Automotive Systems
Business Strategy
Hitachi IR Day 2013

June 13, 2013
Kunihiko Ohnuma
Chairman & CEO
Hitachi Automotive Systems, Ltd.
Automotive Systems Business Strategy

Contents

1. Business Overview
2. Market Trends
3. Growth Strategy
4. Business Targets
1-1. Business Concept

Harness advanced technologies in the environment, safety and information fields to create new value for people, automobiles and society, and a richer society.

Become the most globally trusted corporate group

- **Environment**
  - Eco-friendly energy control with high efficiency

- **Information**
  - Information and telecommunication solutions for improving the riding experience inside automobiles and convenience

- **Safety**
  - Optimal safe driving control in terms of driving, steering and braking
1-2. Business Structure

Drive control systems
- Electrically-driven intelligent brake
- Stereo camera
- Suspension systems

Powertrain & electronic control systems
- Hybrid systems
  - Motors
  - Inverters
  - Lithium-ion batteries (Hitachi Vehicle Energy)
- Engine management systems
  - Variable valve systems
  - Direct Injection systems

Car information systems
- Clarion Car Navigation Systems
- Smartphone controller

Other
- Seismic isolation oil damper for buildings
- Hydrogen dispenser (TOKICO TECHNOLOGY)

FY2012 Consolidated revenues
806.8 billion yen
1-3. Hitachi’s Management Structure

- Infrastructure Systems Group
- Information & Telecommunication Systems Group
- Power Systems Group
- Construction Machinery Group
- High Function Materials & Components Group
- Automotive Systems Group

Established as an independent group from the Infrastructure Systems Group on April 1, 2013

Grow the automotive components business as a core business by operating the business and marketing management decisions closer to the market as a market-responsive organization
Automotive Systems Business Strategy

Contents
1. Business Overview
2. Market Trends
3. Growth Strategy
4. Business Targets
2-1. Global Auto Production Trends

Global carmakers will capture a large share as emerging nations’ markets expand.

Small car production in particular will expand in emerging markets.

Source: Data compiled in-house from data provided by IHS Automotive
2-2. Global Regulatory Trends

Environmental regulations

- **CO₂ regulations**
  - [gCO₂/km] (Normalized to NEDC)
  - U.S.
  - Europe
  - Japan
  - China
  - 2005 2010 2015 2020 2025

- **Stringent emission regulations**
  - (Nitrogen Oxide, Particulate Matter, etc)
  - Japan: New long-term regulations, Post new long-term regulations
  - U.S.: Tier 2, Tier 3
  - Europe: Euro 4, Euro 5, Euro 6, Euro 7
  - China: Euro 3, Euro 4, Euro 5
  - 2005 2010 2015 2020

Safety evaluation

- **Region**
  - U.S. NCAP / IIHS*
  - Europe Euro-NCAP
  - Japan JNCAP

- **Evaluate institution**

  - Collision warning / Lane departure warning
  - Collision avoidance / Mitigate damage
  - Excessive speed warning
  - Lane departure warning
  - Low-medium-high speed collision avoidance
  - Mitigate damage
  - Collision avoidance pedestrians
  - Collision avoidance / Mitigate damage
  - Lane departure warning
  - Night time pedestrians collision avoidance

*NCAP: European New Car Assessment Programme
IIHS: Insurance Institute for Highway Safety

Environmental regulations are slowly being applied in emerging nations as well as industrialized countries.

Requirement of safety evaluation more on pedestrian protection than cars collision avoidance.
2-3. Global Technology Trends

Increased focus on mobility technology for creating a sustainable society

**Environment**
- Enhancing state-of-the-art electronic control and electric drive technologies
  - Creation of more efficient internal combustion engines
  - Improvement of power-saving technologies for P-HEVs and EVs

**Safety**
- Advance from collision safety to preventive safety
  - Create automobiles that don’t collide using outside recognition sensors and chassis electronic control technologies

**Information**
- Link automobiles and society with IT
  - Use information technology as a bridge between automobiles and the outside to improve comfort and convenience as well as add value to automobiles

Leverage next-generation mobility technology to make automobiles smarter and realize automated driving

P-HEV: Plug-in Hybrid Electric Vehicle  EV: Electric Vehicle
Automotive Systems Business Strategy

Contents

1. Business Overview
2. Market Trends
3. Growth Strategy
4. Business Targets
3-1. Global Position Analysis

Electronics products* share of TOP 10 global parts suppliers by revenue in FY2011

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

*Electronics products: Electronic control and electric drive products such as electronic control units, hybrid systems, etc.
3-2. Global growth strategy

Global-winning global growth strategy

<table>
<thead>
<tr>
<th>Customer strategy</th>
<th>Regional strategy</th>
<th>Product strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expand sales to global automakers</td>
<td>Produce locally for local consumption in regions around the world</td>
<td>Build next-generation environment, safety systems</td>
</tr>
<tr>
<td>Strengthen proposals matched to customers’ strategies</td>
<td>Focus on emerging nations</td>
<td>• Increasing electronics products share</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Standardize globally</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Enhance core products</td>
</tr>
</tbody>
</table>

Strengthen the global management foundation with an eye on 2020
Execute cost structure reform and cash flow management to make business operations stronger.
3-3. Customer Strategy

Expand sales to global automakers

Customer composition and Targets

<table>
<thead>
<tr>
<th>Company</th>
<th>FY2011</th>
<th>FY2015 (Target)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NISSAN</td>
<td>37%</td>
<td>40%</td>
</tr>
<tr>
<td>RENAULT</td>
<td>33%</td>
<td>30%</td>
</tr>
<tr>
<td>Other</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>Mazda</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Isuzu</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Suzuki</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>VW/Audi</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Honda</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Ford</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>GM Group</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>Toyota Group</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>Other</td>
<td>30%</td>
<td>30%</td>
</tr>
</tbody>
</table>

1 trillion yen

811.5 billion yen

Strengthen proposal capabilities

Use GAM/GAT to strengthen global response

Bolster customer strategy-matching proposals by strengthening integrated contact points for customers expanding their businesses globally

Improve global design and development capabilities

Make speedy product and system proposals to cater to the various needs of customers developing business globally

- Increase overseas development personnel by 2.4 times (FY 2015)
- Expand application of simulation/analysis technologies shared across the Hitachi Group

GAM : Global Account Manager
GAT : Global Account Team

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Increase production bases in emerging nations

<table>
<thead>
<tr>
<th>Country</th>
<th>FY2008</th>
<th>FY2011</th>
<th>FY2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>13</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Thailand</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mexico</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>India</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dispatch sales representatives
Considering plans for entry

Advance into emerging nations to accelerate local production for local consumption
### Emerging Nation Business Expansion

#### Emerging nation revenue target indices

<table>
<thead>
<tr>
<th>Region</th>
<th>2010</th>
<th>2012</th>
<th>2015 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>100</td>
<td>94</td>
<td>300</td>
</tr>
<tr>
<td>Asia</td>
<td>100</td>
<td>146</td>
<td>200</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South and Central America</td>
<td>100</td>
<td>135</td>
<td>150</td>
</tr>
</tbody>
</table>

Revenue index (FY2010:100)

Double revenues in emerging nations by FY 2015 (Vs. FY2010)
3-6. Global Product Standardization

Promotion of modular design
- Standardization of product specifications -

- Reduce types of components making up products
- Facilitate local procurement
- Improve cost competitiveness
- Increase global development
- Facilitate response to individual customer specifications
- Expand customers

Standardize MONOZUKURI
Build global standard production lines
Facilitate the startup of overseas production
- Expand local production for local consumption
- Production cost reduction

Results of Global Standardization of VTC
(Revenue index)

<table>
<thead>
<tr>
<th>Years</th>
<th>2008</th>
<th>2012</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>100</td>
<td>200</td>
<td>320</td>
</tr>
</tbody>
</table>

Grow revenues 3.2 times compared with FY2008

Quickly provide products matched to customer needs in terms of price and quality competitiveness

VTC: Valve Timing Control system
Differentiate next-generation systems by enhancing core products

Contribution to creation of automobiles attractive to customers

<table>
<thead>
<tr>
<th>Next-generation powertrain control</th>
<th>Next-generation chassis control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultra fuel-efficient system</td>
<td>Electric drive subsystem</td>
</tr>
<tr>
<td>Engine control unit</td>
<td>Motors</td>
</tr>
<tr>
<td>Electric valve timing control</td>
<td>Inverters</td>
</tr>
<tr>
<td>ISS Starter</td>
<td>Outside recognition sensors</td>
</tr>
<tr>
<td>Lithium-ion batteries</td>
<td>Stereo camera</td>
</tr>
<tr>
<td>ADAS</td>
<td>Electrically-driven intelligent brake</td>
</tr>
<tr>
<td>Electrically-driven PKB</td>
<td>Semi-active Suspension systems</td>
</tr>
<tr>
<td>ESC</td>
<td></td>
</tr>
</tbody>
</table>
3-8. Helping Create Next-generation Vehicles

Contribute by synergy to the creation of next-generation vehicles fit for a sustainable society

Hitachi’s key technologies support sustainable society

Hitachi Automotive Systems

- Environment
- Safety
- Information

Next generation mobility technology

Infrastructure / advanced technologies
- Autonomous mobility robot technologies
- Traffic control and management systems

IT
- Big Data
- Cloud

Technology related energy
- Energy management solution of EV

Fusion smart cities

Smart mobility

Smart grid

Smart cities

Hitachi Group

Next-generation vehicles

Propose solutions by key technologies within the Hitachi Group

Help automakers create next-generation vehicles
3-9. Investing in Growth

**Investment in electronic control and electric drive globally**

### Investment composition

- **Total sum of FY2008 – FY2010**: 90 billion yen
  - Domestic: 40%
  - Overseas: 60%
- **Total sum of FY2011 – FY2013 (Target)**: 200 billion yen
  - Domestic: 60%
  - Overseas: 40%
- **Related electronic control and electric drive products**

### R&D expenditure

- **FY2011**: 52.8 billion yen
  - Overseas: 24 billion yen
  - Domestic: 28.8 billion yen
- **FY2012**: 58.3 billion yen
  - Overseas: 29 billion yen
  - Domestic: 29.3 billion yen
- **FY2015 (Target)**: 80.0 billion yen
  - Overseas: 48 billion yen
  - Domestic: 32 billion yen

- **Global engineering personnel**
  - **FY2011**: 3,600 personnel
  - **FY2012**: 3,700 personnel
  - **FY2015 (Target)**: 4,000 personnel

- **Number of personnel**
  - Overseas: 500
  - Domestic: 800

- **Percentage**
  - Overseas: 40%
  - Domestic: 60%

- **Expenditure increase**
  - 2.2 times (Vs. FY2011)
  - 3.7 times (Vs. FY2011)
  - 2 times (Vs. FY2011)
### Main past initiatives

| Production costs | Promotion of modular design - Standardization of product specifications and MONOZUKURI -  
Strengthening of high-efficiency production and quality at optimal production locations |
| Direct material costs | Lower costs through global procurement system and centralized purchasing  
Reduction of overall costs through VEC activities |
| Indirect costs | Globally unify core IT systems  
Centralize and standardize administrative operations |

VEC: Value Engineering for Customers

### Main future initiatives (Continue and strengthen above initiatives)

| Production costs | Globally develop low-cost, standard production lines  
Cost reduction due to defective work through Zero Defects activities |
| Direct material costs | Costs reduction by VEC activities and rigorously adopting overseas materials  
Maintain procurement networks compatible with global TSCM |
| Indirect costs | Optimize Global logistics  
Optimize logistics route, integration and re-use of logistics packing materials |

TSCM: Total Supply Chain Management
3-11. Strengthening Cash Flow Management

Initiatives for improving free cash flows

**Issues and areas to strengthen**

- Improve operating cash flows
  - Raise inventory turnover ratio
  - Shorten develop and prototype timeframes

- Improve investment efficiency
  - Improve capital expenditure efficiency
  - Increase internal production of production facilities
  - Develop standard automated production lines globally
  - Create low-cost production lines for handling small production lots for emerging nations

**Earnings improvement initiatives**

- Bolster global production management to optimize global inventories
- Strengthen simulation technologies
- Internal production rate 20% ⇒ 60% (FY2012 ⇒ FY2015)
- Standard automated production lines ⇒ Develop 12 in FY2013
- Lower costs by 30% to 70% with low-cost production lines
Automotive Systems Business Strategy

Contents
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4-1. Business Targets

FY2015 targets: revenues: 1 trillion yen, EBIT ratio : 7.0%

Overseas revenue ratio for global customer bases*

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenues (Billion yen)</th>
<th>Overseas Revenue Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2010</td>
<td>737.9</td>
<td>48%</td>
</tr>
<tr>
<td>FY2011</td>
<td>811.5</td>
<td>50%</td>
</tr>
<tr>
<td>FY2012</td>
<td>806.8</td>
<td>50%</td>
</tr>
<tr>
<td>FY2013 (Forecast)</td>
<td>820.0</td>
<td>55%</td>
</tr>
<tr>
<td>FY2015 (Target)</td>
<td>1 trillion yen</td>
<td>60%</td>
</tr>
</tbody>
</table>

EBIT: Earnings before Interest and Taxes
* Customer bases that install automotive components in finished vehicles. This is different from overseas revenues in the consolidated accounts. Excluding exchange rate differences
4-2. FY2015 targets

FY2015 targets

- **Revenues**: 1 trillion yen
  (Overseas revenue ratio for global customer bases 60%)
- **EBIT (Operating income)**: 7.0%
- **Gross margin**: 1 point improvement (Vs. FY2012)
- **SG&A expense ratio**: 2 point improvement (Vs. FY2012)

Become the most globally trusted corporate group
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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;
- uncertainty as to the success of 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;
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