

# **FY2018 Medium-Term Management Plan**

## **Power Electronics Business**

**May 26, 2016**  
**Fuji Electric Co., Ltd.**  
**Power Electronics Business Group**

## ■ Business Overview

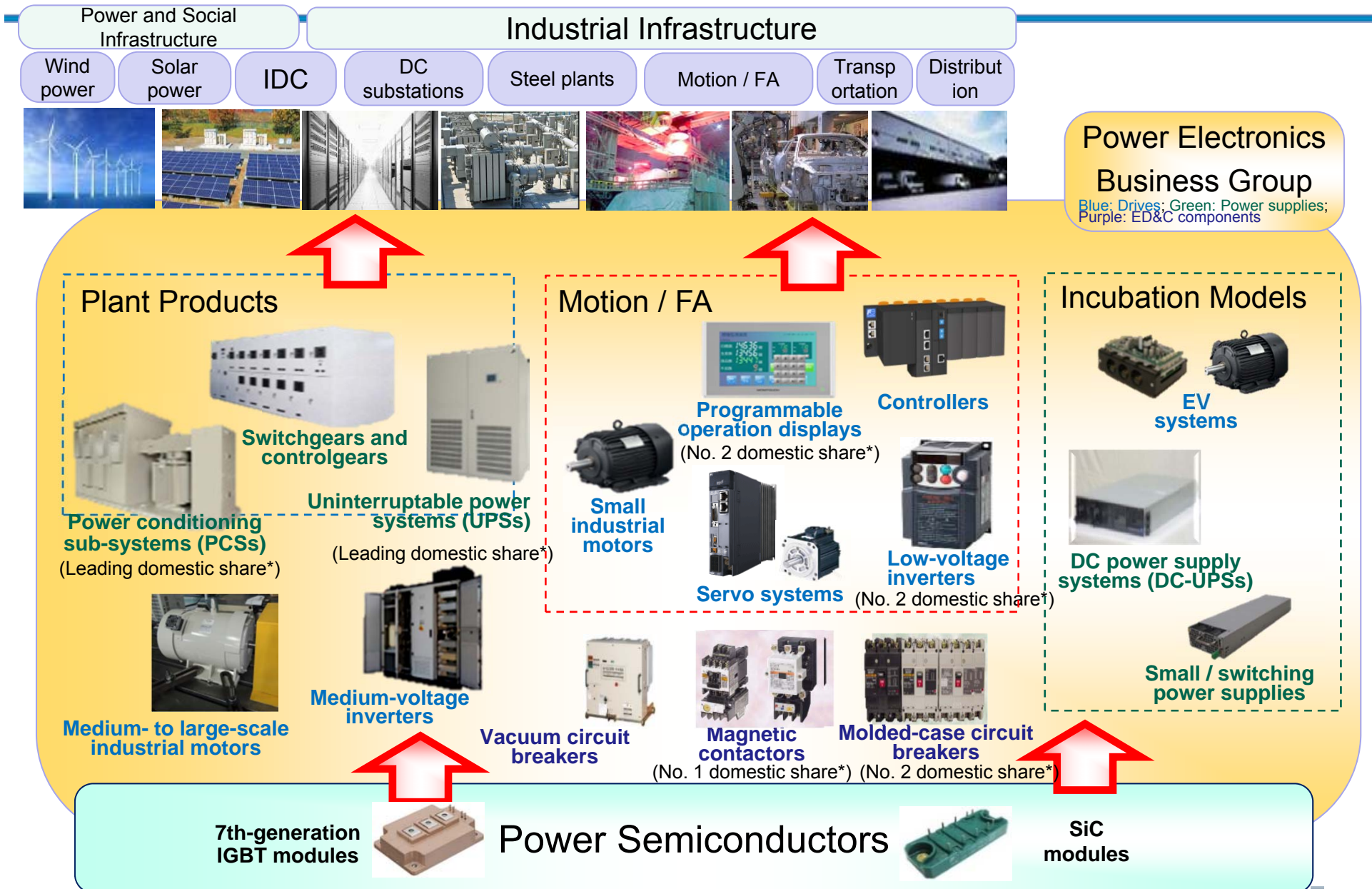
## ■ Review of FY2015 Medium-Term Management Plan

## ■ FY2018 Medium-Term Management Plan

- Basic policies
- Business Targets
- Market Trends
- Priority Measures
- Capital Investment / Research and Development

# Business Overview

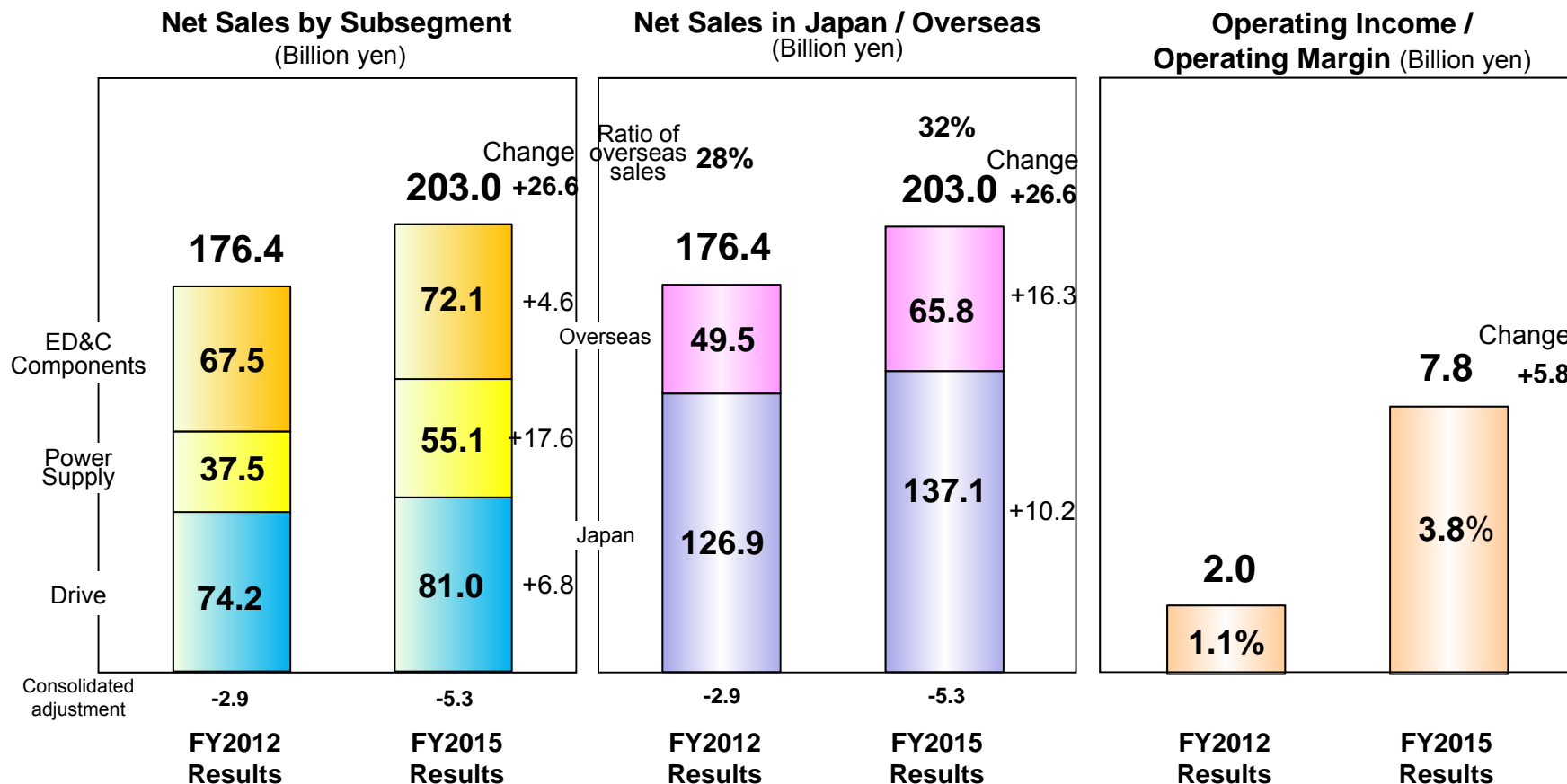
# Business Overview



\* Market share information from FY2015; Source: Fuji Electric

# Review of FY2015 Medium-Term Management Plan

- Higher sales in all subsegments, overall net sales up 15% and operating income 4 times higher
- Low operating margin



※Figures for FY2012 reflect the organizational restructuring conducted in FY2015.

## ● Shift from business restructuring to business expansion

- ✓ Business restructuring
  - Strengthened constitution by reducing fixed costs and advancing Pro-7 activities
- ✓ Global system construction
  - Expanded business through M&As and collaboration
    - Joint venture with Shanghai Electric in China, Fuji SMBE in Asia
  - Promoted local production and consumption
    - 3-hub manufacturing structure (Japan, China, and Thailand) established with start of operations at Thailand Factory
- ✓ Tracking related to plant products (medium- to large-scale industrial motors, medium-voltage inverters, PCSs, switchgears and controlgears)
  - Tracked costs, deliveries, and quality

## ● Challenges

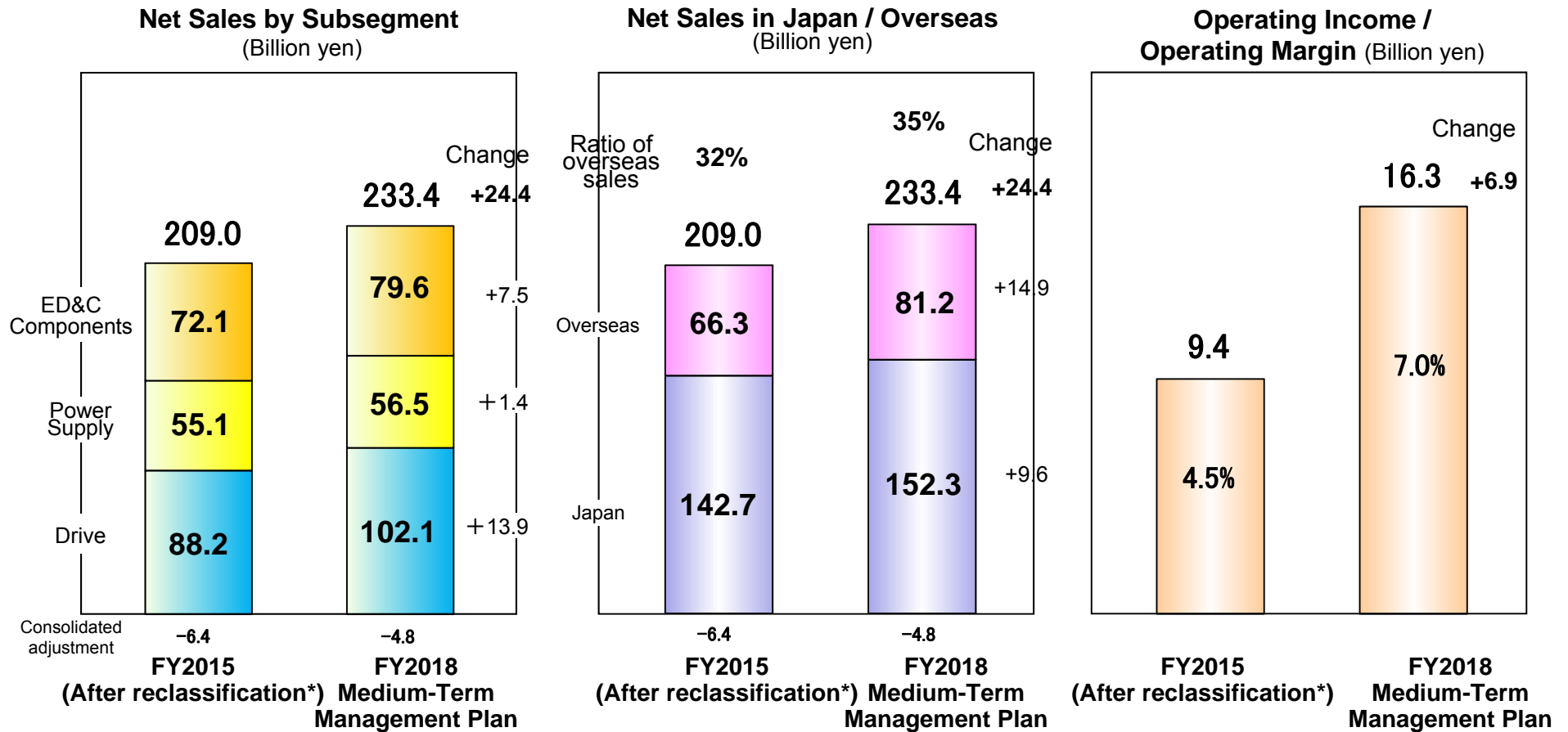
- ✓ Establishing a profitable structure
- ✓ Creating new products suited to global market

# **FY2018 Medium-Term Management Plan**



- Reinforce profit structure
  - ✓ Achieve operating margin of 7%
  
- Expand global operations
  - ✓ Reap benefits of M&As and collaboration
  - ✓ Develop and launch new products boasting market competitiveness
  - ✓ Expand into new fields

# Business Targets



\*Figures for FY2015 have been restated to reflect organizational restructuring conducted in FY2016.  
Restructuring details: Change of segment responsible for controllers (industrial instrumentation equipment → power electronics)

# Drive / Power Supply

# Drive Market Trends - Inverters

- **Japan: Strong growth expected**
- **China: Currently stagnant conditions, delayed recovery centered on air-conditioning equipment and elevators**
- **Asia: Growth focused on infrastructure investment despite impacts of sluggish Chinese market**
- **Europe / Americas: Lingering opaqueness in oil and gas fields due to low price of crude oil**

Region/ country	CAGR (FY2016-FY2018)	High-growth fields
Japan	103%	▪ Gentle growth focused on fan and pump industries
Overseas		
China	100%	▪ Continuation of favorable motion market conditions due to automation needs
Asia	106%	▪ Growth focused on air-conditioning equipment and elevators
Europe	104%	▪ Ongoing recovery trend
Americ as	104%	▪ Continuing growth

(CAGR and market scale figures represent the Company's estimations based on data from forecast institutions related to each equipment category)

# Power Supply Market Trends – UPSs

- **Japan: Sluggish replacement demand in manufacturing industries**
- **North America: Austere environment for large-scale IDC investment**
- **Asia: Accelerated infrastructure investment despite impacts of sluggish Chinese market**

Region/ country	CAGR (FY2016-FY2018)	High-growth fields
Japan	101%	<ul style="list-style-type: none"> <li>▪ Solid trend in IDC establishment</li> <li>▪ High anticipations for IoT-related demand</li> </ul>
Overseas		
China	103%	<ul style="list-style-type: none"> <li>▪ IDC and infrastructure investment</li> </ul>
Asia	103%	<ul style="list-style-type: none"> <li>▪ Accelerated infrastructure development</li> <li>▪ Favorable IT investment trends</li> </ul>
North America	102%	<ul style="list-style-type: none"> <li>▪ <b>World's largest market</b></li> <li>▪ Firm demand for cloud-based and other medium-scale IDCs</li> </ul>

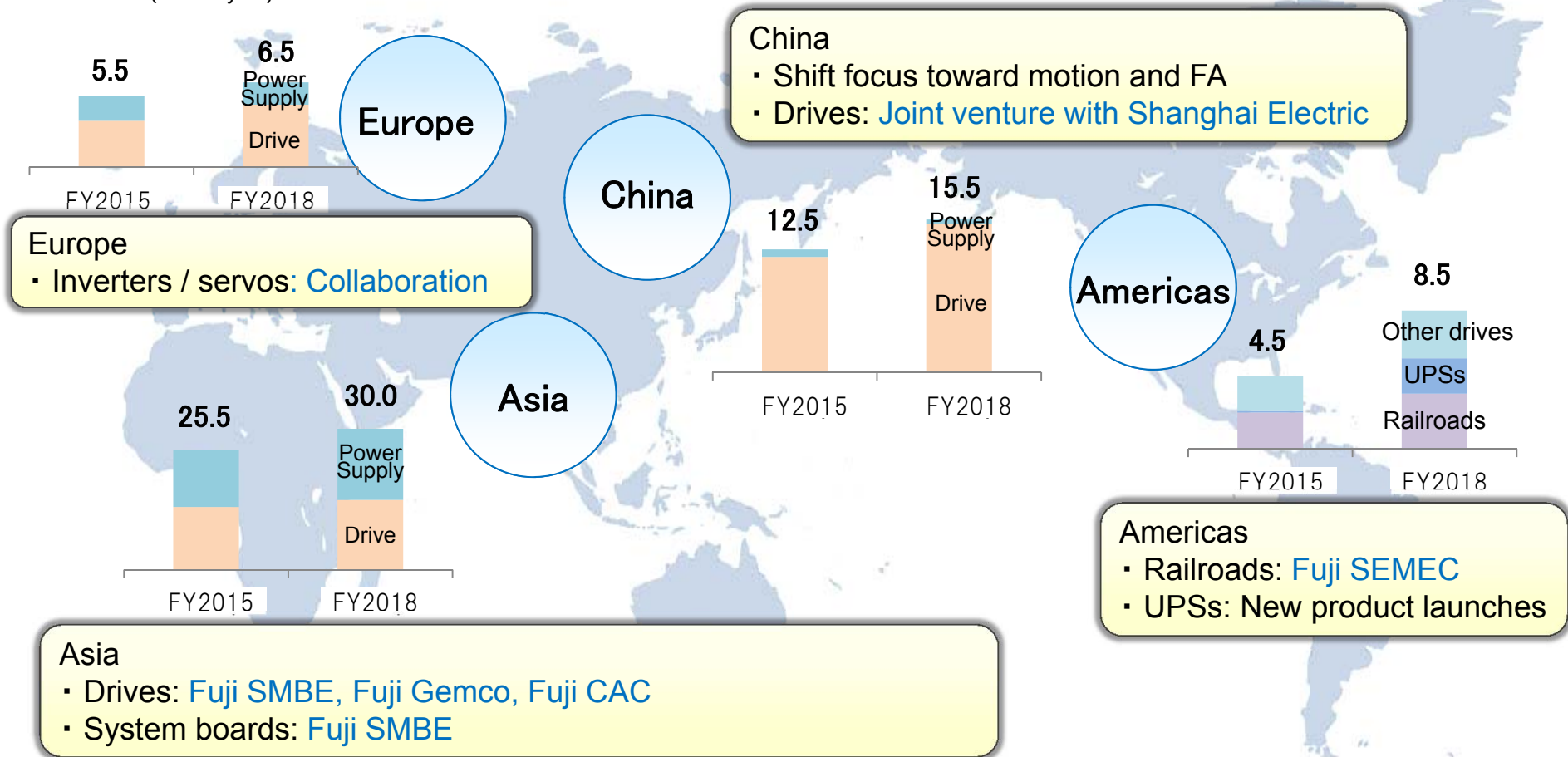
(CAGR and market scale figures represent the Company's estimations based on data from forecast institutions related to each equipment category)

- Expand global operations by stepping up M&As and collaboration
  - ✓ Grow Asian system operations (Fuji SMBE, Fuji Gemco)
  - ✓ Develop North American railway operations (Fuji SEMEC)
- Strengthen domestic mother factories
  - ✓ Reduce costs through rigorous standardization
- Develop and launch new products boasting market competitiveness
  - ✓ Strengthen global marketing
  - ✓ Quickly develop and launch products using standardization platforms
- Expand into new fields
  - ✓ Grow motion and FA operations
  - ✓ Develop component service operations
  - ✓ Start up new businesses (EV systems, DC power supply systems)

# Expansion of Global Operations

- Step up M&As and collaboration and reap benefits
  - Asia: Expand system operations
  - North America: Grow railroad and UPS operations

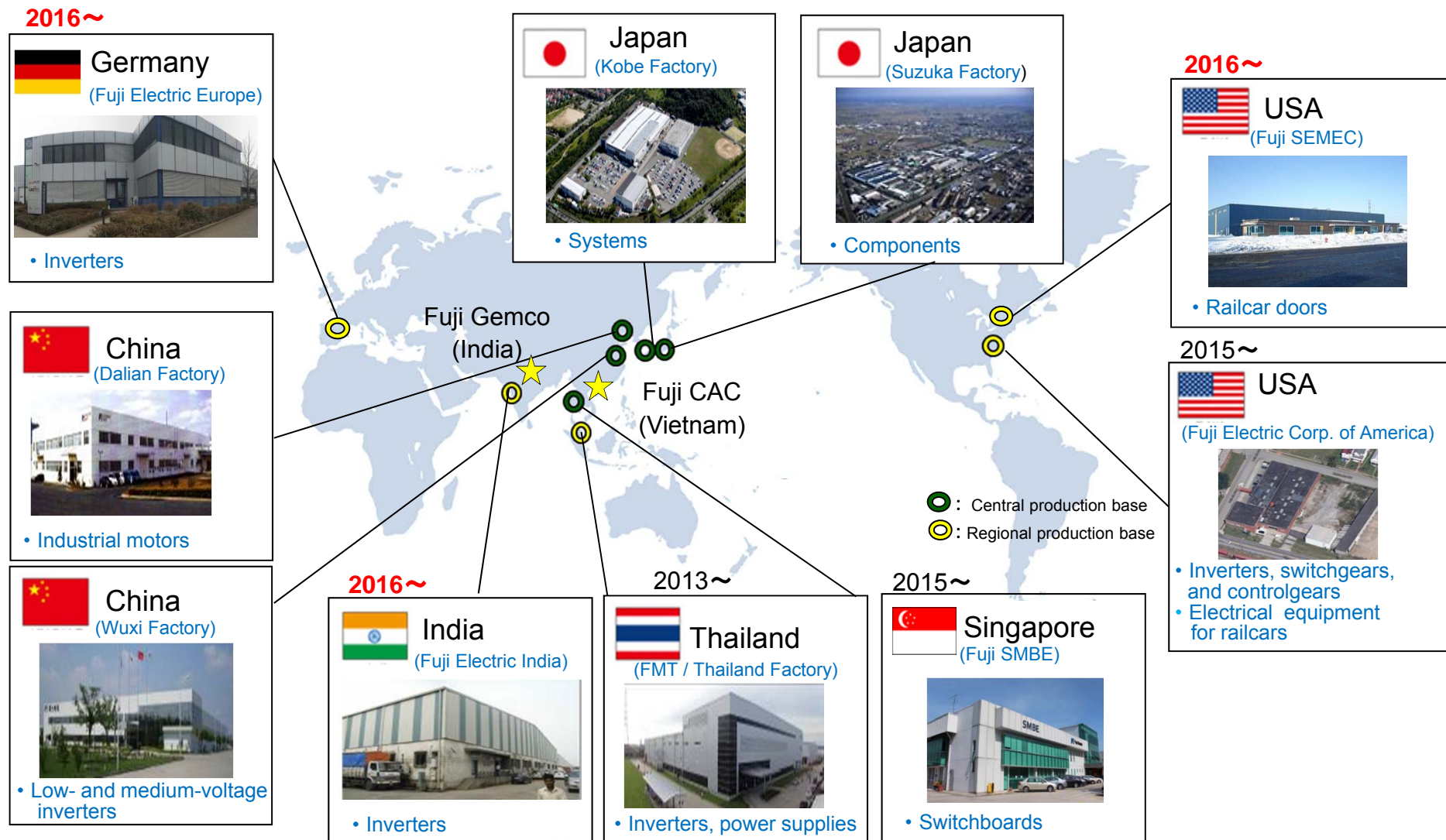
Net Sales (billion yen)



# Expansion of Global Operations

-Reinforcement of Local Production and Consumption Systems

Strengthen component and system production structures around the world  
(Ratio of overseas production: 36%)



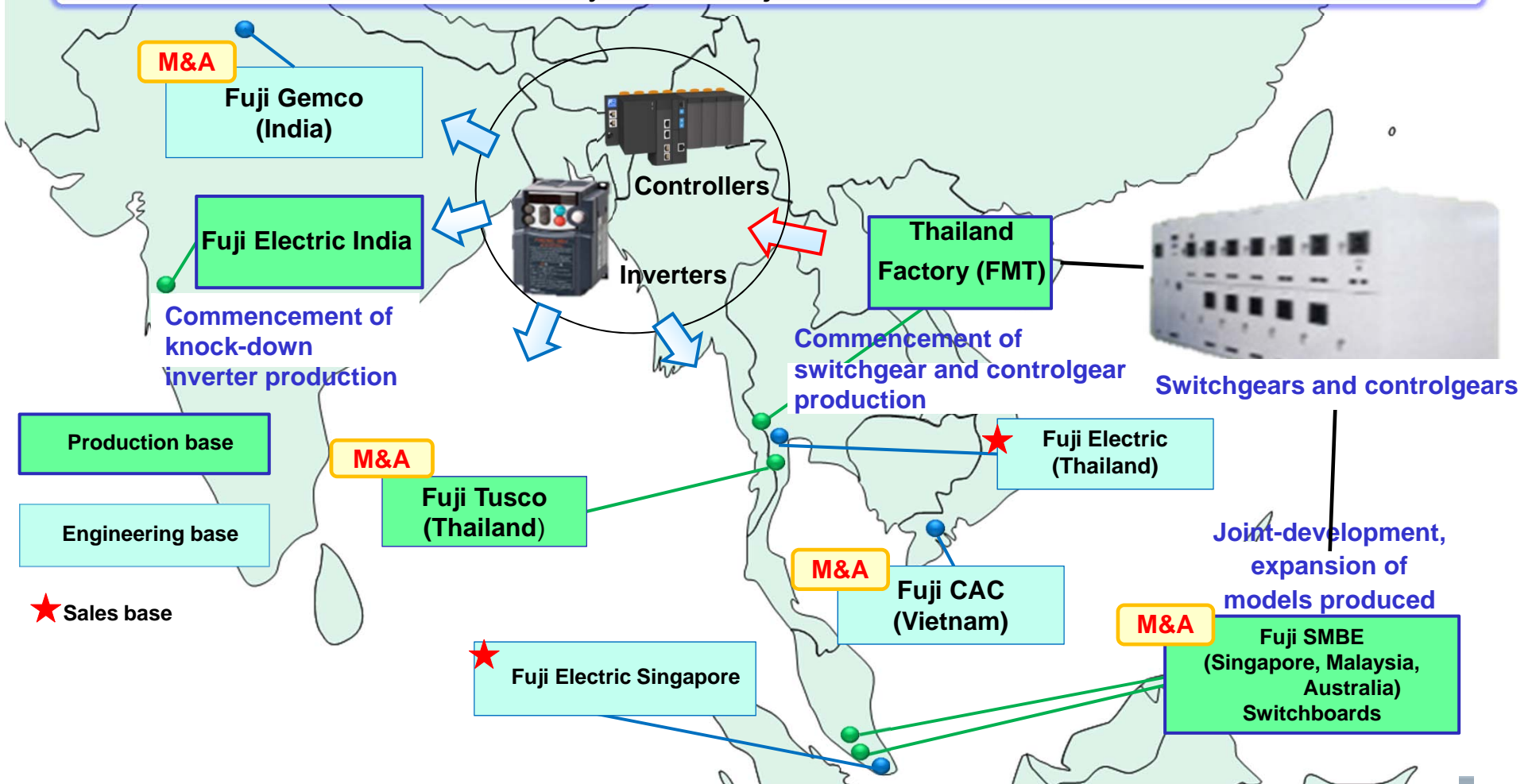


# Expansion of Global Operations - Asia

Provide component products that contribute to the expansion of system operations

- ✓ Introduce drive products matched to each market
- ✓ Increase local production and consumption

Asia: Thailand Factory India: Fuji Electric India



# Expansion of Global Operations - North America

## ● Expand railway operations

- ✓ Localize areas of operations ranging from sales activities for soliciting our specifications to markets to production activities  
Conduct integrated production at Fuji SEMEC's New York Factory
- ✓ Introduce SiC-equipped products into target projects  
Improve development efficiency and reduce costs through extensive platform construction

M&A

**Fuji Electric Corp. of America**  
**New York Factory**  
**(Fuji SEMEC)**  
**Electrical equipment for railcars**



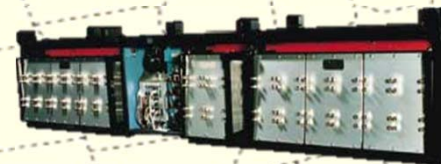
Production base

★ Sales base

**Fuji Electric Corp. of America**  
**Virginia Factory**  
**Electrical equipment for railcars**

★ **Fuji Electric Corp. of America**

★ **Fuji Electric Corp. of America**  
**(Fremont, CA)**



## ● Introduce medium- to large-capacity UPSs

- ✓ Evolve product planning (step up coordination with local sites)
- ✓ Develop SiC-equipped platforms to bolster model lineup in short period
- ✓ Enter rapidly growing market for small to medium-scale data centers  
Construct sales and service systems utilizing sales agent networks

# Strengthening of Domestic Mother Factories

## - Standardization and Cost Reduction

- ✓ Rationalize operations by reorganizing and consolidating manufactured models
- ✓ Generate synergies with development function consolidation (Power Electronics Technical Center)  
Quickly introduce products for the global market and accelerate standardization and shift to in-house production
- ✓ Launch incubation models and achieve profitability



### Component Models

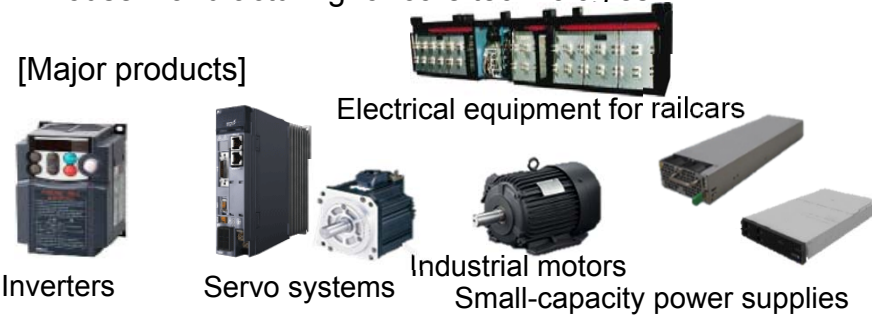
—Mother factory: Suzuka Factory—

**Model factory for creating new products and pursuing productivity improvements**

- Create high-value-added components
- Pursue high levels of productivity and reduced costs

Automation, production technologies, and manufacturing technologies  
In-house manufacturing for core technologies

[Major products]



[Related Bases]  
(Japan) Hakko Electronics, Fuji Electric FA Service  
(Overseas) Thailand Factory, Wuxi Factory, joint venture with Shanghai Electric, Fuji Electric Motor (Dalian) factories, Fuji Electric India, Fuji Electric Europe, Fuji Electric Corp. of America, Fuji Gemco



### System Models

—Mother factory: Kobe Factory—

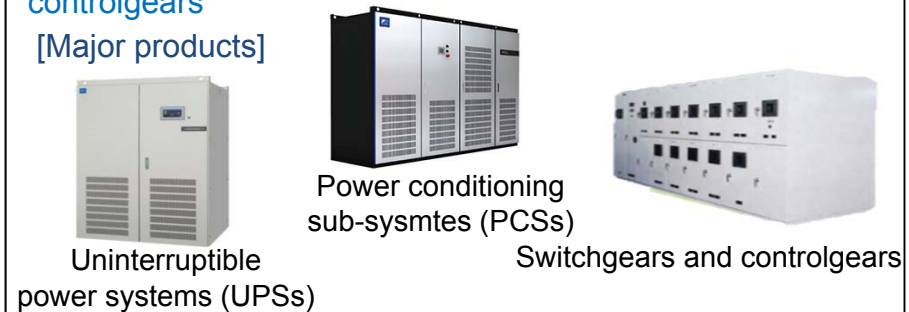
**Model factory for producing complete systems and pursuing increased speed**

- Use of continuous flow processing

Engineering, Design, Procurement, Testing, and Witness Inspection/Shipping  
One stop operation spanning order receipt to shipping  
Single facility housing processes spanning from order receipt to shipping

- Conduct mixed production of switchgears and controlgears

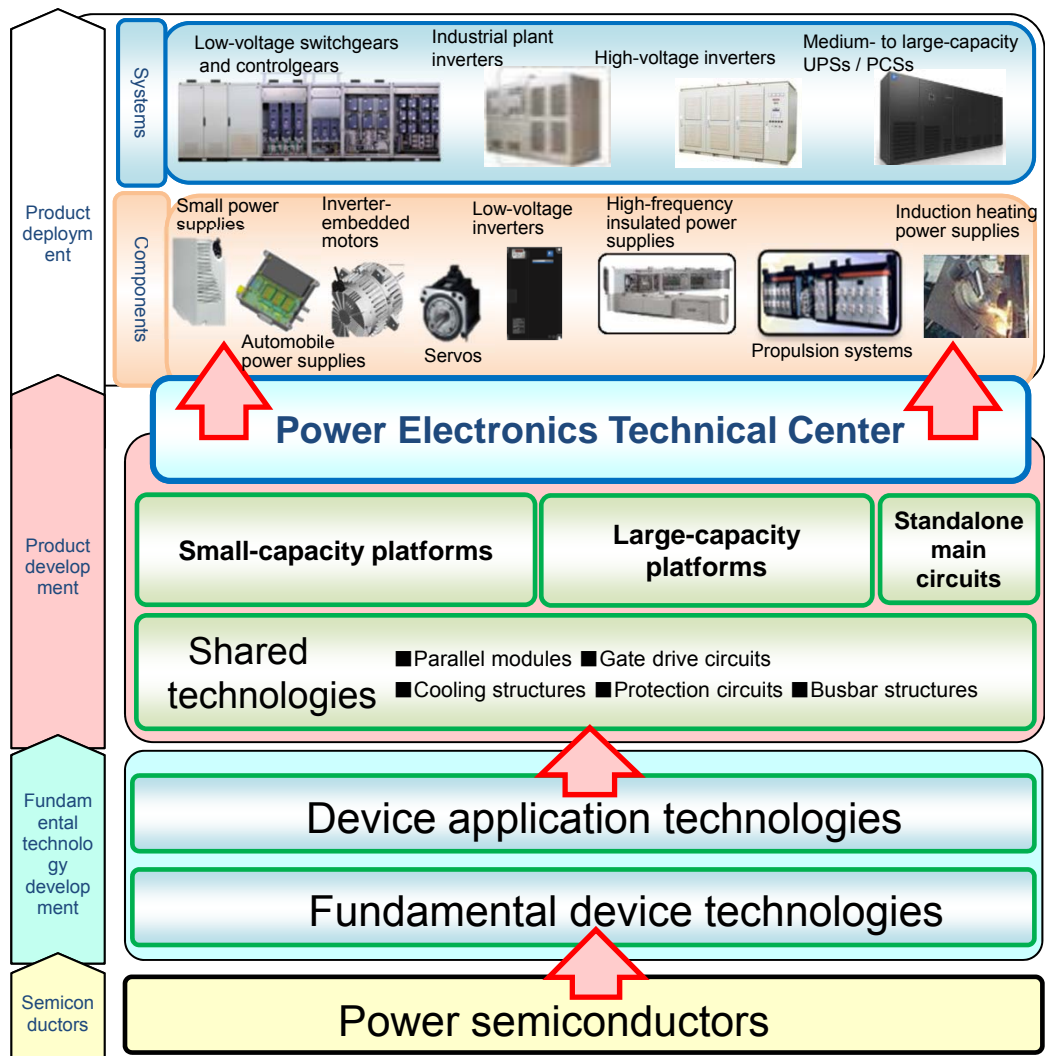
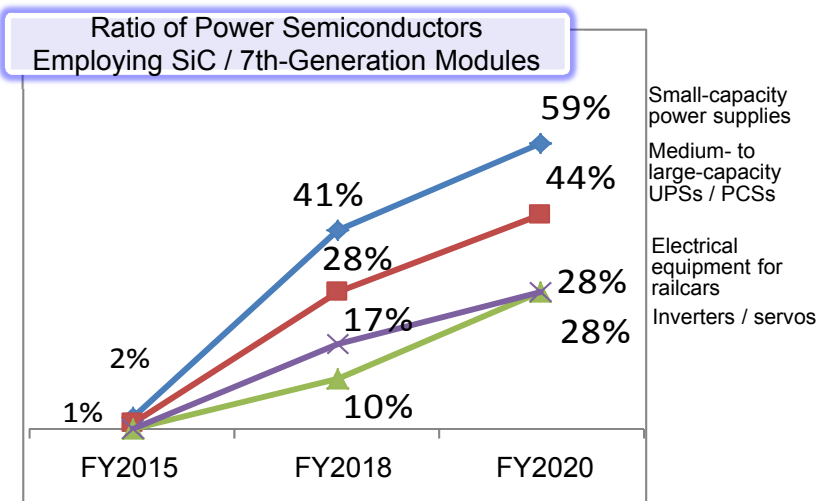
[Major products]



[Related Bases]  
(Japan) Tsukuba Factory, Ibaraki Fuji  
(Overseas) Thailand Factory, Fuji SMBE, Fuji Gemco

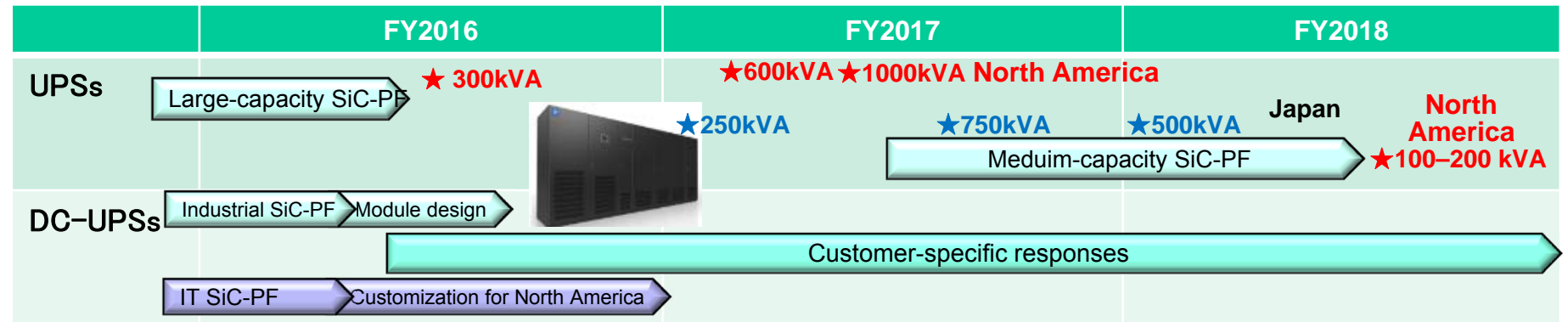
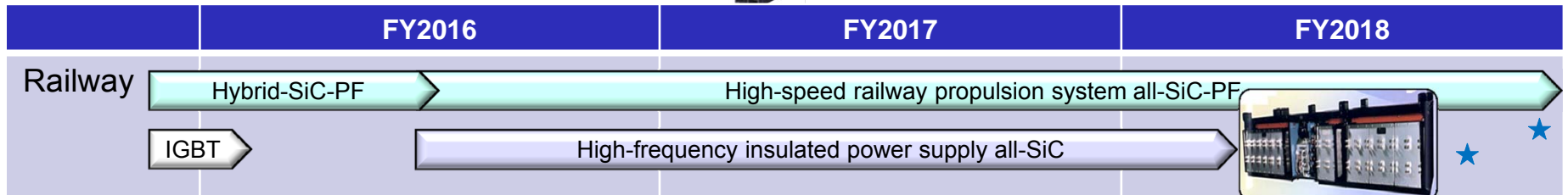
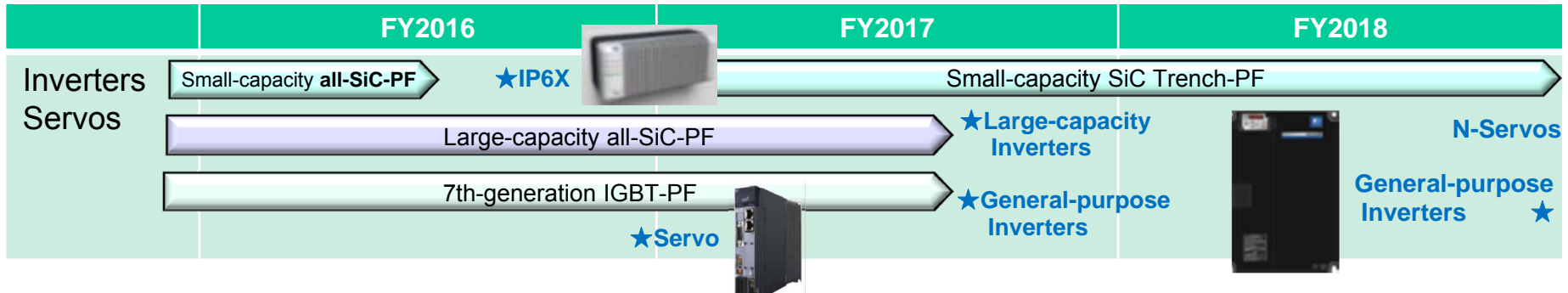
# Quick Launch of New Products for Global Market (Establishment of Power Electronics Technical Center)

- Quickly create new products by developing platforms
- Promote rigorous standardization (halve range of parts)



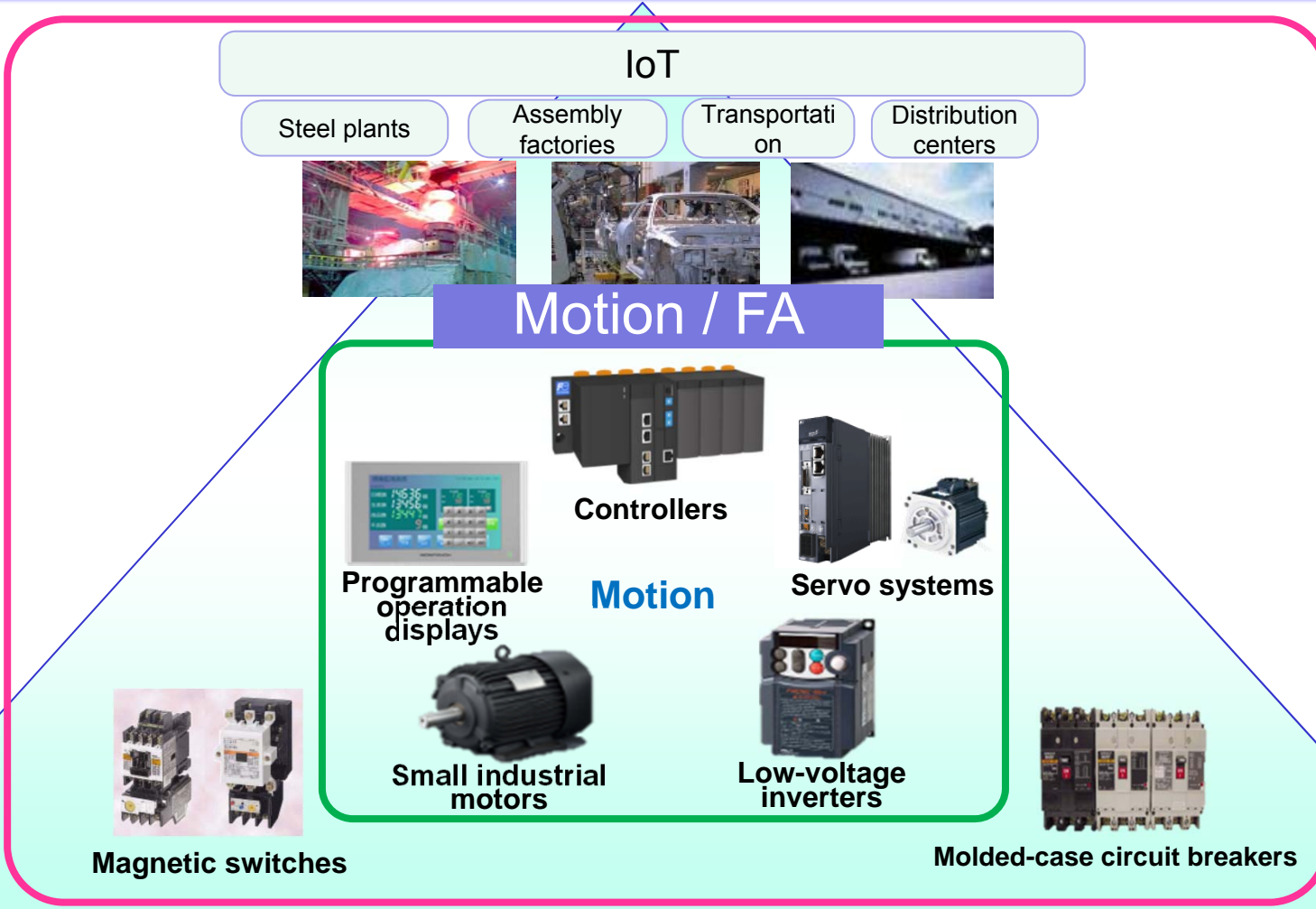
# Development Roadmap

- Quickly develop and launch products using standardization platforms
- Launch differentiated products by utilizing new devices (SiC / 7th-generation modules)



# Expansion into New Fields - Motion and FA

Expand motion and FA operations by integrating components (servos, inverters, industrial motors, controllers, programmable operation displays)



# Expansion into New Fields - Component Services

Establishment of demo centers for specific industries

Strengthening of customer relationships (emphasis on reciprocal communication)



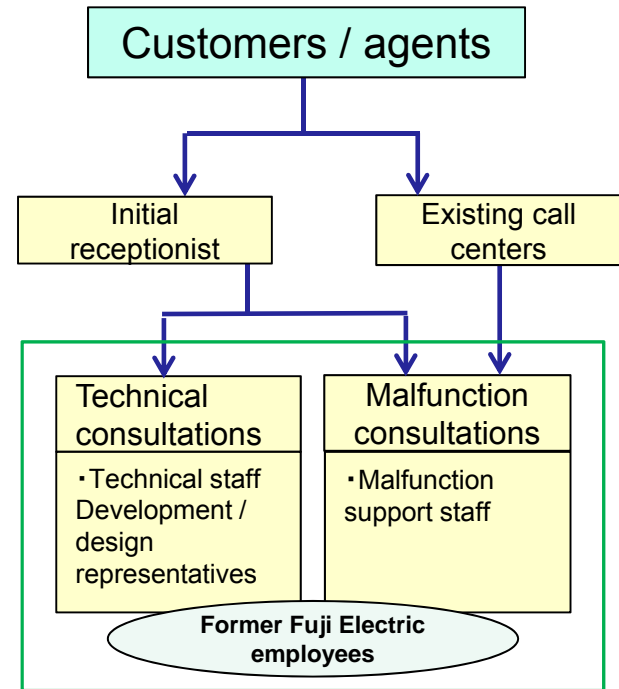
(Ex.) Printing machines

- Exhibit demo products for specific industries
- Incorporate customer input into product development
- Solicit appeal of application and engineering capabilities

Establishment of technical service centers

Reinforcement of customer support systems

System for providing support 365 days a year



**Transmission of information to sales representatives**

# ED&C Components



# ED&C Components Market Trends

- **Japan: Mature market**
- **China: Currently stagnant conditions, recovery in FY2017 and beyond**
- **Southeast Asia: Strong growth focused on infrastructure investment despite instability**
- **South Korea / Taiwan: Heavily influenced by Chinese market conditions**

Region/ country	CAGR (FY2016-FY2018)	High-growth fields
Japan	101%	<ul style="list-style-type: none"> <li>▪ Renovation of aged facilities</li> <li>▪ Construction demand stimulated by 2020 Tokyo Olympics</li> </ul>
Overseas		
China	100-102%	<ul style="list-style-type: none"> <li>▪ Automation investment</li> </ul>
Asia	104-105%	<ul style="list-style-type: none"> <li>▪ Electricity distribution and other infrastructure projects</li> <li>▪ Factory and building construction demand</li> </ul>
Korea/ Taiwan	100-102%	<ul style="list-style-type: none"> <li>▪ Projects primarily related to China</li> </ul>

(CAGR and market scale figures represent the Company's estimations based on data from forecast institutions related to each equipment category)

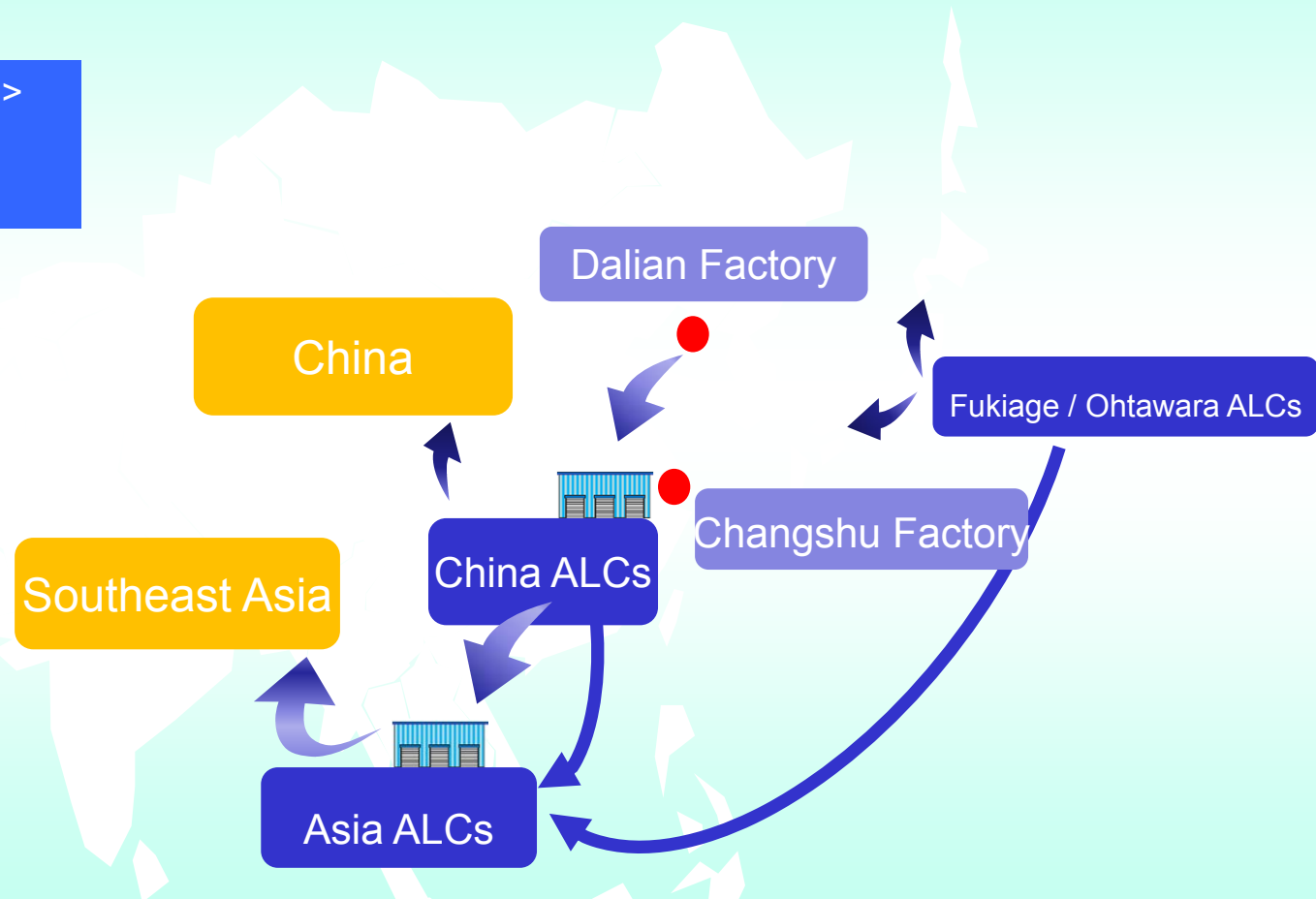
# ED&C Components - Priority Measures

- Thoroughly strengthen manufacturing capabilities
  - Reconstruct overseas logistics networks to improve deliver services
  - Develop model factories utilizing IoT technologies
- Quickly launch differentiated products
  - Develop products matched to market needs
  - Promote joint development with Schneider
- Expand sales
  - Invigorate network of 1st- and 2nd-tier sales agents
  - Increase presence in power distribution field

# Thorough Strengthening of Manufacturing Capabilities - Reconstruction of Overseas Logistics Networks

Achieve same 3-day deliveries possible in Japan through establishment of Assemble and logistic centers (ALCs) in China and Southeast Asia

<Establishment schedule>  
FY2016: China ALCs  
FY2017: Asia ALCs

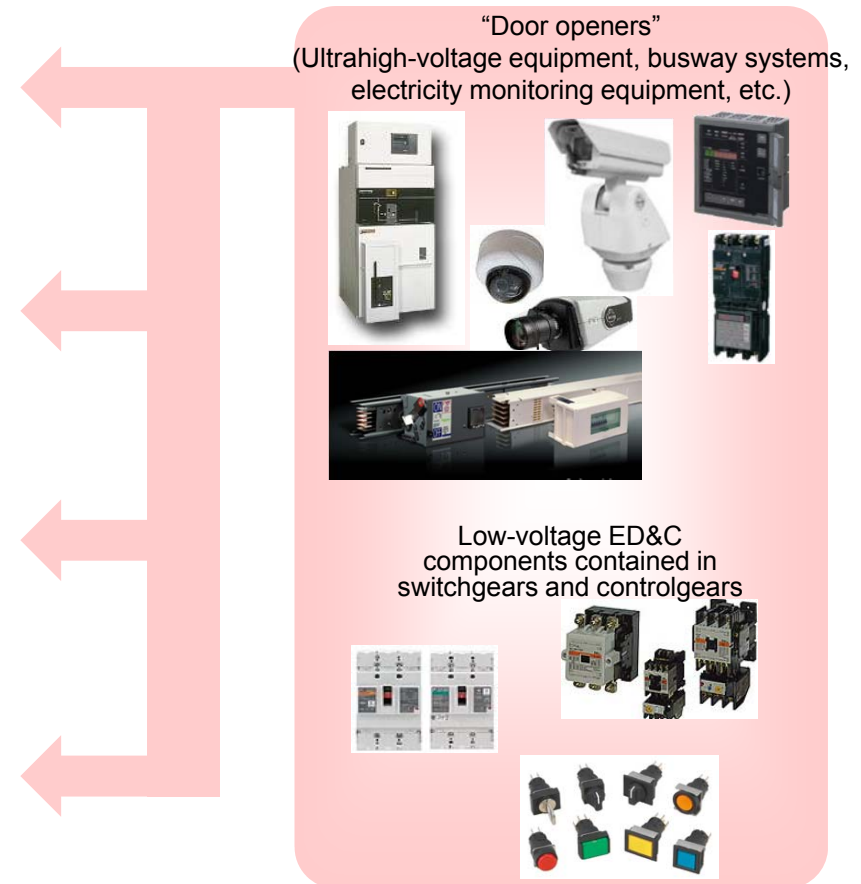


# Expansion of Sales

## - Increasing of Presence in Power Distribution Field

- Step up approach toward facility owners, general contractors, subcontractors, and consultants
- Redouble efforts to acquire orders by utilizing unique products and have Fuji Electric designated in specification documents

- Accelerate approach utilizing unique products as “door openers” for approaching business operators, facility owners, and end users
- Develop systematic approach for acquiring orders for low-voltage ED&C components contained in switchgears and controlgears (have Fuji Electric designated in specification documents)



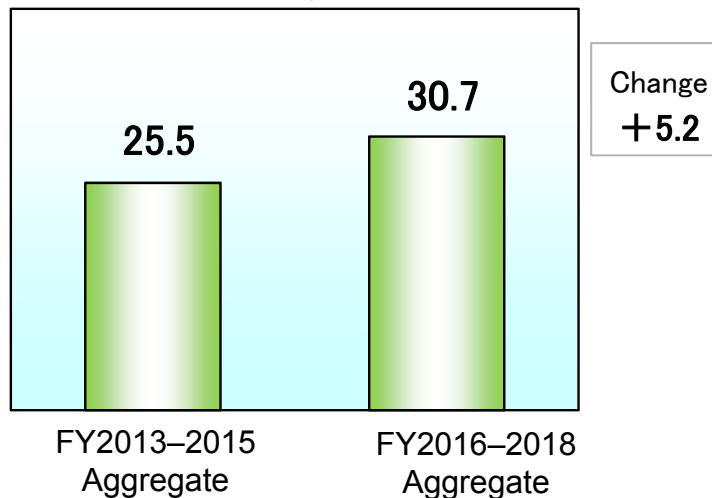
# **Capital Investment / Research and Development**

# Capital Investment / Research and Development

- Capital investment
  - Establish Power Electronics Technical Center  
Shorten development lead times, generate technological synergies, and strengthen coordination with customers by assembling technology development representatives
  - Enhance local production and consumption systems
- R&D
  - Expedite development and reduce costs by drastically revising product plans and developing platforms

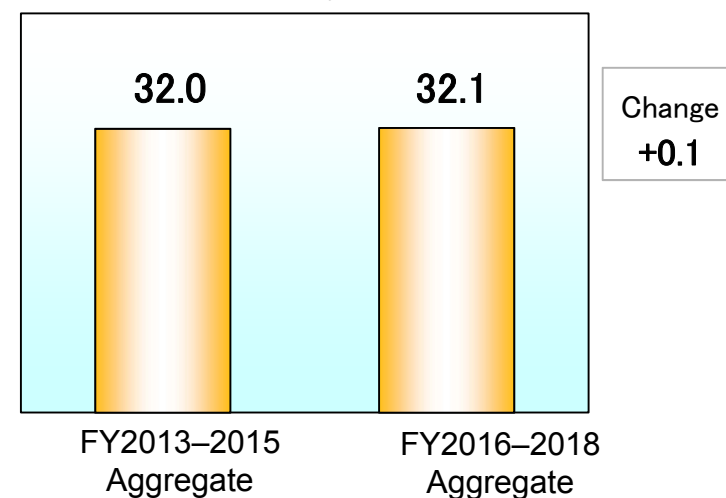
## Capital Investment

(Billion yen)



## Research and Development

(Billion yen)



- Power Electronics Technical Center (Suzuka)
- Production equipment at U.S. and Thailand factories

- SiC-employing equipment (railway, UPSs)
- Motion and servo equipment
- DC power supply systems (DC-UPSs)

Note: Figures for R&D expenditures above have been divided by segment based on theme and may therefore differ from the figures contained in the consolidated financial report for the fiscal year ended March 31, 2016.

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