —
Notes and accounts receivable	225,999	225,999	—
Investments in securities:			
Other securities	89,011	89,011	—
Total assets	¥358,314	¥358,314	¥ —
Liabilities:			
Notes and accounts payable	¥118,028	¥118,028	¥ —
Short-term loans	31,934	31,934	—
Current portion of long-term loans	11,067	11,067	—
Commercial papers	5,000	5,000	—
Bonds	20,000	20,174	174
Long-term loans	17,906	17,979	72
Total liabilities	¥203,937	¥204,184	¥246
Derivatives*:			
Not subject to hedge accounting	¥ 29	¥ 29	¥ —
Subject to hedge accounting	(3)	(3)	—
Total derivative transactions	¥ 26	¥ 26	¥ —

	Millions of yen		
	2017		
	Carrying value	Fair value	Difference
Assets:			
Cash and time deposits	¥ 39,830	¥ 39,830	¥ —
Notes and accounts receivable	206,846	206,846	—
Investments in securities:			
Other securities	84,090	84,090	—
Total assets	¥330,767	¥330,767	¥ —
Liabilities:			
Notes and accounts payable	¥102,076	¥102,076	¥ —
Short-term loans	28,162	28,162	—
Current portion of long-term loans	3,522	3,522	—
Current portion of bonds	10,000	10,007	7
Bonds	20,000	20,256	256
Long-term loans	20,078	20,329	250
Total liabilities	¥183,840	¥184,354	¥513
Derivatives*:			
Not subject to hedge accounting	¥ 21	¥ 21	¥ —
Subject to hedge accounting	1	1	—
Total derivative transactions	¥ 22	¥ 22	¥ —

	Thousands of U.S. dollars		
	2018		
	Carrying value	Fair value	Difference
Assets:			
Cash and time deposits	\$ 407,596	\$ 407,596	\$ —
Notes and accounts receivable	2,127,250	2,127,250	—
Investments in securities:			
Other securities	837,829	837,829	—
Total assets	\$3,372,684	\$3,372,684	\$ —
Liabilities:			
Notes and accounts payable	\$1,110,956	\$1,110,956	\$ —
Short-term loans	300,584	300,584	—
Current portion of long-term loans	104,170	104,170	—
Commercial papers	47,063	47,063	—
Bonds	188,253	189,891	1,638
Long-term loans	168,543	169,230	678
Total liabilities	\$1,919,588	\$1,921,913	\$2,316
Derivatives*:			
Not subject to hedge accounting	\$ 273	\$ 273	\$ —
Subject to hedge accounting	(28)	(28)	—
Total derivative transactions	\$ 245	\$ 245	\$ —

\* Receivables and payables arising from derivative transactions are presented as a net value with the amount in parentheses representing a net liability position.

The calculation methods of fair values of financial instruments and securities and derivative transactions are as follows:

**Cash and time deposits**

Their carrying value approximates the fair value.

**Notes and accounts receivable**

The fair value of notes and accounts receivable is based on their present values discounted by the interest rate determined taking into account the remaining period to maturity for each receivable classified by settlement date.

**Investments in securities**

The fair value of investments in securities is based on quoted market prices. Please refer to Note 7 regarding information on securities by holding purpose.

**Notes and accounts payable**

The fair value of notes and accounts payable is based on their present values discounted by the interest rate determined taking into account the remaining period to maturity for each payable classified by settlement date.

**Short-term loans, current portion of long-term loans and commercial papers**

Since these items are settled in a short period of time, their carrying value approximates the fair value.

**Bonds and current portion of bonds**

The fair value of bonds is based on the market price.

**Long-term loans**

The fair value of long-term loans with fixed interest rates is based on the present value of the total of principal and interest discounted by the interest rate to be applied assuming new loans under similar conditions to existing loans are made. Floating interest rates for long-term loans are hedged by interest-rate swap agreements and accounted for as loans with fixed interest rates. The fair value of those long-term loans is based on the present value of the total of principals, interests and net cash flows of swap agreements discounted by the interest rates, estimated reasonably, applicable to new loans under similar conditions.

**Derivative transactions**

Please refer to Note 14.

## Notes to Consolidated Financial Statements

The carrying value of financial instruments without determinable market value at March 31, 2018 and 2017 is presented as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Unlisted equity securities	¥ 3,275	¥ 2,669	\$ 30,826
Investments in unconsolidated subsidiaries and affiliates	8,116	7,788	76,393
Total	¥11,391	¥10,458	\$107,220

The redemption schedule for time deposits and notes and accounts receivable with maturity dates at March 31, 2018 is summarized as follows:

	Millions of yen	
	Within 1 year	Over 1 year and less than 5 years
Time deposits	¥ 43,257	¥—
Notes and accounts receivable	225,999	—
Total	¥269,256	¥—

	Thousands of U.S. dollars	
	Within 1 year	Over 1 year and less than 5 years
Time deposits	\$ 407,163	\$—
Notes and accounts receivable	2,127,250	—
Total	\$2,534,413	\$—

With respect to the redemption schedule of bonds, long-term loans and finance lease obligations, please refer to Note 8.

## 15. DERIVATIVES AND HEDGING ACTIVITIES

The currency-related derivatives positions outstanding for which hedge accounting has not been applied at March 31, 2018 and 2017 are as follows:

Classification	Transaction	Millions of yen			
		Contract value (notional principal amount)	Contract value (notional principal amount over one year)	Fair value	Valuation gain (loss)
	Foreign currency forward exchange contracts:				
	Selling:				
	U.S. dollars	¥ 4,707	¥—	¥ 46	¥ 46
	Yen	2,062	—	(3)	(3)
	Euro	845	—	12	12
Over-the-counter transactions	RMB	740	—	(6)	(6)
	Others	105	—	(0)	(0)
	Buying:				
	U.S. dollars	2,019	—	(18)	(18)
	Yen	966	—	1	1
	Euro	86	—	(0)	(0)
	Others	93	—	(0)	(0)
Total		¥11,627	¥—	¥ 29	¥ 29

		Millions of yen			
		2017			
Classification	Transaction	Contract value (notional principal amount)	Contract value (notional principal amount over one year)	Fair value	Valuation gain (loss)
	Foreign currency forward exchange contracts:				
	Selling:				
	U.S. dollars	¥ 7,475	¥—	¥ 24	¥ 24
	Yen	1,772	—	(10)	(10)
	Euro	763	—	3	3
Over-the-counter transactions	RMB	440	—	1	1
	Others	88	—	(1)	(1)
	Buying:				
	U.S. dollars	750	—	2	2
	Yen	379	—	2	2
	Euro	33	—	(0)	(0)
	Others	3	—	0	0
Total		¥11,706	¥—	¥ 21	¥ 21

		Thousands of U.S. dollars			
		2018			
Classification	Transaction	Contract value (notional principal amount)	Contract value (notional principal amount over one year)	Fair value	Valuation gain (loss)
	Foreign currency forward exchange contracts:				
	Selling:				
	U.S. dollars	\$ 44,305	\$—	\$ 433	\$ 433
	Yen	19,409	—	(28)	(28)
	Euro	7,954	—	113	113
Over-the-counter transactions	RMB	6,965	—	(56)	(56)
	Others	988	—	(0)	(0)
	Buying:				
	U.S. dollars	19,004	—	(169)	(169)
	Yen	9,093	—	9	9
	Euro	809	—	(0)	(0)
	Others	875	—	(0)	(0)
Total		\$109,441	\$—	\$ 273	\$ 273

The fair value of foreign currency forward exchange contracts is mainly computed using the prices provided by counterparty financial institutions.

## Notes to Consolidated Financial Statements

The currency-related derivatives positions outstanding for which hedge accounting has been applied at March 31, 2018 and 2017 are as follows:

			Millions of yen		
			2018		
Method for hedge accounting	Transaction	Major hedged item	Contract value (notional principal amount)	Contract value (notional principal amount over one year)	Fair value
Deferral hedge accounting	Foreign currency forward exchange contracts:				
	Selling:				
	U.S. dollars		¥ 1	¥—	¥(0)
	Euro	Accounts receivable	360	—	5
	RMB		657	—	(5)
	Others		26	—	0
	Buying:				
	U.S. dollars		30	—	(0)
	Euro	Accounts payable	160	—	(1)
	RMB		37	22	(0)
Others		7	—	(0)	
Allocation method for foreign currency forward exchange contracts (Note 2(o))	Foreign currency forward exchange contracts:				
	Selling:				
	Euro	Accounts receivable	2	—	(*)
	Buying:				
	Euro		63	—	(*)
	THB	Accounts payable	30	—	(*)
	Others	0	—	(*)	
Total			¥1,379	¥22	¥(3)

			Millions of yen		
			2017		
Method for hedge accounting	Transaction	Major hedged item	Contract value (notional principal amount)	Contract value (notional principal amount over one year)	Fair value
Deferral hedge accounting	Foreign currency forward exchange contracts:				
	Selling:				
	U.S. dollars		¥ 4	¥—	¥ 0
	Euro	Accounts receivable	434	—	1
	RMB		76	—	0
	Others		23	—	(0)
	Buying:				
	U.S. dollars		45	—	0
	Euro	Accounts payable	178	—	(1)
	RMB		29	—	(0)
THB		24	—	0	
Others		18	—	0	
Allocation method for foreign currency forward exchange contracts (Note 2(o))	Foreign currency forward exchange contracts:				
	Selling:				
	Euro	Accounts receivable	12	—	(*)
	Buying:				
	Euro	Accounts payable	86	—	(*)
	Others	23	—	(*)	
Total			¥956	¥—	¥ 1

			Thousands of U.S. dollars		
			2018		
Method for hedge accounting	Transaction	Major hedged item	Contract value (notional principal amount)	Contract value (notional principal amount over one year)	Fair value
Deferral hedge accounting	Foreign currency forward exchange contracts:				
	Selling:				
	U.S. dollars	Accounts receivable	\$ 9	\$ —	\$ (0)
	Euro		3,389	—	47
	RMB		6,184	—	(47)
	Others		245	—	0
	Buying:				
	U.S. dollars	Accounts payable	282	—	(0)
	Euro		1,506	—	(9)
	RMB		348	207	(0)
Others	66		—	(0)	
Allocation method for foreign currency forward exchange contracts (Note 2(o))	Foreign currency forward exchange contracts:				
	Selling:				
	Euro	Accounts receivable	19	—	(*)
	Buying:				
	Euro	Accounts payable	593	—	(*)
	THB		282	—	(*)
Others	0		—	(*)	
Total			\$12,980	\$207	\$(28)

The fair value of foreign currency forward exchange contracts is mainly computed using the prices provided by counterparty financial institutions.

(\*): The fair value of foreign currency forward exchange contracts that qualify for the allocation method is included in the fair value of the underlying accounts receivable and payable.

The interest-related derivatives positions outstanding for which hedge accounting has been applied at March 31, 2018 and 2017 are as follows:

			Millions of yen		
			2018		
Method for hedge accounting	Transaction	Hedged item	Contract value (notional principal amount)	Contract value (notional principal amount over one year)	Fair value
Swap rates applied to underlying long-term loans	Interest-rate swap transactions (pay—fixed, receive—variable)	Long-term loans	¥18,000	¥8,000	(**)

			Millions of yen		
			2017		
Method for hedge accounting	Transaction	Hedged item	Contract value (notional principal amount)	Contract value (notional principal amount over one year)	Fair value
Swap rates applied to underlying long-term loans	Interest-rate swap transactions (pay—fixed, receive—variable)	Long-term loans	¥20,465	¥18,000	(**)

			Thousands of U.S. dollars		
			2018		
Method for hedge accounting	Transaction	Hedged item	Contract value (notional principal amount)	Contract value (notional principal amount over one year)	Fair value
Swap rates applied to underlying long-term loans	Interest-rate swap transactions (pay—fixed, receive—variable)	Long-term loans	\$169,428	\$75,301	(**)

(\*\*): Since interest-rate swap agreements are accounted for as if the interest rates applied to the swaps had originally applied to the underlying long-term loans, their fair values were included in the fair value of the long-term loans.

## Notes to Consolidated Financial Statements

### 16. RESEARCH AND DEVELOPMENT COSTS

Research and development costs included in selling, general and administrative expenses for the years ended March 31, 2018 and 2017 totaled ¥6,009 million (\$56,561 thousand) and ¥5,167 million, respectively.

### 17. OPERATING LEASES

Future minimum lease payments subsequent to March 31, 2018 under noncancelable operating leases are as follows:

Years ending March 31,	Millions of yen	Thousands of U.S. dollars
2019	¥ 536	\$5,045
2020 and thereafter	518	4,876
Total	¥1,054	\$9,921

### 18. CONTINGENT LIABILITIES

At March 31, 2018, the Company and its consolidated subsidiaries were contingently liable as guarantors of loans of customers and other in the aggregate amount of ¥584 million (\$5,497 thousand), and as guarantors of loans of employees in the amount of ¥1 million (\$9 thousand).

In addition, at March 31, 2018, the Company and its consolidated subsidiaries had contingent liabilities arising from notes discounted with banks and notes endorsed in the amount of ¥234 million (\$2,203 thousand).

### 19. PLEDGED ASSETS

Pledged assets as of March 31, 2018 are as follows:

	Millions of yen	Thousands of U.S. dollars
	2018	2018
Land	¥760	\$7,154

Secured liabilities as of March 31, 2018 are as follows:

	Millions of yen	Thousands of U.S. dollars
	2018	2018
Long-term loans	¥28	\$264

### 20. AMOUNTS PER SHARE

Amounts per share at March 31, 2018 and 2017 and for the years then ended are as follows:

	Yen		U.S. dollars
	2018	2017	2018
Profit attributable to owners of parent:			
Basic	¥ 136.34	¥ 81.65	\$ 1.28
Diluted	—	—	—
Net assets	2,424.97	2,301.10	22.83
Cash dividends applicable to the year	40.00	33.00	0.38

Basic profit attributable to owners of parent per share has been computed based on the profit attributable to owners of parent available for distribution to the shareholders of common stock and the weighted-average number of shares of common stock outstanding during the year.

Diluted profit attributable to owners of parent per share for the years ended March 31, 2018 and 2017 has not been presented because

no potentially dilutive shares of common stock were outstanding.

Net assets per share have been computed based on the number of shares of common stock outstanding at the year end.

Cash dividends per share represent the cash dividends proposed by the Board of Directors as applicable to the respective years together with the interim cash dividends paid.

The financial data used in the computation of basic profit attributable to owners of parent per share for the years ended March 31, 2018 and 2017 are summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Profit attributable to owners of parent	¥17,175	¥10,331	\$161,662
Profit available for distribution to shareholders of common stock	17,175	10,331	161,662
Weighted-average number of shares	125,977,181	126,541,671	

## 21. CASH AND TIME DEPOSITS

A reconciliation of cash and time deposits in the accompanying consolidated balance sheets at March 31, 2018 and 2017 and cash and cash equivalents in the accompanying consolidated statements of cash flows for the years then ended is as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Cash and time deposits	¥43,303	¥39,830	\$407,596
Long-term deposit included in other assets of investments and other assets	—	2	—
Time deposits with maturities of more than three months	(445)	(102)	(4,189)
Cash and cash equivalents	¥42,857	¥39,730	\$403,398

## 22. SEGMENT INFORMATION

### (a) Overview of reportable segments

The reportable segments of the Company comprise those entities for which obtaining separate financial reports is possible and that are subject to regular review by the Board of Directors, which decides upon the distribution of management resources and assesses their performance.

Reflecting the respective positions of each business in the value chain, as well as identifying the most closely aligned industries, the Company defined five segment categories: Functional Materials (located at the top of the value chain), Advanced Materials & Processing (located in the next stage of the value chain), Electronics, Automotive & Energy, and Life & Healthcare (functioning within the corresponding industries).

The following describes the major products and services handled by each reportable segment.

The Functional Materials segment is engaged in the sales of materials for paints/inks, urethane materials, auxiliaries, plastic materials, plastic additives, industrial oil solutions, surfactants materials, fluorochemicals, encapsulant materials, silicone materials, and more for the paints/inks, resins, urethane foams, organic synthesis, surfactants, and semiconductors industries.

The Advanced Materials & Processing segment is engaged in the sales of dyestuffs, dyes, functional dyes, digital print processing products, thermoplastic resins, thermosetting resins, automobile refinish paints, conductive coatings, synthetic rubber, inorganic materials, plastics products, resins molding tools/dies for the dye/additive, digital print processing materials, fiber processing, raw resin materials, resin moldings, functional films and sheets, constructions, and other industries.

The Electronics segment is engaged in the sales of pre-processing materials and devices for LCD/semiconductors, materials for display panels, materials and devices for semiconductor assembly, low-temperature/vacuum equipment, high-function epoxy, resins, precision electronics abrasives, and more for the displays, touch panels, semiconductors, hard disk drives, electronic components, and heavy electrical industries.

The Automotive & Energy segment is engaged in the sales of plastic products, thermoplastic resins, thermosetting resins, silicone products, resins molding tools/dies, high-function car electronics materials and components, battery materials, solar cell/secondary battery materials and more for the automotives, automotive components, and energy industries.

The Life & Healthcare segment is engaged in the sales of pharmaceutical/agricultural chemicals and materials, research products, in vitro diagnostics, enzymes, food additives, additives for cosmetics, feeds, and surfactants for the pharmaceutical, food, and cosmetics industries. Furthermore, the segment offers radiation measurement as one of its main services. In addition, this segment sells cosmetics, health foods, and beauty foods directly to consumers.

### (b) Calculation methods of net sales, income or loss, assets, and other items by reportable segments

The accounting policies of reportable segments are generally identical to those described in Note 2. Reportable segment income corresponds to operating income in the consolidated statements of income. Intersegment internal income and transfers are determined based on the values of transactions at actual market prices.

## Notes to Consolidated Financial Statements

### (c) Information on net sales, income or loss, assets and other items for each reportable segment

Information by reportable segments for the years ended March 31, 2018 and 2017 is as follows:

Millions of yen											
2018											
Reportable Segments											
	Functional Materials	Advanced Materials & Processing	Electronics	Automotive & Energy	Life & Healthcare	Total	Others	Total	Corporate	Adjustments	Consolidated
Sales to customers	¥176,068	¥262,831	¥129,324	¥129,708	¥85,371	¥783,303	¥ 629	¥783,933	¥ —	¥ —	¥783,933
Intersegment sales and transfers	2,543	2,234	2,108	2,817	508	10,213	4,783	14,997	—	(14,997)	—
Net sales	178,612	265,065	131,433	132,526	85,880	793,517	5,413	798,931	—	(14,997)	783,933
Segment income	5,170	6,700	8,917	2,415	4,216	27,420	207	27,628	(3,954)	445	24,118
Segment assets	87,905	134,977	70,149	51,109	97,667	441,809	5,304	447,113	153,594	(29,262)	571,445
Other items:											
Depreciation and amortization other than amortization of goodwill	456	645	2,454	249	3,552	7,359	218	7,577	1,717	—	9,295
Amortization of goodwill	133	—	112	—	1,502	1,748	—	1,748	—	—	1,748
Unamortized balance of goodwill	3,276	—	1,296	—	20,905	25,478	—	25,478	—	—	25,478
Investments in affiliates accounted for by the equity method	2,478	1,482	2,751	1,231	2,601	10,545	—	10,545	—	(2)	10,542
Increase in property, plant and equipment, net and intangible assets	243	2,817	1,834	191	2,369	7,458	68	7,527	1,896	—	9,423

Millions of yen											
2017											
Reportable Segments											
	Functional Materials	Advanced Materials & Processing	Electronics	Automotive & Energy	Life & Healthcare	Total	Others	Total	Corporate	Adjustments	Consolidated
Sales to customers	¥153,546	¥242,609	¥127,722	¥112,956	¥84,904	¥721,739	¥ 644	¥722,384	¥ —	¥ —	¥722,384
Intersegment sales and transfers	2,000	2,414	1,977	2,619	472	9,483	5,432	14,916	—	(14,916)	—
Net sales	155,546	245,024	129,699	115,576	85,376	731,223	6,077	737,300	—	(14,916)	722,384
Segment income	4,185	5,093	6,333	1,539	3,332	20,484	148	20,633	(6,153)	550	15,030
Segment assets	72,576	121,346	65,610	46,258	98,221	404,013	5,089	409,102	149,020	(27,347)	530,775
Other items:											
Depreciation and amortization other than amortization of goodwill	476	809	2,524	219	3,412	7,442	216	7,658	1,722	—	9,381
Amortization of goodwill	—	—	41	—	1,502	1,543	—	1,543	—	—	1,543
Unamortized balance of goodwill	—	—	627	—	22,407	23,034	—	23,034	—	—	23,034
Investments in affiliates accounted for by the equity method	1,716	1,394	2,318	1,235	2,476	9,140	—	9,140	—	(1)	9,139
Increase in property, plant and equipment, net and intangible assets	297	3,561	1,825	284	4,906	10,875	190	11,066	1,107	—	12,173

Thousands of U.S. dollars

	2018										
	Reportable Segments					Total	Others	Total	Corporate	Adjustments	Consolidated
	Functional Materials	Advanced Materials & Processing	Electronics	Automotive & Energy	Life & Healthcare	Total	Others	Total	Corporate	Adjustments	Consolidated
Sales to customers	\$1,657,267	\$2,473,936	\$1,217,282	\$1,220,896	\$803,567	\$7,372,957	\$ 5,921	\$7,378,887	\$ —	\$ —	\$7,378,887
Intersegment sales and transfers	23,936	21,028	19,842	26,515	4,782	96,131	45,021	141,162	—	(141,162)	—
Net sales	1,681,212	2,494,964	1,237,133	1,247,421	808,358	7,469,098	50,951	7,520,058	—	(141,162)	7,378,887
Segment income	48,663	63,065	83,933	22,732	39,684	258,095	1,948	260,053	(37,218)	4,189	227,014
Segment assets	827,419	1,270,491	660,288	481,071	919,305	4,158,594	49,925	4,208,518	1,445,727	(275,433)	5,378,812
Other items:											
Depreciation and amortization other than amortization of goodwill	4,292	6,071	23,099	2,344	33,434	69,268	2,052	71,320	16,162	—	87,491
Amortization of goodwill	1,252	—	1,054	—	14,138	16,453	—	16,453	—	—	16,453
Unamortized balance of goodwill	30,836	—	12,199	—	196,771	239,816	—	239,816	—	—	239,816
Investments in affiliates accounted for by the equity method	23,325	13,950	25,894	11,587	24,482	99,256	—	99,256	—	(19)	99,228
Increase in property, plant and equipment, net and intangible assets	2,287	26,515	17,263	1,798	22,299	70,200	640	70,849	17,846	—	88,695

**(d) Geographical information**

Net sales by country or region for the years ended March 31, 2018 and 2017 are summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Japan	¥395,428	¥369,365	\$3,722,026
Greater China	207,437	193,784	1,952,532
ASEAN	110,380	101,998	1,038,968
Americas	36,564	29,573	344,164
Europe	14,178	11,975	133,453
Other	19,943	15,687	187,716
Total	¥783,933	¥722,384	\$7,378,887

Notes: 1. Net sales are categorized by country or region based on the locations of customers.

2. Country or region is determined by geographical proximity.

3. Major countries in each region

- (1) Greater China China, Hong Kong, and Taiwan
- (2) ASEAN Thailand and Singapore
- (3) Americas U.S.A. and Mexico
- (4) Europe Germany
- (5) Other Korea

Property, plant and equipment by country or region as of March 31, 2018 and 2017 are summarized as follows:

	Millions of yen		Thousands of U.S. dollars
	2018	2017	2018
Japan	¥61,686	¥61,666	\$580,629
Other	5,539	5,952	52,137
Total	¥67,225	¥67,619	\$632,765

## Notes to Consolidated Financial Statements

### (e) Information on loss on impairment of fixed assets per reportable segments

Loss on impairment of fixed assets for the years ended March 31, 2018 and 2017 is as follows:

Millions of yen									
2018									
Reportable Segments									
	Functional Materials	Advanced Materials & Processing	Electronics	Automotive & Energy	Life & Healthcare	Total	Others	Eliminations or corporate	Total
Loss on impairment of fixed assets	¥—	¥528	¥221	¥4	¥—	¥754	¥—	¥92	¥847

Millions of yen									
2017									
Reportable Segments									
	Functional Materials	Advanced Materials & Processing	Electronics	Automotive & Energy	Life & Healthcare	Total	Others	Eliminations or corporate	Total
Loss on impairment of fixed assets	¥—	¥1,352	¥1	¥38	¥—	¥1,392	¥—	¥6	¥1,398

Thousands of U.S. dollars									
2018									
Reportable Segments									
	Functional Materials	Advanced Materials & Processing	Electronics	Automotive & Energy	Life & Healthcare	Total	Others	Eliminations or corporate	Total
Loss on impairment of fixed assets	\$—	\$4,970	\$2,080	\$38	\$—	\$7,097	\$—	\$866	\$7,973

For the year ended March 31, 2017, as to business-use assets for manufacturing of color formers in Advanced Materials & Processing segment, due to decreasing profitability, the carrying values were reduced to their recoverable amounts and recorded loss on impairment of fixed assets of ¥1,249 million.

### 23. SUBSEQUENT EVENTS

The following distribution of retained earnings of the Company, which has not been reflected in the accompanying consolidated financial statements for the year ended March 31, 2018, was approved at a meeting of the shareholders held on June 22, 2018:

	Millions of yen	Thousands of U.S. dollars
Cash dividends (¥23.0 = U.S.\$0.22 per share)	¥2,879	\$27,099



## Independent Auditor's Report

The Board of Directors  
NAGASE&CO., LTD.

We have audited the accompanying consolidated financial statements of NAGASE&CO., LTD. and its consolidated subsidiaries, which comprise the consolidated balance sheet as at March 31, 2018, and the consolidated statements of income, comprehensive income, changes in net assets, and cash flows for the year then ended and a summary of significant accounting policies and other explanatory information, all expressed in Japanese yen.

### *Management's Responsibility for the Consolidated Financial Statements*

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in Japan, and for designing and operating such internal control as management determines is necessary to enable the preparation and fair presentation of the consolidated financial statements that are free from material misstatement, whether due to fraud or error.

### *Auditor's Responsibility*

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in Japan. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. The purpose of an audit of the consolidated financial statements is not to express an opinion on the effectiveness of the entity's internal control, but in making these risk assessments the auditor considers internal controls relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### *Opinion*

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of NAGASE&CO., LTD. and its consolidated subsidiaries as at March 31, 2018, and their consolidated financial performance and cash flows for the year then ended in conformity with accounting principles generally accepted in Japan.

### *Convenience Translation*

We have reviewed the translation of these consolidated financial statements into U.S. dollars, presented for the convenience of readers, and, in our opinion, the accompanying consolidated financial statements have been properly translated on the basis described in Note 1.

June 22, 2018  
Osaka, Japan

*Ernst & Young Shinohara LLC*

A member firm of Ernst & Young Global Limited

# Consolidated Subsidiaries, Affiliates and Offices

● Consolidated subsidiary ○ Company accounted for under the equity method

As of April 1, 2018

Category	Company name	Description of business	Location	Year of establishment
<b>Japan</b>				
<b>Manufacturing and Processing</b>				
●	Nagase ChemteX Corporation	Research, manufacture, and sale of enzymes, fermented products, pharmaceutical intermediates, disinfecting agents, functional polymers, epichlorohydrine derivatives, electronics materials, etc.	Osaka Pref.	1970
●	Hayashibara Co., Ltd.	Development, manufacture, and sale of food raw materials, pharmaceutical raw materials, cosmetics raw materials, health foods raw materials, functional dyes, etc.	Okayama Pref.	1932
●	Nagase Medicals Co., Ltd.	Manufacture and sale of pharmaceuticals, animal drugs, health foods, and cosmetics	Hyogo Pref.	1972
●	Setsunan Kasei Co., Ltd.	Coloring and sale of plastics	Osaka Pref.	1966
●	Totaku Industries, Inc.	Manufacture and sale of plastic products	Osaka Pref.	1952
●	Kotobuki Kasei Corporation	Molding, processing and sale of plastic products	Tochigi Pref.	1972
●	Nagase Techno-Engineering Co., Ltd.	Manufacture, sale and maintenance of low-temperature vacuum equipment, systems for chemical supply management and recycling processes, inspection systems, and the peripheral equipment for each of these	Tokyo Pref.	1989
●	Fukui Yamada Chemical Co., Ltd.	Manufacture of color former	Fukui Pref.	1985
●	Nagase Filter Co., Ltd.	Planning, production, processing, quality testing and sale of metal filters	Osaka Pref.	2006
●	CAPTEX Co., Ltd.	Manufacture and development of battery power source controllers, battery power sources and power source peripheral equipment	Aichi Pref.	2004
●	DAITAI KAKO CO., LTD.	Manufacture and sale of special pattern paint, polyester resin related products and FRP waterproof/anticorrosion related products	Osaka Pref.	1949
○	Xenomax-Japan Co., Ltd.	Manufacture and sales of high heat-resistant polyimide film XENOMAX®	Fukui Pref.	2018
○	Sun Delta Corporation	Development of applications for synthetic plastic products and manufacture and sale of processed products	Tokyo Pref.	2005
○	Honshu Rheem Co., Ltd.	Manufacture and sale of fiber drums, import and sale of food processing machines and materials	Kanagawa Pref.	1968
○	Toyo Beauty Supply Corporation	Contract manufacture of cosmetics and health foods	Tokyo Pref.	1964
○	eX. Grade Co., Ltd.	Development, manufacture and sale of components for electronic equipment	Osaka Pref.	2003
○	SN Tech Corporation	Manufacture of developer, recycling business	Osaka Pref.	2008
○	Nissei Technology Corporation	Design, development, and manufacture of ultra-precision plastic lenses and optical units; manufacture of precision mechanical components and units	Hyogo Pref.	1953
<b>Sales</b>				
●	Nagase Chemical Co., Ltd.	Sale of dyestuffs, industrial chemicals, chemicals for manufacturing paper, plastics and machinery	Tokyo Pref.	1995
●	Nagase Plastics Co., Ltd.	Sale of raw materials for plastics and plastic products	Osaka Pref.	1975
●	Nagase Beauty Care Co., Ltd.	Sale of cosmetics and health foods	Tokyo Pref.	1991
●	Nishinohon Nagase Co., Ltd.	Sale of dyestuffs, auxiliaries, industrial chemicals and plastics	Fukuoka Pref.	1969
●	Nagase Elex Co., Ltd.	Sale of raw materials for plastics and plastic products	Tokyo Pref.	1979
●	Nagase Abrasive Materials Co., Ltd.	Sale of abrasives, inorganic materials and related equipment	Osaka Pref.	1955
●	Nagase Sanbio Co., Ltd.	Sales of medicine for agriculture and additives for fertilizers, feed and food	Tokyo Pref.	1987
●	Nagase Tool Matex Co., Ltd.	Sale of auto models, test production materials, and carbon fiber composites	Tokyo Pref.	1965
●	Nagase Techno Service Co., Ltd.	Sales of kitting/logistics services, online catalog sales, recordable media, and RFID	Chiba Pref.	1991
○	Nagase-OG Colors & Chemicals Co., Ltd.	Purchasing and information services related to dyes, industrial chemicals, etc.	Osaka Pref.	1957
<b>Servicing</b>				
●	Nagase Logistics Co., Ltd.	Warehousing and distribution	Hyogo Pref.	1982
●	Nagase Information Development, Ltd.	Software development and maintenance	Tokyo Pref.	1987
●	Nagase Chemspec Co., Ltd.	Sale and technical servicing of chemicals	Tokyo Pref.	1976
○	Nagase Landauer, Ltd.	Radiation measuring services	Ibaraki Pref.	1974
●	Nagase Business Expert Co., Ltd.	Office administration services, import/export administration services	Tokyo Pref.	1996
	Nagase Logistics Support Co., Ltd.	An exclusive stevedore for Nagase Logistics Co., Ltd.	Hyogo Pref.	1954
	Choko Co., Ltd.	Insurance agency	Osaka Pref.	1971

Category	Company name	Description of business	Location	Year of establishment
<b>Greater China and Korea</b>				
<b>Manufacturing and Processing</b>				
●	Nagase ChemteX (Wuxi) Corporation	Plastic manufacture and sale of adhesives and high-tech chemical products for electronics, technology services	China	2002
●	Totaku Industries Suzhou Co., Ltd.	Manufacture and sale of plastic products	China	2005
●	Nagase Electronics Technology (Xiamen) Co., Ltd.	Chemical etching of liquid crystal glass panel units	China	2010
●	Nagase Engineering Service Korea Co., Ltd.	Equipment maintenance service and engineering	Korea	1997
○	Guangzhou Kurabo Chemicals Co., Ltd.	Manufacture of molded urethane products for automobiles	China	2001
○	Toyo Quality One (Guangzhou) Co., Ltd.	Research and development, manufacturing, processing, sale, technology consulting, and after-sale service for major automotive parts	China	2004
○	Toyo Quality One Ningbo Co., Ltd.	Manufacture and sale of polyurethane foam	China	1993
○	Tokai Spring Mfg. (Foshan) Co., Ltd.	Development, manufacture, and sale of precision press products, spring, and standard molds	China	2005
○	Light Chemical (Changzhou) Co., Ltd.	Research, development, and after-sale service for high-function composites and intermediates; sales of internally developed products	China	2011
○	Wuxi Chenghong Electronic Chemicals Co., Ltd.	Research, development, manufacture, and sales of electronics chemicals including semiconductors and flat panel displays (FPDs)	China	2013
	ON Textile Chemicals (Shanghai) Co., LTD.	Manufacture, sales, and export/import of textile-related products, dyeing processing agents	China	2003
	Mianyang Chenghong Electronic Chemicals Co., Ltd.	Research, development, manufacture, and sales of electronics chemicals for the electronics industry	China	2017
<b>Sales</b>				
●	Nagase (Hong Kong) Ltd.	Import/export, domestic sales, marketing	China	1971
●	Shanghai Hua Chang Trading Co., Ltd.	Sale of resins and related products	China	1998
	Suzhou Branch Office/ Ningbo Branch Office		China	
	Chengdu Branch Office/ Chongqing Branch Office		China	
	Nanjing Branch		China	
●	Shanghai Nagase Trading Co., Ltd.	Import/export, domestic sales, marketing	China	1997
●	Nagase Wahlee Plastics Corporation	Sale of resins and related products	Taiwan	1990
	Taichung Office		Taiwan	
	Gangshan Office		Taiwan	
●	Guangzhou Nagase Trading Co., Ltd.	Import/export, domestic sales, marketing	China	2002
	Wuhan Branch Office/ Chongqing Branch Office		China	
	Zhengzhou Branch Office		China	
●	Nagase (Taiwan) Co., Ltd.	Import/export, domestic sales, marketing	Taiwan	1988
●	Tianjin Nagase International Trading Co., Ltd.	Import/export, domestic sales, marketing	China	2003
	Dalian Branch Office/Qingdao Branch Office		China	
	Changchun Branch Office		China	
●	NWP International Trading (Shenzhen) Co., Ltd.	Sale of plastic products in South China	China	2004
	Dongguan Branch Office		China	
	Guangzhou Branch Office		China	
	Xiamen Branch Office		China	
●	Shenzhen Nagase Trading Ltd.	Import/export, domestic sales, marketing	China	2006
	Guanlan Branch		China	
●	Datai (Shanghai) Chemical Trading Co., Ltd.	Sales of paints	China	2013
●	Nagase Korea Corporation	General import/export trading, retailing/wholesaling, import/export trade agency	Korea	2001
	ON Colors & Chemicals (Shanghai) Co., Ltd.	Sales of textile-related products, dyeing processing agents, related equipment; export/import and technology consulting, technological development of dyeing processing	China	2002
	QINGDAO REPLUS CO., LTD.	Planning and development, manufacturing control, quality control and sales of food packaging	China	2015

## Consolidated Subsidiaries, Affiliates and Offices

● Consolidated subsidiary ○ Company accounted for under the equity method

Category	Company name	Description of business	Location	Year of establishment
<b>Servicing</b>				
	Nagase Techno-Engineering (Shanghai) Co., Ltd.	Construction and maintenance of chemical supply and management equipment	China	2006
	NW Consultant Service (Shenzhen) Ltd.	Print quality management consultant	China	2008
	Nagase Business Management and Planning (Shanghai) Co., Ltd.	Management of NAGASE Group operations and promotion of business strategies related to Greater China	China	2011
<b>Asean and the Middle East</b>				
<b>Manufacturing and Processing</b>				
●	Pac Tech Asia Sdn. Bhd.	Manufacture and sale of semiconductor manufacturing equipment, semiconductor wafer bumping contract manufacturing	Malaysia	2006
○	Sanko Gosei Technology (Thailand) Ltd. Bangkok Design Office	Manufacture of automobile components	Thailand Thailand	1994
○	Automotive Mold Technology Co., Ltd.	Manufacture of automotive molds and dies	Thailand	2000
○	Nafuko Co., Ltd.	Manufacture, import/export and sale of packaging materials and related equipment	Thailand	1996
○	Dainichi Color Vietnam Co., Ltd.	Manufacture and sale of color masterbatch blend for plastic	Vietnam	2006
○	PT. Toyo Quality One Indonesia	Manufacture of flame lamination products	Indonesia	2008
	MINDA KYORAKU LTD.	Manufacture of blow-formed automobile components	India	2011
<b>Sales</b>				
●	Nagase (Thailand) Co., Ltd. Eastern Office Yangon Branch	Import/export, domestic sales, marketing	Thailand Thailand Myanmar	1989
●	Nagase Singapore (Pte) Ltd. Australia Branch Bangladesh Liaison Office Middle East Representative Office Turkey (Izmir) Liaison Office	Import/export, domestic sales, marketing	Singapore Australia Bangladesh United Arab Emirates Turkey	1975
●	Nagase (Malaysia) Sdn. Bhd. Johor Bahru Office Penang Office	Import/export, domestic sales, marketing	Malaysia Malaysia Malaysia	1981
●	PT. Nagase Impor-Ekspor Indonesia Surabaya Branch	Import/export, domestic sales, marketing	Indonesia Indonesia	1998
●	Nagase Philippines Corporation	Import/export, domestic sales, marketing	Philippines	1997
●	Nagase Philippines International Services Corporation	Domestic sales, import/export	Philippines	2005
●	Nagase Vietnam Co., Ltd. Ho Chi Minh City Branch	Import/export, domestic sales, marketing	Vietnam Vietnam	2008
●	Nagase India Private Ltd. North India Branch (Gurgaon) South India Branch (Chennai)	Import/export, domestic sales, marketing	India India India	2006
	Landauer Radiopharmaceuticals Pty. Ltd.	Sales of radiation-related pharmaceuticals	Australia	2015
<b>Servicing</b>				
	PT. Indonesia Mold Technology	Design changes and maintenance for large-scale plastic automobile component molds	Indonesia	2015
	Nagase (Siam) Co., Ltd.	Contract services for Group companies	Thailand	2000
	Landauer Australasia Pty Ltd	Radiation measuring services	Australia	2006

Category	Company name	Description of business	Location	Year of establishment
<b>Americas</b>				
<b>Manufacturing and Processing</b>				
●	Engineered Materials Systems, Inc.	Research and development, manufacture, and sales of materials for commercial adhesives, conductive adhesives	America	1993
●	Pac Tech USA Packaging Technologies Inc.	Semiconductor wafer bumping, manufacture and sale of semiconductor manufacturing equipment	America	2001
●	Sofix LLC	Manufacture and sale of color formers	America	1990
○	KN Plotech America Corporation	Manufacture and sale of blow-formed plastic molding components and products	America	2010
○	TQ-1 de MEXICO S.A. de C.V.	Manufacture and sale of urethane for automotive seat pads and automotive laminated frames and sale of automotive urethane foam	Mexico	2012
○	Cytech Products Inc.	Manufacture and sales of mold release agents for polyurethane resins, thermal paper additives and emulsion dispersing element	America	1988
<b>Sales</b>				
●	Nagase America Corporation	Import/export, domestic sales, marketing	America	1971
	Michigan Branch		America	
	California Branch		America	
●	Fitz Chem LLC	Sales of raw materials for paints, inks, adhesives, resin compounds, personal care products	America	1985
●	Nagase Enterprise Mexico S.A. de C.V.	Import/export sales, intermediate trade, market development, information collection	Mexico	2010
	Leon Branch Office		Mexico	
	Nagase do Brasil Comércio de Produtos Químicos Ltda.	Import/export sales, intermediate trade, market development, information collection	Brazil	2012
<b>Europe</b>				
<b>Manufacturing and Processing</b>				
●	Pac Tech-Packaging Technologies GmbH	Semiconductor wafer bumping, manufacture and sale of semiconductor manufacturing equipment	Germany	1995
●	Inkron Oy	Development, manufacture of functional materials for semiconductors and electronic devices	Finland	2013
<b>Sales</b>				
●	Nagase (Europa) GmbH	Import/export, domestic sales, marketing	Germany	1980
	Hungary Representative Office		Hungary	
	London Branch		England	
	Lyon Branch		France	

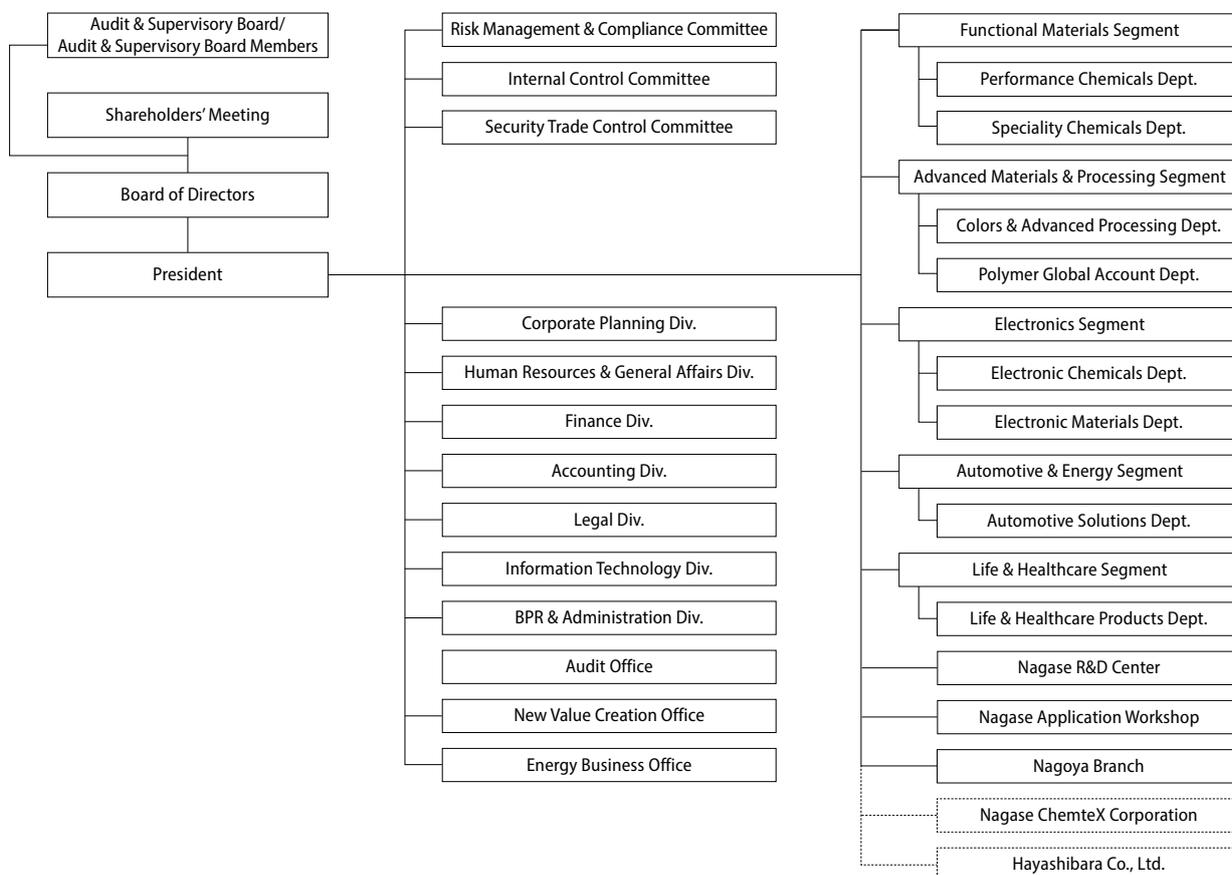
# Corporate Information (As of March 31, 2018)

## Overview

<b>Company Name</b>	NAGASE & CO., LTD.	
<b>Founded</b>	June 18, 1832	
<b>Establishment</b>	December 9, 1917	
<b>Capital</b>	¥9,699 million	
<b>Employees</b>	861 (Consolidated: 6,312)	
<b>Main Business</b>	Import/export and domestic sales of chemicals, plastics, electronics materials, cosmetics and health foods	
<b>Main Banks</b>	Sumitomo Mitsui Banking Corporation, The Bank of Tokyo-Mitsubishi UFJ, Ltd.*, Mizuho Bank, Ltd., Sumitomo Mitsui Trust Bank, Limited	
<b>Main Offices</b>	Osaka Head Office Tokyo Head Office Nagoya Branch Office Nagase R&D Center Nagase Application Workshop	1-1-17, Shinmachi, Nishi-ku, Osaka City, Osaka 550-8668, Tel: (81) 6-6535-2114 5-1, Nihonbashi-Kobunacho, Chuo-ku, Tokyo 103-8355, Tel: (81) 3-3665-3021 3-14-18, Marunouchi, Naka-ku, Nagoya City, Aichi 460-8560, Tel: (81) 52-963-5615 Kobe High Tech Park, 2-2-3, Murotani, Nishi-ku, Kobe City, Hyogo 651-2241, Tel: (81) 78-992-3162 2-4-45, Higashitsukaguchicho, Amagasaki City, Hyogo 661-0011, Tel: (81) 6-4961-6730

\* MUFG Bank, Ltd. as of April 1, 2018

## Organization (as of April 1, 2018)



# Investor Information (As of March 31, 2018)

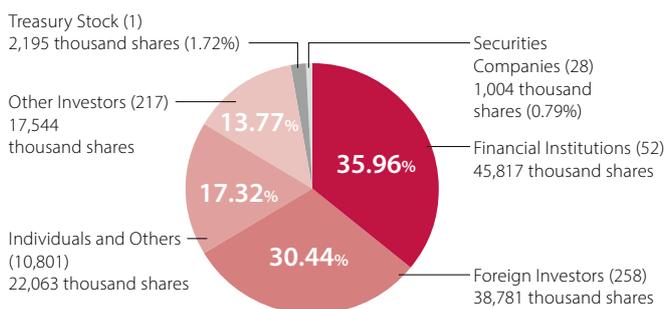
**Stock Exchange**.....Tokyo (First Section)

**Code**.....8012

**Stock Status**.....Authorized Number of Shares 346,980,000 shares  
Issued Number of Shares 127,408,285 shares

**Number of Shareholders**.....11,357

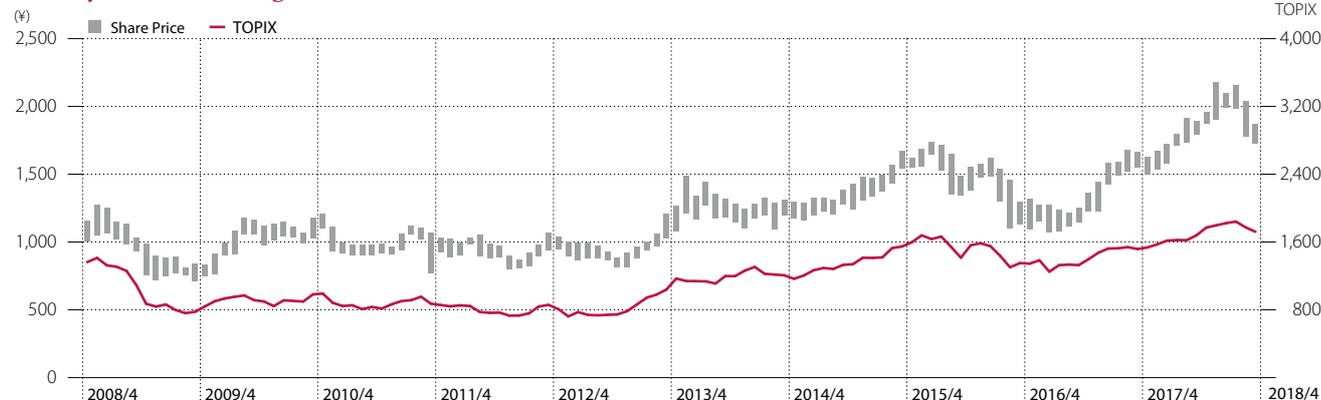
## Composition of Shareholders



## Principal Shareholders

Name	Number of Shares Held (Thousands)	Percentage of Total Shares Outstanding (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	6,936	5.44
Sumitomo Mitsui Trust Bank, Limited	5,776	4.53
NORTHERN TRUST CO. (AVFC) RE SILCHESTER INTERNATIONAL INVESTORS INTERNATIONAL VALUE EQUITY TRUST	5,772	4.53
Japan Trustee Services Bank, Ltd. (Trust Account)	4,932	3.87
Sumitomo Mitsui Banking Corporation	4,377	3.44
Nippon Life Insurance Company	3,589	2.82
Reiko Nagase	3,549	2.79
NORTHERN TRUST CO. (AVFC) RE U.S. TAX EXEMPTED PENSION FUNDS	3,264	2.56
Japan Trustee Services Bank, Ltd. (Trust Account 9)	2,970	2.33
Nagase Shunzo Co., Ltd.	2,688	2.11

## Monthly Share Price Range of NAGASE



## Monthly Trading Volume

