

# **Railway Systems Business Strategy**

Hitachi IR Day 2011

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**Hitachi, Ltd.**

# Railway Systems Business Strategy

## Contents

- 1. Overview**
2. Market Environment
3. Policy and Strategy
4. Performance and Targets
5. Conclusion

# 1-1 Revenues by Systems and Products & Services

## Transport management & control systems

## Rolling stock systems

### Signaling/traffic management systems

### Rolling stock/Overseas maintenance

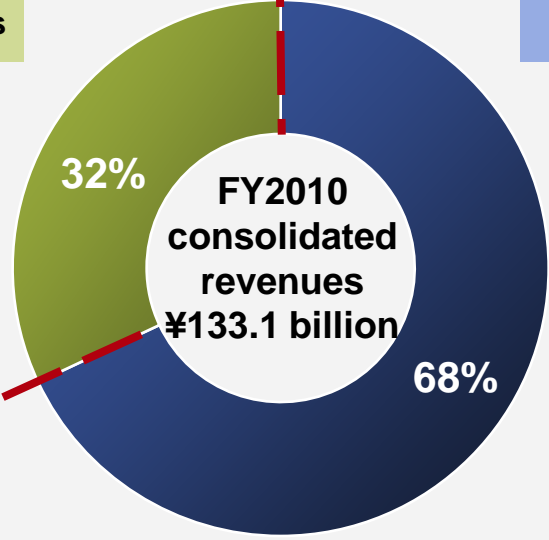
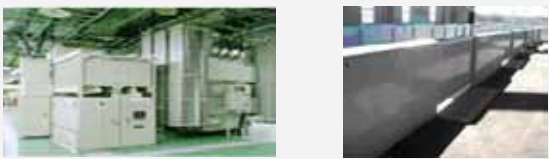
#### Signaling/train control systems



#### Traffic management systems/ power management systems



#### Power supply systems Platform gates



#### High-speed trains



#### Limited express trains



#### Commuter trains



#### Monorails



### Electrical components

#### Main circuit/ main motor



#### Air-conditioning/ air-moving systems



#### Overseas maintenance



## Rail Systems Company

### Rail Systems Division

**Kasado Rail Systems Product Div.**  
(Rolling stock)

**Mito Rail Systems Product Div.**  
(Electrical components, signaling/  
train control systems, traffic management systems/  
power management systems)

**Hitachi Works**  
(Main motors, IGBT modules)  
**Kokubu Engineering & Product Div.**  
(Power supply systems)  
**Omika Works**  
(Traffic management systems/  
Power management systems,  
Business support systems)

### Sales & Marketing Division

**Rail Systems Sales Div.** (Domestic market)

**Global Sales & Marketing Div.**  
(Overseas market)

### Global Rail Business Development Division

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## Japan

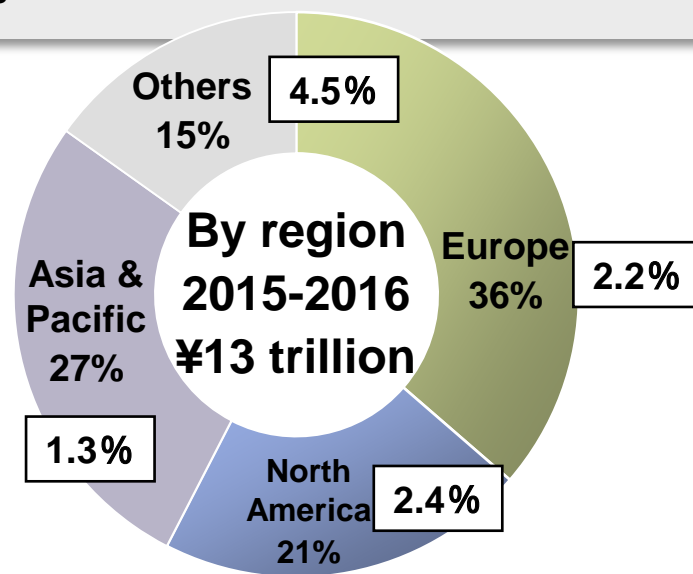
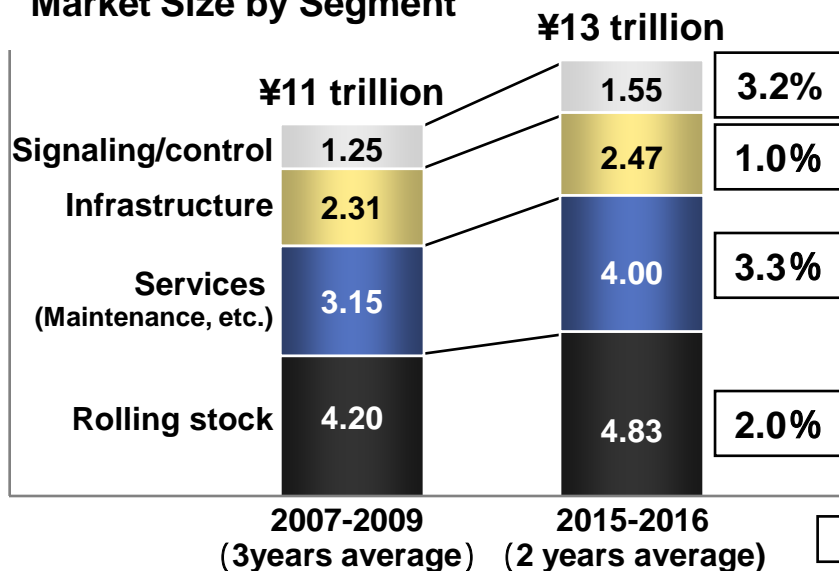
- Increase investment in services and environment-related areas, but major growth in capital expenditures cannot be expected
- Drop off construction of new Shinkansen lines, and increase demand on replacement/upgrading aging lines, etc.

## Overseas

11 trillion yen per 3 years average (2007-2009)    13 trillion yen per 2 years average(2015-2016)(CAGA2.3%)

- High growth in service and Signaling/control segments
- Increase investments in railway networks in emerging countries

### Market Size by Segment

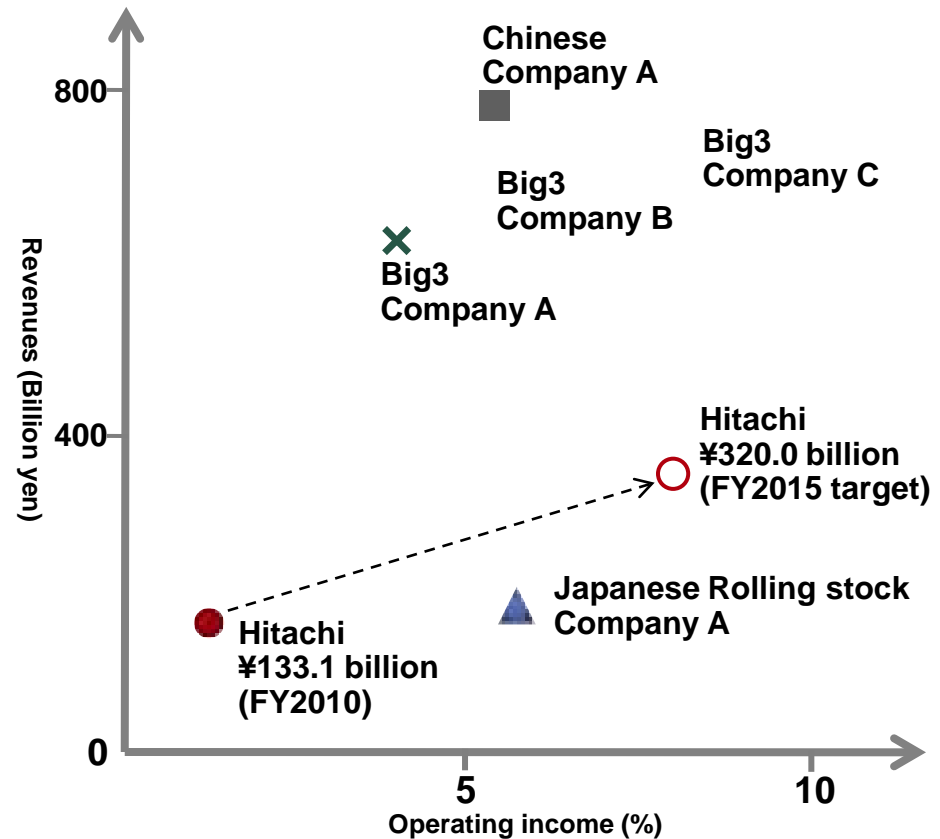


Source: UNIFE World Rail Market Study 2010

## Position as a Total Systems Integrator

|                               |                                   | Rolling stock systems |                       | Transport management & control systems |
|-------------------------------|-----------------------------------|-----------------------|-----------------------|--|
|                               |                                   | Rolling stock         | Electrical components | Signaling/ traffic management          |
| <b>Hitachi</b>                |                                   |                       |                       |  |
| <b>Big 3</b>                  |                                   |                       |                       |  |
| <b>China (Company A)</b>      |                                   |                       |                       |  |
| <b>Japanese manufacturers</b> | Rolling stock (Company A)         |                       | -                     | -                                      |
|                               | Electrical Components (Company B) | -                     |                       |  |
|                               | Signaling (Company C)             | -                     | -                     |  |

### Position



\* Figures are for FY2010

## Rolling stock systems

Higher efficiency, lower environmental impact

- **Aluminum train technology**  
(High-speed trains, Commuter trains)  
Highly economical rolling stock in the next generation (A-train)
- **Inverter technology**  
Developed small, lightweight, low noise (World-class) products
- **Hybrid technology**  
World's first to enter service  
(Ki-Ha E200 series for East Japan Railway Company )

## Transport management & control systems

High reliability

- **Signaling/train control systems technologies**  
Developing signaling systems compliant with European standards (ETCS\*)  
\*ETCS: European Train Control System
- **Traffic management system technologies**  
Provide high-performance, high function systems to support high-density transportation with advanced control technologies (Top share in Japan)

## Total project integration

Develop globally with own core systems technologies on traffic management, signaling, power supply and rolling stock



# Railway Systems Business Strategy

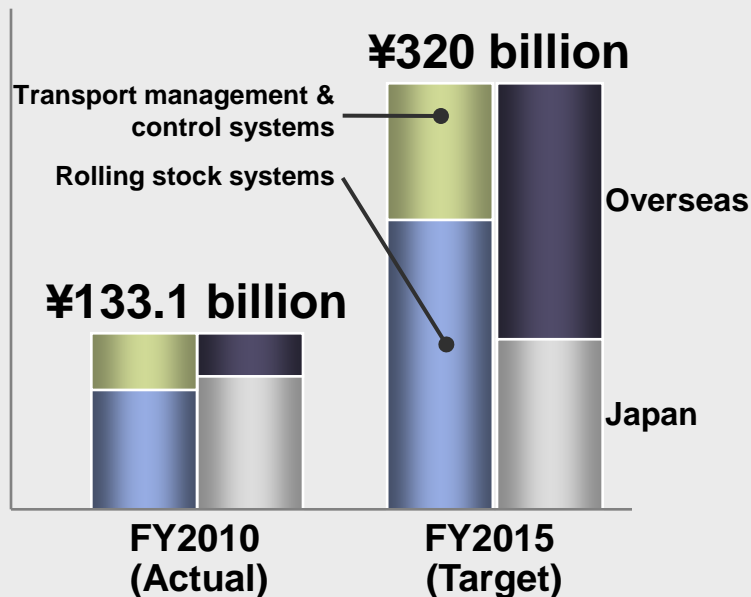
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## Accelerate Globalization with Technologies Developed in Japan

### Target

- Revenues\* : ¥320 billion
- Overseas revenue : 60%
- Operating income : 8%



\* Excluding business support systems which belongs to Information & Telecommunication Systems segment (FY2015 sales target : ¥30 billion )

### Strategies

- **Sustainable Growth in Japan**
  - Expand sales of rolling stock systems
  - Secure market share in signaling/train control systems
  - Expand hybrid traction systems business
  - Create new businesses by collaboration with customers
- **Expand overseas business**
  - Focus on the High-speed trains market
  - Expand Electrical components business
  - Expand Signaling/train control systems business
  - Accelerate to develop emerging countries

## Expand Sales of Rolling Stock Systems

- Expand aluminum trains (A-train) sales to municipal and private railways

( Hankyu Corporation Series 9000 train, Tobu Railway Co., Ltd. Series 50000 train )

- Secure market share of Shinkansen ( East Japan Railway Company E5/E6 series)

- Expand sales of electrical components ( Central Japan Railway Company E233 series)



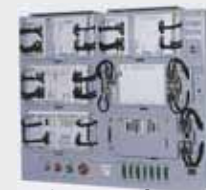
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## Secure Share in Signaling/Train Control Systems

- Complete Shinkansen signaling system projects (Hokuriku/Hokkaido)

( Hokuriku Shinkansen (Takasaki to Kanazawa), Hokkaido Shinkansen (Shin-Aomori to Shin-Hakodate) )

- Maintain and ensure high share in Traffic management systems (81% for JR)



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## Expand Sales of Hybrid Traction Systems

- Develop by leveraging track record (World's first to enter service)

( East Japan Railway Company Ki-Ha 200 series/ HB-E300 series)



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## Create New Businesses in Collaboration with Customers

- Create new business by fuse information and control technologies (IC card, Digital signage, etc)

## Further Expansion of U.K. and Chinese Business Challenge to Emerging Markets (Urban Transport Including Monorail)

### ■ U.K.

Rolling stock + maintenance, Electrical components,  
Signaling/train control systems

### ■ China

Electrical components, Signaling/train control systems

### ■ Emerging markets(Southeast Asia, Brazil, India)

Total project integration business

## U.K. (1)

### Rolling stock + maintenance

#### Expand maintenance business by Rolling stock sales

Establish high profitable business model by maintenance business

- Starting-up a full maintenance service for Class 395 train

Challenge to the future project,  
(Rolling stocks and maintenances)

- Intercity Express Programme (IEP)
- Commuter trains and replacement of aging trains



Ashford Depot (Class 395)

### Electrical components

#### Actively target retrofit projects

Leverage Class 465 track record

### Signaling/train control systems

#### Expand sales through the trial project with Network Rail

Complying with European standard (ETCS)

Start trial running in 2012

## U.K. (2)

### Intercity Express Programme (IEP)

#### Background

- Mar. 2009 Selected as preferred bidder
- Mar. 2011 Resumed negotiations with UK Department for Transport
- Dec. 2011 Financial close



Existing High Speed Train



New-type train (image)

#### Project overview

High Speed Trains (HST) replacement package  
(Rolling stock, maintenance)

- No. of vehicles: approx. 500 cars + options
- Maintenance period: 30 years

#### Local manufacturing site

- Candidate location: Northeast England
- Approx. 500 employees



## China (1)

### Electrical components

#### ■ High-speed railways

High-speed train(300kph)CRH380C  
Order receipt for 25 trains

#### ■ Intercity transportation

Middle-speed train (200kph)CRH7  
-Order receipt for proto type trains  
-Target share: 40% for commercial production

#### ■ Urban transportation

Target: 200 sets/year  
(equivalent to no. of inverters)



Main traction converters for high-speed rolling stock



Shanghai No. 6 line rolling stock

### Signaling/train control systems

#### ■ Middle and high speed railways

Expand sales of Chinese-version train control systems (CTCS)

- Dedicated high speed passenger line  
Target share: 40% (on-board units)  
20% (wayside units)
- Middle-speed onboard units  
Target share: 70%

Continuous sales expansion of computerized-interlocking  
(Target: 100 stations/year)

#### ■ Urban transportation

Promoting CBTC

- Chongqing No.3 line  
Start commercial operation in September, 2011

CRH: China Railway High-speed  
CTCS: China Train Control System (Compliant with European regulations)  
CBTC: Communication Based Train Control (Wireless train control system)

## China (2)

### Increase local production capacity (Establish Changchun plant)

#### ■ Hitachi Yonge Electric Equipment (Xi'an) Co., Ltd. (HYEE\*)

Expand production capacity

50sets/month → 80sets/month (2010)

Established the second production site in Changchun (April, 2011)

- Hitachi Yonge Electric Equipment (Changchun) Co., Ltd. (HYC)
- Start production in 2012
- Initial production capacity: 50 sets/month

#### ■ Establish capacity of 130 sets/month in total

#### ■ Possible to increase production capacity to 280 sets/month in the future

\*HYEE: Joint venture with Yongji Xinshisu Electric Equipment Co., Ltd.



HYC (image)



## Emerging Markets

### ■ Increasing demands for Total project integration

Target projects

- Systems integration for urban transport (E&M)

Metro, Monorail

- Subsystems integration

Signaling, Rolling stock

Target region

Southeast Asia, Brazil and India

### ■ Strengthen capabilities for E&M

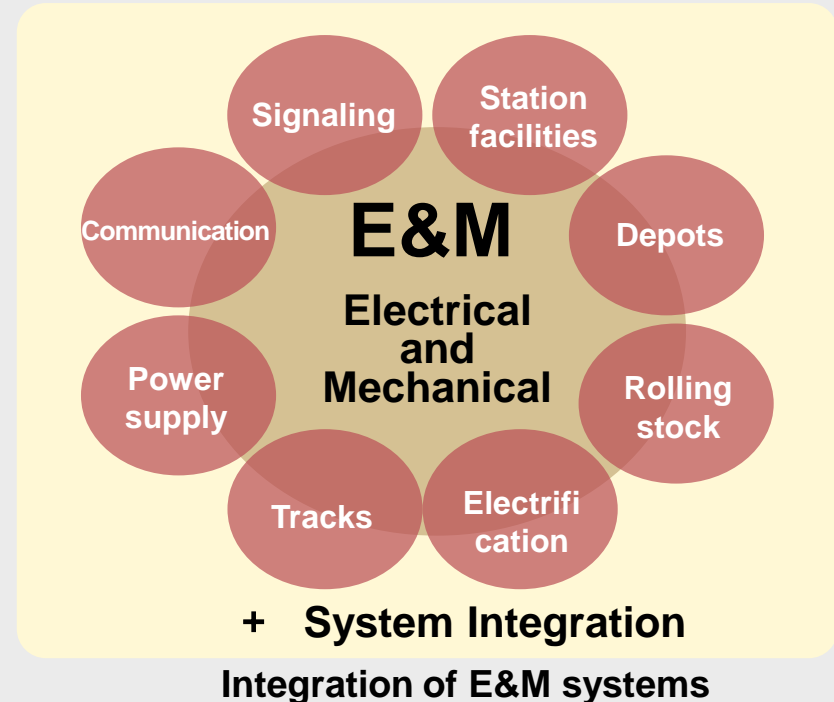
Sales and engineering

- Establish the dedicated organization for E&M

- Strengthen local operations

Project management

- Promote the alliance with Mitsubishi Heavy Industries

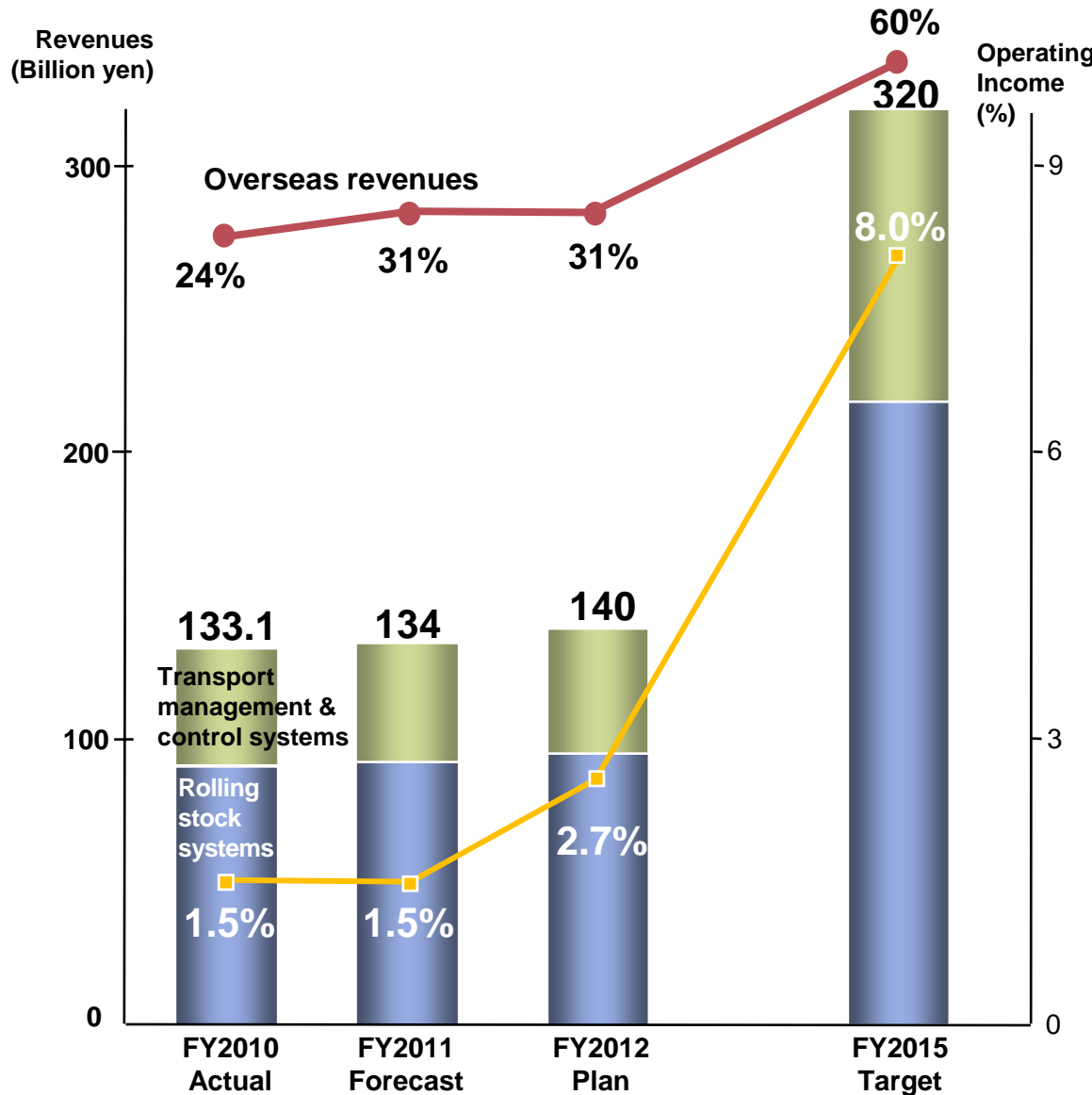


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# 4 Performance and Targets



## Core systems and markets

Rolling stock systems

### Rolling stocks

- IEP (U.K.)
- Shinkansen (Japan)

### Electrical components

- Middle-and High-speed (China)
- New markets (India)

Transport management & control systems

### Signaling/train control systems

- Japan, China, U.K. and India

**Total project Integration**  
- Emerging Markets  
(Southeast Asia, Brazil, India)

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### FY2015 Targets

- **Revenues: ¥320 billion**
- **Overseas revenue : 60%**
- **Operating income : 8%**

**Accelerate Globalization with  
Technologies Developed in Japan**

# 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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- 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, including, without limitation, the information, electronics, automotive, construction and financial sectors;
- exchange rate fluctuations of the yen and 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 in Japan, 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 Components & Devices and 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 and synthetic resins 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 success of alliances upon which Hitachi depends, some of which Hitachi may not control, with other corporations in the design and development of certain key products;
- uncertainty as to Hitachi’s access to, or ability to protect, certain intellectual property rights, particularly those related to electronics and data processing technologies;
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- the possibility of disruption of Hitachi’s operations in Japan by earthquakes, tsunamis or other natural disasters, including the possibility of continuing adverse effects on Hitachi’s operations as a result of the earthquake and tsunami that struck northeastern Japan on March 11, 2011;
- 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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