

**RAISING THE
POWER
OF MC**

Fiscal Year 2017 Business Segment IR Meeting

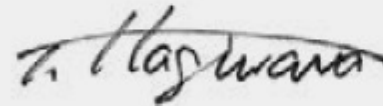
Mitsubishi Corporation Chemicals Group

Future of the Chemicals Group

**THE
STRENGTH
OF 7**



In the chemicals industry, which has expansive interfaces with the clothing, food, and housing sectors, the Chemicals Group is pursuing new businesses by taking full advantage of its solid market interfaces in the industry.

A handwritten signature in black ink, reading "T. Hagiwara".

Takeshi Hagiwara
Group CEO, Chemicals Group

Group Management Participants

EVP, Group CEO, Chemicals Group
Takeshi Hagiwara

General Manager, Chemicals Group CEO Office
Shoichi Ogiwara

SVP, Division COO, Life Science Business Division
Koji Kishimoto

SVP, General Manager, New Business Development Department
Kenji Takahashi

General Manager, Chemicals Group Administration Department
Shingo Torii

Agenda

1. Basic Policy regarding Midterm Corporate Strategy 2018
2. Progress on Midterm Corporate Strategy 2018
3. Reorganizations
4. Group Strategy and Chemical Value
5. Strategic Areas (Selection and Concentration)
6. Life Sciences Business
7. New Initiatives
8. Sustainability
9. Group Investment Plans and Forecasts

1. Basic Policy Regarding Midterm Corporate Strategy 2018

The basic policy of the Chemicals Group is based on its three pillars and follows Midterm Corporate Strategy 2018.

1. Achieve large-scale growth

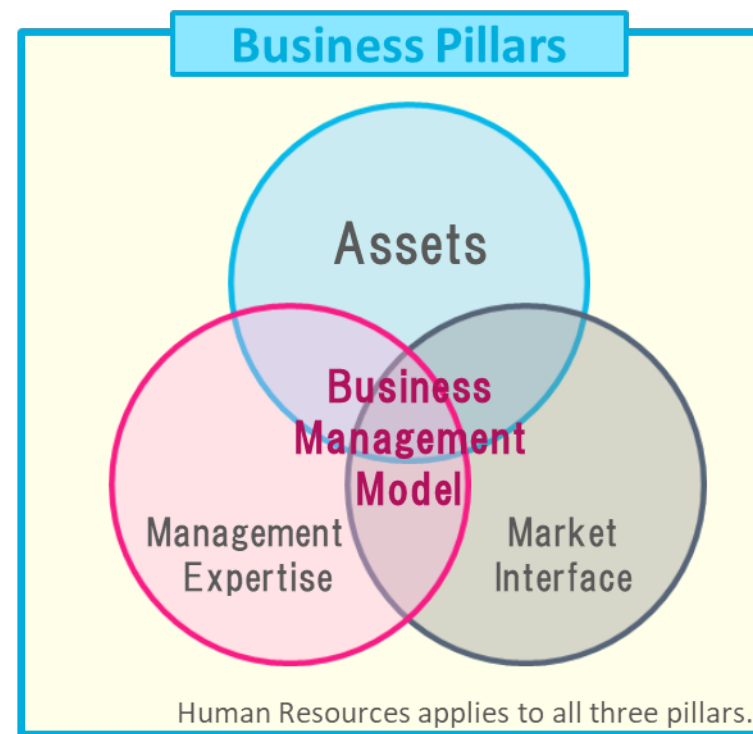
Realize significant growth by identifying life sciences as the central pillar of the Group's growth strategy, **expanding assets and management expertise, and strengthen proactive initiatives** in each sector

2. Increase efficiency

Pursue efficiency of businesses/ transactions that have low growth prospects, acknowledging their **lifecycle stage** due to **changes in the business environment**

3. Strengthen Management Expertise

Pursue the **development of management talent** essential for the Group's growth, by expanding the flexibility of talent relocation, increasing the number of management positions, etc.



Assets

- Portfolio Companies (Subsidiaries, Affiliates)
- Tangible assets: Production facilities, unique products etc.
- Intangible assets: Development capabilities, brands etc.

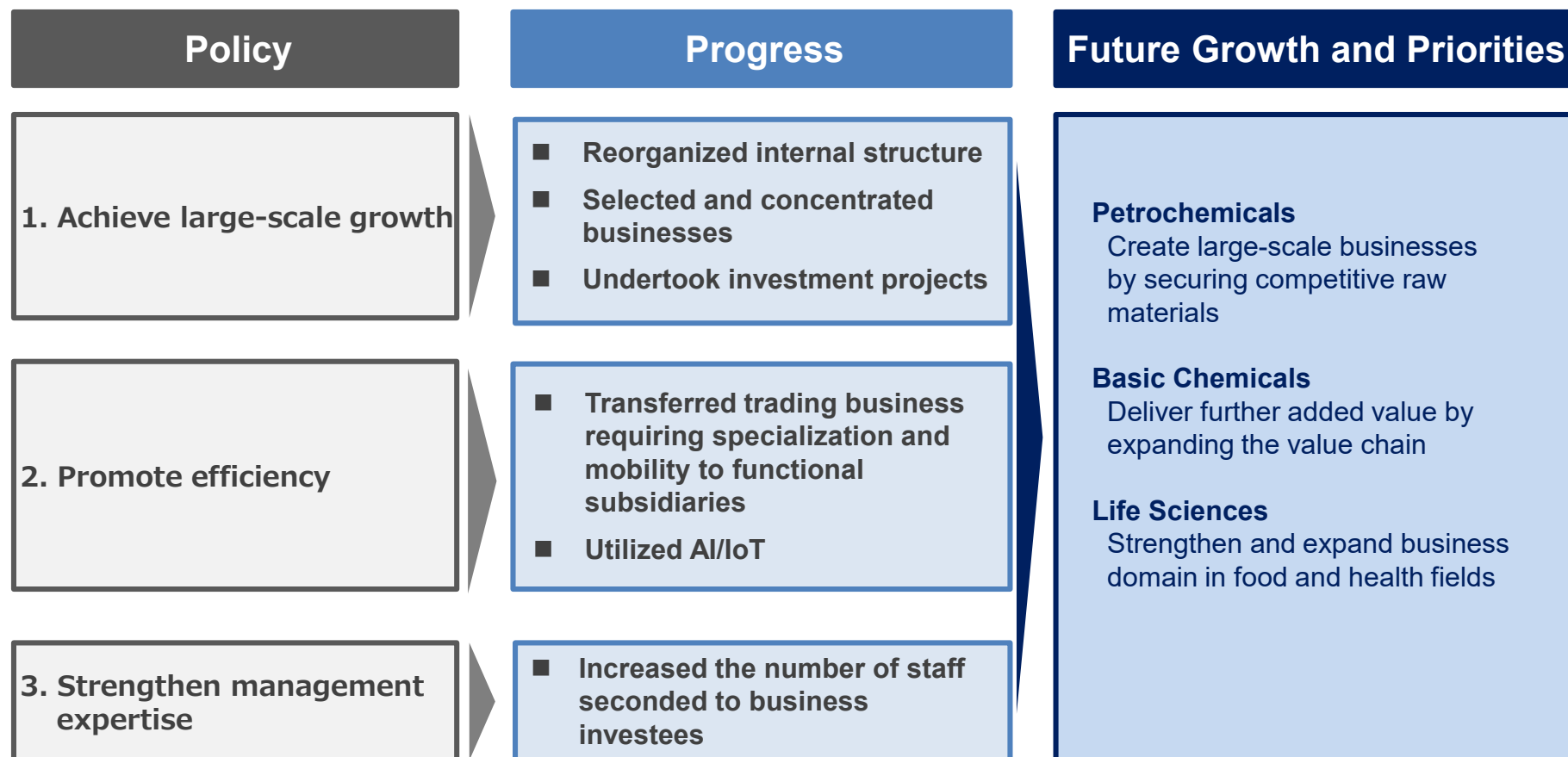
Frontline Expertise

Market interfaces such as information capabilities and network within the industry via trading activities in Headquarter and portfolio companies

Management Expertise




Creating value by organically connecting assets and frontline expertise

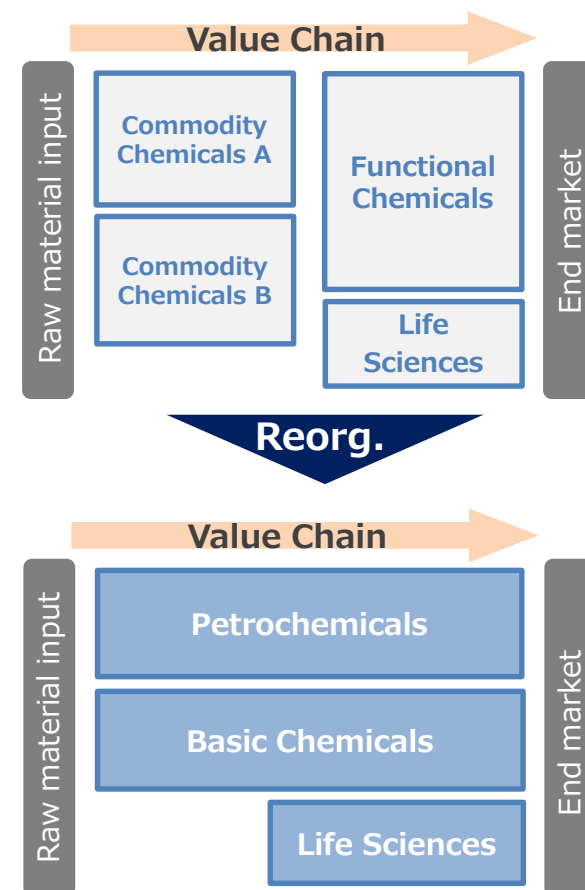
2. Progress on Midterm Corporate Strategy 2018



3. Reorganizations

- Transition from a product-strategy-based organization to one based on MC's Strengths and degree of management engagement
- Have each division monitor the entire length of its value chain and pursue organic business opportunities ⇒ **Reorganized the group organization from 4 divisions into 3 divisions**

	Petrochemicals	Basic Chemicals	Life Sciences
			
Characteristics of the domain	Petrochemical industry complex-related, with strong access to upstream naphtha, natural gas etc. resources	Various businesses with competitive strengths in specialization on products and regions, as well as the extent of the value chain	Food and health-related domain strong through the generation of value improving quality of life
MC's strengths & Degree of Management Engagement	<ul style="list-style-type: none"> Strong presence in the global market Best practices know-how from SHARQ business 	<ul style="list-style-type: none"> Management know-how through minority interests Established market presence (business domains x geographical regions) 	Platform for MC-led businesses / MC-owned technologies and materials
Principal Investees	SHARQ / PC Aroma / KOHJIN Film & Chemicals / Chuo Kagaku / Mitsubishi Shoji Chemical / Mitsubishi Corp. Plastics	ESSA / METOR / CGCL PAU / Riken Americas / MC Ferticom / Nippon Resibon	Mitsubishi Corp. Lifescience / Mitsubishi Int'l Food Ingredients / IFFCO-MC / Fujifilm Diosynth



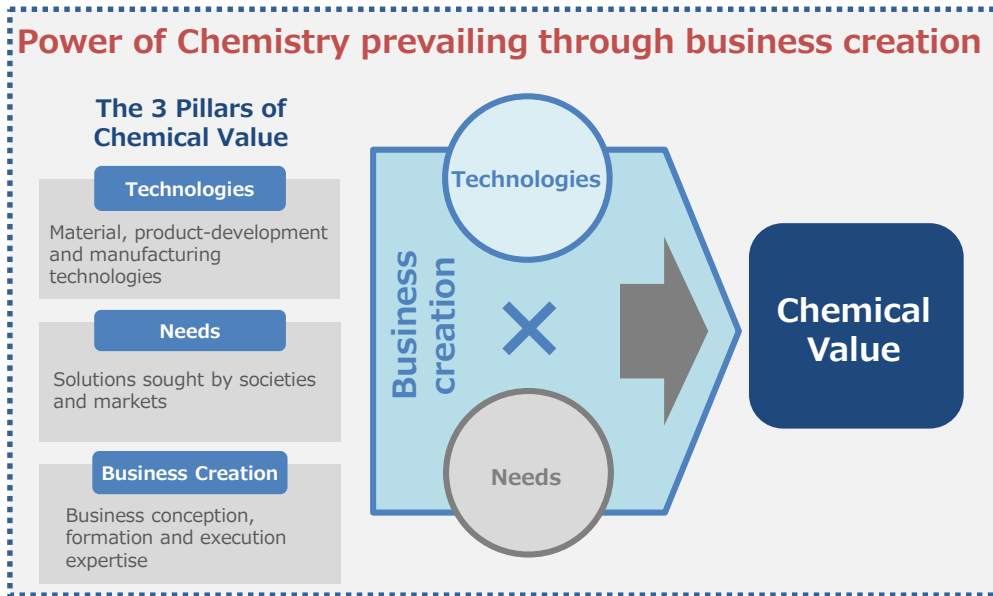
4. Group Strategy and Chemical Value

Chemical Value

- “Chemical Value” is the sum of “3 Values – economic, societal and environmental value –” generated by **the power of Chemistry**
- It is embodied in **technologies, needs and business creation.**
- * “The power of chemistry” is defined as its ability to **completely transform** materials and their worth.
e.g. “Bread from Air” BASF ammonia synthesis

MC's Strengths

- Ability to accurately **gauge needs** (**business opportunities**) by applying frontline expertise and monitoring chemical value chains linked to various industries
- Ability to **conceive and execute new ideas** (**businesses**)
- Ability to **judge technologies** through partnerships with chemicals manufacturers and **technical expertise as a manufacturer**, primary in life sciences businesses.



**Maximize the Chemical Value
in areas where MC has
strengths amidst the changing
business environment**

5. Strategic Areas (Selection and Concentration)

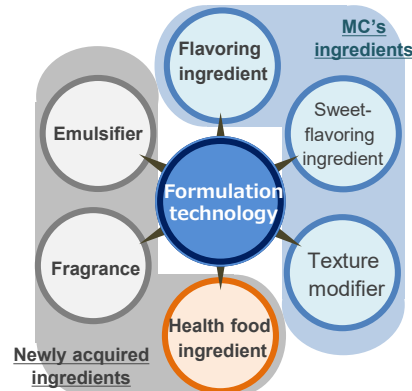
Division	Strategic Areas
Petrochemicals	1. Olefins and their derivatives
	2. Aromatics centered around polyester raw materials
Basic Chemicals	3. Chlor-alkali, PVC
	4. C1 Chemicals
Life Sciences	5. Life sciences

6. Life Sciences Domain: Food Science Business

Business Overview

- ✓ Sales rank **9th in the world, 2nd in Japan**
 - Approx. 150 billion yen in sales
 - Japan domestic share comparable to that of Ajinomoto Co., Inc.
- ✓ Global expansion of **production and sales businesses**
 - Production locations mainly in Asia
 - Sales by MC in North America, Europe, and Asia (incl. China)
- ✓ Three subsidiaries operate jointly under the umbrella of Mitsubishi Life Sciences

Major ingredients and formulation technology in food design



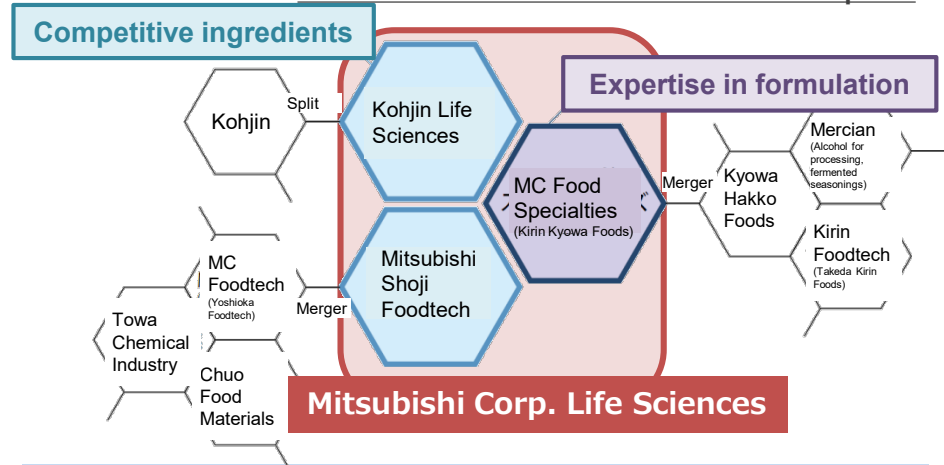
Strengths

- Competitive **ingredients based on fermentation technology, and formulation** technology that delivers further added value to the ingredients
- **Proactive management** since early 2000 created a well-balanced **business platform** at the core of which is Mitsubishi Corporation Life Science Limited (MCLS), established through M&A and business restructuring

Growth Strategy

- Expand outside Japan into North America, Europe, and Asian markets
- Expand ingredients and formulation technology through M&A

Three subsidiaries and their establishment paths



- Acquire **customer base and formulation technology** meeting regional preferences
⇒ Acquired Carolina Ingredients (US)
- **Strategic business of health food ingredients** that connect food (food science) and health (health science)

6. Life Sciences Domain: Health Science Field

Health Science Field

Aim to **prevent diseases** and **maintain health**, which can contribute to solving social issues around aging population and medical costs reduction in developed countries.

- Health supplements and functional foods
- Personal care (e.g. cosmetics)
- Pharmaceuticals-related

Biopharmaceutical CDMO Business

□ CDMO Business (Contract Development & Manufacturing Organization)

Develops technology and undertakes manufacturing on its own, and hence requires advanced R&D and manufacturing technology.

□ MC's business

Joint management of FUJIFILM Diosynth Biotechnologies Inc. (FDB) (MC holding 20%), ranking 3rd in the world's biopharmaceutical CDMO industry, with Fujifilm Corp.

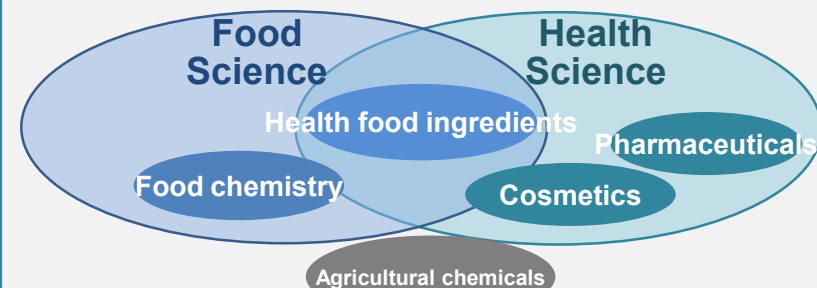
□ Business environment

- Market is expanding rapidly due to **significant growth in the biopharmaceutical market** and **strong outsourcing demands** from pharmaceutical companies.
- Limited number of players because of **high technological entry barriers**.

□ Strategy

- Aim to grow the business to a world-class level
- Improve manufacturing capacity of FDB (own investments by MC, M&A, partnerships)
- Expand into new fields (regenerative medicine, peptide drugs)

Businesses in Life Sciences Domain



Size of each end market and CDMO market (growth rate in parenthesis)

	Pharmaceuticals & medical care	CDMO
Regenerative medicine	2 trillion yen (20%)	20 billion yen (35%)
Biopharmaceuticals	25 trillion yen (11%)	3.5 billion yen (11%)
Low-molecular-weight drugs	90 trillion yen (3%)	4 trillion yen (4%)



7. New initiatives: Agricultural Solutions Business

Business environment

- Japanese domestic abandoned farmland has increased and the number of producers fell due to aging population and declining birth rates.
- Progress in information technology (IT) optimizes farm work and improves the quality of collection process.

Goals

- Establish a solution-providing business based on the existing agricultural supplies business*.
- Provide solutions to challenges in the domestic agricultural industry, and transform the industry into a profitable and sustainable one.

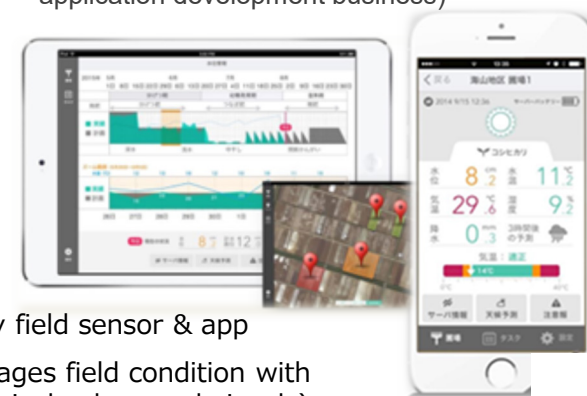
Strategy

Invested in agricultural IoT service company, **vegetalia, inc.** to improve agricultural productivity.



vegetalia
Vegetation Science & Technology

Improve agricultural productivity by providing problem solving tools that utilize plant science and IoT technology (IoT sensor business, application development business)

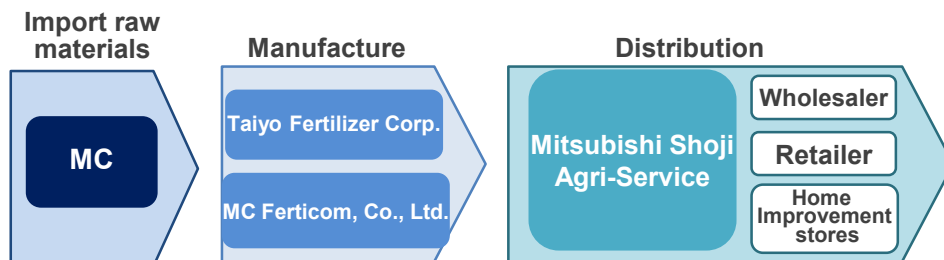


Paddy field sensor & app

(manages field condition with numerical values and visuals)

*Existing Agricultural Supplies Business

《Fertilizer》



《Agrochemicals》



7. New initiatives: Commercialize Durobeads®

- Carbon nanotubes (CNTs) are a material of dreams – they are light and durable, and have high electrical and thermal conductivity, heat resistance, and chemical stability.
- To promote the spread of CNTs, MC developed a new product, Durobeads® (patented) to address issues regarding scattering properties and portability of existing nanotubes.
- While promoting development of CNTs application, MC developed mass production technology in response to customer demand with an aim to expand the business.

Target industries and fields of demand:

- (1) Rubber and tire industry (2) Lithium-ion batteries (3) Resin compound industry
(4) Paint (5) Lubrication (wind power generation, grindstones, lubricants)
(6) Agriculture (plant cultivation)



8. Sustainability: Major Priorities, Business Environment, and Initiatives

Responding to the dynamic business environment surrounding the Chemicals Group is MC's initiative to addressing major sustainability challenges.

Major sustainability priorities

(1) Transitioning to a low-carbon society

(2) Procuring and supplying in a sustainable manner

(3) Tackling evolving regional issues

(4) Addressing the needs of society through business innovation

(5) Conserving the natural environment

(6) Growing together with local communities

(7) Fostering our employees' maximum potential

Business environment surrounding the chemical industry

- ❑ Declining demand for petroleum
- ❑ Growing demand for clean energy

- ❑ Reduced use of fossil fuels
- ❑ Changes in the structure of social industry and in supply and demand

- ❑ Aging population in developed countries
- ❑ Regional issues in developing countries

- ❑ Spread of autonomous driving and electric vehicles
- ❑ Spread of AI & IoT

- ❑ Increased awareness of environmental problems and contribution to local communities

Initiatives taken by the Chemicals Group

- Petrochemical Business initiatives to respond to the changing environment
- Expansion of methanol and ethanol businesses

- Recycling and bioplastic initiatives
- Stable supply of materials necessary for food, clothing, and shelter

- Initiatives for the health chemical business in the Health Care Domain
- Address regional issues through manufacturing businesses

- Initiatives for lightweight materials and battery raw materials
- Agriculture solution business utilizing IT

- Address challenges through manufacturing businesses in developing countries

8. Sustainability: Conserving the Natural Environment and Growing Together with Local Communities

Focus on upstream manufacturing business located at sites of raw materials, whose superiority is directly related to securing competitive raw materials and stable operations in the chemical product value chain, starting with natural resources (crude oil, natural gas, and marine resources).

Promote community-based businesses in developing countries by partnering with state-owned and local companies.

- Grow together with local communities
- Contribute to local communities as a part of business

Respond to regional issues

- ✓ Develop industries and promote employment
- ✓ Conserve the environment
- ✓ Promote education and preserve culture

Results

Mexico ESSA

Contributed to conserving the environment and coexistence with the local community in Guerrero Negro through salt field business (Exportadora de Sal, S.A. de C.V.[ESSA]).

自然環境の保全



化学品グループ
自然を活用した塩田事業

クジラや野鳥等の周辺生態系とともに歩む
ESSA社

- 40-year joint venture with the Ministry of Economy of Mexico
- Develop together with the local community while maintaining the industry and conserving the environment in a town of 14,000 people, whose main sources of income are salt fields and whale-watching tours (families of ESSA employees amount to approx. 7000 people).

Saudi Arabia SHARQ/HIPF

Based on the ethylene glycol manufacturing business (SHARQ), established Higher Institute for Plastic Fabrication (HIPF) to create employment opportunities.



地域・コミュニティとの共生

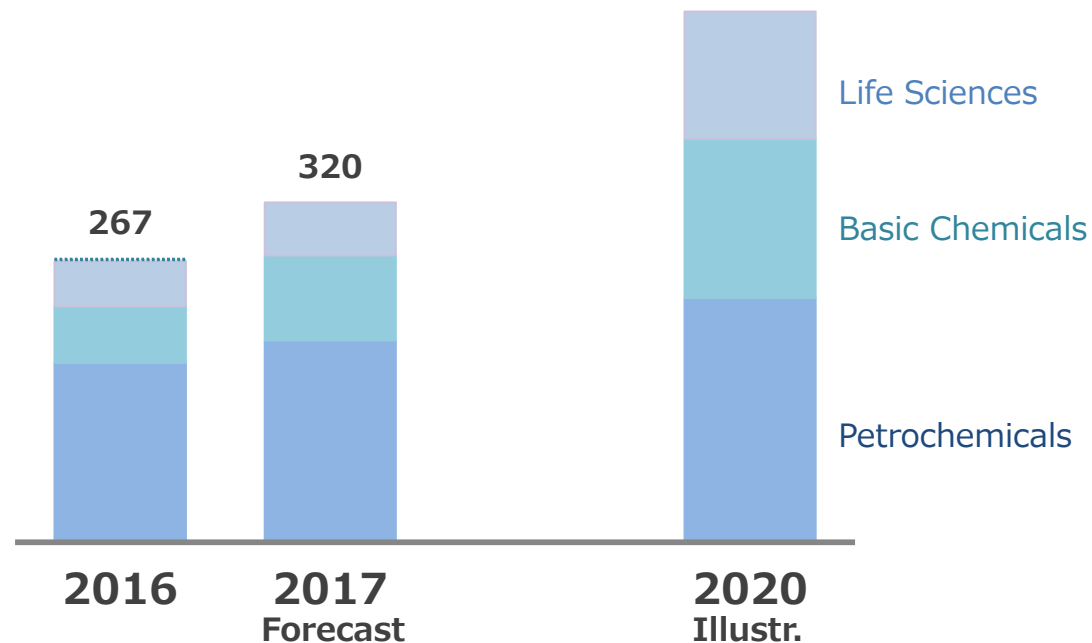
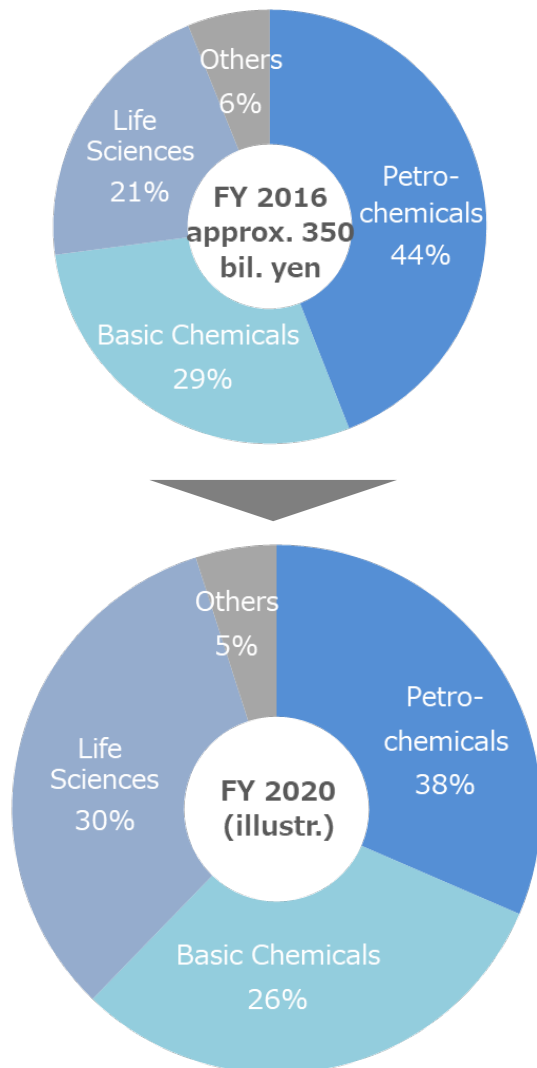
化学品グループ
石油化学事業を基盤とした
サウジアラビアへの貢献
職業訓練校の設立・運営を通じて
人材育成・雇用創出を支援する
SHARQ事業

- Established SHARQ in 1981 as part of a national project aiming for stable procurement of crude oil with SABIC (state-owned), which intended to diversify its industries.
- World's largest petrochemical plant following three expansions.
- Established HIPF in 2007 as an initiative to address challenges the nation faces.
 - Improved employment opportunities of Saudi citizens by providing training on technology.
 - Promoted the downstream sector of the petrochemical industry.

9. Group Investment Plans and Forecast

Investment balance

Consolidated net income

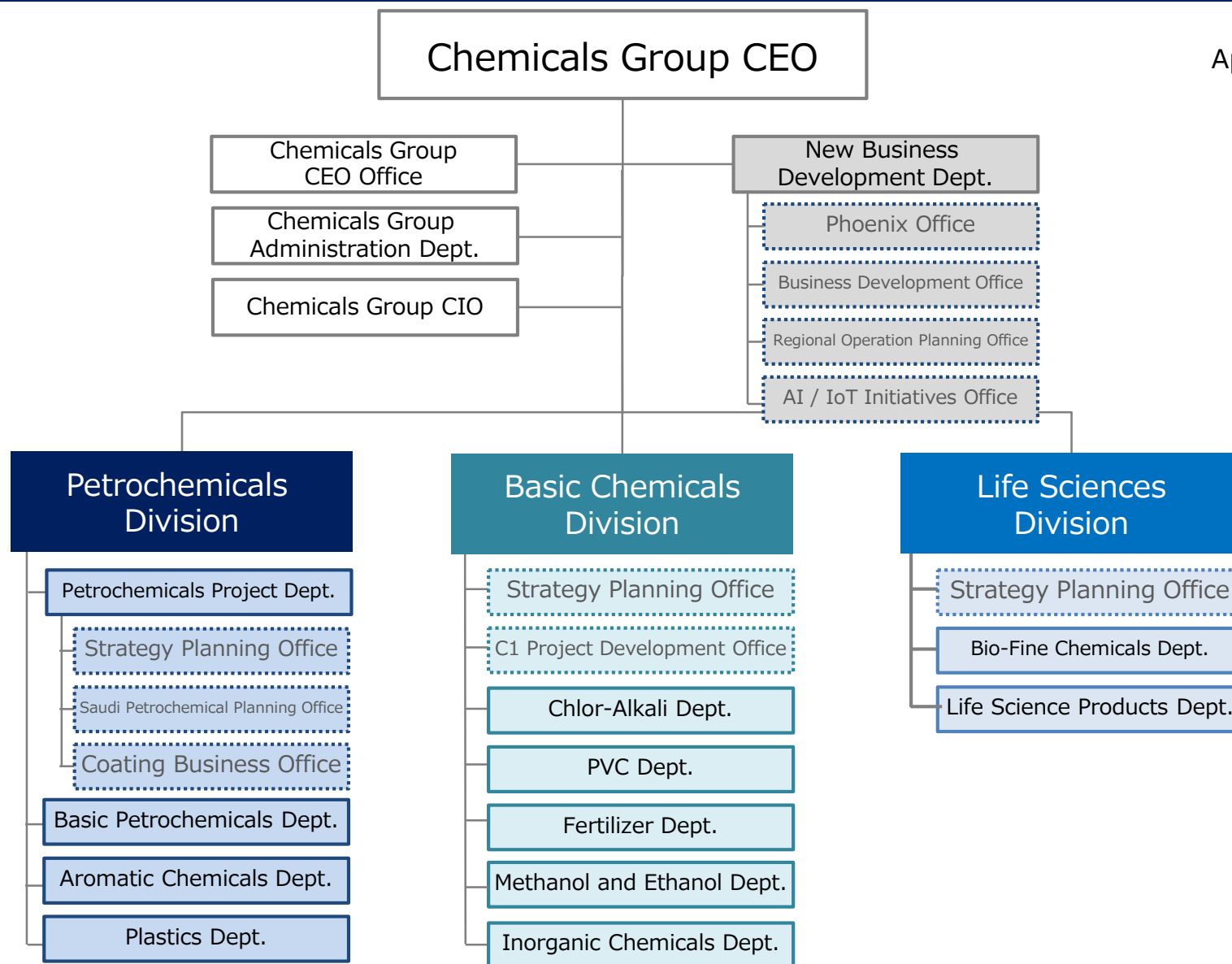


Appendix

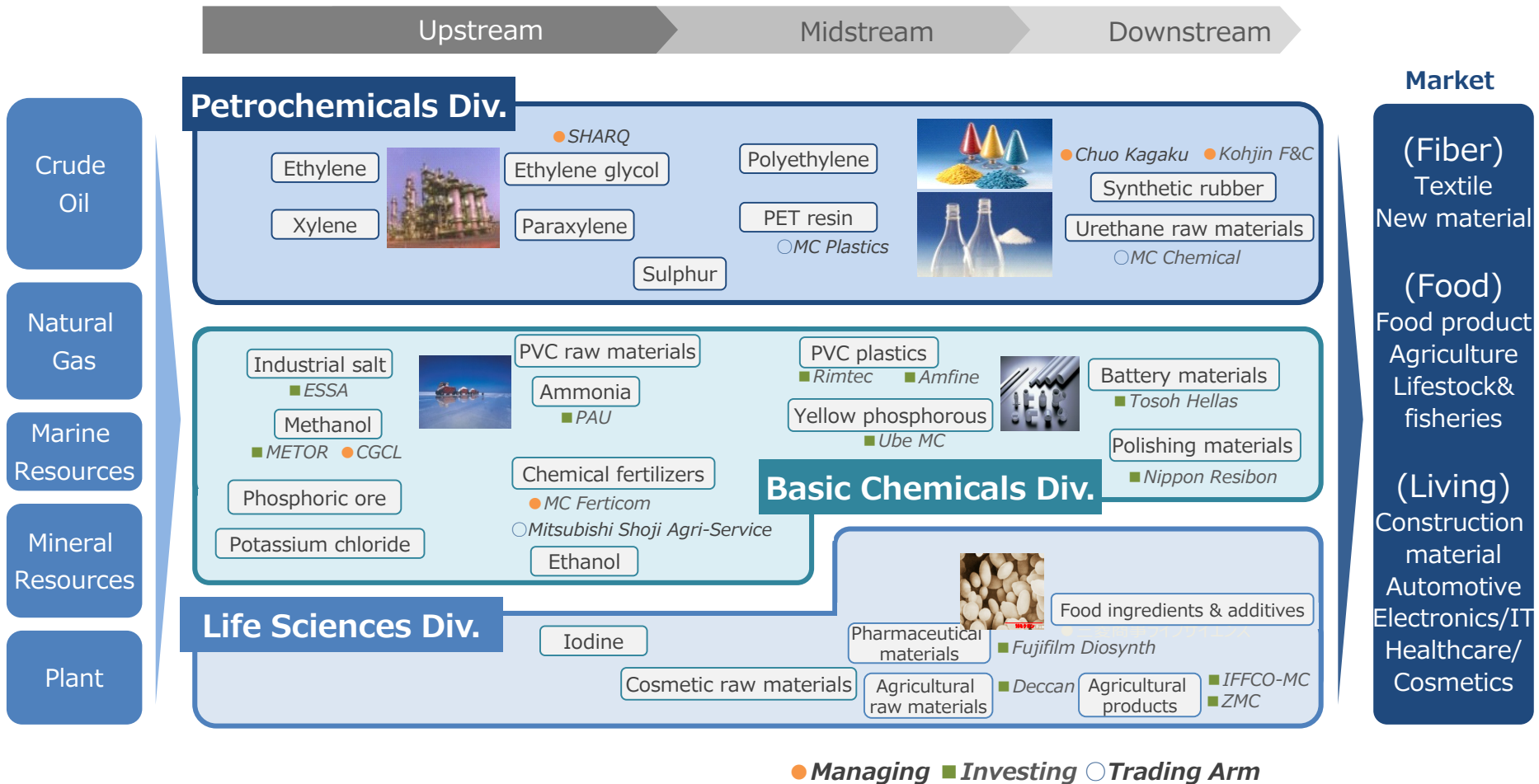


(Reference) Group Organization

April 2018

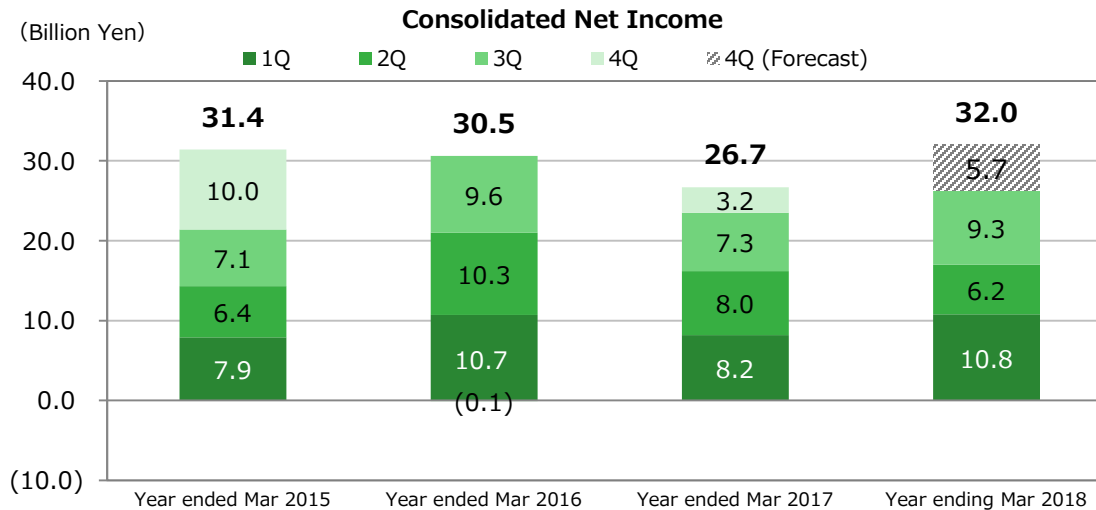


(Reference) Group Business Domains



Supplementary Information to the Financial Results for the Nine Months Ended December 2017

Chemicals Segment



(Billion Yen)	Nine Months ended December 2016	Nine Months ended December 2017	YoY Change	Main Reasons	Forecast for Year Ending March 2018	Main Reasons	Rate of Progression	Main Reasons
Gross Profit	85.1	89.0	3.9	Increased transaction earnings due to favorable market conditions, etc.	-	-	-	-
Equity-method income	9.6	14.8	5.2	Increased income due to favorable market conditions, etc.	-	-	-	-
Consolidated Net Income	23.5	26.3	2.8	Increased transaction earnings and income due to favorable market conditions, etc.	32.0	The full-year forecast has been revised from 31.0 billion yen to 32.0 billion yen.	82%	-

(Billion Yen)	March 2017	December 2017
Segment Assets	943.9	999.9

Supplementary Information to the Financial Results for the Nine Months Ended December 2017

Life Science (Food Science Business) Chemicals Group

MC's Business

Sales : Approx. 150 billion yen

Scope of business: Production, sales, export, and import of seasonings, sweeteners, yeast-related materials, confectionery / bakery materials, liquors for cooking and confectionery, medicine raw materials and other industrial chemical products

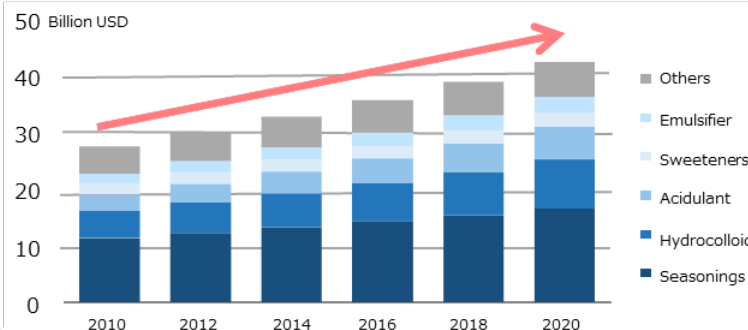
Employees: Approx. 2,900

Production locations: Japan 10, Others 7 (China 2 / Indonesia 3 / Thailand 1 / Spain 1)

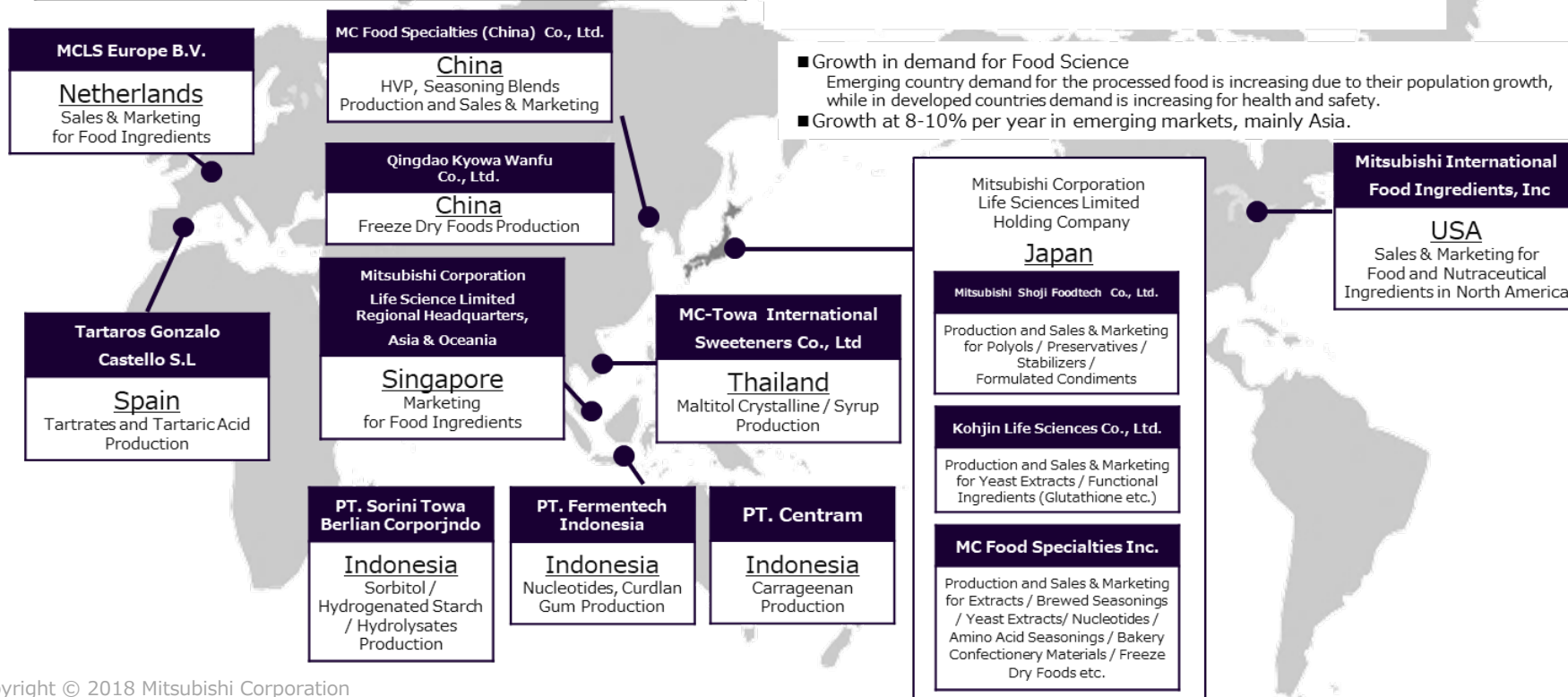
Sales office locations: Japan / United States / Netherlands / China

Global Market

Source: Leatherhead Food Research



- Growth in demand for Food Science
Emerging country demand for the processed food is increasing due to their population growth, while in developed countries demand is increasing for health and safety.
- Growth at 8-10% per year in emerging markets, mainly Asia.



《Appendix》 At a Glance: Chemicals Business

THE POWER TO CREATE THE "NEXT"
Chemicals Group

At a Glance Chemicals Business 2017

Chemicals play an important role in our daily lives – they are used to make clothing, food, housing materials, and much more. Here, Atom Jr. talks with Dr. Chemistry about how MC's Chemicals Group is enriching societies through its business activities.

Salt



Japan's Salt Imports

Share **45%** (MC)

Here tool /
Particulate titanium oxide
↓
Sunscreen

Boy, chemistry seems so complicated!



Atom Jr. Dr. Chemistry

Not at all. Let me show you the power of chemicals!

The power of chemicals is at work here!
BT resins
↓
Smartphones

Here tool /
Ethanol
↓
Alcohol



Plastics

Plastics and rubber are made from petroleum.

And recyclable bottles and fabrics too...

Materials Used for PET Plastic Drinking Bottles in Japan

Share Bottles **20%** Caps **35%** (MC Group)

Fertilizer

Don't forget chemical fertilizers, which are essential for growing vegetables and livestock feed.

So chemicals help to feed the world!

Volume of Compound Fertilizers Supplied via Commercial Channels* in Japan

Share **40%** (MC Group)

*Excludes fertilizers supplied via agricultural cooperatives

Here tool /
Coating materials
↓
Automobile bodies

Here tool /
Synthetic fibers
↓
Clothing

Food Ingredients

Think about food ingredients – the power of fermentation makes food taste better and it makes food healthier too.

Commercial-Use Brewed Seasonings (Cooking Sake, etc.) in Japan

Share **40%** (MC Group) No.1

And the MC Group is helping to share the power of chemicals!

Yes, and chemicals will play an even greater role in shaping our future.

