Rail Systems Business Strategy
Hitachi IR Day 2012

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Vice President and Executive Officer
President & CEO, Rail Systems Company
Infrastructure Systems Group
Hitachi, Ltd.
Rail Systems Business Strategy

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1. Overview
2. Market Environment
3. Business Performance Trends and Targets
4. Business Policy and Growth Strategy
5. Conclusion
1-1 Revenues by Systems and Products & Services

**Transport management & control systems**
- Signaling/traffic management systems
- Traffic management systems/power management systems
- Power supply systems
- Platform gates

**Rolling stock systems**
- Rolling stock/Overseas maintenance
- High-speed trains
- Limited express trains
- Commuter trains
- Monorails
- Overseas maintenance

**Electrical components**
- Main circuit/main motor
- Air-conditioning/air-moving systems

FY2011 Consolidated Revenues ¥139.6 billion

32%

68%
Rail Systems Business Strategy

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2. Market Environment

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### Global rail business environment and Hitachi’s initiatives

<table>
<thead>
<tr>
<th>Market environment</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Increased environmental awareness</strong></td>
<td>• Make lighter</td>
</tr>
<tr>
<td>Demands for transportation systems with low environmental impact</td>
<td>• Make more energy efficient</td>
</tr>
<tr>
<td></td>
<td>• Apply smart grid technologies to rail systems</td>
</tr>
<tr>
<td><strong>Growth of emerging countries</strong></td>
<td>• Propose comprehensive rail system solutions</td>
</tr>
<tr>
<td>Increasingly heavy traffic congestion</td>
<td>• Total project integration (E&amp;M*)</td>
</tr>
<tr>
<td><strong>Increased awareness of safety and reliability</strong></td>
<td>• High reliability</td>
</tr>
<tr>
<td>Increasingly sophisticated demands for safety levels</td>
<td>• Signaling/train control systems</td>
</tr>
<tr>
<td></td>
<td>• Traffic management systems</td>
</tr>
<tr>
<td><strong>Intensifying competition</strong></td>
<td>• Low-cost, low-LCC*</td>
</tr>
<tr>
<td>New players entering the market</td>
<td>• Offer high-value-added systems utilizing distinctive technologies</td>
</tr>
<tr>
<td><strong>Financial instability</strong></td>
<td>• Promote localization</td>
</tr>
<tr>
<td>Emergence of protectionism</td>
<td>• Cooperate with local partners</td>
</tr>
<tr>
<td>Increased demand for private-sector funds</td>
<td>• Introduce PPP*3, respond to demand for projects requiring finance</td>
</tr>
</tbody>
</table>

*E&M : Electrical & Mechanical  
*2 LCC : Life Cycle Cost  
*3 PPP : Public Private Partnership
2-2 Market Trends

Japan

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

Overseas

¥11 trillion per year (2007-2009 average) ▶ ¥13 trillion per year (2015-2016 average) (CAGR 2.3%)

- High growth in service and signaling/control segments
- Increased investments in railway networks in emerging countries

Market Size by Segment

<table>
<thead>
<tr>
<th>Segment</th>
<th>2007-2009 Average</th>
<th>2015-2016 Average</th>
<th>% CAGR (2009-2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rolling stock</td>
<td>¥4.20 trillion</td>
<td>¥4.83 trillion</td>
<td>1.55</td>
</tr>
<tr>
<td>Services (maintenance, etc.)</td>
<td>¥3.15 trillion</td>
<td>¥4.00 trillion</td>
<td>3.3%</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>¥2.31 trillion</td>
<td></td>
<td>1.0%</td>
</tr>
<tr>
<td>Signaling/control</td>
<td>¥1.25 trillion</td>
<td></td>
<td>3.2%</td>
</tr>
</tbody>
</table>

By region

- Asia & Pacific: 27%
- North America: 21%
- Europe: 36%
- Others: 16%

Source: UNIFE World Rail Market Study 2010
Position as a Total Systems Integrator

Position

<table>
<thead>
<tr>
<th>Company</th>
<th>Revenues (Billion yen)</th>
<th>Operating income ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitachi</td>
<td>¥139.6 billion (FY2011)</td>
<td>10 (%)</td>
</tr>
<tr>
<td>Overseas Company A</td>
<td>¥320.0 billion (FY2015 target)</td>
<td>15 (%)</td>
</tr>
<tr>
<td>Overseas Company B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overseas Company C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overseas Company D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japanese Rolling Stock Company E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overseas Signaling Company F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overseas Signaling Company G</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Presence

<table>
<thead>
<tr>
<th>Company</th>
<th>Rolling stock systems</th>
<th>Electrical components</th>
<th>Transport management &amp; control systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitachi</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Overseas Company A</td>
<td>PP</td>
<td>PP</td>
<td>PP</td>
</tr>
<tr>
<td>Overseas Company B</td>
<td>PP</td>
<td>PP</td>
<td>PP</td>
</tr>
<tr>
<td>Overseas Company C</td>
<td>PP</td>
<td>PP</td>
<td>PP</td>
</tr>
<tr>
<td>Overseas Company D</td>
<td>PP</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Japanese Rolling Stock Company E</td>
<td>P</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Overseas Signaling Company F</td>
<td>-</td>
<td>-</td>
<td>PP</td>
</tr>
<tr>
<td>Overseas Signaling Company G</td>
<td>-</td>
<td>-</td>
<td>PP</td>
</tr>
</tbody>
</table>

*Figures are for FY2011.
# 2-4 Strength and Key Targets

## Rolling stock systems

**Higher efficiency, lower environmental impact**

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

**Proven track record in maintenance business (U.K.)**

## Transport management & control systems

**High reliability**

- **Signaling/train control systems technologies**
  - Developing signaling systems compliant with European standards (ETCS*)
  - Wireless train control system (CBTC*2)
- **Traffic management system technologies**
  - Provide high-performance, highly functional systems to support high-density transportation with advanced control technologies (Top share in Japan)

*ETCS: European Train Control System
*2 CBTC: Communication Based Train Control

## Total project integration (E&M)

Develop globally with own core systems technologies in traffic management, signaling, power supply and rolling stock
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### 3-1 FY2011 Results and FY2012 Forecast

<table>
<thead>
<tr>
<th></th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>YoY</th>
<th>FY2012 Forecast</th>
<th>YoY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>133.1</td>
<td>139.6</td>
<td>105%</td>
<td>133.0</td>
<td>95%</td>
</tr>
<tr>
<td>Operating income</td>
<td>2.0</td>
<td>4.7</td>
<td>+2.7</td>
<td>3.6</td>
<td>-1.1</td>
</tr>
</tbody>
</table>

**Revenues**
- FY2011 revenues were higher year over year due to an increase in overseas and alleviation of the parts shortages caused by the Great East Japan Earthquake.
- Projecting lower revenues in FY2012 year over year because of lower sales of rolling stock systems in Japan and signaling/transport management systems.

**Operating income**
- FY2011 operating income increased year over year due mainly to the higher revenues and progress cutting costs.
- Projecting lower operating income in FY2012 due mainly to expenses for global business expansion.
3-2 Business Performance Trends and Targets

3.3 Overseas revenues (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>FY2010 Actual</th>
<th>FY2011 Actual</th>
<th>FY2012 Forecast</th>
<th>FY2015 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overseas</td>
<td>24%</td>
<td>28% [31%]</td>
<td>32% [31%]</td>
<td>60% [60%]</td>
</tr>
<tr>
<td>Overseas</td>
<td>133.1</td>
<td>134.0</td>
<td>140.0</td>
<td>[320.0]</td>
</tr>
<tr>
<td>Overseas</td>
<td>[31%]</td>
<td>[31%]</td>
<td>[32%]</td>
<td>[60%]</td>
</tr>
<tr>
<td>Overseas</td>
<td>1.5%</td>
<td>3.4% [1.5%]</td>
<td>2.7% [2.7%]</td>
<td>8.0% [8.0%]</td>
</tr>
<tr>
<td>Overseas</td>
<td>Rolling stock</td>
<td>Transport</td>
<td>Operating income</td>
<td></td>
</tr>
<tr>
<td></td>
<td>systems</td>
<td>management &amp;</td>
<td>ratio (%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>control systems</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*[*] Previous forecasts or targets announced on June 16, 2011*
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Accelerate globalization with technologies developed in Japan

**Target**
- Revenues: ¥320.0 billion
- Overseas revenues ratio: Over 60%
- Operating income ratio: 8%

**Strategies**
- **Expand sales**
  - Strengthen Japan business base
  - Expand overseas business
- **Achieve highly profitable structure**
  - Realign product and business portfolios
    - Focus on maintenance, E&M, signaling/traffic management systems
    - Promote environmental and energy-saving businesses
    - Win projects requiring finance
- **Promote standardization**
  - Rolling stock (global A-train)
  - Signaling (ETCS and CBTC)
  - Components (standard electrical components)
- **Promote Hitachi Smart Transformation Project**

**FY2015 (Target)**
- ¥320.0 billion

**FY2011 (Actual)**
- ¥139.6 billion

**Graph:**
- Breakdown of revenues by region:
  - Japan: ¥139.6 billion
  - Overseas: ¥320.0 billion
- Categories:
  - Transport management & control systems
  - Rolling stock systems
4-2 Expand Sales (Sustainable Growth in Japan)

**Rolling Stock Systems**
- Expand sales of aluminum trains (A-train) to municipal and private railways
- Secure Shinkansen market share [Hokuriku Shinkansen]
- Expand sales of electrical components

**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 companies)

**Expand Business by Promoting New Businesses**
- Build energy-saving systems for optimizing power demand - Apply smart grid technologies to rail systems and lithium-ion battery technologies  
  [Hybrid Ki-Ha*, B-CHOP*2]
- Bolster core products by applying new technologies
  
  * Develop SiC*3 inverters for reducing power loss

*Joint development with East Japan Railway Company  
*2 B-CHOP (Energy Storage for Traction Power Supply)  
*3 SiC: Silicon carbide
4-3 Expand Sales (Expand Overseas Business)

- **Rolling stock systems**
  Expand maintenance business
  Promote standardization (global A-train and standardized inverters)

- **Signaling/train control systems**
  Expand sales focusing on products compliant with European standards (ERTMS*/ETCS and CBTC)

- **Total project integration (E&M)**
  Promote alliance with Mitsubishi Heavy Industries and local partners to strengthen project integration
  Shift from selling individual products to becoming a total systems integrator

*ERTMS : European Rail Traffic Management System*
Establish highly profitable business model by capturing orders for projects with maintenance contracts and PPP projects

- **Class 395 maintenance business**
- **Intercity Express Programme (IEP)**
  - Under negotiation
  - Project overview
    - High Speed Trains (HST*) replacement package
      (rolling stock, maintenance)
      - No. of vehicles: approx. 500 cars + options
      - Maintenance period: 30 years
        (Expand maintenance business throughout the U.K.)
- **Commuter trains and replacement of aging trains**
  - U.K.: Rolling stock for suburban lines and subways in London

*HST : High Speed Train*
Generate earnings by focusing on signaling/train control systems projects

<table>
<thead>
<tr>
<th>China</th>
<th>U.K. and Europe</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medium- to high-speed railways</strong></td>
<td><strong>Expand sales through joint development with Network Rail</strong></td>
<td><strong>Enter the market with ETCS</strong></td>
</tr>
<tr>
<td>- Expand sales of Chinese train control systems (CTCS*)</td>
<td>- Expand sales of Chinese train control systems (CTCS*)</td>
<td>- Establish a local engineering base</td>
</tr>
<tr>
<td>- Dedicated high-speed passenger line</td>
<td>- Dedicated high-speed passenger line</td>
<td></td>
</tr>
<tr>
<td>- Entered revenue service in Guangzhou-Shenzhen Railway (December 2011)</td>
<td>- Entered revenue service in Guangzhou-Shenzhen Railway (December 2011)</td>
<td></td>
</tr>
<tr>
<td>- Extension planned from Shenzhen to Hong Kong</td>
<td>- Extension planned from Shenzhen to Hong Kong</td>
<td></td>
</tr>
<tr>
<td>- Expand sales of computerized-interlocking</td>
<td>- On-board units complying with European standard (ETCS)</td>
<td></td>
</tr>
<tr>
<td>- Continuous orders at the level of 100 stations/year</td>
<td>- Plan to start trial running in 2012</td>
<td></td>
</tr>
<tr>
<td><strong>Urban transportation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Expand sales of CBTC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Chongqing Line 3 entered revenue service (September 2011)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Received orders for Southern extension section (revenue service planned in December 2012)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*CTCS : China Train Control System
Generate earnings by capturing orders for total project integration (E&M)

Increasing demand for total project integration

- Target projects
  - Urban transportation systems (metro, monorail)

- Target regions
  - Southeast Asia, Brazil and India

Strengthen capabilities for E&M

- Sales and engineering
  - Established dedicated organization for E&M
  - Strengthen local operations

- Project management
  - Strengthen alliance with Mitsubishi Heavy Industries

Diagram:
- E&M
  - Electrical and Mechanical
  - Depots
  - Rolling stock
  - Tracks
  - Electrification
  - Communication
  - Station facilities
  - Power supply
  - Signaling
Generate earnings by standardizing products

**Global A-train**

- Optimal product lineup by use
  - AT100 (metro)
  - AT200 (regional)
  - AT300 (high-speed)
  - AT400 (monorail)

**ETCS, CBTC**

- Develop products compliant with European standards
  - U.K.: Expand sales through joint development with Network Rail
  - China: Expand sales of Chinese train control systems (CTCS)
  - China: Expand sales of CBTC
  - India: Established a local engineering base

**Standard inverters**

- China: Enhance manufacturing bases
- U.K.: Capture replacement orders for electrical components
- India: Enter market via collaboration with partners
Global A-train (1)

AT100 (metro)

AT200 (regional)

Specifications
- Maximum service speed 160 Km/h
- Line length 20 to 26 m/car
Global A-train (2)

AT300 (high-speed)

- Specifications
  - Maximum service speed
    200～240Km/h
  - Line length
    20～26 m/car

AT400 (monorail)

- Specifications

<table>
<thead>
<tr>
<th></th>
<th>Large</th>
<th>Medium</th>
<th>Small</th>
</tr>
</thead>
<tbody>
<tr>
<td>Train formation</td>
<td>61m</td>
<td>57m</td>
<td>38m</td>
</tr>
<tr>
<td>(4 cars)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Train width</td>
<td>3.0m</td>
<td>3.0m</td>
<td>2.8m</td>
</tr>
<tr>
<td>Train height</td>
<td>5.3m</td>
<td>5.3m</td>
<td>4.8m</td>
</tr>
<tr>
<td>Voltage</td>
<td>DC 1,500V</td>
<td>DC 750V</td>
<td></td>
</tr>
</tbody>
</table>
**4-10 Promote Hitachi Smart Transformation Project**

**Shift from management focused on the Japanese market to truly global management**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Rigorously promote localization</th>
</tr>
</thead>
</table>
| Production costs | - Establish overseas manufacturing bases and operation centers outside of Japan, China and the U.K.  
- Reduce costs by selecting optimal manufacturing bases |
| Direct Materials costs | - Build global supply chain  
(Establish global procurement network)  
- Strengthen engineered sourcing |
| Indirect costs | - Reduce indirect costs by centralizing and standardizing administrative and overlapping operations  
- Actively utilize global human resources |
4-11 Global Supply Chain

- **U.K.**
  - Expand maintenance business throughout the U.K.
  - Establish manufacturing bases for rolling stock
  - Enter signaling/train control systems market
  - Expand and enhance procurement bases

- **China**
  - Expand manufacturing bases for electrical components
  - Further develop signaling/train control systems businesses
  - Strengthen alliances with local companies

- **Southeast Asia**
  - Establish new engineering centers
  - Establish new procurement bases

- **India**
  - Establish new engineering centers
  - Establish new procurement bases
  - Strengthen alliances with local companies
  - Establish manufacturing bases for rolling stock and signaling/control systems

- **Europe**
  - Consider establishing a manufacturing base for electrical components

- **Brazil**
  - Establish a manufacturing base for rolling stock by JV
  - Strengthen alliances with local companies

- **Expand and enhance existing bases**
- **Develop new bases**
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FY2015 Targets

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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.

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, including, without limitation, the information, electronics, automotive, construction and financial sectors;
- 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;
- 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 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;
- 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.

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