

AsahiKASEI

Material Sector Business Briefing

September 8, 2016
Asahi Kasei Corporation

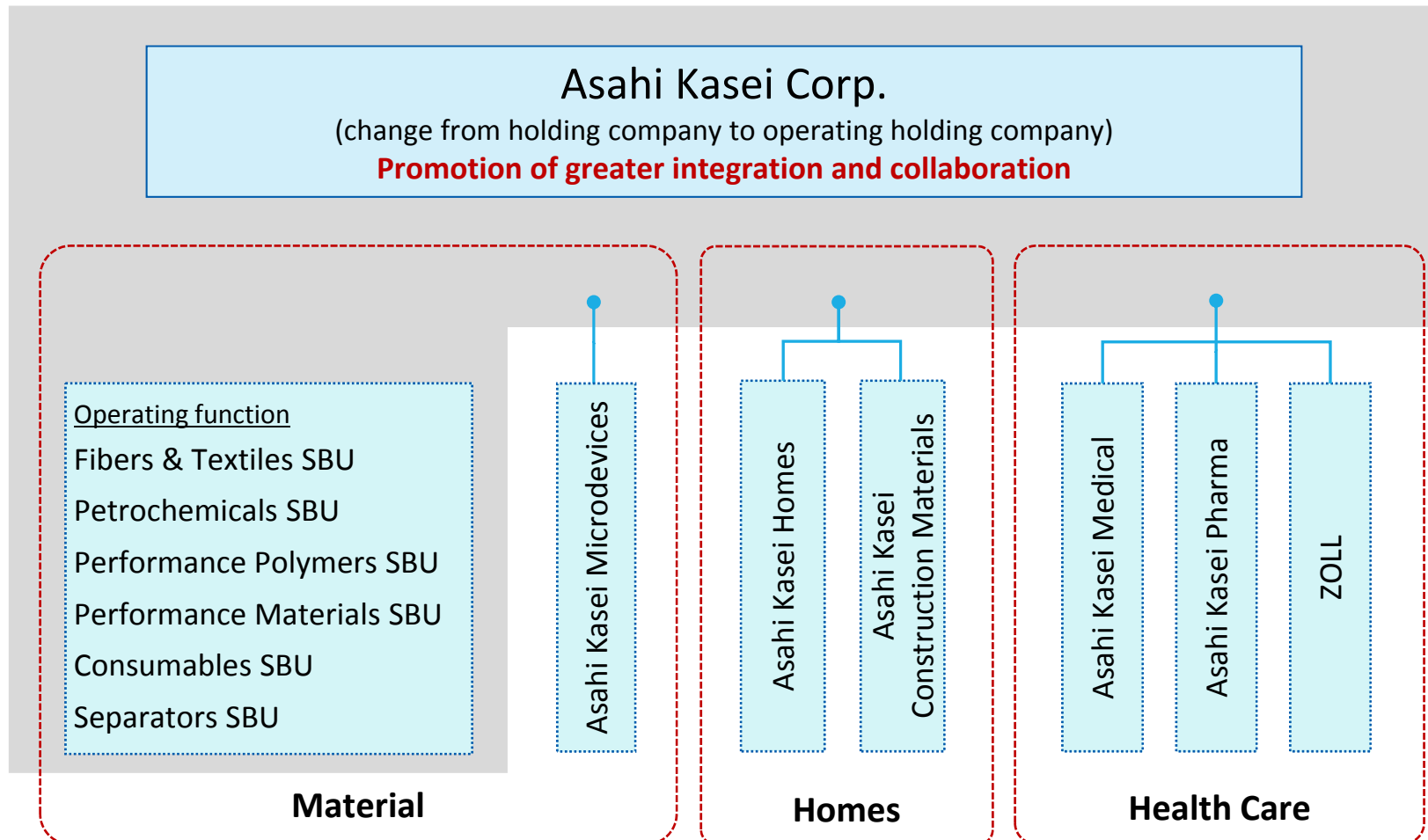


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2. Strength of Asahi Kasei
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Asahi Kasei Group configuration from Apr. 2016

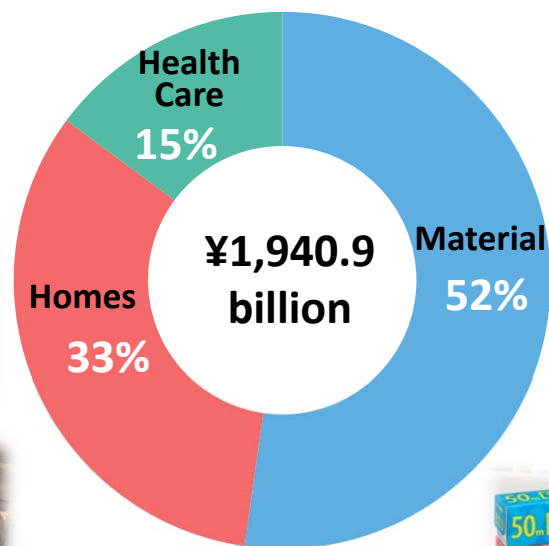
Three business sectors and operating holding company configuration from April 2016



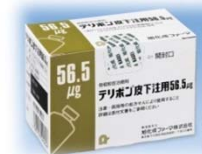
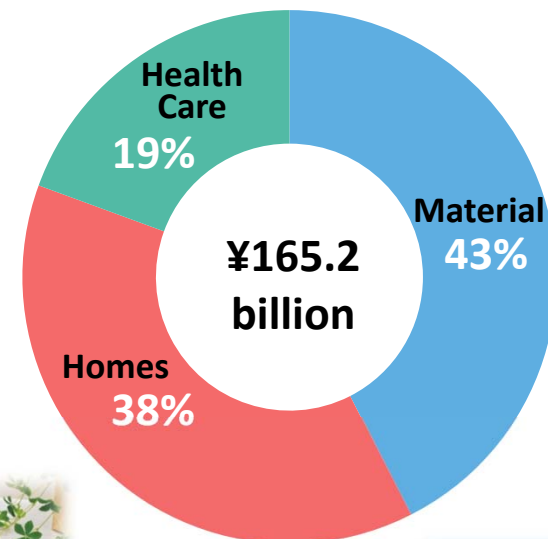
Financial performance by segment (1)

FY 2015 Asahi Kasei Group financial results

Net sales



Operating income



Note: Percentages calculated excluding the Others category and corporate expenses.

Financial performance by segment (2)

(¥ billion)

	FY2015			FY2016 forecast		
	Net sales	Operating income ¹	Operating margin	Net sales	Operating income ¹	Operating margin
Fibers	132.1	13.9	10.5%	130.0	13.5	10.4%
Chemicals	750.7	60.8	8.1%	713.0	59.0	8.3%
Electronics ²	121.6	4.4	3.6%	137.0	(2.5)	-1.8%
Material	1,004.4	79.2	7.9%	980.0	70.0	7.1%
Homes	583.0	65.4	11.2%	573.0	61.0	10.6%
Construction Materials	49.4	5.8	11.8%	51.0	4.0	7.8%
Homes	632.4	71.0	11.2%	624.0	65.0	10.4%
Health Care ³	144.9	24.3	16.8%	134.0	15.0	11.2%
Critical Care	140.5	11.9	8.5%	146.0	13.5	9.2%
Health Care	285.4	36.2	12.7%	280.0	28.5	10.2%
Others	18.7	3.8	20.3%	26.0	4.0	15.4%
Corporate expenses and eliminations	—	(25.0)	—	—	(22.5)	—
Consolidated	1,940.9	165.2	8.5%	1,910.0	145.0	7.6%

¹ Figures for operating income by business category include intrasegment transactions which are eliminated from the segment totals.

² Fiscal 2016 operating income forecast for Electronics includes a ¥6.9 billion decline from the previous year due to the impact of stronger yen and increased amortization of goodwill and other intangible assets, etc. related to the acquisition of Polypore International, LP.

³ Fiscal 2016 operating income forecast for Health Care includes a ¥9.3 billion decline from the previous year ago in the pharmaceuticals business due to the impact of reduced reimbursement prices and decreased shipments of Flivas agent for treatment of benign prostatic hyperplasia due to competition from generics.

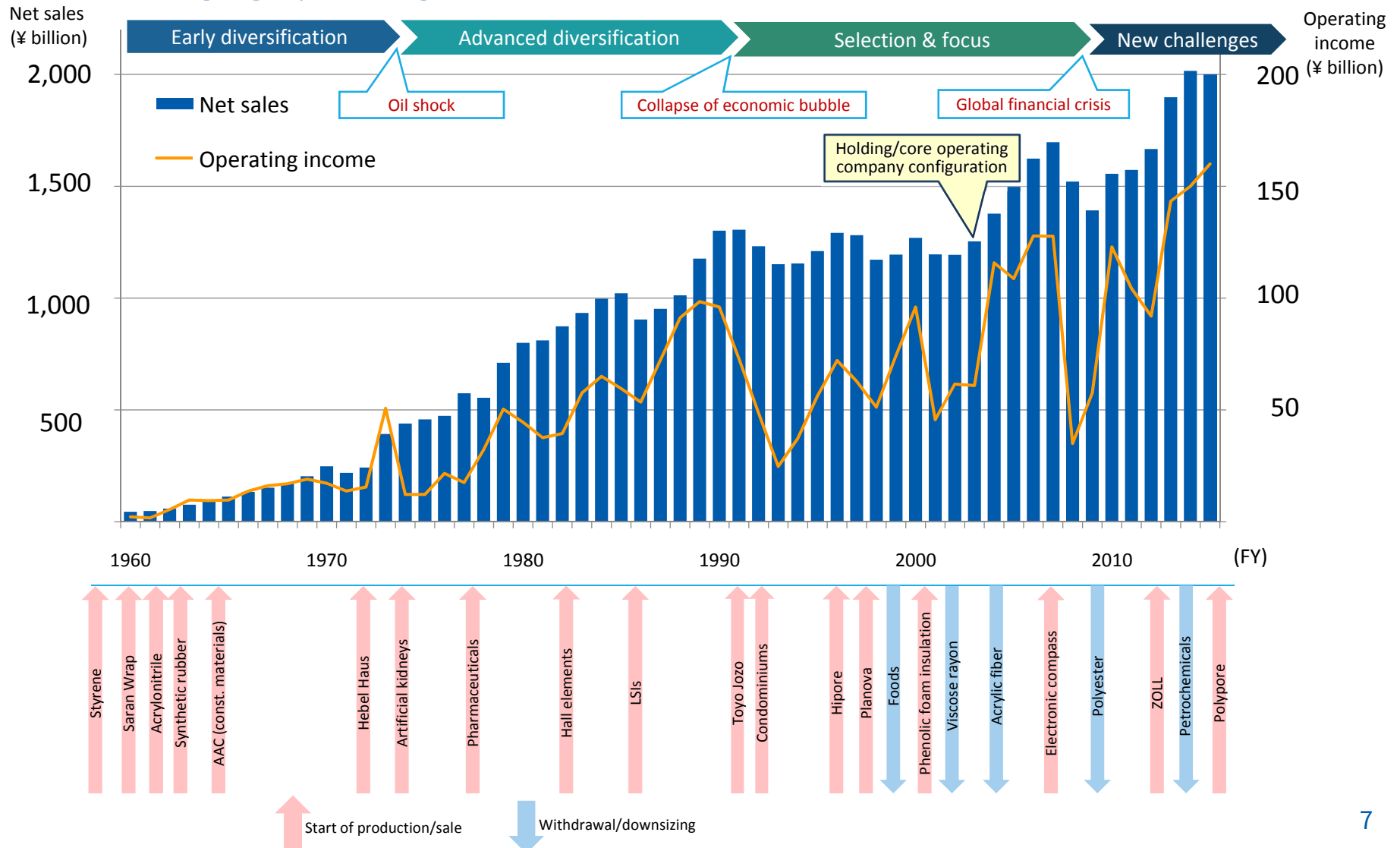


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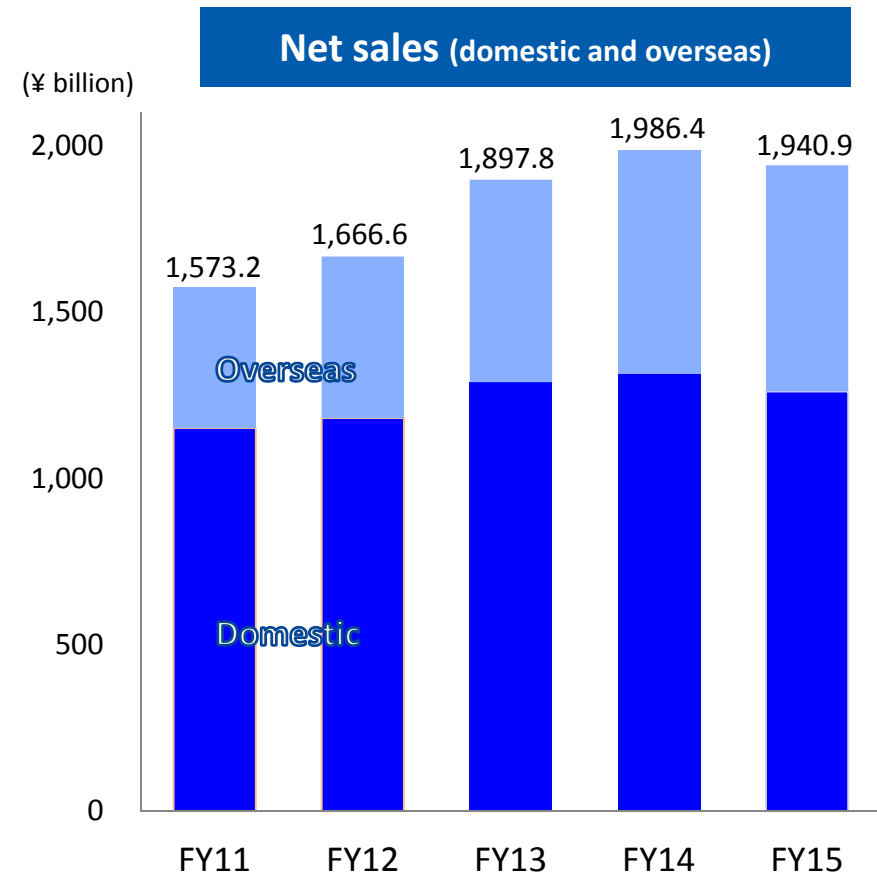
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History of portfolio transformation

Boldly taking challenges with new businesses to achieve growth under changing operating climates



Connecting technology, business, and human resources



- Expanding a selectively diversified portfolio with the strength of superior businesses in each sector
- While global businesses are further expanded, homes and pharmaceutical businesses will be steadily extended based on competitiveness in the domestic Japanese market
- Creating a new value unique to Asahi Kasei by leveraging diversities in technology, businesses, and human resources



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Organization of Material business sector

Material

Fibers & Textiles SBU

Petrochemicals SBU

Performance Polymers SBU

Performance Materials SBU

Consumables SBU

Separators SBU

Asahi Kasei Microdevices Corp.

Asahi Kasei Advance Corp.

Vice-Presidential Executive Officer
Yuji Kobayashi

Primary Executive Officer
Toshio Takanashi

Senior Executive Officer
Tsuneo Takemoto

Lead Executive Officer
Hiroshi Yoshida

Senior Executive Officer
Kenji Hamai

Executive Officer
Ryuma Yamazaki

Senior Executive Officer
Shigeki Takayama

President
Satoru Tamura

President
Yasushi Asano

Main products of Material sector (1)

SBU	Division/affiliate	Main products
Fibers & Textiles	Bemberg	Bemberg
	Roica	Roica
	Non-woven Fabrics	Eltas, Bemliese, Lamous
	Leona Filament	Leona (airbags, tire cord)
Petrochemicals	Basic Chemicals	Caustic soda, nitric acid, styrene, adipic acid, cyclohexanol
	Asahi Kasei Mitsubishi Chemical Ethylene Corp.	Ethylene, propylene, butadiene
	Acrylonitrile	AN, sodium cyanide
	MMA	MMA, CHMA, PMMA
	Polyethylene	HDPE, LDPE, Sunfine
	PS Japan Corp.	Polystyrene (HIPS, GPPS)
Performance Polymers	Synthetic Rubber	S-SBR, elastomer
	Performance Plastics	Leona, Tenac, Xyron, Stylac, Thermylene (PP compound)
	Compound & Marketing	

Main products of Material sector (2)

SBU	Division/affiliate	Main products
Performance Materials	Performance Coating Materials	Duranate, Duranol (PCD), aluminum paste
	Functional Additives	Ceolus, acetonitrile, MAN
	Explosives	Metal clads, explosives
	Microza & Water Processing	Microza UF/MF
	Ion Exchange Membranes	Ion-exchange membranes, electrolyzers
	Electronics & Functional Products	APR, AFP, Pimel, pellicles, Novacure
	Electronics Interconnecting Materials	Sunfort (photosensitive dry film)
	Electronics Insulation Materials	Glass fabric
Consumables	Asahi Kasei Home Products Corp.	Saran Wrap, Ziploc, Frosch
	Fabricated Products	PS/PS film, PVDC latex, Asaclean
	Asahi Kasei Pax Corp.	Beverage cups, food packaging
Separators	Battery Materials	Hipore
	Polypore International, LP	Daramic, Celgard
Asahi Kasei Microdevices Corp.		LSIs, electronic compasses, magnetic sensors, IR sensors, UVC LEDs

Basic policy and strategic focus

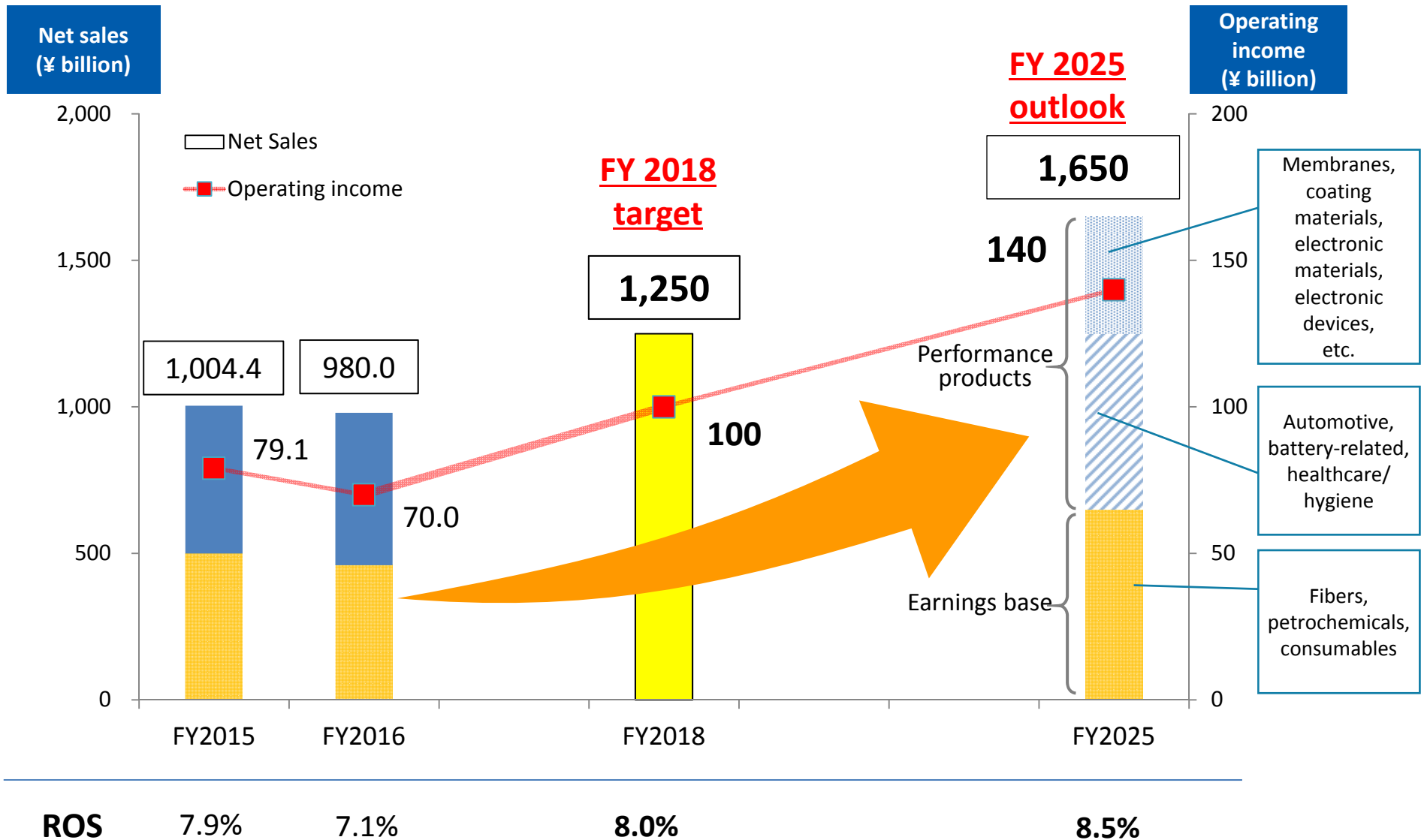
Basic policy

- Work to **enhance profitability** of established businesses and expand key businesses
- Develop and implement business strategies to **achieve synergies** among the businesses within the Material sector
- Develop and implement strategic investments toward the targets for FY 2025

Strategic focus

- Expand environment/energy and **automotive-related businesses**
- Strengthen healthcare/hygiene-related businesses
- Review the business portfolio and develop new businesses
- Advance **global strategy by region**

FY 2018 target and FY 2025 outlook



Strategic focus: automotive-related businesses (1)

FY 2025 sales target: ¥300 billion

→ Enhance value for customers through comprehensive proposals of our products and technologies in the Material sector

Key strategy 1

Creating new products and solutions by integrating various businesses/products/technologies in the Material sector

- Unparalleled proposal capability made possible by our broad range of materials including plastics, fibers and textiles, battery materials, electronic devices, etc.
- Creating new value through integrated proposals

Create, Challenge

Key strategy 2

Enhancing our ability to respond to the needs of customers

- Deepening relationships with customers by key account marketing
- Offering advanced solutions as a combined Asahi Kasei Group
- Reinforcing our capability to offer better technology and development support

Connect, Communication, Create

Key strategy 3

Heightening our presence around the world

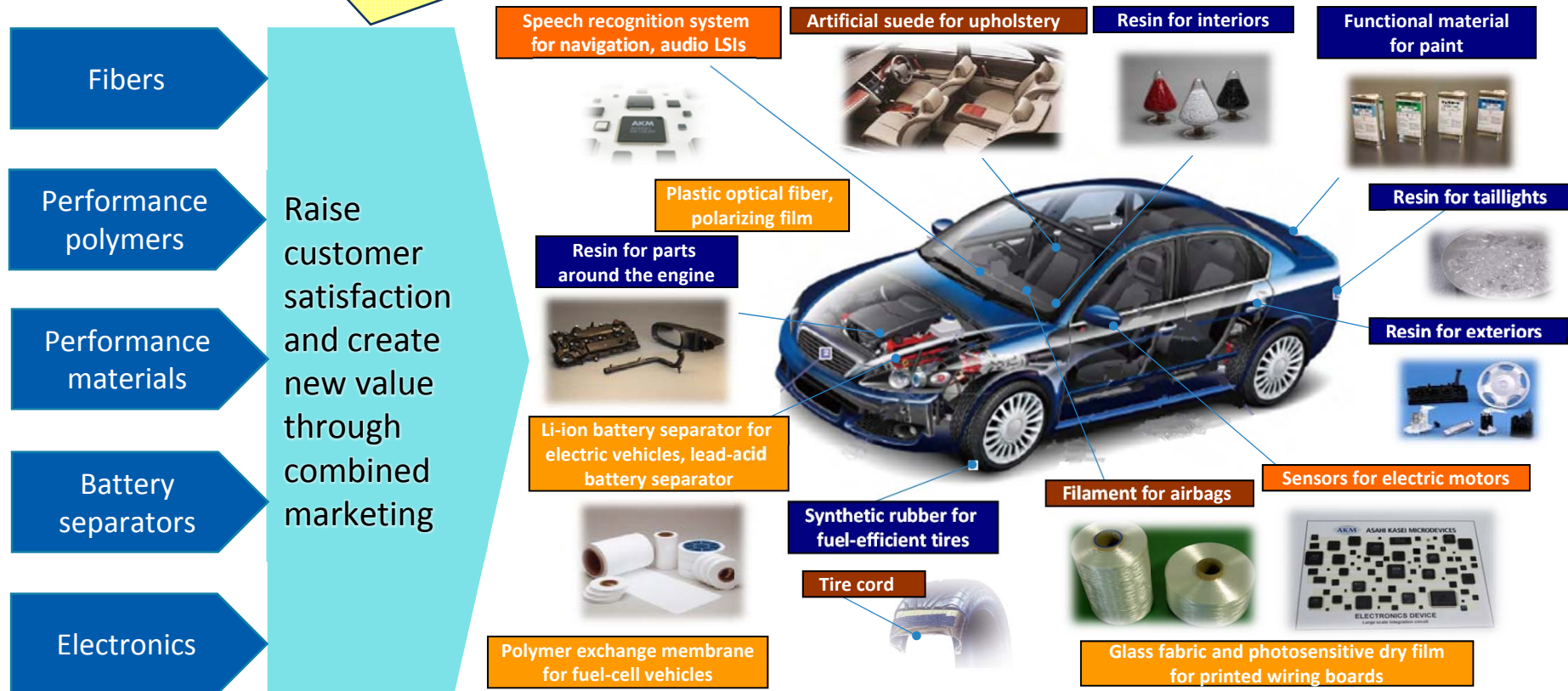
- Advancing various programs to build the Asahi Kasei brand on a global scale

Connect, Communication

Strategic focus: automotive-related businesses (2)

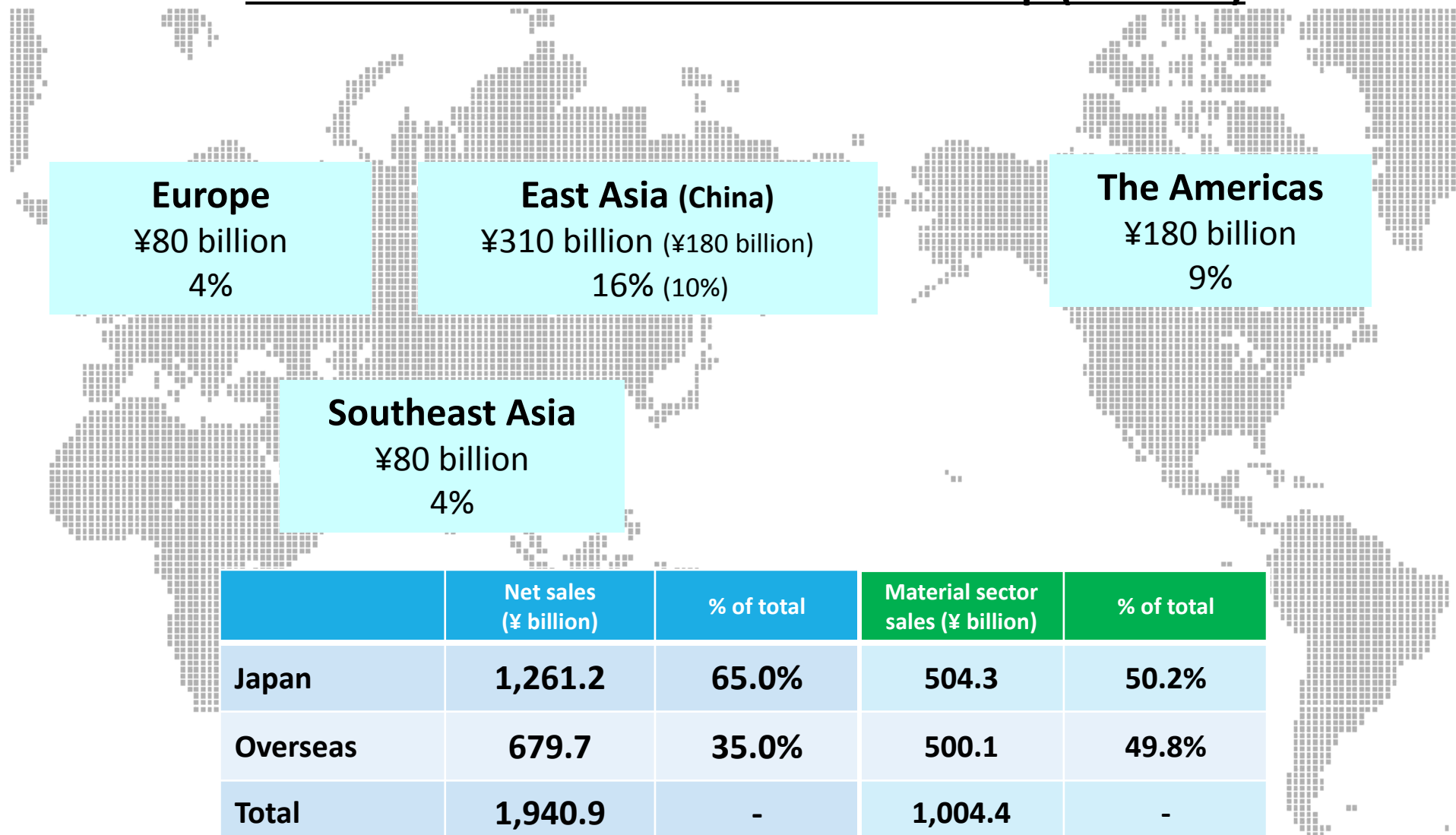
To enhance sector-wide comprehensive approach to customers, Automotive Marketing Department was established in April 2016

Automotive Marketing Dept. for greater internal coordination



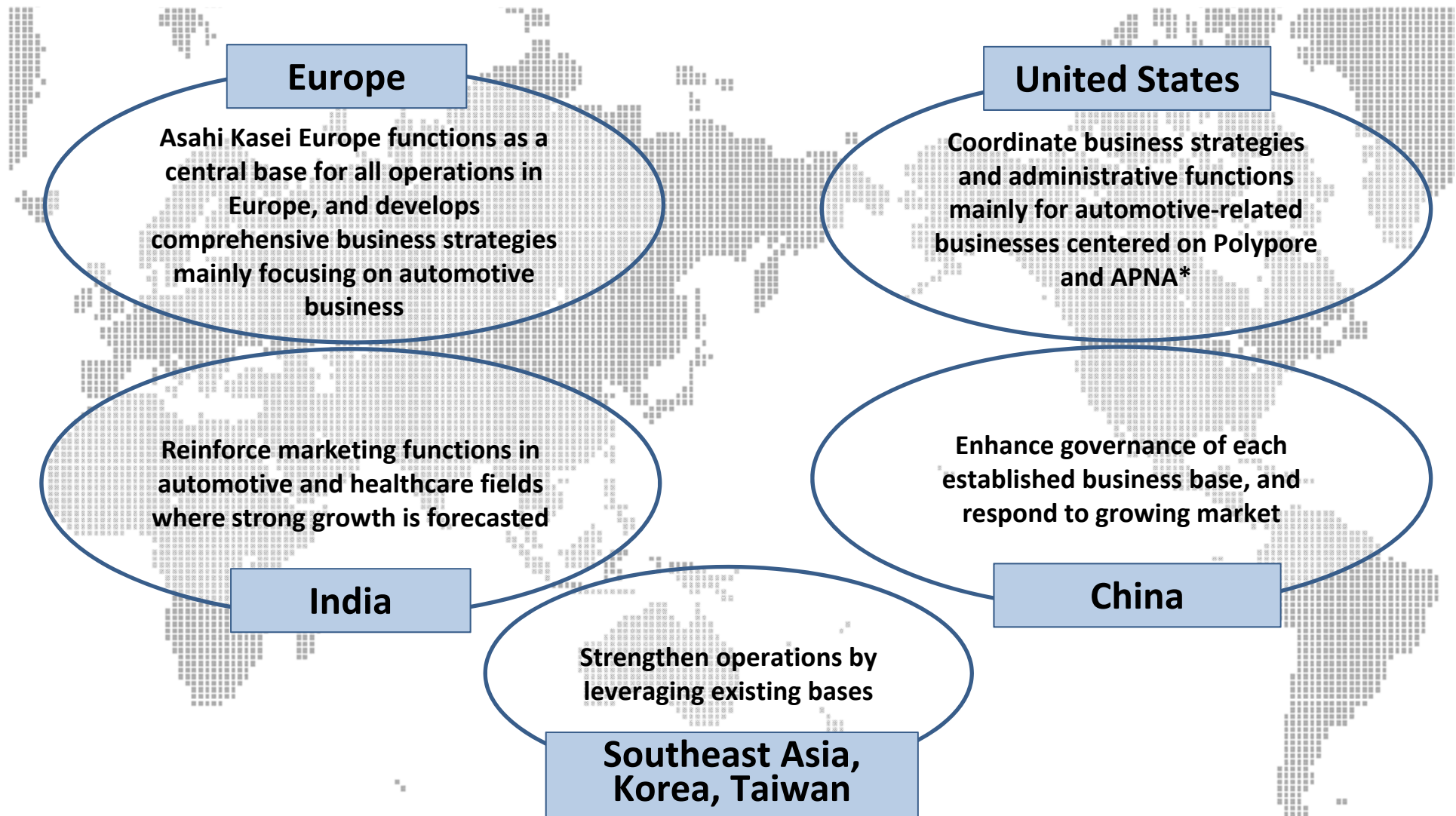
Strategic focus: global strategy by region (1)

Overseas net sales of Asahi Kasei Group (FY 2015)



Strategic focus: global strategy by region (2)

Advancing integration of business strategies and functions in each region



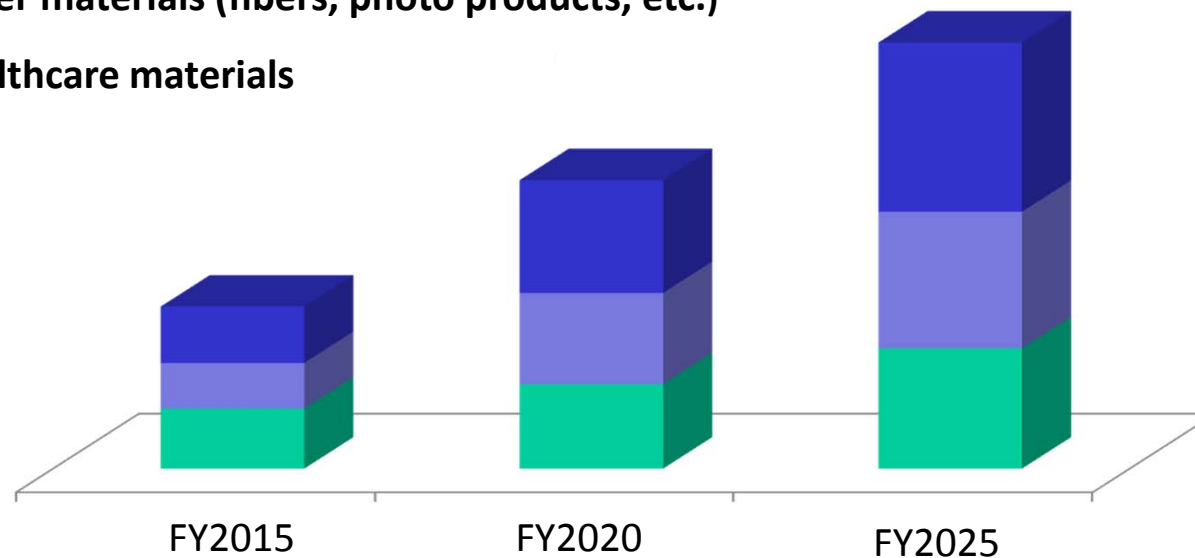
* Asahi Kasei Plastic North America, Inc.

Strategic focus: global strategy by region (3)

Asahi Kasei Europe GmbH—operation began April 2016

Enhancing Asahi Kasei's presence in Europe and promoting comprehensive marketing within the Material sector mainly for the automotive industry.
→ Aiming to triple current net sales of €700 million in Europe by FY2025.

- Automotive-related
- Other materials (fibers, photo products, etc.)
- Healthcare materials



Strategic focus: growth in healthcare applications

Health Care sector of Asahi Kasei (pharmaceuticals/medical devices/critical care)

Sales: ¥ billion	FY 2015	→	FY 2018 (target)	→	FY 2025 (outlook)
Health Care sector	285.4		370		600

Expansion of materials for healthcare-related applications through synergy within Material sector

Applications for pharmaceutical manufacturing

- ◆ **Ceolus microcrystalline cellulose**: Maintain No. 1 position as pharmaceutical excipient, and expand sales in growing Asian markets.
- ◆ **Acetonitrile**: No. 1 position in Japan in pharmaceutical manufacturing solvent. Further expand with stable supply ensured by two production bases.

Packaging material of pharmaceuticals

- ◆ **Polyvinylidene chloride (PVDC) latex for push-through pack (PTP) packaging**: Proactively expand in emerging countries where strong demand growth for pharmaceuticals including generics is forecasted.

Material for medical-related applications

- ◆ **Hydrogenated styrenic thermoplastic elastomer**: Increase production to meet growing demand for medical fluid bags in China and Europe.
- ◆ **New fiber-related materials**: NanoAct cellulose nanobeads as label for immunoassay. Fiber for endovascular stent grafts.

Hygiene materials

- ◆ **Spunbond**: Proactively expand in diaper applications.
- ◆ **Disinfection applications**: Promotion of UVC LED business, sales of Klaran high-output UVC LEDs.

Basic strategy by business unit

Business unit	Basic strategy
Fibers & Textiles SBU	Stable expansion of all four main businesses while studying expansion of production facilities
Petrochemicals SBU	Enhance earning base by completing structural realignment of operations while transforming to a higher value-added configuration
Performance Materials SBU	Continue to grow highly profitable products ranging from performance chemicals to electronic materials, and create new businesses
Consumables SBU	As a manufacturer of consumables for both B-to-B and B-to-C markets, expand business in the growing fields including convenience stores and healthcare applications
Asahi Kasei Microdevices Corp.	Leverage technological advantages to expand with solution-oriented business in the sensing, audio, voice fields

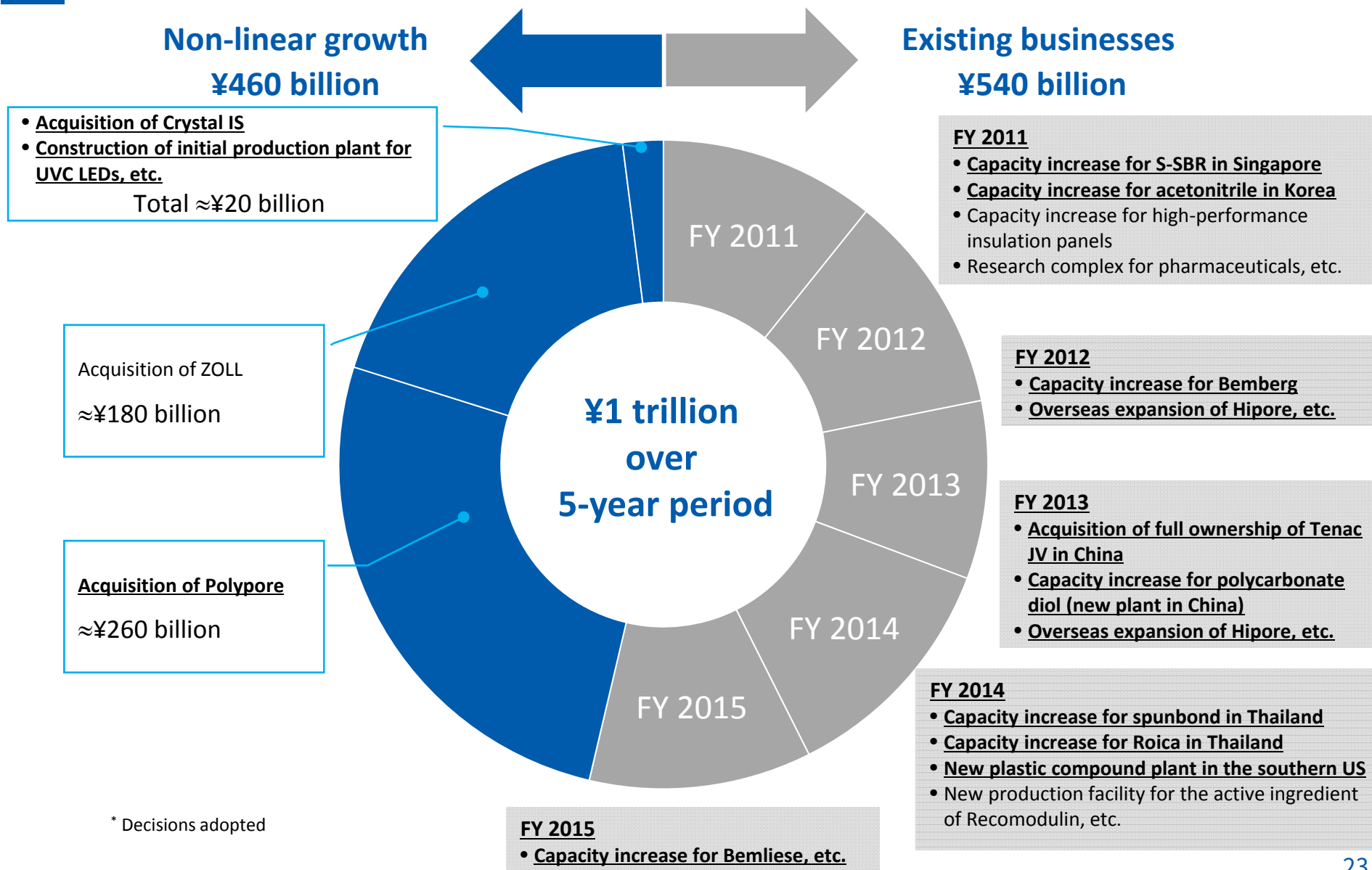
(Performance Polymers SBU and Separators SBU detailed separately)



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Investments under “For Tomorrow 2015”



Investment for growth in the Material sector

SBU	Products	Location	Items	Period
—		Germany	Establishment of Asahi Kasei Europe GmbH	2016
		Japan	Consolidation and enhancement of R&D facilities	2017/18
Performance Polymers	S-SBR	Singapore	Construction of second plant (50kt/y)	2015
	Elastomers	Japan	Capacity expansion of hydrogenated styrenic thermoplastic elastomers	2015/16
	Engineering plastics	Mexico	Establishment of Asahi Kasei Plastics Mexico	2015
		US	Startup of the second plant for plastic compounds	2016
		Vietnam	Establishment of Asahi Kasei Plastics Vietnam	2016
Performance Materials	Duramate HDI-based polyisocyanate	China	Capacity expansion in Nantong plant (10kt/y)	2015
	Duranol polycarbonatediol	China	Startup of new facility in Nantong (3kt/y)	2014
	Functional additives	China	Alliance in pharmaceutical additives with SPI Pharma	2016
	Acetonitrile	South Korea	Startup of new facility (11kt/y)	2014
Petro-chemicals	Ethylene, propylene, butadiene	Japan	Unification of naphtha cracker	2016
	DRC process to produce DPC	Japan	Construction of validation plant	2017
	Ultrahigh molecular weight PE	Japan	Capacity expansion	2017/18
Fibers & Textiles	Bemberg cupro fiber	Japan	Capacity expansion	2014
	Bemliese cupro nonwovens	Japan	Capacity expansion (1.5kt/y)	2017
	Spunbond nonwovens	Thailand	Capacity expansion (20kt/y)	2016
	Roica spandex	Thailand	Capacity expansion	2016
	Leona nylon 66 filament	Japan	Capacity expansion	2016
	Lamous artificial suede	Japan	Re-start of idle plant	2014
Separators	Celgard LIB separator, Daramic lead-acid battery separator	US, etc.	Acquisition of Polypore International, LP	2015
	Hipore LIB separator	Japan	Capacity expansion in Hyuga plant (60 million m ² /Y)	2016
		Japan	Capacity expansion in Moriyama plant (60 million m ² /y)	2018



Financial and capital strategy

- Total investment (3-year total): ¥700 billion
 - Proactively advance M&A and other new investment in addition to investment to maintain and expand established businesses

- Strategic investment in the Material sector
 - Proactively invest for expansion mainly in battery separator, S-SBR, plastic compounds, and fibers & textiles
 - Consider M&A for Performance Polymers and Consumables SBUs

Creating for Tomorrow

The commitment of the Asahi Kasei Group:

To do all that we can in every era to help the people of the world make the most of life and attain fulfillment in living.

Since our founding, we have always been deeply committed to contributing to the development of society, boldly anticipating the emergence of new needs.

This is what we mean by “Creating for Tomorrow.”

Reference

Asahi Kasei's leading products (1)

Automobile



S-SBR for fuel-efficient tires

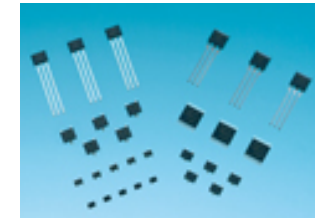


Duranate coating material



No. 1 share in the world

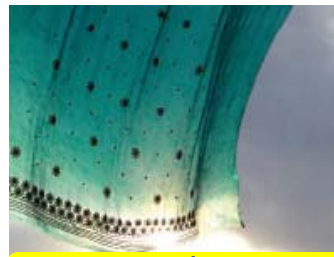
Hipore Li-ion battery separator



No. 1 share in the world

Magnetic sensors

Material



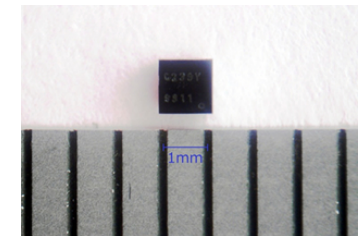
No. 1 share in the world

Cupro regenerated cellulose fiber



No. 1 share in the world

Ion-exchange membranes



No. 1 share in the world

Electronic compass



Sunfort photosensitive dry film



UVC LEDs



Spunbond nonwovens for sanitary products



Roica spandex



Acrylonitrile

Asahi Kasei's leading products (2)

Health Care



One of a kind

Wearable defibrillator



No. 1 share in the world

Defibrillators for Hospital & EMS



No. 1 share in the world

Planova virus removal filters



No. 1 share in the world

Sepacell leukocyte reduction filters



Hebel Haus



Saran Wrap and Ziploc

Domestic Business

Fibers (1)

Bemberg cupro fiber

- Only manufacturer in the world
- Global development for wide range of applications such as linings, functional innerwear, and ethnic garments
- Capacity expansion in Nobeoka; start-up in June 2014, capacity increase by 10%



Roica spandex

- Global development of high-function and high-quality brand; production plants in Japan, Taiwan, China, Thailand, and Germany
- Launch of recycled spandex for the first time in the world in July 2015, which is the world's only spandex certified under the Global Recycle Standard



Leona nylon 66 filament

- Expansion in automotive airbag application in addition to tire cord application with superior strength and heat resistance



Fibers (2)

Nonwovens

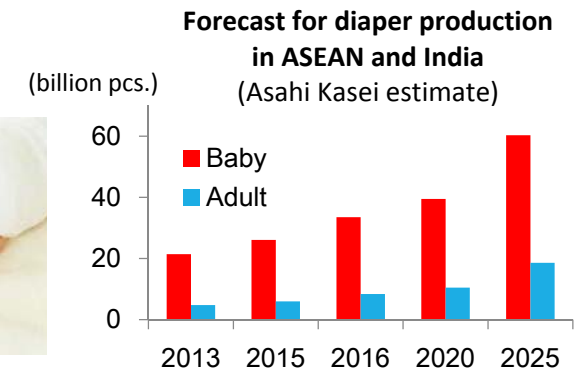
Offering distinctive nonwovens made of different materials and by original production technology for wide range of applications

Eltas spunbond

Increased demand in hygienic application; capacity expansion to 40,000 t/y in Thailand in January 2016



Eltas



Bemliese continuous-filament cellulose nonwoven

Increased demand in facial mask application; decision to expand capacity in March 2017



Bemliese



Lamous artificial suede

Sales expansion in automotive upholstery application; capacity doubled by restarting suspended facility in October 2014

Lamous



Petrochemicals (1)

Main petrochemical products

	Asahi Kasei Capacity (kt/y)	Main competitors	Main applications	Asahi Kasei's position/strengths
Acrylonitrile	960	Ineos	Acrylic fiber, ABS; captive use for ABS, adiponitrile	2nd largest producer in the world (150 kt/y plant in Kawasaki closed in Aug. 2014, 100 kt/y plant in Mizushima dedicated to another product)
Styrene	390	Shell Ineos Lyondell Basell	EPS, ABS, SB latex, unsaturated polyester, SBR; captive use for PS, ABS, SB latex, SBR	After 320 kt/y plant in Mizushima closed in Feb. 2016, business to focus on domestic market and captive use
Methyl methacrylate	170	Mitsubishi Rayon	MS, MBS, coating materials; captive use for PMMA	Proprietary, cost-competitive C4 process
Cyclohexanol	180	Shandong Haili BASF	Adipic acid, caprolactam; captive use for adipic acid	Mainly for captive use
Polyethylene	283	(Domestic) Japan Polyethylene Prime Polymer	Films, miscellaneous goods, food containers, injection molding	Business development taking advantage of unique characteristics based on distinctive catalyst technology
Polystyrene	315	(Domestic) Toyo Styrene DIC	Food containers, food packaging, toys, miscellaneous goods, construction materials	Largest producer in Japan

Petrochemicals (2)

Strengthening petrochemical operations in Japan

Strengthening petrochemical operations by establishing the optimum production configuration for stable earnings and enhanced competitiveness to cope with contracting domestic demand and price competition from products made overseas based on low-priced feedstock

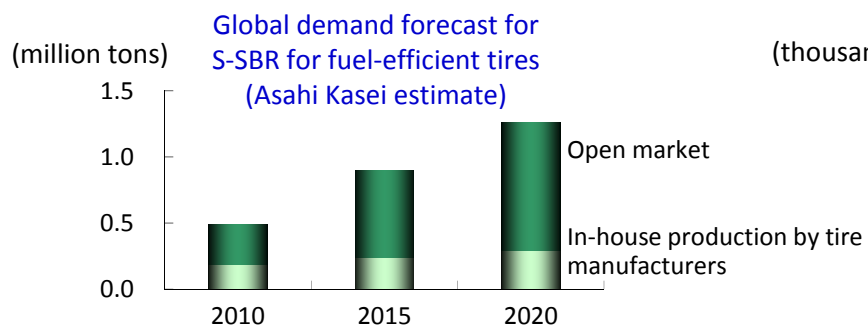
Business	Location	Capacity (thousand tons)	Major applications	Closure schedule
Naphtha cracker	Mizushima	500 (unified with Mitsubishi Chemical's facility)	Production of basic petrochemical products such as ethylene and propylene	February 2016
AN	Mizushima	200	Acrylic fiber, ABS, acrylamide, adiponitrile	August 2014
	Kawasaki	100		
	Korea	150		
	Thailand	560		
Styrene	Mizushima	200	Polystyrene, ABS, synthetic rubber	February 2016
		320		
ABS resin	Mizushima	390	Automotive, home electronics, office equipment	December 2015
SB latex	Mizushima	65	Paper coating, adhesives, paint	December 2015
	Kawasaki	24		
Epoxy resin	Mizushima Fuji	36	Coatings, adhesives, electronics	May 2015
		37 (undisclosed)		

 Closure Dedication to another product

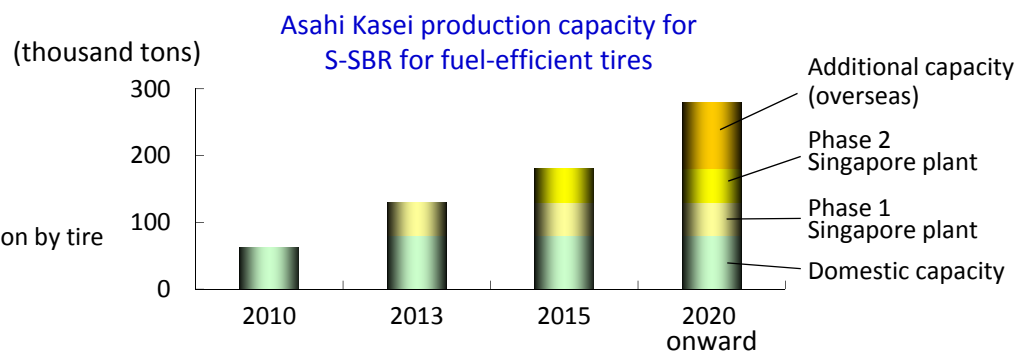
Performance polymers (1)

Synthetic rubber (solution-polymerized SBR)

- Top share in Asian market for solution-polymerized SBR (S-SBR) for fuel-efficient tires
- Enhancing overall tire performance, with good balance of fuel efficiency and wet grip
- Technology for both continuous and batch polymerization processes; taking the lead in proactively expanding capacity for continuous process, with fewer competitors

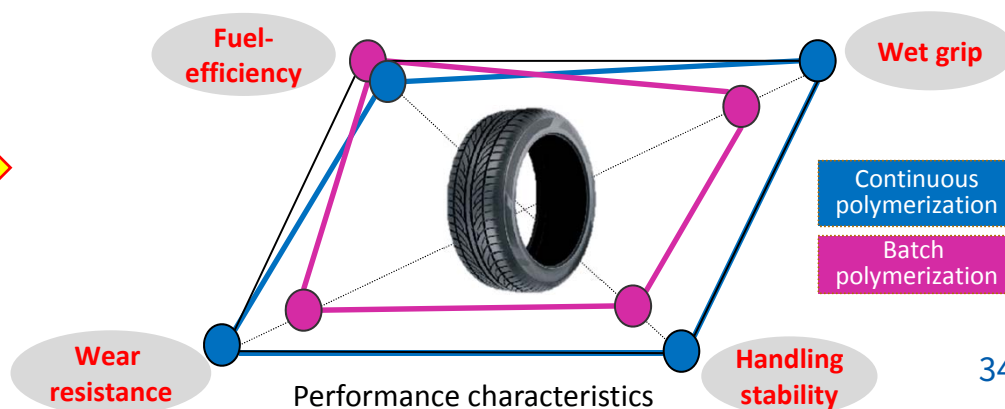
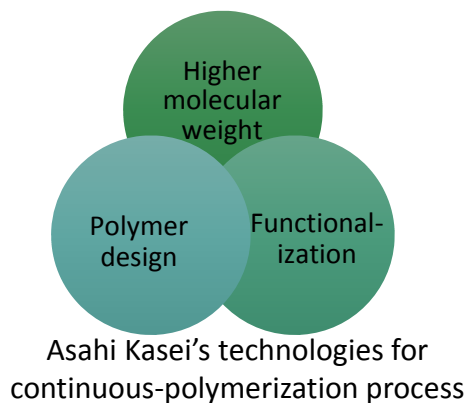


Growing demand for fuel-efficient tires with more stringent environmental standards



New plant in Singapore — 50 kt/y in 2013 and 50 kt/y expansion in 2015

Enhancing all four main performance characteristics of tires through original technologies for polymer design, higher molecular weight, and functionalization



Performance polymers (2)

Engineering plastics

Advancing global growth strategy; reinforcing automotive-related businesses

- Leveraging computer-aided engineering (CAE) technology with weight-saving proposals for automotive parts
- Development of materials based on sophisticated technologies for polymer design, alloys, and compounding
- Global operations for production (compounding), sales, and technical service

Product	Strategy	Main automotive applications
Leona polyamide 66	Global development of specialty polyamide with superior heat resistance, durability, rigidity, and appearance	Engine compartment parts (cylinder head covers, etc.)
Tenac polyacetal	Production of low-VOC products in both Mizushima, Japan, and Zhangjiagang, China, and global sales expansion	Interior parts, fuel-system parts, electric motor parts
Xyron modified polyphenylene ether	Global development of superior grades centered on office equipment, photovoltaics, automobiles, and rechargeable battery applications	Electrical system parts (relay blocks, electric vehicle battery parts, etc.)
Polypropylene compounds	Sales expansion leveraging 2nd plant in US and sales subsidiary in Mexico	Radiator fans, fan shrouds, etc.

Performance materials

Main products of performance materials

Product	Main applications	Asahi Kasei's position
Microza UF and MF membranes	Water filtration	Top-tier world share: No. 1 share in the US municipal water treatment market
Aciplex ion-exchange membranes Membrane-process electrolyzer	Chlor-alkali electrolysis	Membranes: No. 1 world share Electrolyzers: No. 2 world share
Duranate HDI-based polyisocyanate	Non-yellowing polyurethane curing (coatings, inks, adhesives, cast molding, etc.)	No. 2 world share No. 1 domestic share
Acetonitrile	Solvent for pharmaceutical manufacture	No. 2 world share
Ceolus microcrystalline cellulose	Additives for pharmaceuticals and foods	No. 1 domestic share
Sunfort dry film photoresist	Forming circuit patterns on printed wiring boards and semiconductor packaging	World top-3 share: 30
APR and AFP photopolymers and platemaking systems	Printing plates for packaging such as cardboard, labels, and film	No. 1 domestic share

Consumables

Division/affiliate	Main products
Fabricated Products Division	Polyolefin and polystyrene films, Asaclean
Asahi Kasei Home Products Corp.	Saran Wrap, Ziploc, Frosch
Asahi Kasei Pax Corp.	Beverage containers, food packaging materials

Household products

Saran Wrap, Ziploc, Cookper

- ◆ Saran Wrap: No. 1 market share in Japan
- ◆ Increase market share by improving convenience and function of products



Frosch

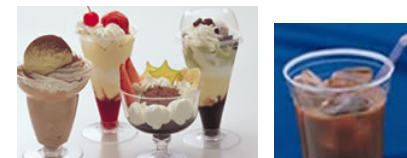
- ◆ Utilize brand strength of Saran Wrap to expand business by developing new kitchen goods such as detergent and deodorizer



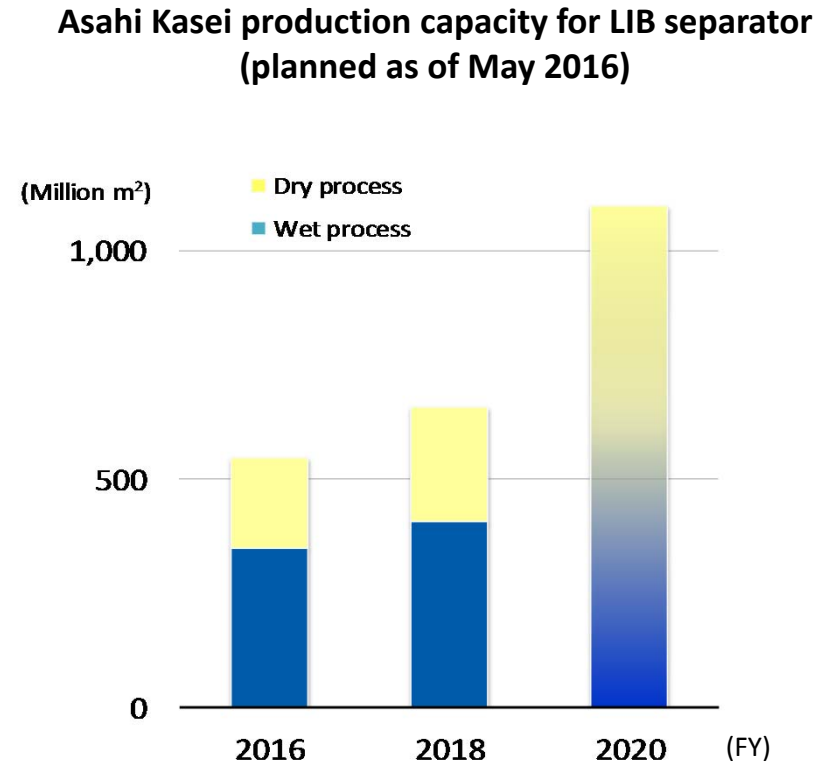
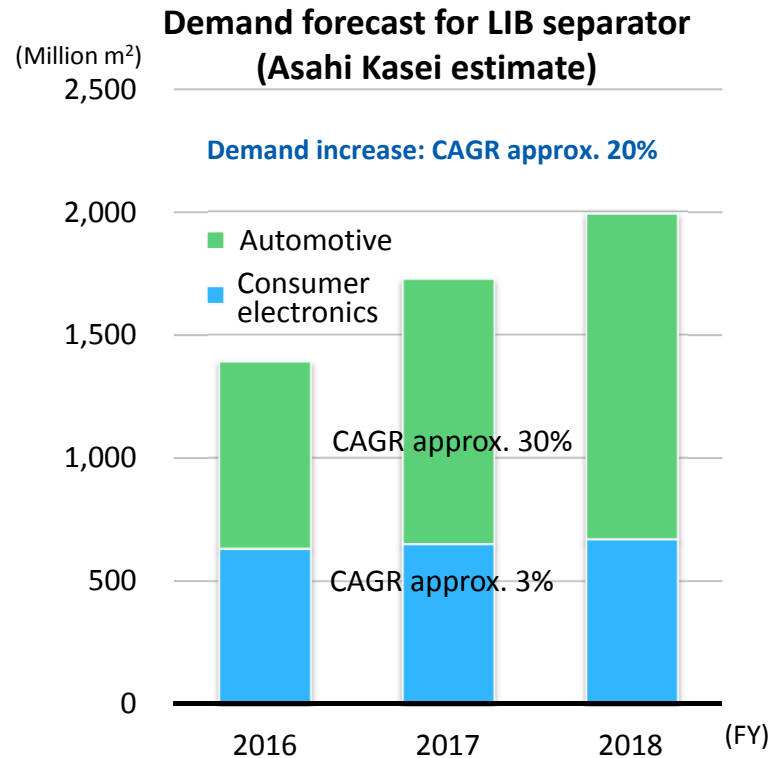
Commercial products

Containers for convenience stores and fast food chains

- ◆ Rapid growth in container market for convenience stores and fast food chains
- ◆ Increase market share, utilizing position as leading manufacturer of polypropylene containers
- ◆ Capture container demand including other materials in the future



LIB separator



Main applications

Electronics	Mobile communication devices (cellphones, smartphones, tablets, etc.), laptop PCs, wearable devices, digital cameras, etc.
Electrical goods	Power tools, cordless appliances, etc.
Eco-friendly vehicles	Hybrid vehicles, electric vehicles
Energy storage systems	Grid management, backup power



Electronic devices

Product	Main applications	Asahi Kasei's position	Main competitors
Electronic compass	Smartphones, tablets, etc.	World's No. 1	Yamaha, Alps Electric
Devices for camera module	Camera modules for smartphones	Top tier in the world (magnetic sensors)	Rohm Semiconductor, Renesas Electronics
LSIs for crystal oscillator	Smartphones, communication devices	World's No. 1	Panasonic
LSIs for high-end audio	Smartphones, high-end audio equipment	Top tier in the world	ESS Technology, Cirrus Logic
LSIs for automotive audio/visual/navigation	Car audio, navigation system, hands-free system, etc.	Top tier in Japan	NXP Semiconductors, Texas Instruments
Hall elements for motor control	Air conditioner, household appliances, computer cooling fans, industrial equipment	World's No. 1	—

Various sensing solutions for the IoT era

- Hall elements: motor control
- Electronic compass: smartphones, tablets
- Close positioning sensing: digital cameras, smartphones
- Electric current sensor: industrial equipment (inverters, servomotors, robots)
- Gas sensor: indoor air quality monitoring system
- Human detection sensor: "smart homes" etc.
- Rotation angle sensor: industrial equipment, automotive electric motor control

