
Automotive Systems Business Strategy

Hitachi IR Day 2017

June 8, 2017

Hideaki Seki

President & CEO

Hitachi Automotive Systems, Ltd.

Automotive Systems Business Strategy

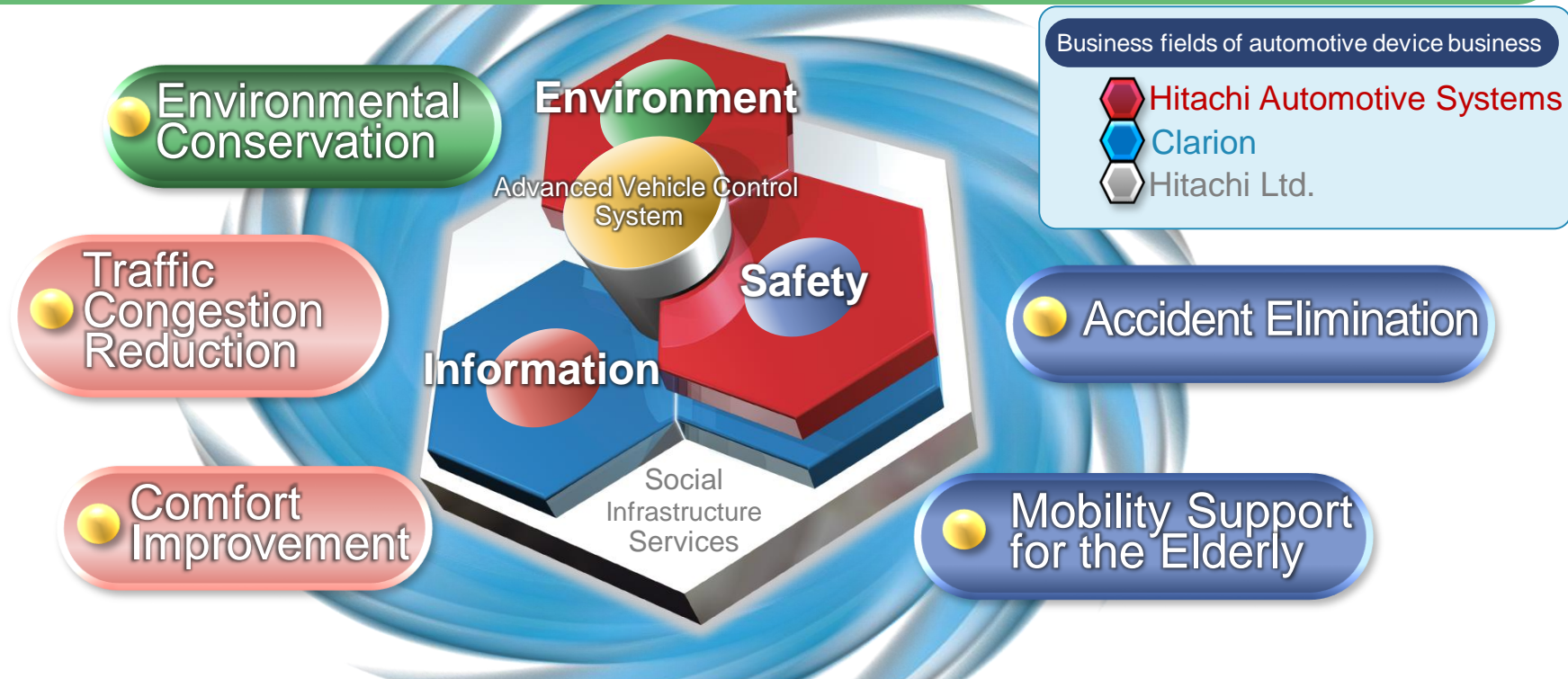
[Contents]

1. Business Overview
2. Market Trends
3. Growth Strategy
4. Summary

Corporate Credo

We will contribute to the realization of an affluent society by creating new value-added systems, products and services through the harmonization of people, vehicles and society.

Contribute to Society by Providing New Solutions for Vehicle Manufacturing to Solve Social Issues



Meet the needs of society with an Advanced Vehicle Control System that integrates social infrastructure and services with vehicle environment, safety and information technologies

1-2. Business Structure

Structure the Automotive Systems business segment around systems and products in environmental, safety, and information fields that together form an advanced vehicle control system

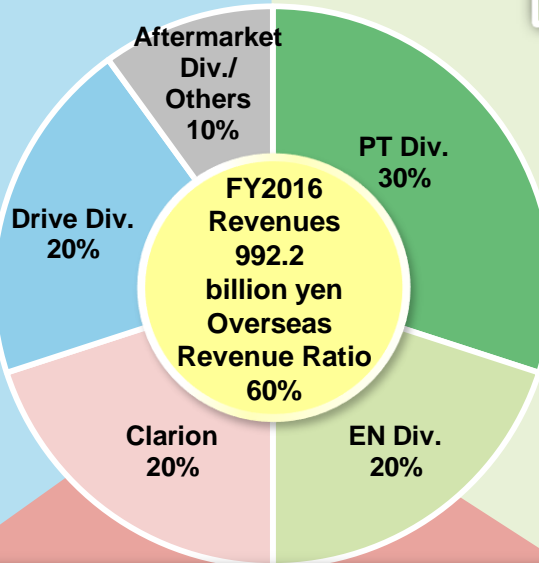
Safety Field: 40%

Integrated Chassis Control System

All-round External Recognition System



Advanced Drive Control System



Environmental Field: 40%

Engine Management System

High-efficiency Combustion Control System



Electric Powertrain System

Hybrid/electric Vehicle System



Information Field, Other: 20%

Car Information System

In-vehicle Information Device System

Advanced Human-Machine Interface

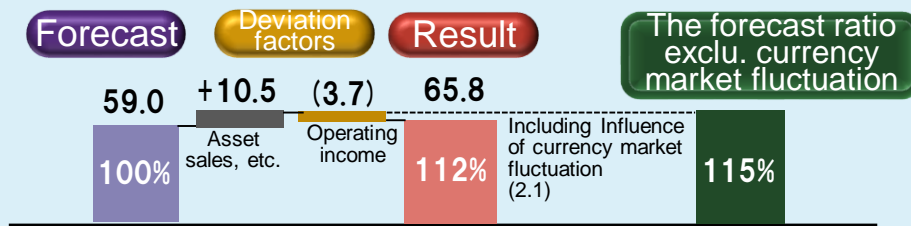
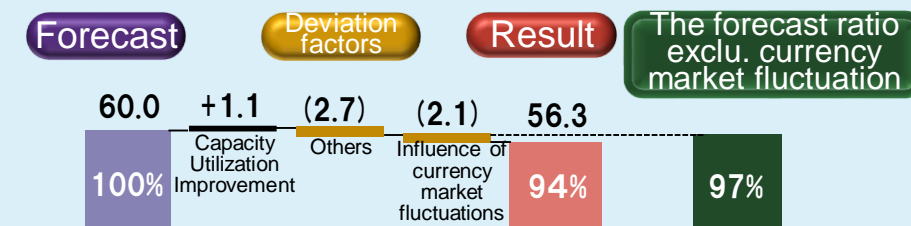
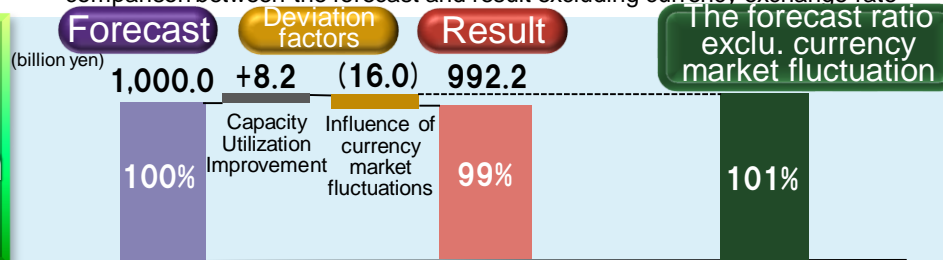
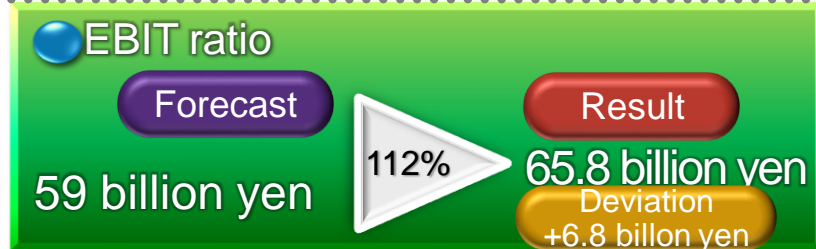
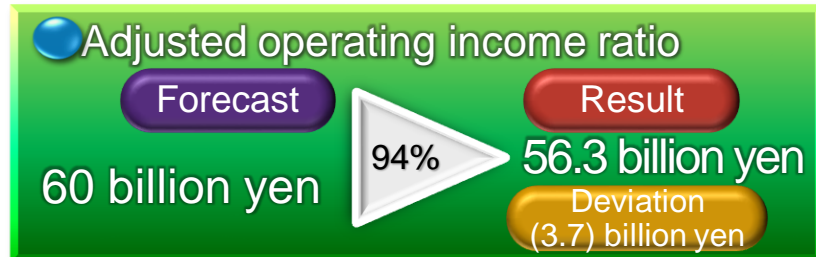
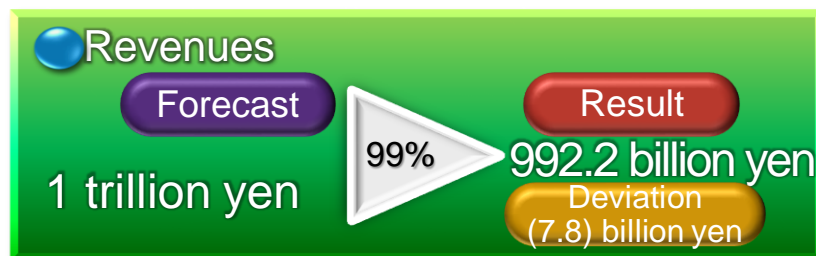
Telematics Communication Unit



1-3. Summary of FY2016

Capacity utilization rate improved although business forecast*1 was not achieved due to the influence of currency market fluctuations

■ The deviation factors of the FY 2016 forecast in Hitachi IR Day 2016 and the comparison between the forecast and result excluding currency exchange rate



To address exchange risks, enhance global procurement and accelerate local production for local consumption

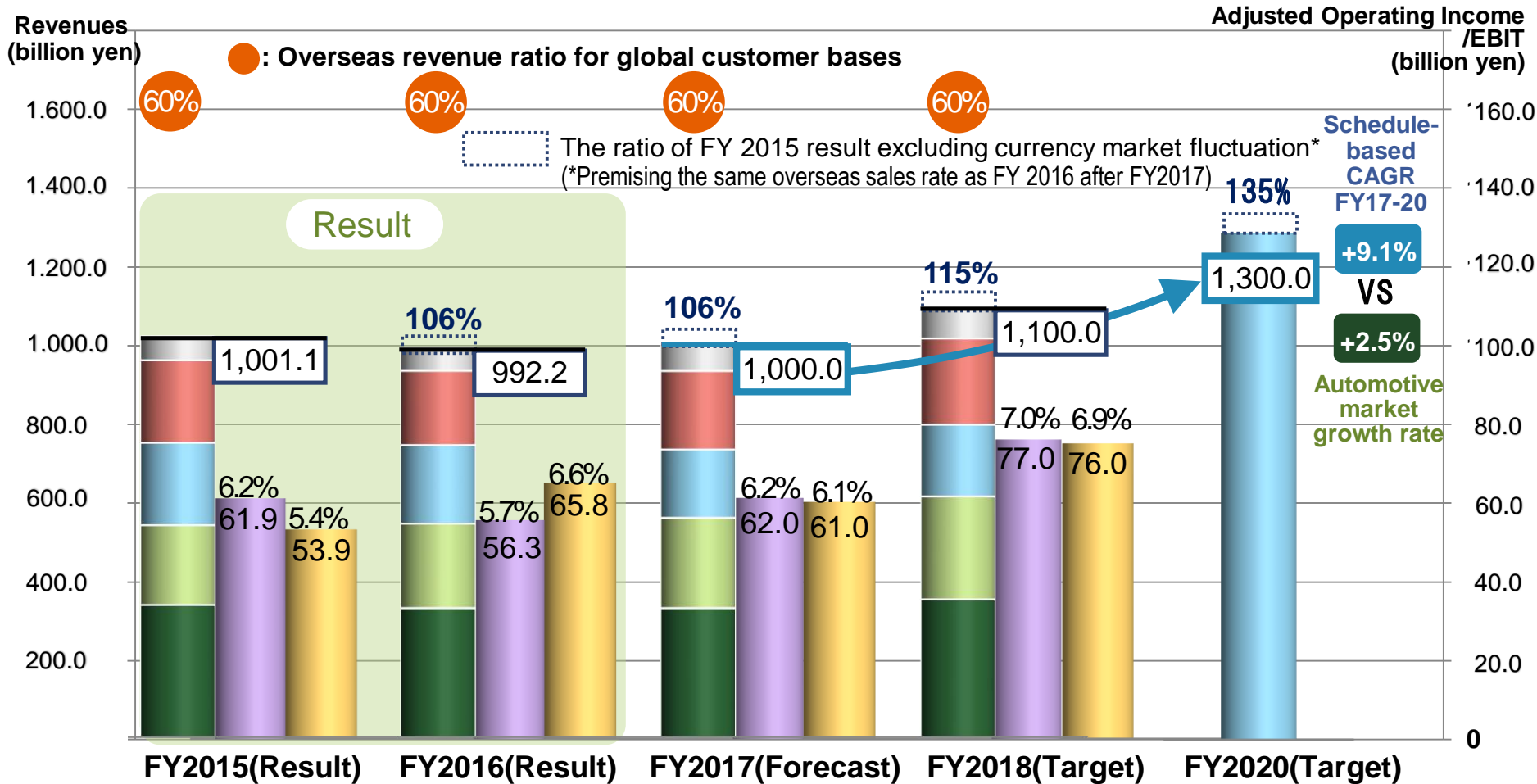


*1: Forecast as of 2016 IR Day.

*2: The rate at which overseas group companies locally procure both parts and materials that are produced locally. © Hitachi, Ltd. 2017. All rights reserved.

1-4. Business Performance Trends

Enhance the potential for growth, aiming for a growth rate that substantially exceeds the market growth rate by FY2020



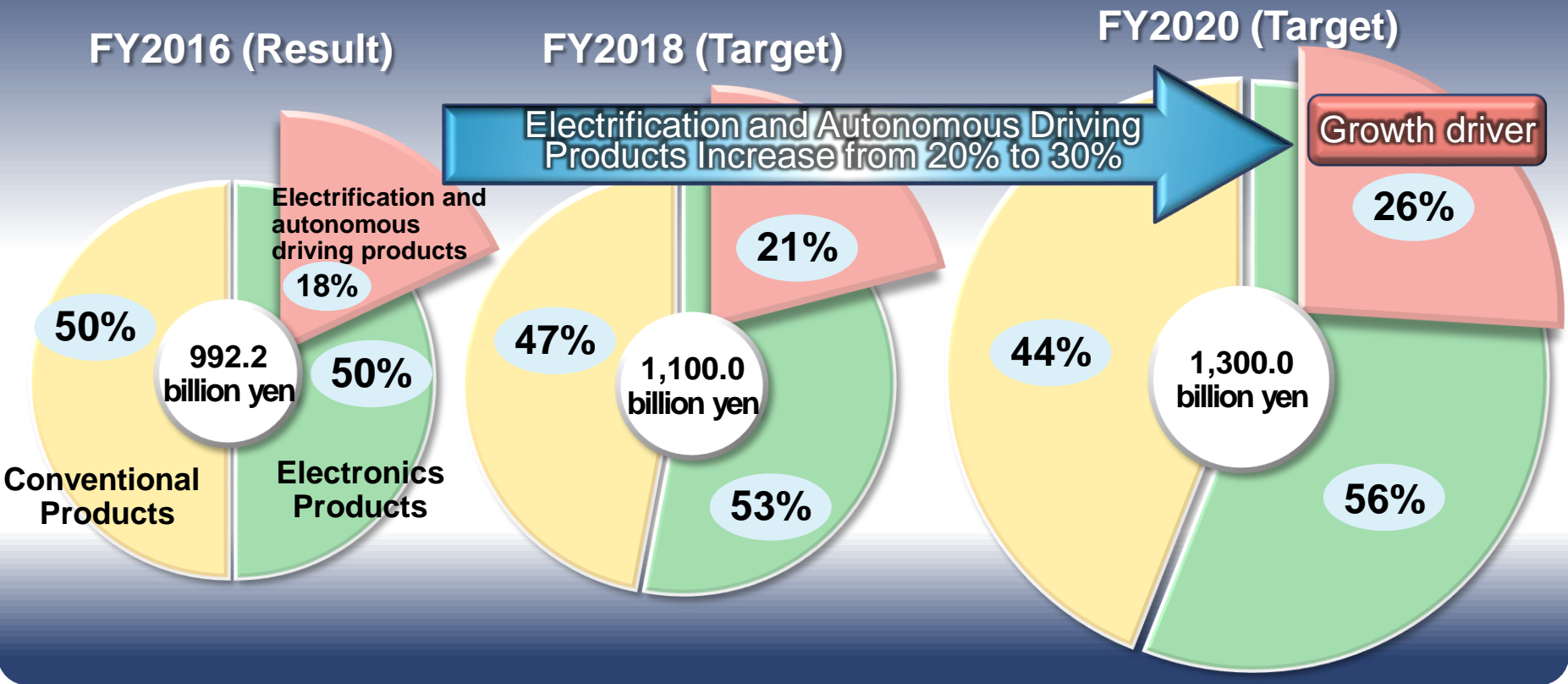
Revenues: Powertrain & Electronics Control Systems Div., Drive Control Systems Division, Engine & Chassis Div., Car Information Systems (Clarion), Aftermarket Division/Others
 Adjusted Operating Income (Ratio), EBIT (Margin)

CAGR: Compound Annual Growth Rate

1-5. Portfolio Trends

Increase the ratio of electronics products while maintaining base in conventional products

Trends for the ratio in revenues between conventional products and electronics products



Electrification and autonomous driving products are the growth drivers to driven more high earnings structure.

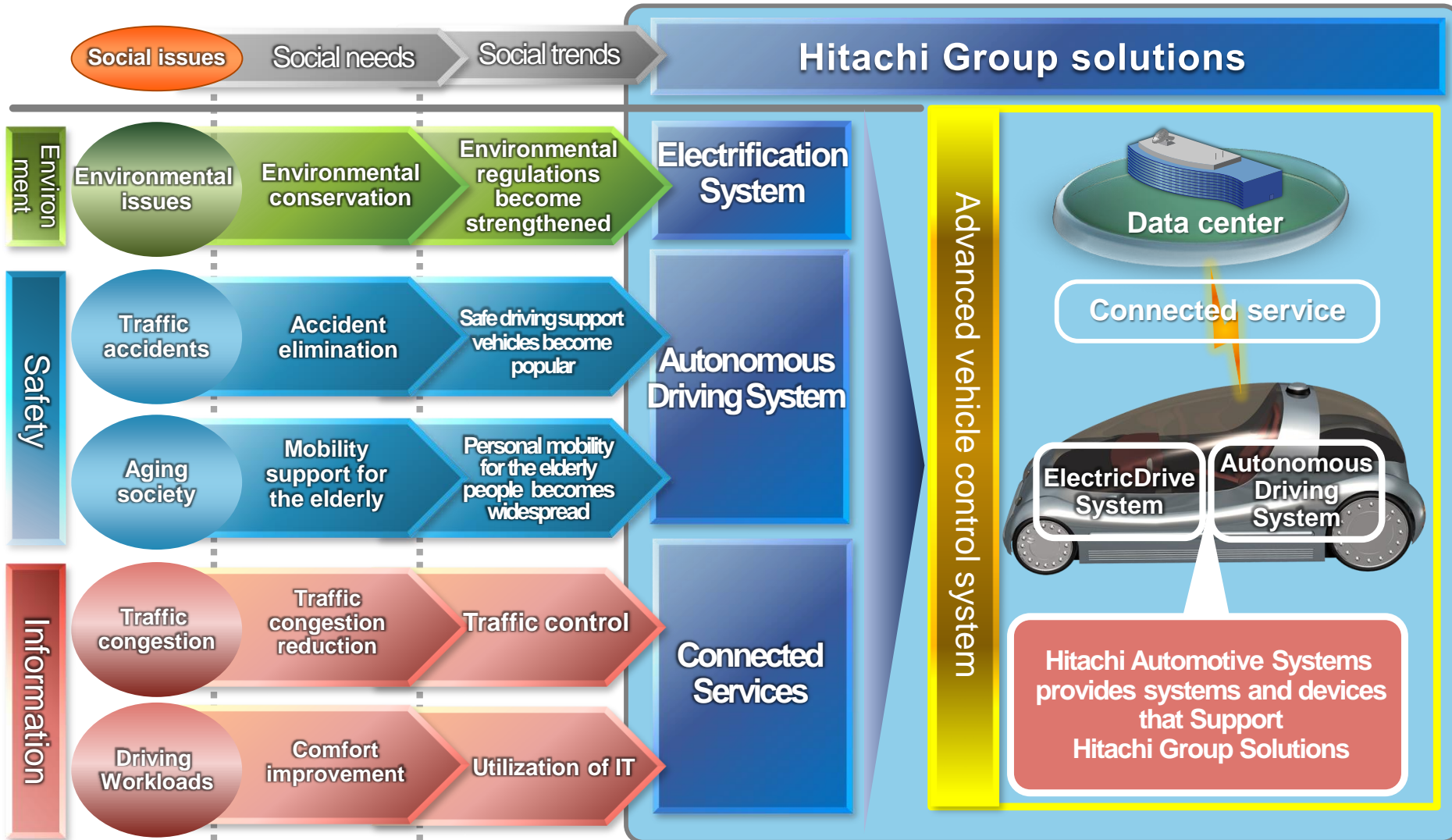
Automotive Systems Business Strategy

[Contents]

1. Business Overview
- 2. Market Trends**
3. Growth Strategy
4. Summary

2-1. Automobile Society Issues and Solutions

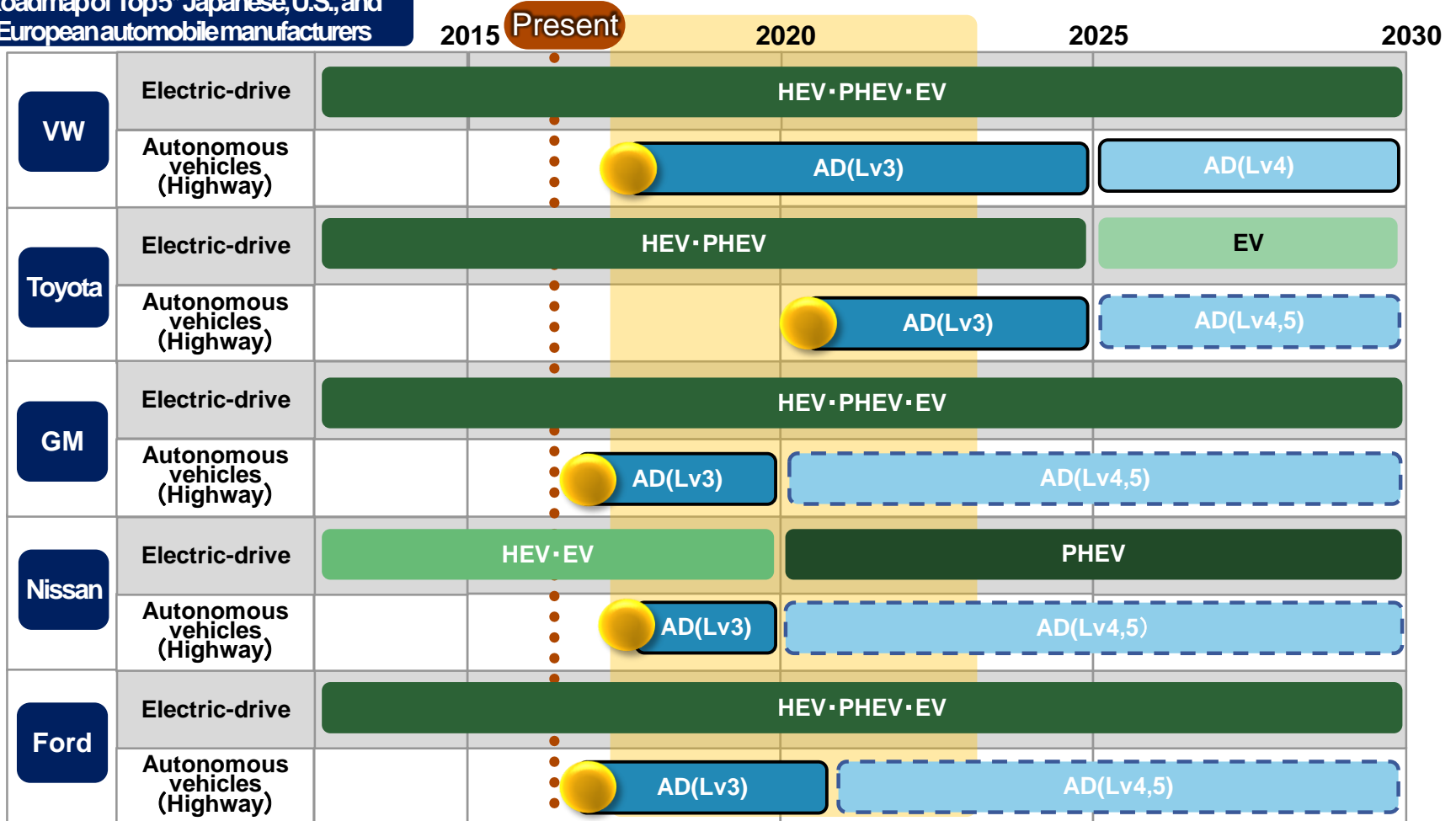
Keys to solve issues in automobile society are **Electrification, Autonomous Driving, and Connectivity.**



2-2-1. Market Trends – Roadmap of Electric-driven and Autonomous Driving Vehicles

Autonomous vehicles based on electric-drive cars will be introduced into the market continuously from around 2020

Roadmap of Top5* Japanese, U.S., and European automobile manufacturers



* Based on production volume in FY2016

Source: Arthur D. Little Japan, Inc.

Public Information released by automobile manufacturers

Source survey

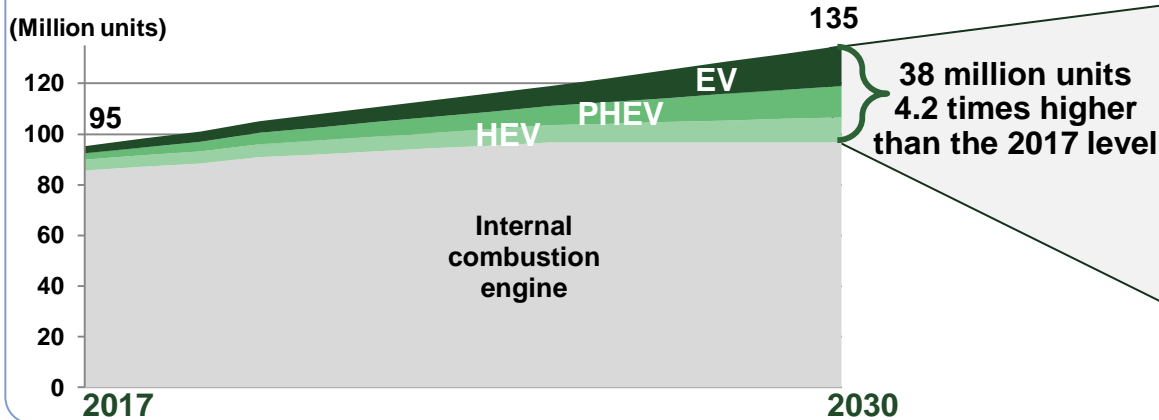
Automobile manufacturers are accelerating market introduction of electric and autonomous vehicles

2-2-2. Market Trends

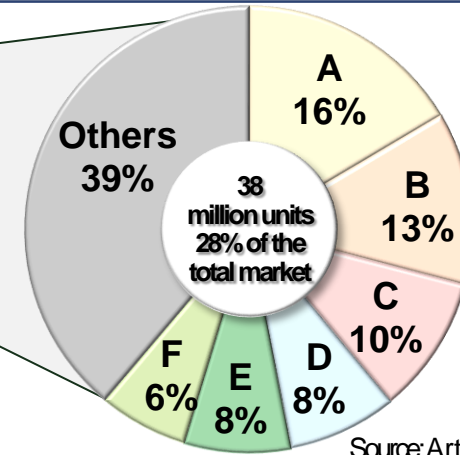
- Changes in Production of EVs

Global electric vehicle production volume will increase sharply, driven by China, the world's largest automobile market

Changes in Global Production Volume by Powertrain Type

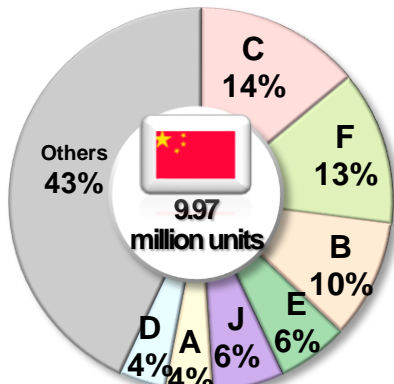


Market Shares of Electric-driven Vehicle OEMs in 2030

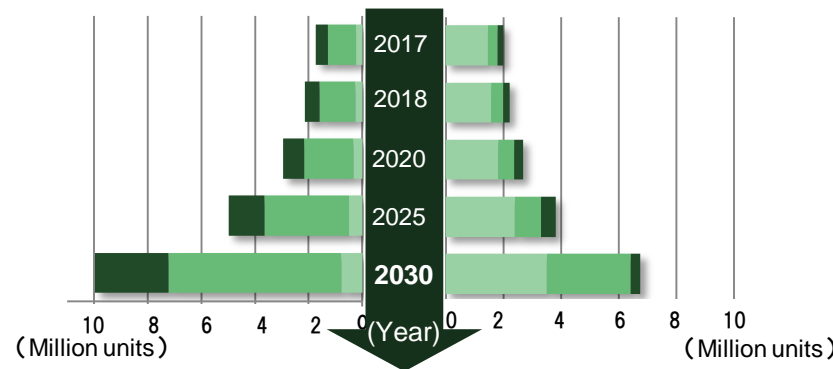


Source: Arthur D. Little Japan

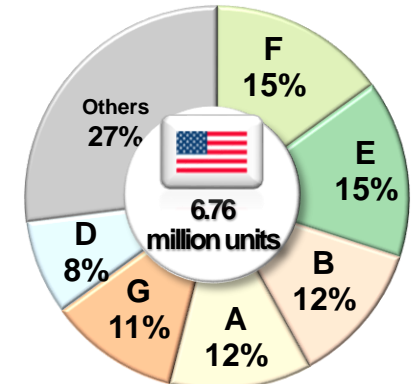
【China】Market Shares of OEMs in 2030



Electric Vehicle Production Volume Forecasts in the Two Major Markets



【US】Market Shares of OEMs in 2030



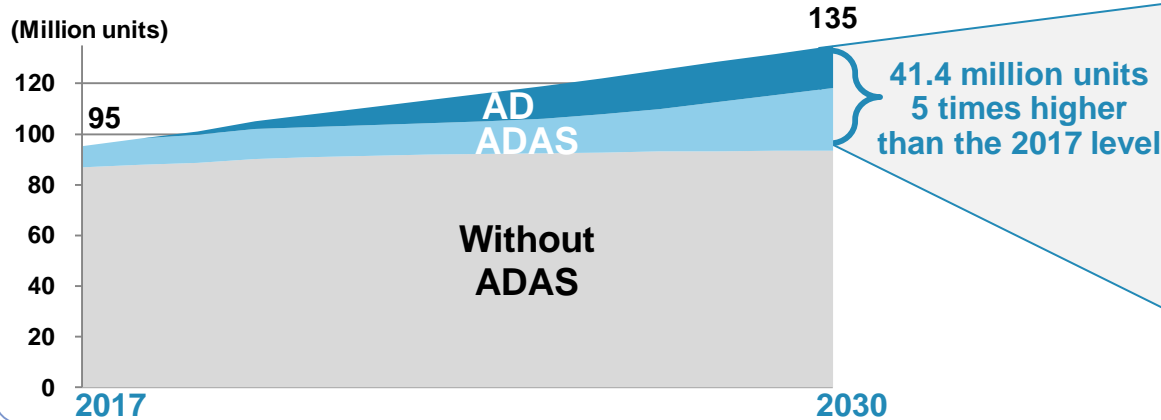
In China, EV production volume will reach around 10 million units in 2030, and in the U.S., production will be more than three times higher than the level in 2017

2-2-3. Market Trends

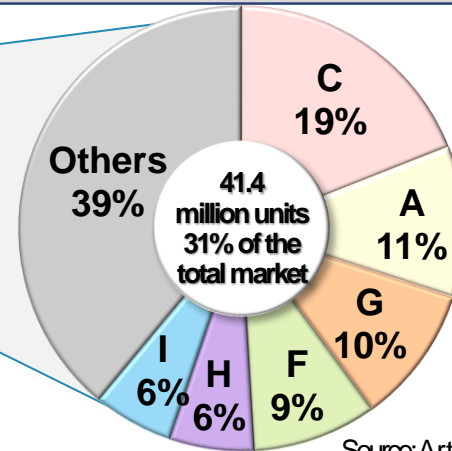
-Changes in Production of Autonomous Vehicles

Global production volume of autonomous driving vehicles will expand dramatically, especially in China and the U.S.

Changes in Global Production Volume of Autonomous Driving Vehicles

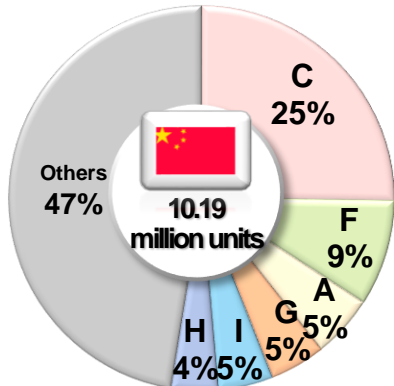


Market Shares of Autonomous Driving Vehicle OEMs in 2030

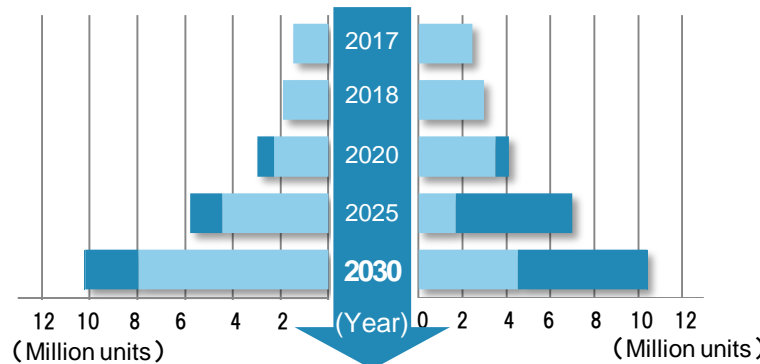


Source: Arthur D. Little Japan

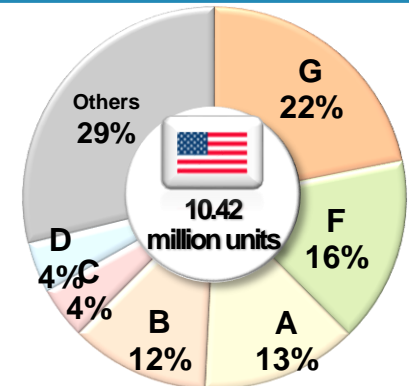
【China】Market Shares of OEMs in 2030



Autonomous Driving Vehicle Production Volume Forecasts in the Two Major Markets



【US】Market Shares of OEMs in 2030



From FY2025, production in China and the U.S. will be up to speed, and these two major markets will account for half of global production

*ADAS: Advanced Driver Assistance System

Automotive Systems Business Strategy

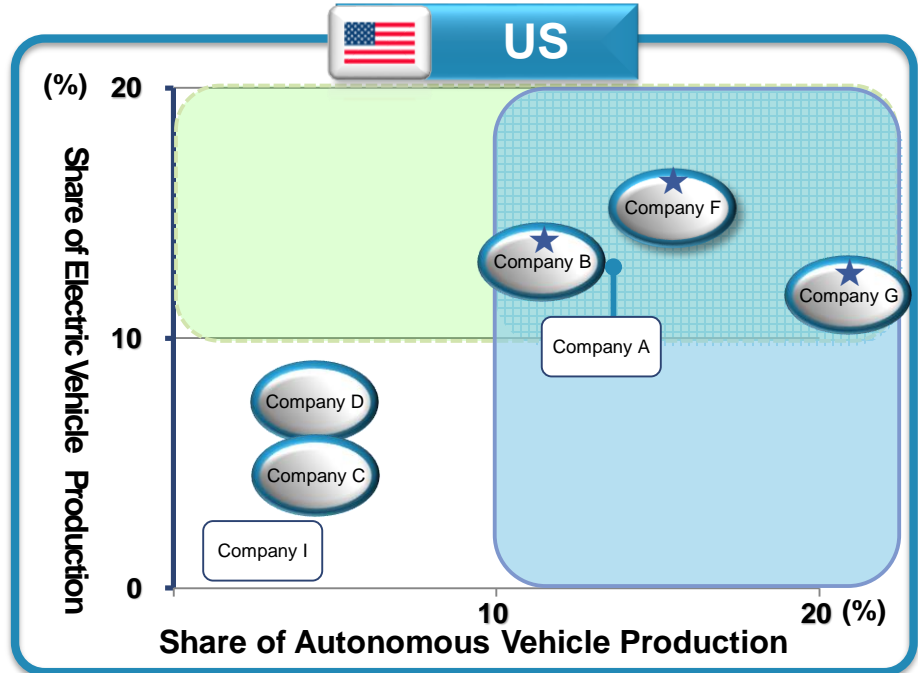
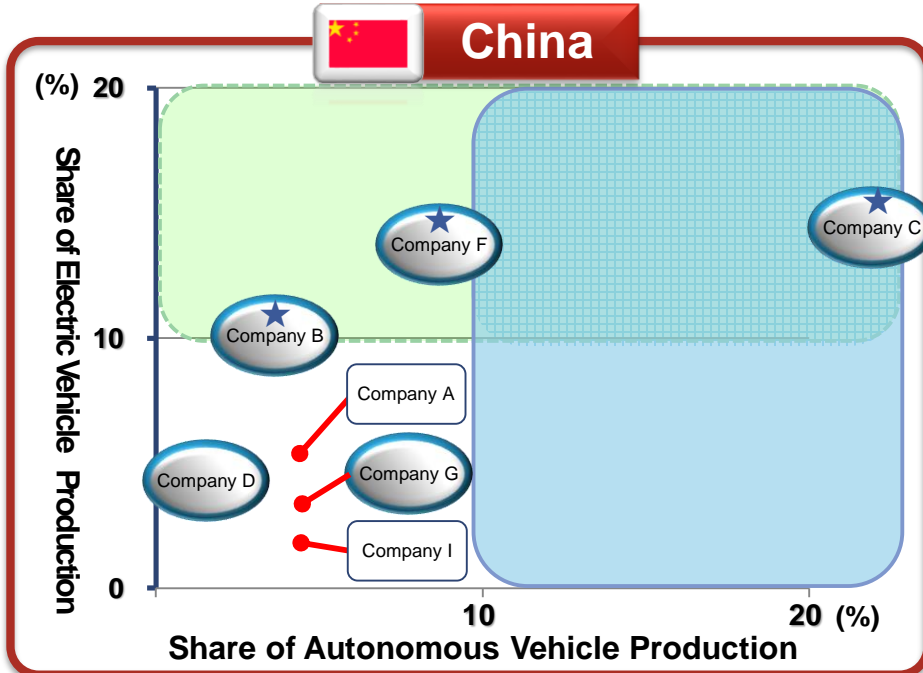
[Contents]

1. Business Overview
2. Market Trends
- 3. Growth Strategy**
4. Summary

3-1. Targets in the Two Major Markets

In the two major markets, strengthen focus on expanding sales to automakers with large market shares in electric and autonomous vehicles, and who already hold Hitachi in high regard.

Plot Diagram of Market Shares in Electric and Autonomous Vehicle Production in China and the US in 2030



- : Target of increased sales expansion efforts
- : Customers holding Hitachi Automotive Systems in high regard (automakers that are already supplied with EV/autonomous driving-related products by Hitachi Automotive Systems or that have decided to use Hitachi products)
- : Customers targeted for sales expansion of electric-drive products
- : Customers targeted for sales expansion of both electric-drive and autonomous driving products
- : Customers targeted for sales expansion of autonomous driving products (customers with production share of 10% or more)

Seek business growth by stepping up sales expansion to meet growing “megatrend” needs in the two major markets

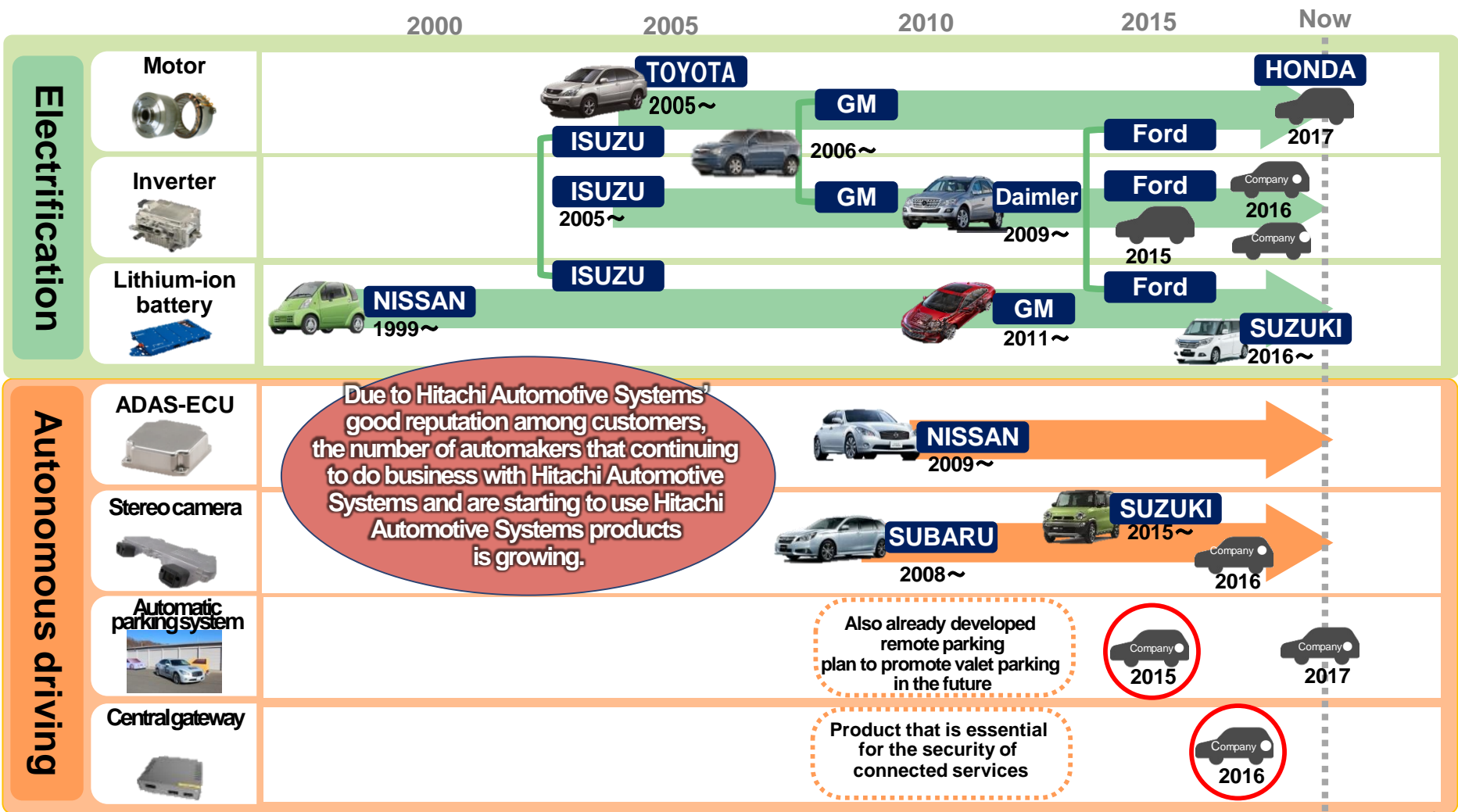
3-2. Customers Continuing to Use or Starting to Use Electric-drive and Autonomous Driving Products

Customers which continue to use or have decided to start using Hitachi Automotive Systems electrification and autonomous driving related products are increasing

*The photographs of vehicles of makers currently using Hitachi products show the models for which products were first supplied

: Timing of decision by auto maker to start using Hitachi Automotive Systems products

: Expected to start supply this fiscal year



Due to Hitachi Automotive Systems' good reputation among customers, the number of automakers that continuing to do business with Hitachi Automotive Systems and are starting to use Hitachi Automotive Systems products is growing.

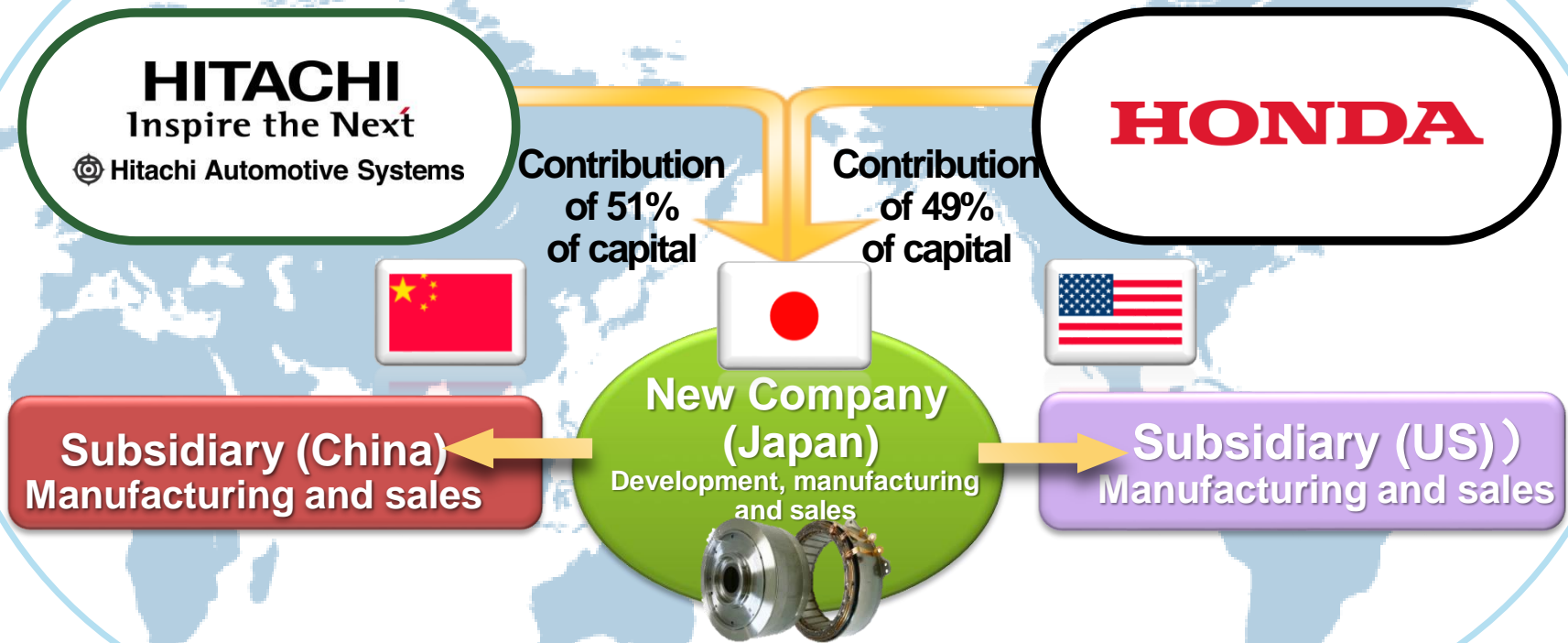
Also already developed remote parking plan to promote valet parking in the future

Product that is essential for the security of connected services

3-3. Example of Initiatives for Electric-drive Products - Motors

Collaborate with Honda Motor Co. to create synergy by combining knowledge and scale to strengthen competitive advantage and business base in the motor business

Plan to establish new company in Japan in July and then establish subsidiaries to manufacture and sell motors in China and the US



Expand sales of competitive motors to meet growing demand for electric vehicle motors from automakers around the world

3-4 Example of Initiatives for Autonomous Driving Products –Autonomous Driving ECU

Already demonstrated test driving with a prototype electronic control unit (ECU) equipped with various applications, aiming for early market introduction

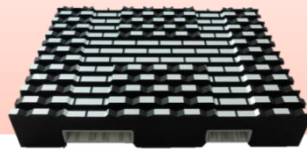
Test driving vehicle



Expressway
Level 2 (2016)
Level 3 (Planned in 2017)



Autonomous driving system fits compactly into trunk



Autonomous Driving ECU

Equipped with database capable of real-time high-speed data processing required for autonomous driving

Demonstrated Test Driving on Hitachi Automotive Systems' Test Course



Examples of applications demonstrated using prototype ECU for mass production vehicles

Low speed car passing

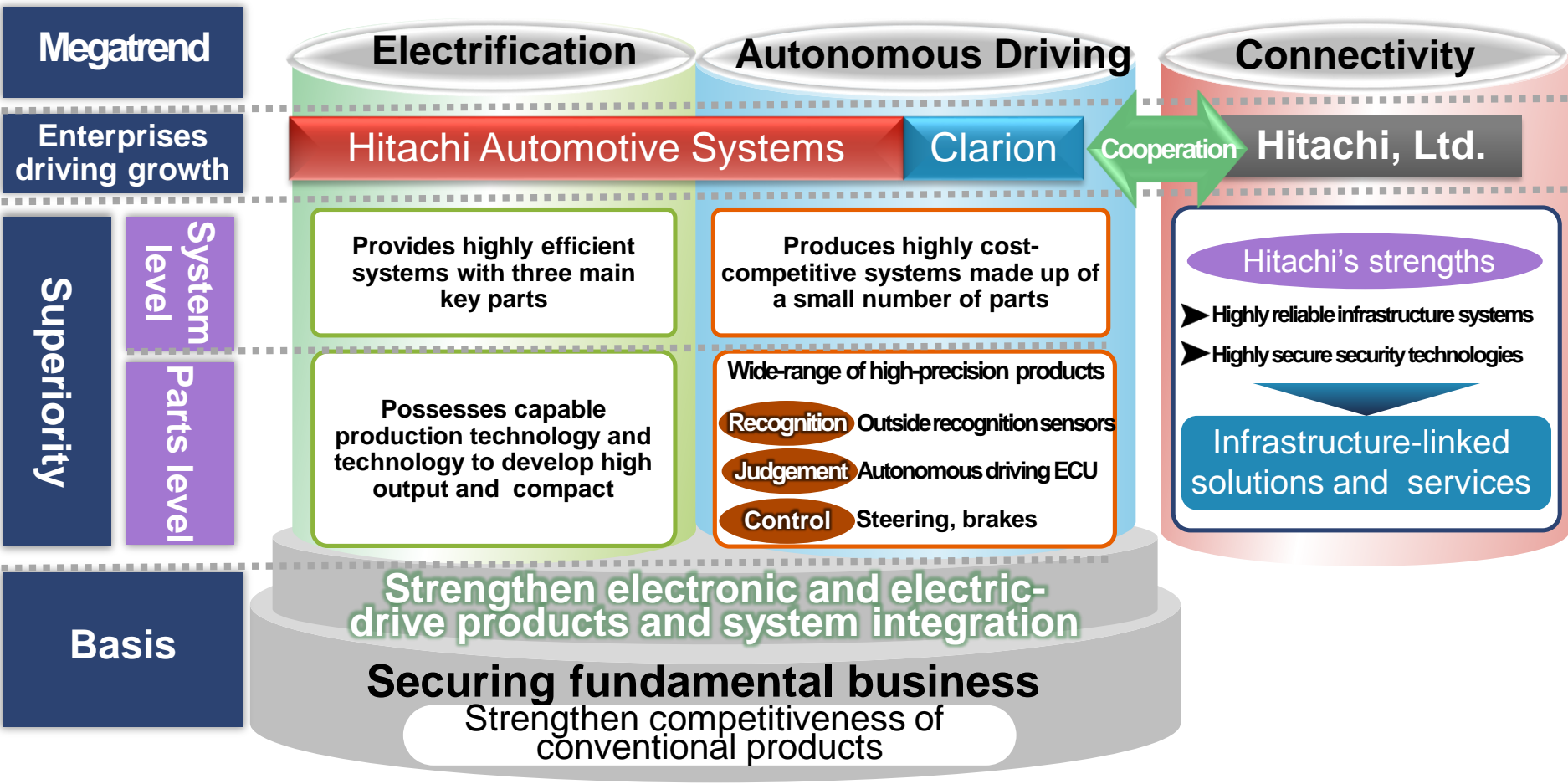
Auto lane changing

Traffic jam assist

Strengthen cooperative development with customers through repeated demonstrations using Hitachi Automotive Systems' test course

3-5-1. Technologies for Megatrends – Superiority

Securing fundamental business and use system integration of electronic products as basis for increasing edge in technologies for megatrends in cooperation with Hitachi Group companies



Expand business by maintaining an edge at both a parts level and a system level

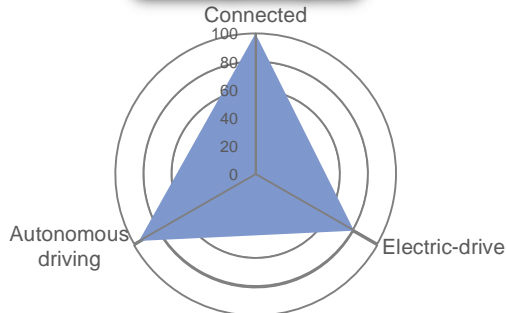
3-5-2. Technologies for Megatrends -Benchmarking

Comparison with global mega-suppliers shows that Hitachi has the all-round ability required to respond to megatrends

Determination of all-round ability based on average score when ability to respond to three megatrends was rated out of 100

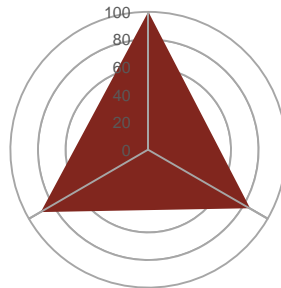
Source: Arthur D. Little Japan

Company A



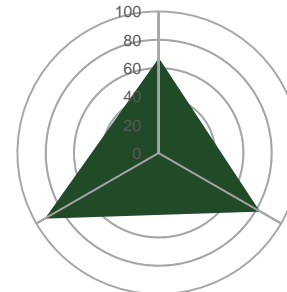
Overall Score 92

Hitachi



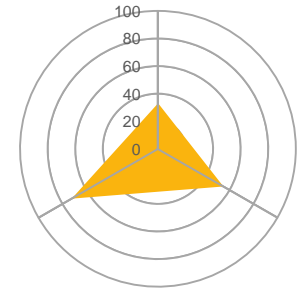
91

Company B



81

Company C



53

Main Assessment Criteria	Connectivity		
	Availability of parts	Infrastructure linkage	Data center linkage
	Electrification		
	Availability of parts	Eco performance	Compactness
	Autonomous driving		
	Availability of parts	Proposal ability	Availability of AD-ECU
	Timing of market introduction of AD-ECU	AD-ECU demonstration/testing	AD-ECU multi-function SW compatibility

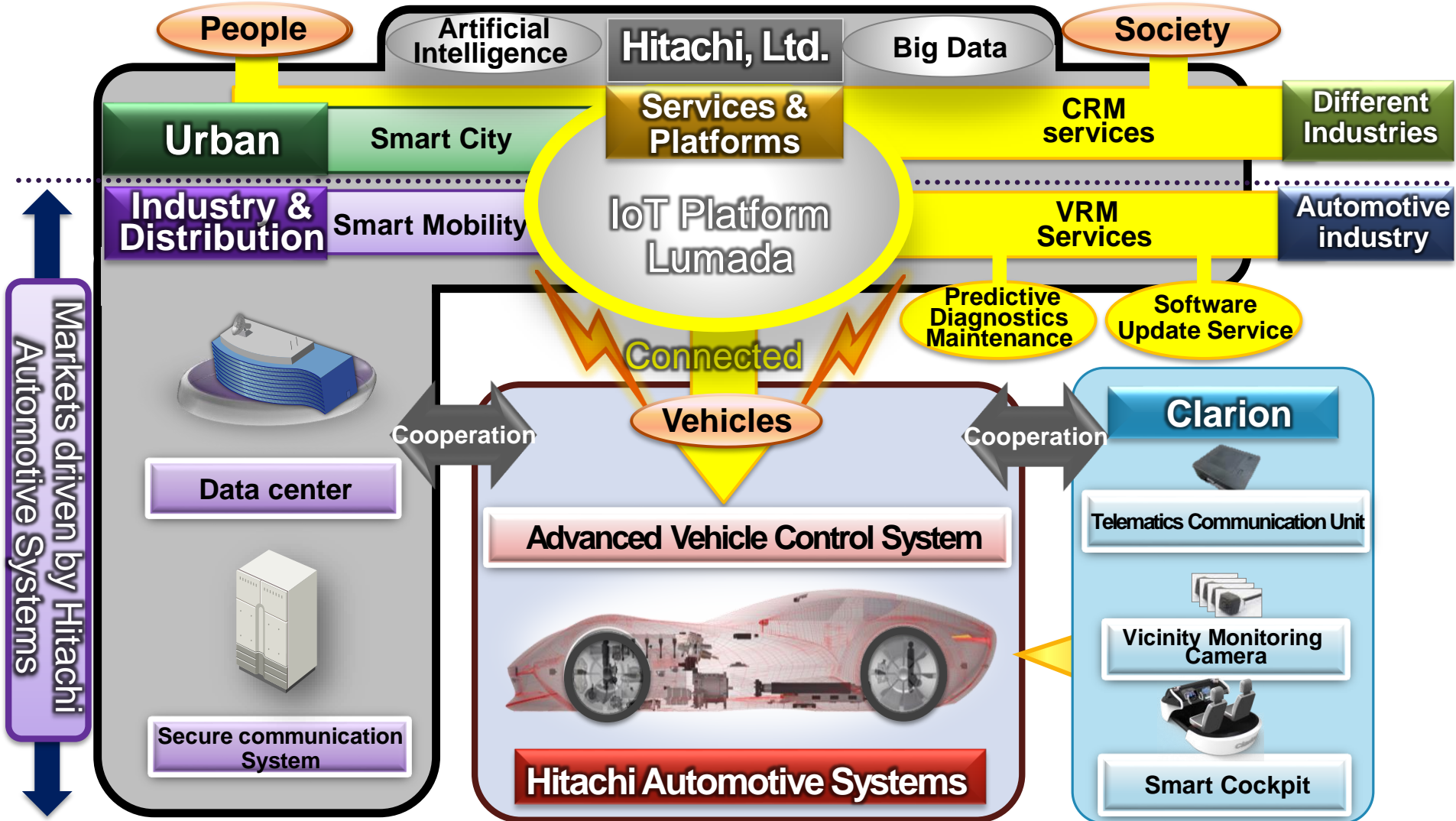
	Company A	Hitachi	Company B	Company C
Connectivity	100	100	67	33
Electrification	81	85	83	55
Autonomous driving	96	90	93	72

Aim to become a major global player in the megatrends of the future

*SW: Software

3-6. Collaborative Solutions Provided by Hitachi Group

The Hitachi Group companies have the linkages to connect people, vehicles and society



3-7. Business Targeting in Response to Megatrends

Significantly expand business in areas capitalizing on the electrification and autonomous driving megatrends by strengthening relationships with customers and offering one-stop-shop services

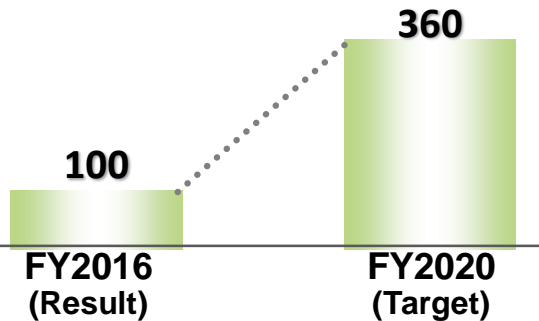
Systems and Products Business Targets (FY2016 Revenues =100)

Electrification Systems/Products

Main Products



Aim for over three times
FY2016 level in 2020

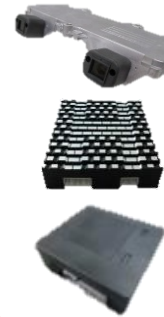


Measures

Significantly increase revenues by expanding sales to customers in China, the world's largest automobile market, through collaboration and joint development with customers

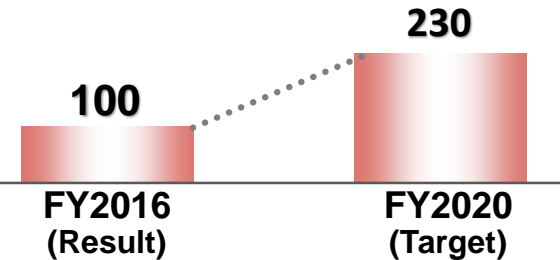
Autonomous Driving Systems/Products*

Main Products



*Excluding control system products

Aim for two times FY2016 level
in 2020



Measures

Expand revenues by strengthening autonomous driving system proposals through one-stop-shop services by the Safety & Information Systems Division

Expand business in EV and autonomous driving system markets worldwide

3-8. Example of Expansion of Sales to Customers -GM

Double revenues (from FY2016 ▶ FY2020) by expanding sales to GM through product-based and region-based measures

Customer Rating

Received “Supplier Quality Excellence” Award for the fifth consecutive year this year in recognition of the quality of our products

Examples of electric-drive products previously supplied



Saturn Vue



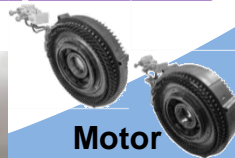
Chevrolet Bolt



Buick LaCrosse



Chevrolet Malibu



Motor



Inverter



Battery

Double

Measures to increase revenues

Product-based

- Expand orders received in electric-drive business (motors, inverters, batteries)
- New opportunities for autonomous driving business (outside recognition sensors, control units, etc.)

Region-based



Significantly expand revenues in China

Revenues

FY2016

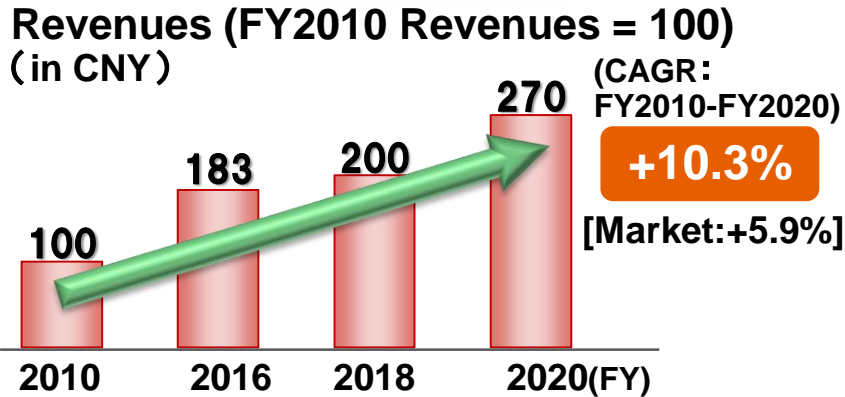
FY2020

Expand revenues through ability to make proposals that meet customer needs, leveraging ability to respond to technological trends

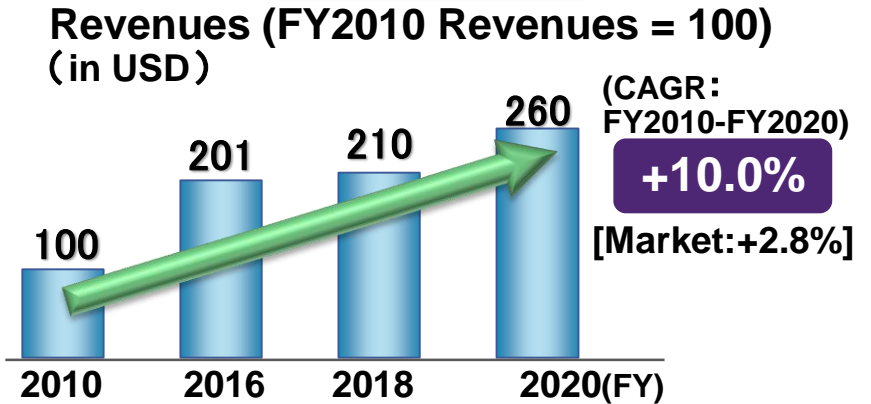
3-9. Improvement of Performance in Two Major Markets **HITACHI** Inspire the Next

Ensure growth rates that are significantly higher than the market growth rates of the world's two largest markets

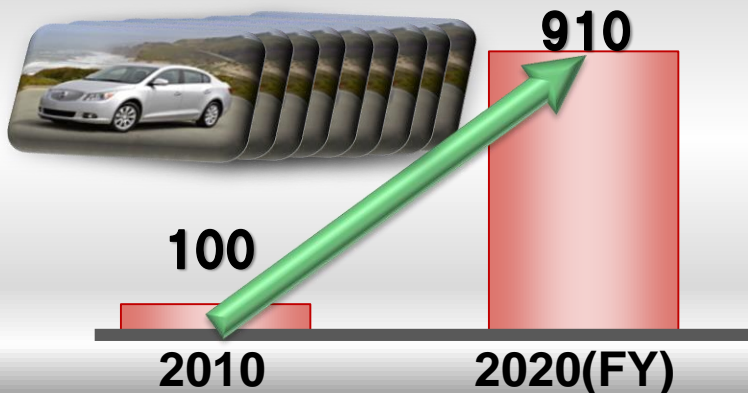
China



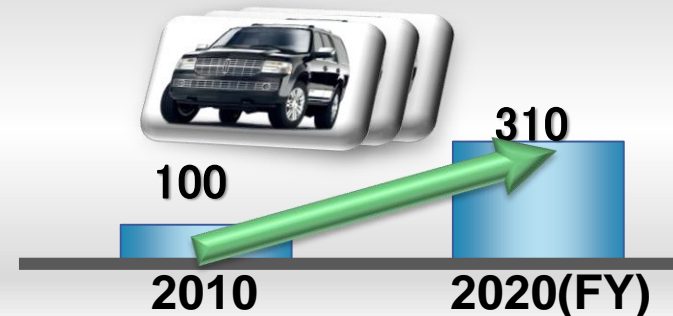
Americas



Increase revenue from GM in China to nine times FY2010 level



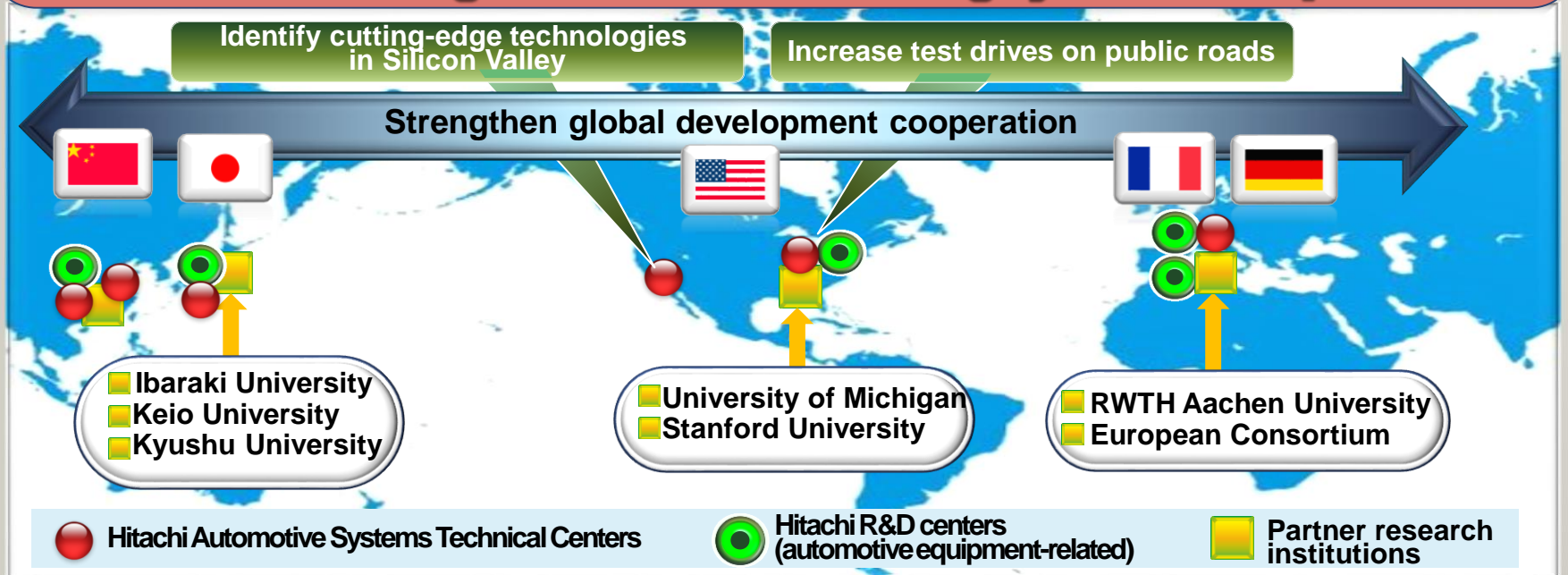
Increase revenue from Ford in Americas to three times FY2010 level



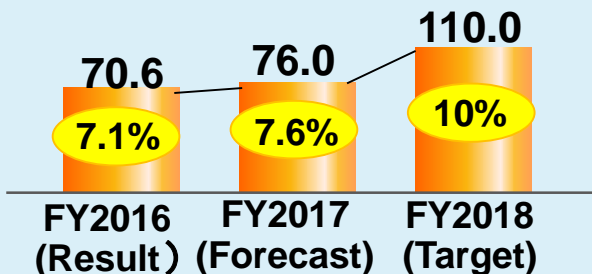
3-10 Measures to Strengthen Global R&D

Utilize Hitachi Group's R&D assets and open innovation on a global scale

Establish development centers with North American centers as hub to strengthen autonomous driving system development



Changes in R&D Expenditure(Billion yen)



Strengthen software development capability

Establish Software Design Division in Safety and Information Systems Division

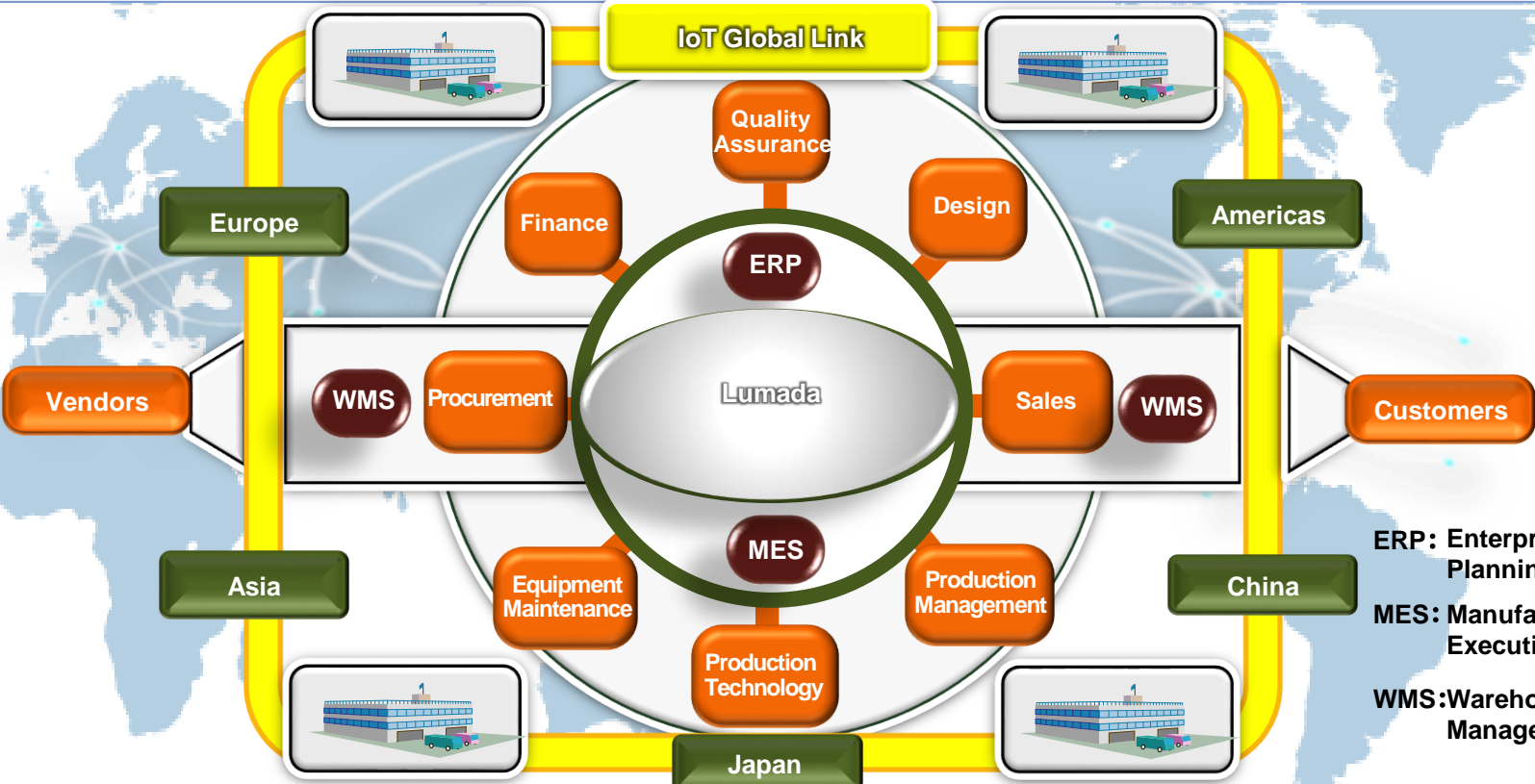
▶ Expand safety and information systems business to meet sophisticated development needs(from April 2017)

Increase simulation-based development

▶ Increase software development efficiency by 30% in FY2017 (from FY2014)

3-11. Manufacturing Innovation by Utilizing IoT

Utilize the IoT platform Lumada to promote manufacturing innovation through the establishment of digital production lines in five key regions.



<ul style="list-style-type: none"> ● Quality trend analysis ● Equipment maintenance management ● Optimum production schedule 	<ul style="list-style-type: none"> ● Prevention of mega recalls ● Predictive maintenance ● Improvement of production efficiency 	<p>Improvement of asset efficiency</p>
---	--	---

Improve asset efficiency by expanding the introduction of manufacturing execution systems to more than 900 manufacturing lines in 2017

Execute growth strategy through structural reform and continuous innovation

Promotion Details

Cost structure reform

- Strengthen manufacturing and quality assurance capabilities through utilization of IoT
Use Big Data to increase production efficiency, carry out predictive maintenance and ensure quality traceability
- Strengthen investment management and improve asset efficiency
Strengthen deliberation of investment by business divisions and regional headquarters to improve asset efficiency

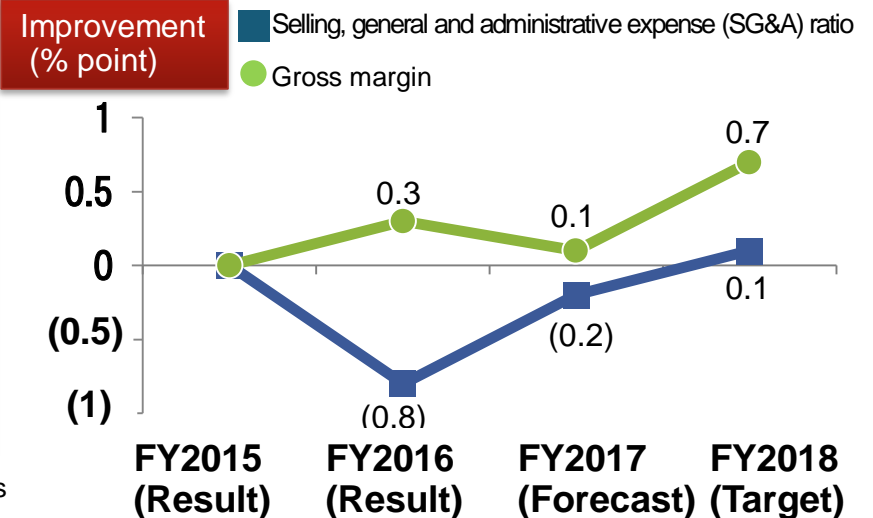
Cash generation

- Expand proposals of products and systems in response to megatrends
Strengthen structure for development of EV and autonomous driving products and systems and expand cooperative development with customers
- Strengthen cooperation among Hitachi Group companies
Build up services business by utilizing Lumada

Improvement of CCC, Operating CF and ROA

	FY2015 (Result)	FY2016 (Result)	FY2017 (Forecast)	FY2018 (Target)
CCC	42.1 days	40.5 days	40.7 days	40.6 days
Operating CF	89.4 billion yen	75.5 billion yen	88.0 billion yen	105.0 billion yen
ROA	4.9%	6.2%	4.7%	5.3%

Improvement in gross margin and SG&A ratio



CCC: Cash Conversion Cycle, Operating CF: Cash flow from operating activities
ROA: Return on Assets

Automotive Systems Business Strategy

[Contents]

1. Business Overview
2. Market Trends
3. Growth Strategy
4. Summary

FY2018 Targets and Growth Beyond FY2018

FY2018 Targets

- Revenues: 1.1 trillion yen (Increase of 10% from FY2015)
- Adjusted Operating Income Margin[EBIT Margin]:7.0%[6.9%]
(Improvement of 0.8% [1.5%] from FY2015)
- ROA: 5.3% (Improvement of 0.4% from FY2015)
- Operating CF[Ratio]:105.0 billion yen[9.5%]
(Increase of 15.6 billion yen (0.6%) from FY2015)

FY2020 Targets

Enhance the potential growth aiming for growth rate of 9.1%, significantly higher than market growth rate of 2.5%.
Revenues of 1.3 trillion yen

Cautionary Statement

Certain statements found in this document may constitute “forward-looking statements” as defined in the U.S. Private Securities Litigation Reform Act of 1995. Such “forward-looking statements” reflect management’s current views with respect to certain future events and financial performance and include any statement that does not directly relate to any historical or current fact. Words such as “anticipate,” “believe,” “expect,” “estimate,” “forecast,” “intend,” “plan,” “project” and similar expressions which indicate future events and trends may identify “forward-looking statements.” Such statements are based on currently available information and are subject to various risks and uncertainties that could cause actual results to differ materially from those projected or implied in the “forward-looking statements” and from historical trends. Certain “forward-looking statements” are based upon current assumptions of future events which may not prove to be accurate. Undue reliance should not be placed on “forward-looking statements,” as such statements speak only as of the date of this document.

Factors that could cause actual results to differ materially from those projected or implied in any “forward-looking statement” and from historical trends include, but are not limited to:

- economic conditions, including consumer spending and plant and equipment investment in Hitachi’s major markets, particularly Japan, Asia, the United States and Europe, as well as levels of demand in the major industrial sectors Hitachi serves;
- exchange rate fluctuations of the yen against other currencies in which Hitachi makes significant sales or in which Hitachi’s assets and liabilities are denominated, particularly against the U.S. dollar and the euro;
- uncertainty as to Hitachi’s ability to access, or access on favorable terms, liquidity or long-term financing;
- uncertainty as to general market price levels for equity securities, declines in which may require Hitachi to write down equity securities that it holds;
- fluctuations in the price of raw materials including, without limitation, petroleum and other materials, such as copper, steel, aluminum, synthetic resins, rare metals and rare-earth minerals, or shortages of materials, parts and components;
- the possibility of cost fluctuations during the lifetime of, or cancellation of, long-term contracts for which Hitachi uses the percentage-of-completion method to recognize revenue from sales;
- credit conditions of Hitachi’s customers and suppliers;
- fluctuations in product demand and industry capacity;
- uncertainty as to Hitachi’s ability to implement measures to reduce the potential negative impact of fluctuations in product demand, exchange rates and/or price of raw materials or shortages of materials, parts and components;
- uncertainty as to Hitachi’s ability to continue to develop and market products that incorporate new technologies on a timely and cost-effective basis and to achieve market acceptance for such products;
- increased commoditization of and intensifying price competition for products;
- uncertainty as to Hitachi’s ability to achieve the anticipated benefits of its strategy to strengthen its Social Innovation Business;
- uncertainty as to the success of acquisitions of other companies, joint ventures and strategic alliances and the possibility of incurring related expenses;
- uncertainty as to the success of restructuring efforts to improve management efficiency by divesting or otherwise exiting underperforming businesses and to strengthen competitiveness;
- the potential for significant losses on Hitachi’s investments in equity-method associates and joint ventures;
- general socioeconomic and political conditions and the regulatory and trade environment of countries where Hitachi conducts business, particularly Japan, Asia, the United States and Europe, including, without limitation, direct or indirect restrictions by other nations on imports and differences in commercial and business customs including, without limitation, contract terms and conditions and labor relations;
- uncertainty as to the success of cost structure overhaul;
- uncertainty as to Hitachi’s ability to attract and retain skilled personnel;
- uncertainty as to Hitachi’s access to, or ability to protect, certain intellectual property rights;
- uncertainty as to the outcome of litigation, regulatory investigations and other legal proceedings of which the Company, its subsidiaries or its equity-method associates and joint ventures have become or may become parties;
- the possibility of incurring expenses resulting from any defects in products or services of Hitachi;
- the possibility of disruption of Hitachi’s operations by natural disasters such as earthquakes and tsunamis, the spread of infectious diseases, and geopolitical and social instability such as terrorism and conflict;
- uncertainty as to Hitachi’s ability to maintain the integrity of its information systems, as well as Hitachi’s ability to protect its confidential information or that of its customers; and
- uncertainty as to the accuracy of key assumptions Hitachi uses to evaluate its employee benefit-related costs.

The factors listed above are not all-inclusive and are in addition to other factors contained in other materials published by Hitachi.

HITACHI
Inspire the Next