

Automotive Systems Business Strategy

Hitachi IR Day 2012

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President & CEO

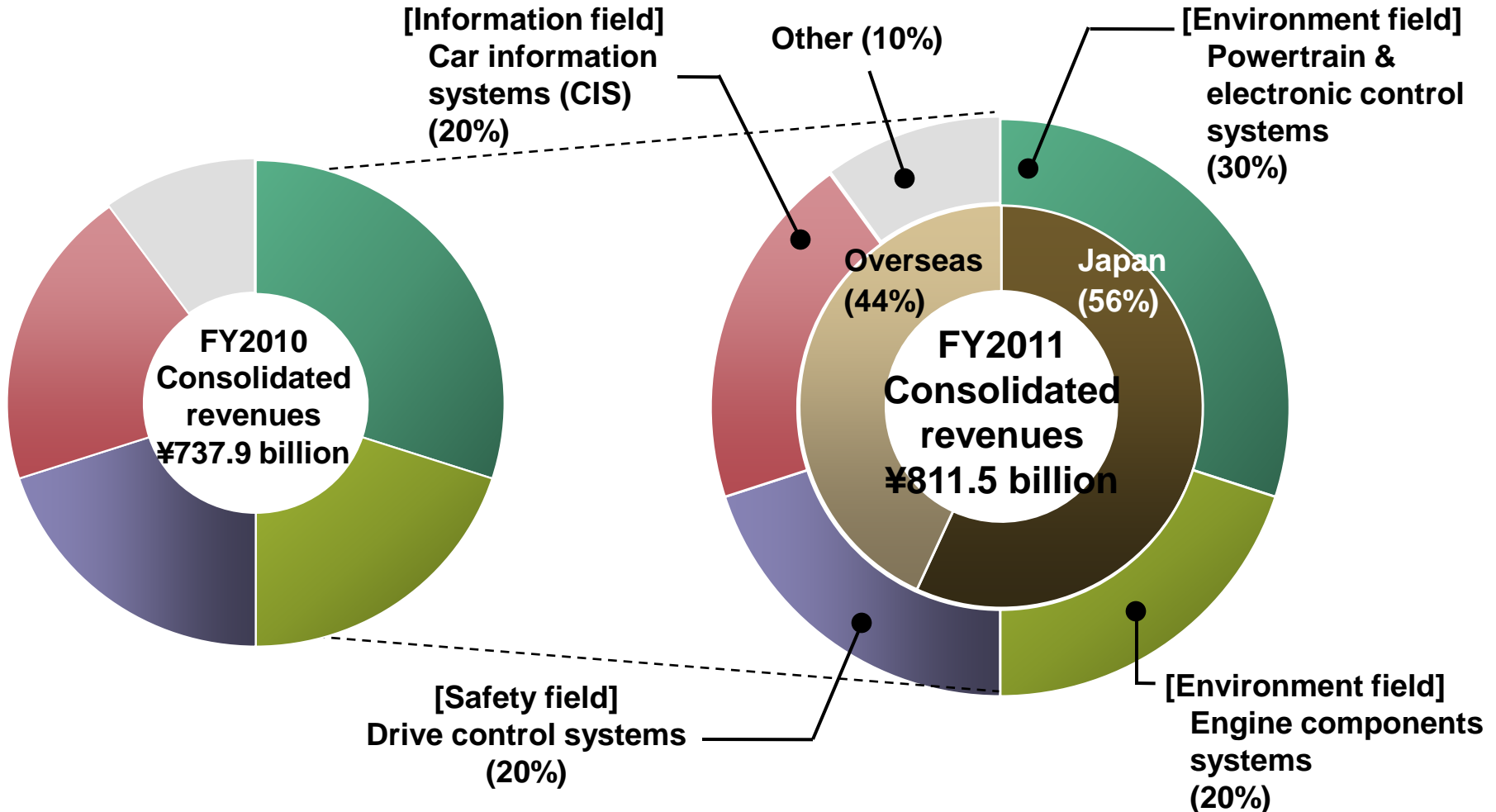
Hitachi Automotive Systems, Ltd.

Automotive Systems Business Strategy

Contents

- 1. Business Overview**
2. Market trends
3. Business Targets
4. Growth strategy
5. Conclusion

**Harness cutting-edge technologies in the environment, safety and information fields
Strengthen the global business foundation further**



Environment field

<Electromechanical>

- Hybrid systems



• Motors



• Inverters

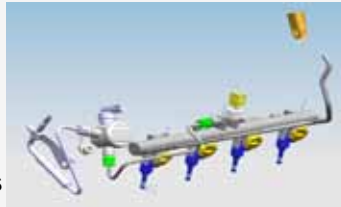


• Battery Modules



• Battery Cells

- Lithium-ion batteries (Hitachi Vehicle Energy)



- Engine management systems

<Fuel economy improvement>



- Variable valve systems



- Engine components

<Driving support>



• Stereo camera



• Power steering systems



• Suspension systems



• Electrically-driven intelligent brake

<Comfort and convenience>



- ICT* solution services for electric vehicles (EV)



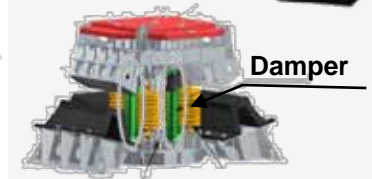
• Smartphone controller (Clarion)



- Car Navigation Systems (Clarion)

Cloud-based telematics

- EV rechargers (TOKICO TECHNOLOGY)



Damper

- Vibration-proof damper for construction*

Safety field

Information field

Other

*ICT: Information and Communication Technology

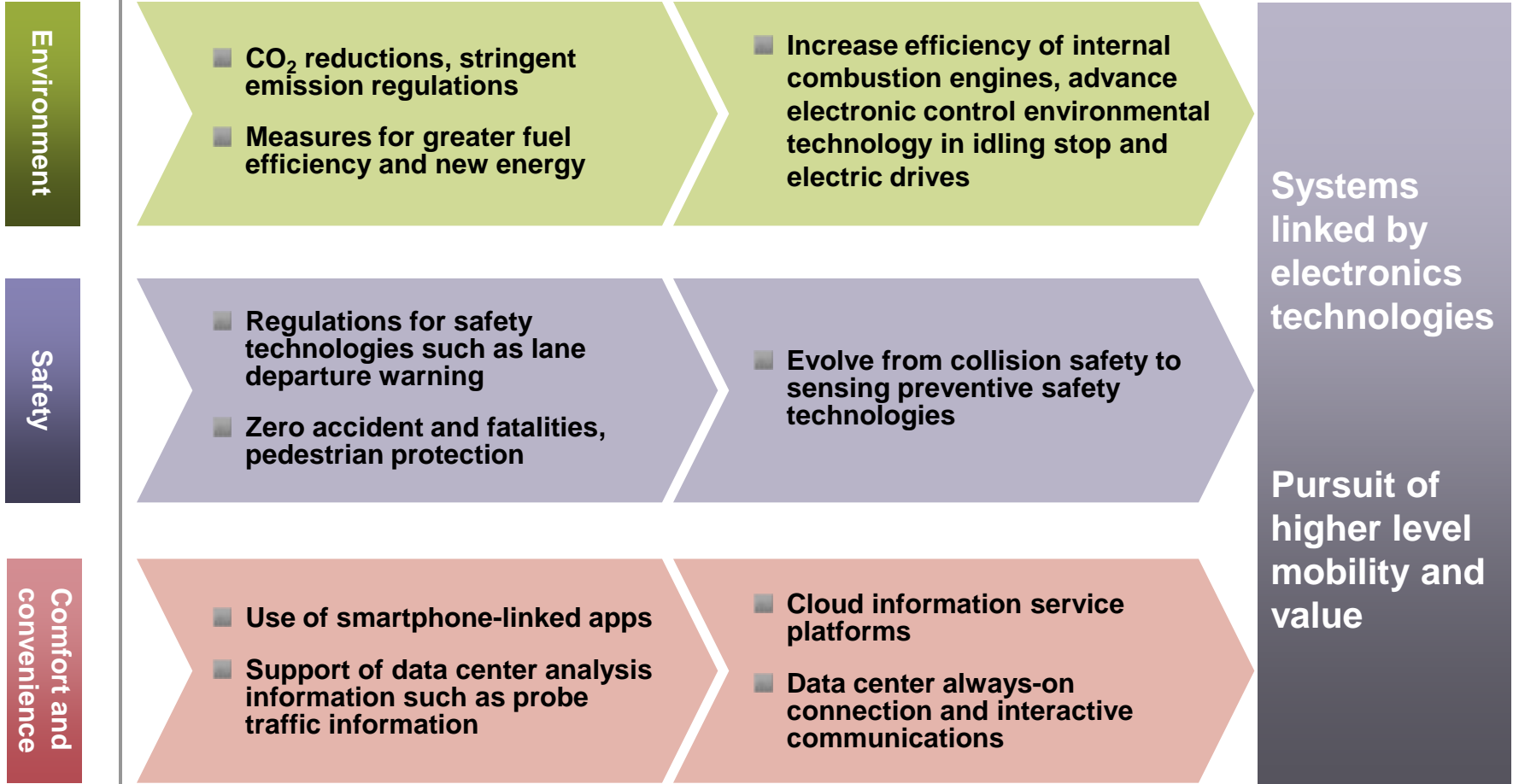
Delivered to MITSUBISHI HEAVY INDUSTRIES BRIDGE & STEEL STRUCTURES ENGINEERING used for vibration-proofing the TOKYO SKY TREE gain tower

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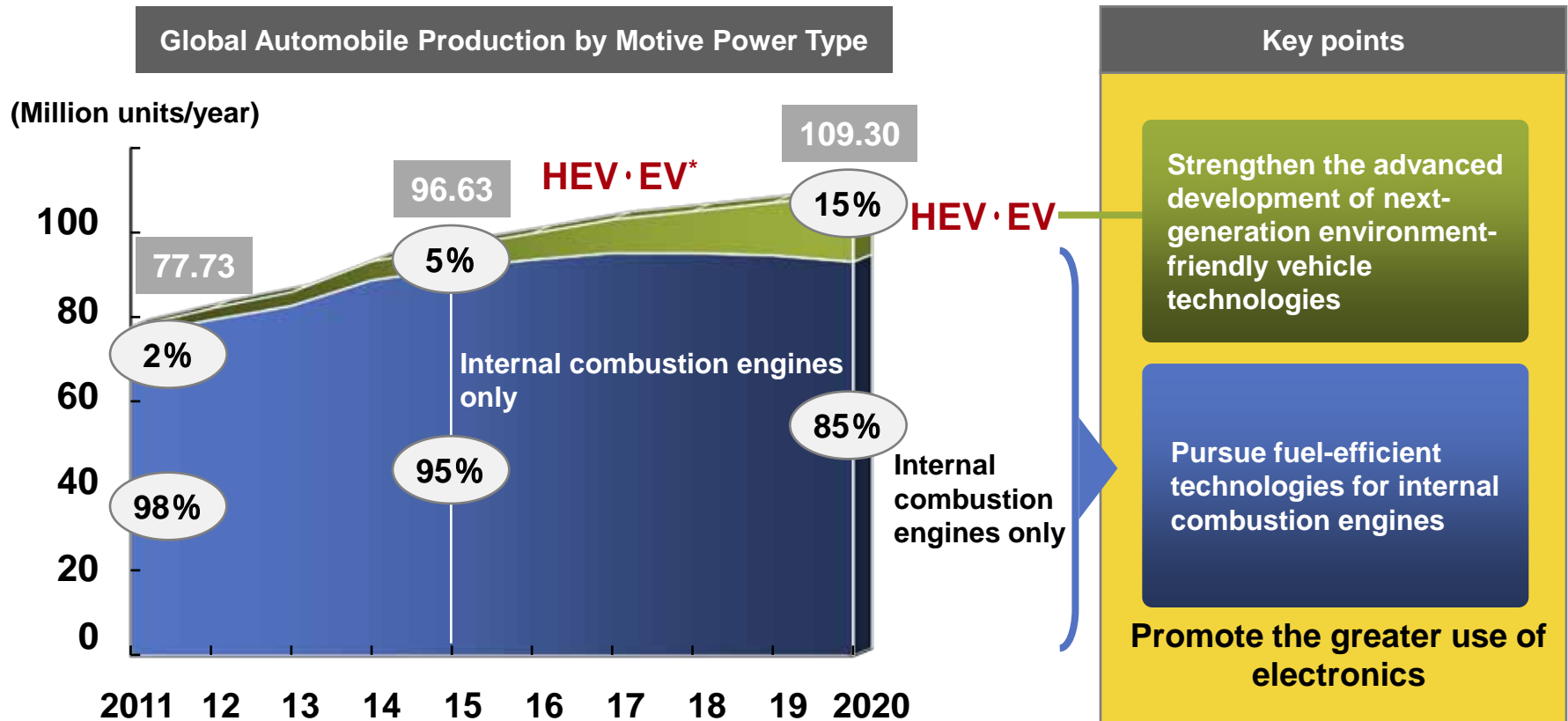
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	Needs and regulations	Technology requirements
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2-2 Global Auto Production Trends (1)

Compete with electronic control and electric drive technologies for both electric drive vehicles and internal combustion vehicles

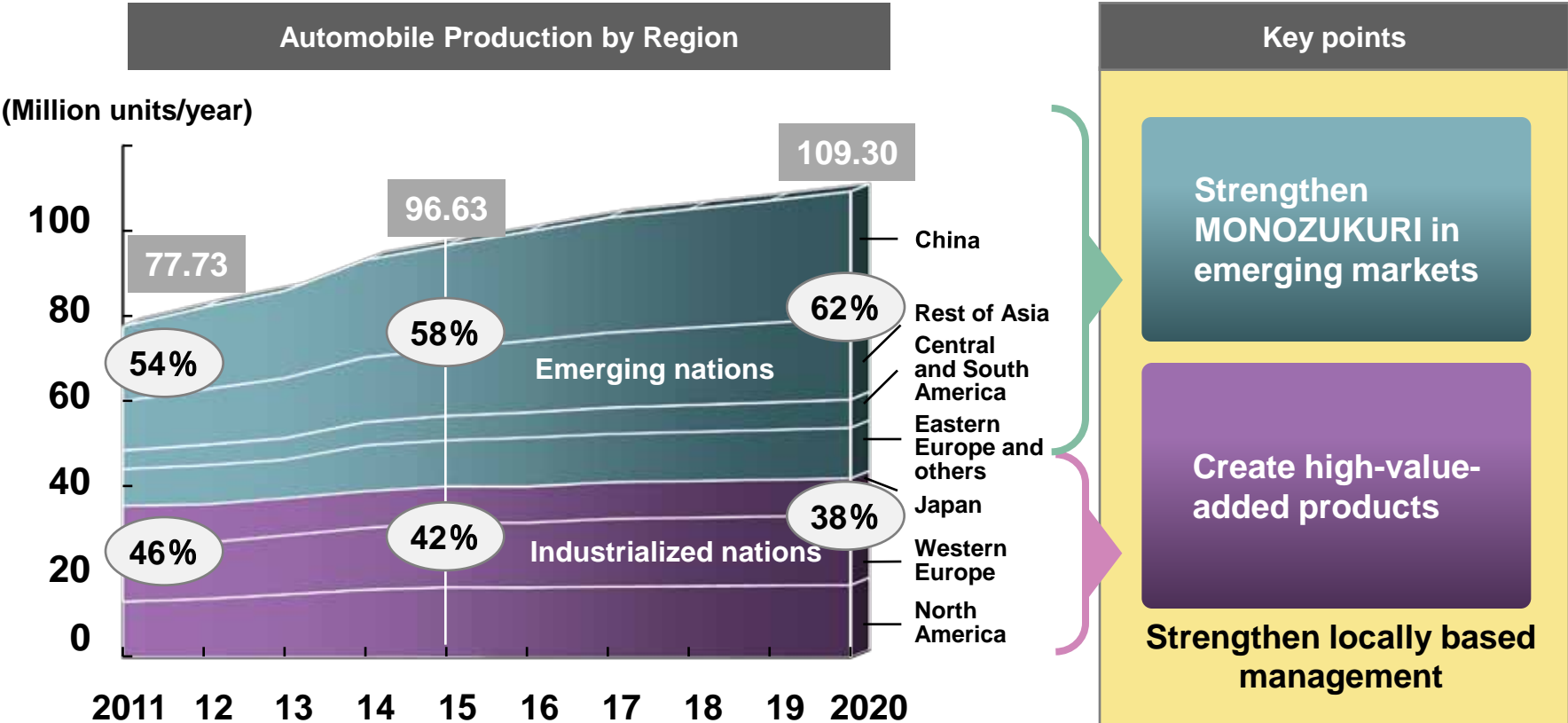


(Source: Data compiled in-house from data provided by IHS Automotive and Nomura Research Institute, Ltd.)

*HEV : Hybrid Electric Vehicle

EV : Electric Vehicle

Promote global business development suited to local needs



(Source: Data compiled in-house from data provided by IHS Automotive)

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Develop into a system supplier that leads the world in electronic control and electric drive technologies

Environment field

Energy control with eco-friendly and high-efficiency

CO₂-reducing engine management systems, motors, inverters, lithium-ion batteries, etc.

Information field

Improve relief, convenience and comfort by using information and communications technologies

Cloud-based telematics, connected solutions, etc.

Ultra fuel-efficient and safe vehicles that connect people and society
Advanced electronic control technologies

Safety field

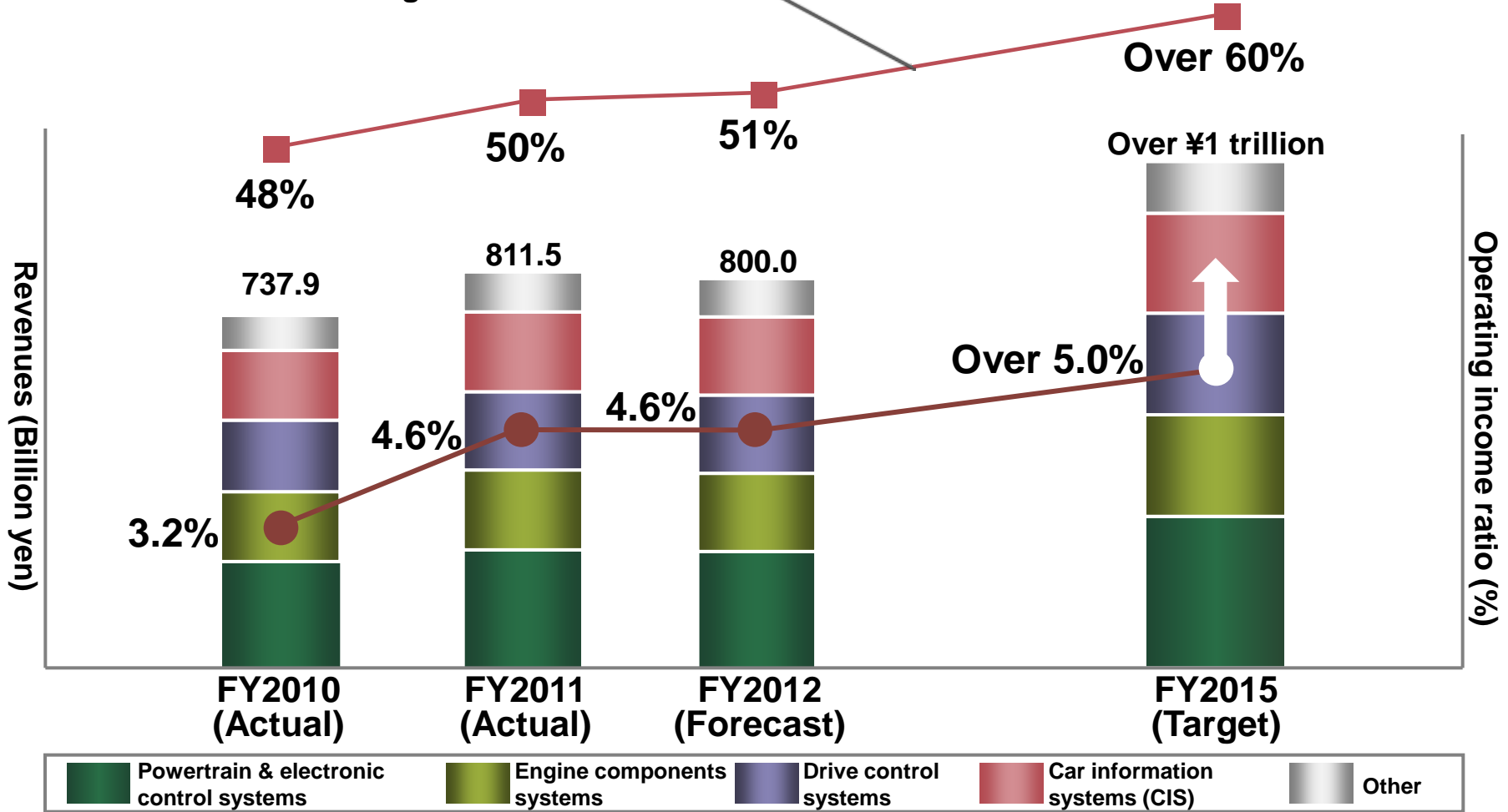
Optimal vehicle kinematic performance in terms of driving, steering and braking

Brake system cooperative with energy regeneration, stereo cameras, etc.

3-2 Business Targets

FY2015 targets: revenues: over ¥1 trillion, operating income ratio: over 5.0%

Overseas revenue ratio for global customer bases*



*Customer bases that install automotive components in finished vehicles.

3-3 FY2011 Results and FY2012 Forecasts

(Billion yen)

	FY2010	FY2011		FY2012	
	Actual	Actual	YoY	Forecast	YoY
Revenues	737.9	811.5	110%	800.0	99%
Operating income	23.7	37.0	+13.2	37.0	± 0



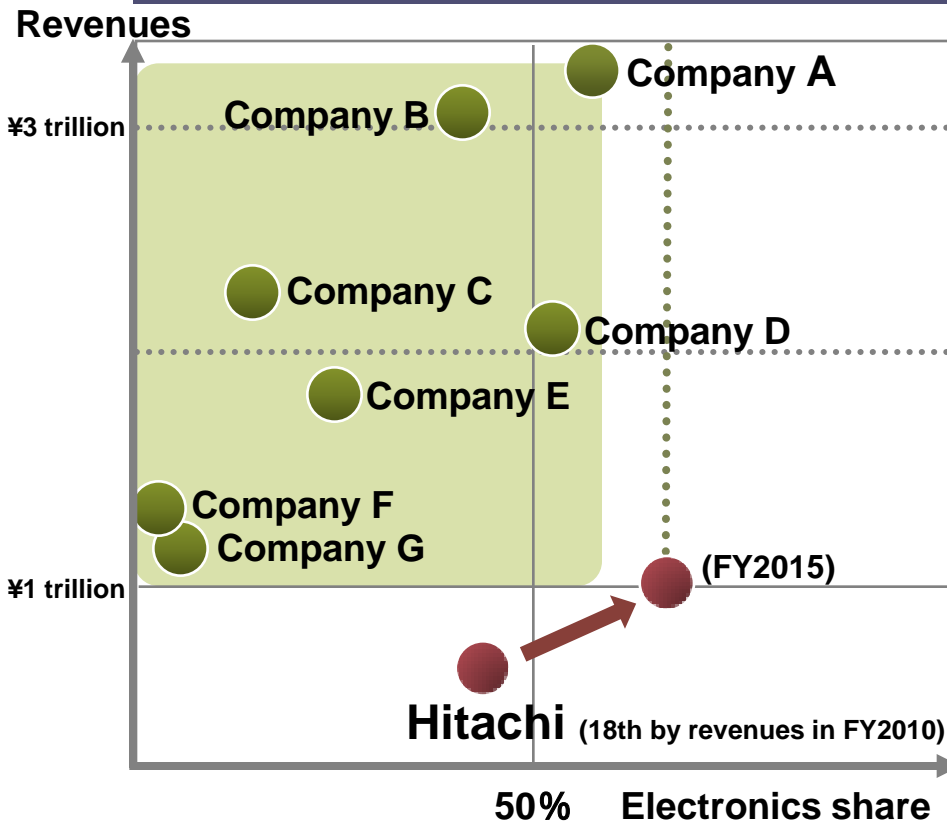
Revenues	<ul style="list-style-type: none"> • Revenues increased in FY2011, reflecting higher global automobile demand, including growth in emerging markets and a recovery in the U.S. market • Forecasting flat revenues for FY2012, with emerging countries expected to continue performing strongly
Operating income	<ul style="list-style-type: none"> • Operating income increased in FY2011 mainly due to higher revenues and cost reductions, etc. • Forecasting earnings on a par with the previous fiscal year in FY2012

3-4 Global Position Analysis

Enhance growth potential by increasing electronics share* to world-leading level

Positioning of Top 10 Global Parts Suppliers by Revenues in FY2010

Companies applying electronics in its Environmental, Safety and Information business



	Environment field	Safety field	Information field
Company A			
Company B			
Company C			
Company D			
Company E			
Company F			
Company G			
Hitachi			


○ :Global Top 10 Domain by Revenues in FY2010 (Source: Arthur D. Little)

*Share of revenues accounted for by electronic control and electric drive products such as electronic control units, hybrid systems, etc.

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Develop into a system supplier that leads the world in electronic control and electric drive technologies

Deepen global business operations

- Implement global strategic investments based on the concept of local production for local consumption
- Expand business with global customers through GAM/GAT*

Develop strong businesses

- Tighten focus on electronic control and electric drive products
- Create global-winning new products and technologies

Strengthen global management foundation

- Strengthen global MONOZUKURI capabilities
- Strengthen global quality
- Reduce global costs

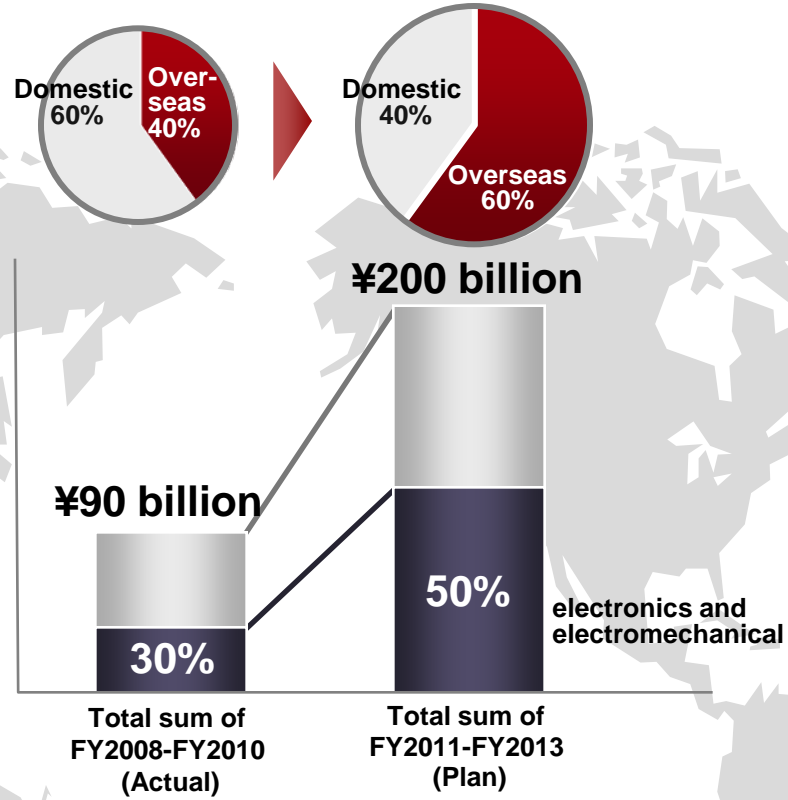
4-2 Increase Global Investment

Reverse domestic/global ratio

Increase global investment by 2.2 times

Increase investment in electronic control and electric drive technologies by 3.7 times

Increased overseas development personnel by 2.4 times



Overseas development personnel	FY2011 (Actual)	FY2015 (Plan)
Americas	130	200
Europe	20	40
China and Asia	50	240
Overseas development personnel total	200	480

4-3 Enhancement Measures by Region (FY2011 Measures (1))

China Strengthened development and sales capabilities responding to local needs in China

New [Zengcheng, Guangdong]

Established Hitachi Automotive Systems (Guangzhou) (February 2012)
Launched mass production of Eco-friendly products (April 2013)
Strengthened system development capabilities by establishing technical center; now have 2 centers with one already in Suzhou

New [Shanghai]

Established Hitachi Highly Automotive Systems (Shanghai) (April 2012)
Launched mass production of starters
(Standard models: July 2012; idling stop: 2014)

New [Beijing and Wuhan/Hubei]

Established two sales bases
Strengthened sales capabilities in addition to Shanghai and Guangzhou

Asia Strengthened Asia business foundation and advanced into India

Enhancement [Chachoengsao, Thailand]

Increased production of engine system and drive system electronic products (From 2013)

Enhancement [Nakhon Ratchasima, Thailand]

Increased production of drive system products (Since April 2012)

New Established local subsidiary in India (April 2012)

Consideration Looking at carrying out local production in Indonesia

4-4 Enhancement Measures by Region (FY2011 Measures (2))

Americas Strengthening electronic control and electric drive technologies in North America and expanding business in Central and South America

Enhancement [Harrodsburg, Kentucky, U.S.]

Increased electronic parts production line
Building lithium-ion battery module line
Begin trial production (November 2012)

New [Berea, Kentucky, U.S.]

Building hybrid vehicle motor plant
Begin trial production (November 2012)

New [Lerma, Estado de Mexico, Mexico]

Start production at second plant
Begin mass producing ignition coils (September 2012)

Consideration [Mexico]

Began establishing third plant (February 2012)

Consideration [Brazil]

Considering local production

Europe Expand business by launching new plant in the Czech Republic

New [Czech Republic]

Hitachi Automotive Systems Czech
Plan to begin mass producing suspensions
(From March 2013)

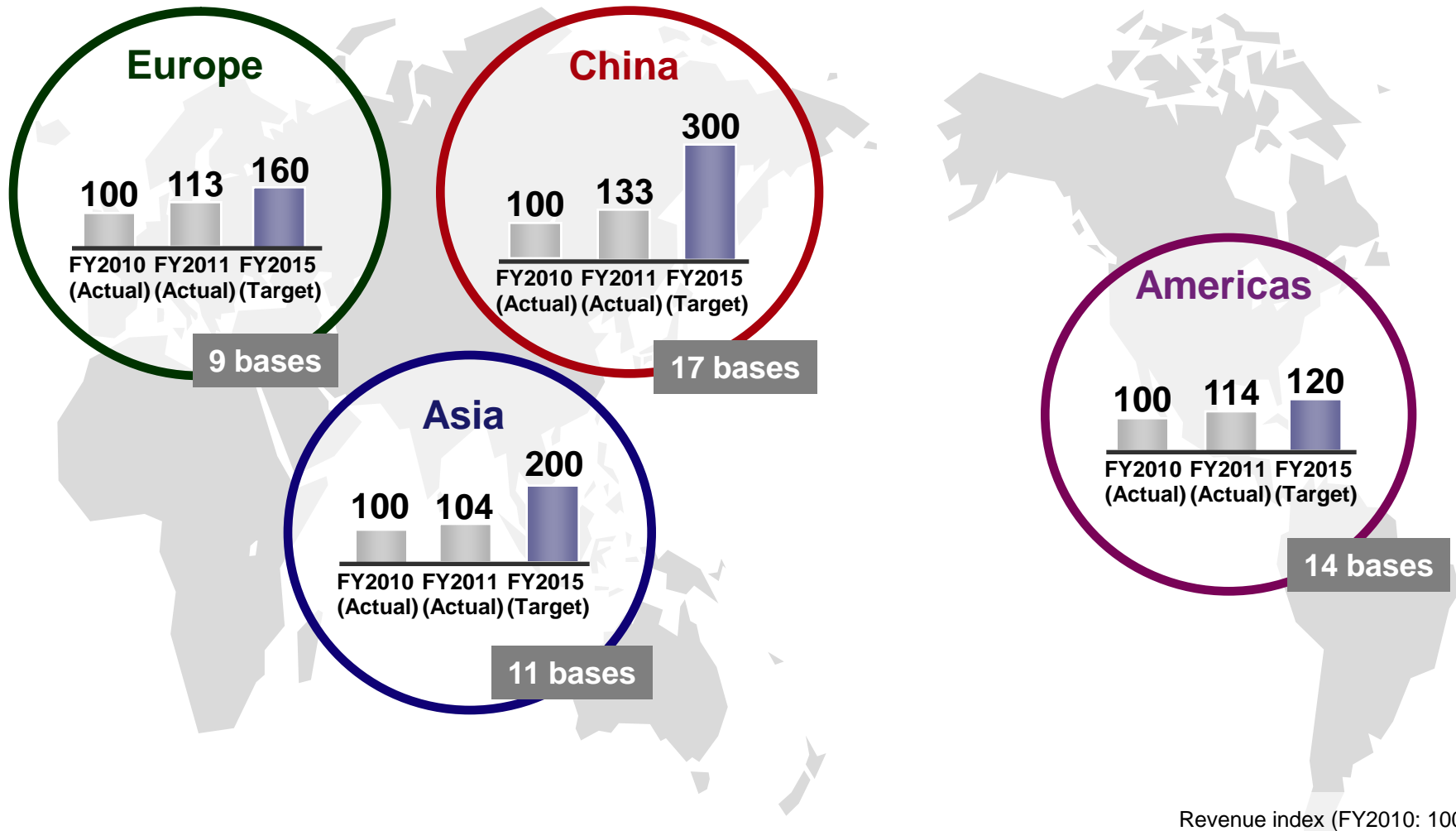
New [Espelkamp, Germany]

Acquired HUECO Automotive GmbH (January 2012)
Expanding aftermarket business in Europe by utilizing HUECO's sales channels

Consideration [Russia]

Considering localizing production

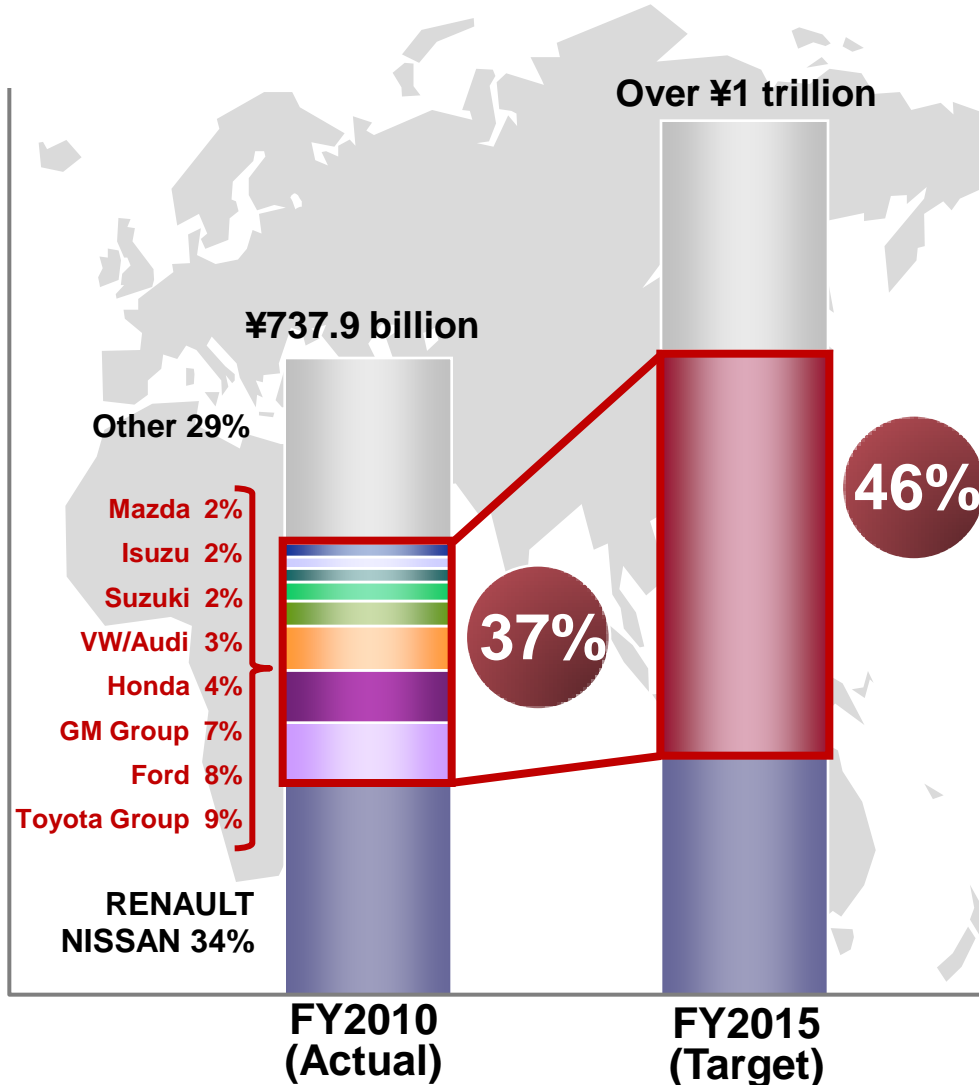
4-5 Revenue Index by Overseas Region



Increase overseas revenue ratio for global customer bases* from 50% (FY2011) to over 60% (FY2015)

*Customer bases that install automotive components in finished vehicles.

Expand business with global customers



Develop strategy and provide support through GAM/GAT*

- For expanding global business with auto-manufacturers, bolster strategic proposals and support by integrating contact points

*GAM: Global Account Manager
GAT: Global Account Team

Enhance advanced technology development and system proposals

- Establish technical sales division
- Make full use of Hokkaido Tokachi test courses
- Strengthen advanced technologies and new product proposal capabilities such as electronic control, electric drive and system development

High-efficiency engine systems

Develop next-generation technologies and expand into global markets

■ E-VTCs*

- Fuel-efficient energy
- High performance even at ultra-low temperatures



3.5% improvement in fuel efficiency

■ Silicon air-flow sensors

- Lower costs by reducing the number of components
- Improve robustness against dust and contamination

Maintain top global share

■ Starters applicable to idling stop systems

- Compact, lightweight and high-output technologies
- Cooperative control technology with engine

Add greater value to commoditized products

HEV system

Build Hitachi-standard electric drive systems

■ Motors

- Create high-efficiency control systems
- Promote development of rare earth-free motors

Contribute to greater HEV fuel efficiency

■ Inverters

- Develop compact, high-output double side cooling power module



Improve heat dissipation performance by 35%, and reduce space by 50%

■ Lithium-ion batteries

- Launch North American battery module line
- Promote sales expansion in the Chinese market

Achieve cumulative production of more than 3 million cells

*VTC: Valve Timing Control System

Drive control systems

Further enhance products with electronic control technologies

- **Electrically-driven intelligent brakes**
 - Commercialize regenerative braking system without negative pressure for HEVs and EVs
 - Develop a series of electrically-driven intelligent brakes
- **Stereo cameras**
 - Promote development of high-performance, low-cost next-generation cameras
 - Develop and expand sales of compact, lightweight technologies for compact and small cars

Build a product lineup catering to everything from small passenger cars to trucks

Improve detection distance, precision and performance



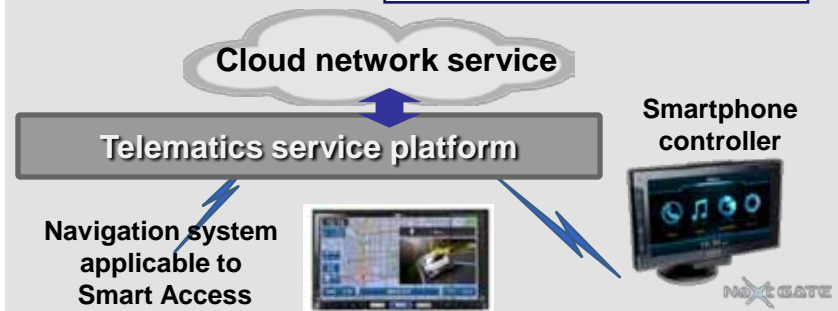
Car information systems

Enhance car information systems business foundation through cooperation with Clarion

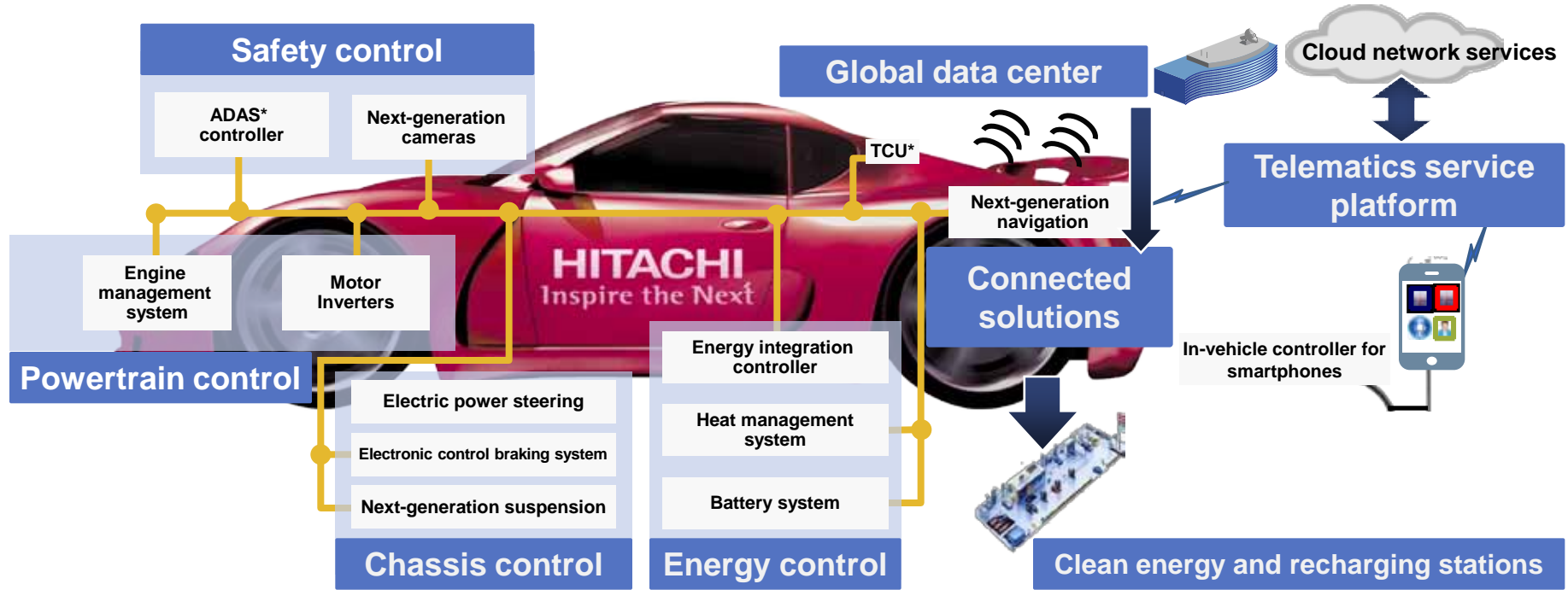
- **Connected solutions (EV-ICT solutions)**
 - Make general use of global data centers
- **Cloud-based telematics services [Smart Access]**
 - Jointly develop service platform with Clarion

Presently managing EV charging and vehicle status information for more than 20,000 vehicles in real time

Popularize globally



**Ultra fuel-efficient and safe vehicles that connect people and society
Promote development of next-generation electric drive vehicle systems**



Aim to be No. 1 in high efficiency and energy conservation through collaboration with control systems

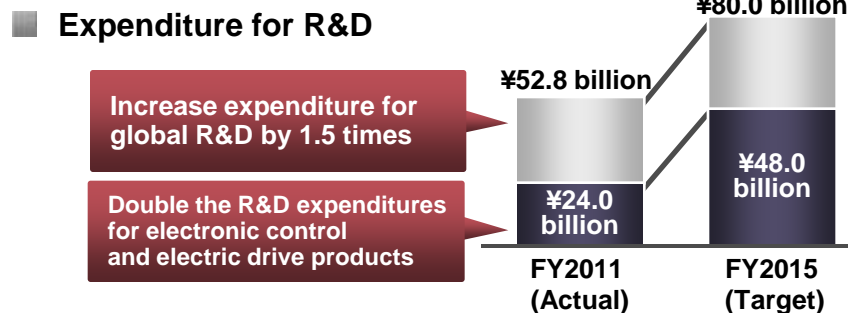
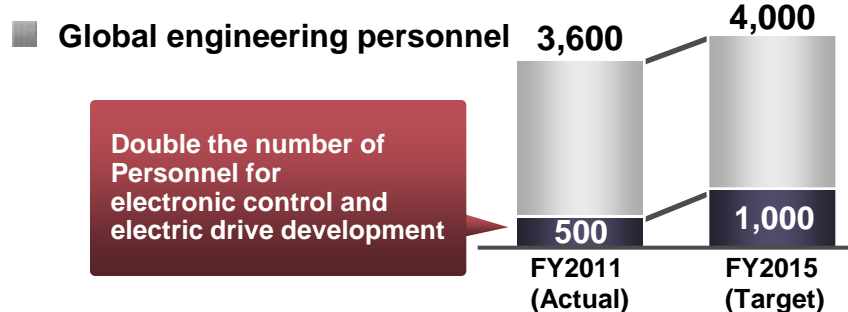
- Proposing various optimal control systems, not just components
- FY2015 target: Increase maximum mileage by more than 30% compared to current EVs (Based on identical battery capacity)

*ADAS : Advanced Driver Assistance System *TCU : Telematics Communication Unit

Strengthen Group-wide technology development and global design capabilities

Upgrade production technologies

(1) Strengthen electronic control and electric drive development system

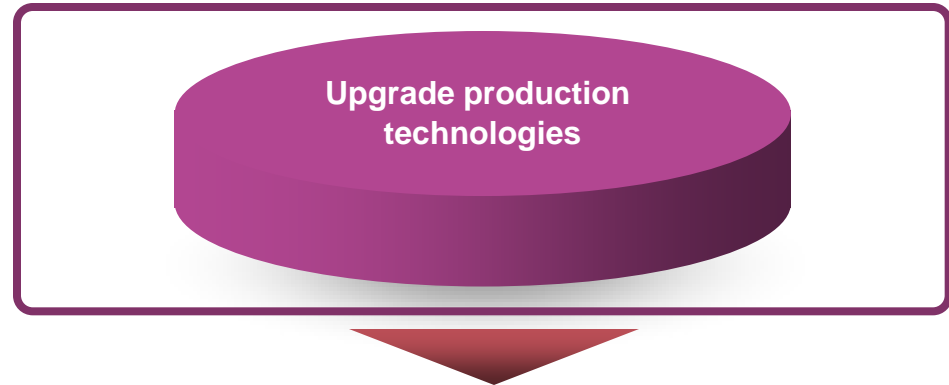


(2) Improve global design and development capabilities

- Bolster technical centers in the U.S., Europe and China [New base in China: September 2012]
- Collaborate with overseas universities [Started joint development with German, U.S. and other universities such as Technische Universität München]

(3) Innovate control development process

- Halve the number of hours by developing digital simulators



(1) Develop new concept small-lot production lines for emerging markets

- Reduce the number of equipment units by bottleneck management
- Procure global facilities locally
- Using general-purpose robots to handle various types of products

(2) Strengthen forging and molding technologies

- Strengthen center for forging and molding prototypes, integrate group companies
- Shorten prototype lead times by upgrading high-precision mold technologies and facilities

4-12 Strengthen Global Management foundation - Improve Quality and Cost Structure



Global quality	<ul style="list-style-type: none">■ Reinforce management function of global quality assurance■ Bring global quality oversight management system fully into operation■ Implement special quality assurance activities focused for overseas products, locally procured parts and other products
Measures to combat yen appreciation	<ul style="list-style-type: none">■ Expand international parts, materials procurement and local procurement■ Extend local production for local consumption
Production costs	<ul style="list-style-type: none">■ Globalize and optimize the total value chain<ul style="list-style-type: none">- Optimize business through global production reform activities■ Increase global engineers, conduct production in optimal locations and BCP
Direct material costs	<ul style="list-style-type: none">■ Lower costs through global procurement system■ Implement VEC* activities for improving profits in strategic and underperforming businesses■ Improve procurement capabilities in products purchased centrally
Indirect costs	<ul style="list-style-type: none">■ Rebuild the globalization of mission-critical systems■ Centralize and standardize administrative operations, continue activities to reduce indirect expenses

*VEC : Value Engineering for Customers

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FY2015 Targets

- **Revenues: Over ¥1 trillion**
- **Overseas Revenue Ratio for Global Customer Bases*: Over 60%**
- **Operating income ratio: Over 5.0%**

Develop into a system supplier that leads the world in electronic control and electric drive technologies

*Customer bases that install automotive components in finished vehicles.
This is different from overseas revenues in the consolidated accounts.

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.

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- 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;
- the potential for significant losses on Hitachi’s investments in equity method affiliates;
- increased commoditization of information technology products and digital media-related products and intensifying price competition for such products, particularly in the Digital Media & Consumer Products segments;
- 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;
- rapid technological innovation;
- 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;
- 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;
- 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 achieve the anticipated benefits of its strategy to strengthen its Social Innovation Business;
- uncertainty as to the success of restructuring efforts to improve management efficiency by divesting or otherwise exiting underperforming businesses and to strengthen competitiveness and other cost reduction measures;
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- uncertainty as to the outcome of litigation, regulatory investigations and other legal proceedings of which the Company, its subsidiaries or its equity method affiliates 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 earthquakes, tsunamis or other natural disasters;
- 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;
- uncertainty as to the accuracy of key assumptions Hitachi uses to evaluate its significant employee benefit-related costs; and
- uncertainty as to Hitachi’s ability to attract and retain skilled personnel.

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