R&D strategy for new growth in Hitachi

10th April 2008

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Vice President & Executive Officer,
General Manager, Research & Development Group,
Hitachi, Ltd.
Global R&D strategy supporting further new growth in Hitachi

Creating an industry which can overcome global issues and produce global competitiveness

Global R&D Strategy

1. Generate innovation for the creation of new industries
   Fusion of Hitachi Group’s strengths and employing external collaborations

2. Commitment to maintain and strengthen the MONOZUKURI industry
   Fortifying innovative MONOZUKURI and increasing the productivity of service industries

3. Speed-up global deployment
   Expanding a seamless global R&D network

4. Foster global and innovative human resources
   Recruitment, fostering and appointment of global and highly-skilled experts
Contents

1. “R&D Management Vision” for Hitachi growth
2. For the expansion of current business areas
3. Fortifying the growth strategy
4. Creation of innovative technology
Contents

1. “R&D Management Vision” for Hitachi growth
2. For the expansion of current business areas
3. Fortifying the growth strategy
4. Creation of innovative technology
1-1. Hitachi’s management policy

<table>
<thead>
<tr>
<th>Basic Management Policy</th>
<th>“Collaborative creation and profit”</th>
</tr>
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<tbody>
<tr>
<td>Rigorous focus on market-oriented approach and profit creation</td>
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Management Goal

Establish a stable, high profit structure

Key Initiatives

1. Increased profitability through rigorously FIV-based management
2. Building a stable, high profit structure
3. Evolution to group management for high profitability
4. Innovation through collaborative creation
1-2. “R&D Management Vision” for Hitachi growth

1. Management of Research
   Manage R&D to produce "World No.1", "Only one" technology
   (1) Technology viewpoint + Laboratory balance sheet (B/S/P/L) viewpoint
   (2) Comply with short-term business division needs and prepare long-term research

2. Return on R&D
   Determine how much R&D investment has contributed to Hitachi Group’s
   (1) Sales, profit increase
   (2) Creation of new business
   (3) Innovative new technology,
   and manage based on the innovation cycle

3. Research-based Management
   Management placing emphasis on R&D as the source of profit and corporate value
   Evolution to “Hitachi = Technology”
1-3. Research mission for new growth

1. Current business expansion
   - Central Research Laboratory: Kokubunji-shi, Tokyo
     - Info. & Telecommunications, Embedded systems, Solution LSI, Storage, Life sciences
   - Hitachi Research Laboratory: Hitachinaka-shi, Ibaraki
     - Public systems, Devices, Components, Materials

2. Generation of new business
   - Mechanical Engineering Research Laboratory: Hitachinaka-shi, Ibaraki
     - Mechatronics applications systems
   - Production Engineering Research Laboratory: Yokohama-shi, Kanagawa
     - Management systems, Production systems & processes
   - Systems Development Laboratory: Kawasaki-shi, Kanagawa
     - Information systems, Security, Ubiquitous, Storage, Service solutions

3. Creation of innovation technology
   - Advanced Research Laboratory: Hatoyama-machi, Saitama
     - Human & Information systems, Health systems, Environment & Energy, Nano-materials & Devices

6 Corporate Laboratories

<No. of employees as at 2008/4/1>
### Technology × Business matrix to objectify fortification guidelines

#### Technology axis
- Circuit design & packaging
- Nanoelectronics
- Energy electronics
- Wireless
- New energy
- Machinery / Plant
- Simulation
- Motor
- Human sciences
- Service engineering
- Management systems
- Design platforms
- Info. processing platforms
- Intelligent info. processing
- SensorNet
- Security
- Embedded software
- Batteries
- Materials
- Machining process
- Measurement
- Bio-platforms

#### Business axis: Hitachi policy

<table>
<thead>
<tr>
<th>Technology</th>
<th>Business</th>
<th>Social</th>
<th>Industrial</th>
<th>Life</th>
<th>Information</th>
<th>Infrastructure Technology</th>
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Engine of growth:
“Fortifying research matrix”

Technology × Business matrix to objectify fortification guidelines

Grouped into 5 areas

<table>
<thead>
<tr>
<th>Technology axis</th>
<th>Business matrix to objectify fortification guidelines</th>
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</thead>
<tbody>
<tr>
<td>Circuit design &amp; packaging</td>
<td>A) Focus on platform research ⇒ Part 2: Current business</td>
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<tr>
<td>Nanoelectronics</td>
<td>B) Fortify environmental, energy-saving research ⇒ Part 3: New business</td>
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<td>Energy electronics</td>
<td>C) Fortify next-generation information research ⇒ Part 3: New business</td>
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<td>Wireless</td>
<td>D) Deployment of new electronics ⇒ Exhibited</td>
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<td>New energy</td>
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<td>Machinery / Plant</td>
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<td>Simulation</td>
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<td>Motor</td>
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<td>Human sciences</td>
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<td>Service engineering</td>
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<td>Management systems</td>
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<td>Design platforms</td>
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<td>Info. processing platforms</td>
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<td>Intelligent info. processing</td>
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<td>Machining process</td>
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<td>Bio-platforms</td>
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Technology axis

- A: Focus on platform research
- B: Fortify environmental, energy-saving research
- C: Fortify next-generation information research
- D: Deployment of new electronics

Business matrix:

- Social
- Industrial
- Life
- Information
- Infrastructure Technology

- Electrical
- Mechanical
- Humanities
- Information
- Physics/Chemistry

Engine of growth:
“Fortifying research matrix”

Part 2: Current business
Part 3: New business
Exhibited
1-5. Research Schemes

<table>
<thead>
<tr>
<th>Business target</th>
<th>2008</th>
<th>2010</th>
<th>2015</th>
<th>2025</th>
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<tbody>
<tr>
<td>Management strategy</td>
<td>Management for collaborative creation &amp; profit</td>
<td>Environmental Vision 2025</td>
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<td>Business Group</td>
<td>Business strategy roadmap</td>
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<td>R&amp;D Group</td>
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<td>Sponsored research (50%)</td>
<td>Adv. sponsored research (30%)</td>
<td>Frontier research (10%)</td>
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<td></td>
<td>Current business expansion (Generate No. 1 businesses)</td>
<td>Create new businesses (speed-up synergy)</td>
<td>Est. innovative business (Shifts in paradigm)</td>
<td>Platform research (10%)</td>
</tr>
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Long-term technology development plan
Contents

1. “R&D Management Vision” for Hitachi growth
2. For the expansion of current business areas
3. Fortifying the growth strategy
4. Creation of innovative technology
2-1. R&D strength & Contributing to profit generation

1. “Collaborative Creation and Profits” progress presentation (28th May 2007)

① Place 15% of corporate researchers in the business division

Actual figure: **16.8%**

② Cut Development time by 30%

MONOZUKURI innovation based on advanced technology

- Corporate organization: Supervisory Office for MONOZUKURI
- R&D organization: Follow-up scheme on development time
  Technology platforms across the Group

2. Contribute to No. 1 businesses
2-2. 30% cut in R&D time through “MONOZUKURI innovation”

Policy: Injecting innovation into MONOZUKURI through cutting-edge technology development

**Analysis-led Design**
- Automatically generated analysis model to reduce design labor
  - Applied from Sept. 2007 in the next shinkansen and express train for the overseas market
  - (Railway car strength evaluation time: 21 days → 10 days)

**Data-linked MONOZUKURI**
- High-speed detection of trouble/defects in process & equipment linked with statistical data

**Supervisory Office for MONOZUKURI**

1. **1st Subcommittee**: Reform of development, design & manufacturing process
   - **Analysis-led design**
   - **Phase-gate system**
   - **W/w-TSCM innovation**
   - **Data-linked MONOZUKURI**

2. **2nd Subcommittee**: Reinforce risk management, project management skills
   - PM support system, PM education

3. **3rd Subcommittee**: Enhance reliability
   - Reinforcing quality assurance activities

4. **4th Subcommittee**: Reinforce knowledge-based management
   - Consolidate common DB of success, accident, and incident examples

5. **5th Subcommittee**: Enhance MONOZUKURI technology
   - Intensify committee activity, enhance factory floor skills

6. **6th Subcommittee**: Personnel, organization, Hitachi Founding Spirit
   - Hand-down the legacy of Hitachi Founding spirit
## 2-3. Technology platforms supporting MONOZUKURI reform

Group wide enhancement & fusion of common key technology and personnel development

<table>
<thead>
<tr>
<th>Details</th>
<th>Technology Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical &amp; Electrical</td>
<td>Information</td>
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<td>Materials</td>
<td>Service Science</td>
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<tr>
<td>Electronics</td>
<td>Outsourcing</td>
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<tr>
<td>New materials</td>
<td>EA*/SoA**/Initial stage consulting</td>
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<tr>
<td>Medical &amp; Biotechnology</td>
<td>Application of advantage technology &amp; devices</td>
</tr>
<tr>
<td>Nanotechnology</td>
<td>New Service Methodologies</td>
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</tbody>
</table>
| Electron beam-based measurement | "*EA: Enterprise Architecture"
| Non-destructive measurement | **SoA: Service Oriented Architecture" |
| Product design support | |
## 2-4. Contributing to No. 1 business

CRL (Central Research Laboratory), ARL (Advanced Research Laboratory), HRL (Hitachi Research Laboratory), SDL (Systems Development Laboratory), MERL (Mechanical Engineering Research Laboratory), PERL (Production Engineering Research Laboratory), CEL (Consumer Electronics Laboratory, Consumer Business Group)

<table>
<thead>
<tr>
<th>Society</th>
<th>Aluminum train carriage (A-train) (Domestic No. 1)</th>
<th>MERL, HRL</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Rail traffic control system (Domestic No. 1)</td>
<td>SDL, HRL</td>
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</table>

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<thead>
<tr>
<th>Industry</th>
<th>Critical-dimension SEM (W/w No. 1)</th>
<th>CRL, PERL, MERL</th>
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<tbody>
<tr>
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<td>DNA sequencer (W/w No. 1)</td>
<td>CRL, ARL</td>
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<td>Bio/Immunological assay equipment (W/w No. 1)</td>
<td>CRL, PERL</td>
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<td>Drill hole opener (W/w: No. 1)</td>
<td>MERL, HRL</td>
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<td>Hot-wire air flow sensor (W/w No. 1)</td>
<td>HRL, MERL</td>
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<tr>
<th>Everyday life</th>
<th>Optical disk drive (W/w: No. 1*)</th>
<th>CRL, MERL, CEL, PERL</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>MRI equipment (low-medium magnetic field; open) (Domestic, Europe No. 1)</td>
<td>CRL, HRL</td>
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<thead>
<tr>
<th>Information</th>
<th>Enterprise storage equipment (W/w: No. 1*)</th>
<th>SDL, CRL</th>
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<td>Operation management software JP1</td>
<td>SDL, CRL</td>
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<td>(Domestic No. 1* for 10 consecutive years)</td>
<td>SDL, CRL</td>
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<td>ATMs (Domestic No. 1, China No. 1*)</td>
<td>MERL, CRL, SDL</td>
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<td>Finger vein authentication system (Domestic No. 1)</td>
<td>CRL, SDL</td>
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<tr>
<th>Platform Technology</th>
<th>2.5-inch HDD (W/w No. 1)</th>
<th>CRL, PERL, MERL</th>
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<tbody>
<tr>
<td></td>
<td>Magnetic Materials (NEOMAX) W/w No. 1)</td>
<td>Hitachi Metals, Ltd. (Magnetic Materials Research Lab.)</td>
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<td>Photosensitive film (W/w No. 1)</td>
<td>Hitachi Chemical Co., Ltd. (New Applied Materials R&amp;D Center)</td>
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<td>Anisotropic Conductive Film for displays (W/w No. 1)</td>
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2-5. Conglomerate MONOZUKURI strength: CTRL (for Europe)

**MONOZUKURI Innovation technology**

*Enhancing riding comfort & safety*
- Carriage behavior analysis, testing technology
- Large-scale collision analysis

*Enhancing comfort*
- Large-scale fluid analysis
- Internal/external noise prediction technology

*Environment-conscious hybrid technology*
- World's first commercial operation (East Japan Railway Company, Koumi line, 2007.07)
- Prototype high-speed hybrid train “HAYABUSA”

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**1st major European order: U.K. CTRL**

(CTRL: Channel Tunnel Rail Link)

- 2007.06 ~ Delivery of 4 prototype trains
- 2007.10 ~ Start of test runs
- 2009.12 ~ Start of commercial operations

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**2nd Oct. 2007: Opening ceremony of the carriage maintenance depots**

(Attended by the U.K. Minister of Transport & the Japanese Ambassador to the U.K.)
Large-scale corporate data compilation

- Capacity virtualization technology: Virtualizes compilation of a greater volume of data than actual capacity.

Virtual equipment technology:
Utilize the data storage capacity of multiple equipment.

- 3 consecutive years W/w top share
- 11 consecutive years top domestic share

Hitachi Data Systems (U.S.)

USP V (launched May 2005)

Storage solution business

348.0 billion JPY [FY 2006] → 390.0 billion JPY [FY 2009 target]

Cultivate undeveloped businesses ⇒
Plan concept
Established concept of virtualization technology

Hitachi America SAN Solutions Lab. (U.S.)
Est. 1999

Customer needs

Expand U.S. market
Customer acquirerement service

Hitachi Data Systems (U.S.)

Technical information

Disk Array Systems Div.
SAN Systems Solution Div.
Software Div.

Product development
Determine specifications

Hitachi America SAN Solutions Lab. (U.S.)

Technical information

Draw-up Spec.

Develop No. 1 technology

Customer needs
Finger vein authentication technology (2000)

1. Pick-up image with near-infrared light
2. Image processing
3. Pattern matching

Near infra-red light

Finger vein pattern

Social needs
- Identity theft
- Skimming
- Personal information leaks
- Digital shoplifting

Products & applications
Admission control
ATM authentication

Employed by 80% of commercial banks

2004
2005

Central Research Laboratory
Technology fusion
- Optical measurement
- Medical technology
- Ultrasound diagnostics
- Image recognition

Social needs and fusion of technology: Finger vein authentication system

Finger vein authentication business
20.0 billion JPY <FY 2006> ⇒ 50.0 billion JPY <FY 2009 target>

Finger vein authentication system

In the future
Automobile

Oct. 2007 Tokyo Motor Show

In the future

Employed by 80% of commercial banks


2004
2005
Contents

1. “R&D Management Vision” for Hitachi growth
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3-1. Growth strategy fortification plan

1. Speed-up globalization

   (1) Fortify overseas R&D centers

   (2) R&D-led deployment of global business

2. Following a business strategy for high-growth

   (1) Environmental Vision 2025

   (2) Accelerate creation from Group synergy

       ▪ Broadcasting and communication convergence:
         Lead “Broadgather” technology

       ▪ Environment, energy conservation: development of core technology

       ▪ Metropolitan renaissance: Building solutions
## Mission of overseas R&D centers

<table>
<thead>
<tr>
<th>Hitachi Europe Ltd.</th>
<th>Hitachi America, Ltd.</th>
<th>Hitachi (China) R&amp;D Corporation</th>
<th>Hitachi Asia Ltd. (Singapore)</th>
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<tbody>
<tr>
<td><strong>Staff:</strong> 35</td>
<td><strong>Staff:</strong> 40</td>
<td><strong>Staff:</strong> 80</td>
<td><strong>Staff:</strong> 5</td>
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<tr>
<td>Fundamental physics research at the University of Cambridge (Mission 3)</td>
<td>Close cooperation in development with the Big 3 automobile manufacturers (Mission 1)</td>
<td>Info. &amp; Telecomm., Software, Env. tech. devt. (Mission 2)</td>
<td>R&amp;D in line with national strategy to fortify storage technology (Mission 2)</td>
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<tr>
<td>Hitachi Cambridge Lab.</td>
<td>Automotive Products Research Lab.</td>
<td>R&amp;D support for local automobile manufacturers (Mission 1)</td>
<td>Act as a regional R&amp;D hub in ASEAN countries and south Asia (Mission 2)</td>
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<tr>
<td><strong>Lab. Head:</strong> David Williams</td>
<td><strong>Lab. Head:</strong> George Saikalis</td>
<td>Automotive Research &amp; Development Lab.</td>
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<td>R&amp;D support for local automobile manufacturers (Mission 1)</td>
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<td><strong>VP:</strong> CHEN Yang-Qiu</td>
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</table>
1. Speed-up globalization

3-3. R&D-led deployment of global business

W/w joint research for environmental defacto's

Global competition in coal thermal power: pilot experiment in CO₂ retrieval (2009)

Joint research with IBM to lead Group business (Feb. 2008)

IBM

• IBM Thomas J. Watson Research Center
• State University of New York (Albany NanoTech Complex)

Hitachi

Fundamental research on 32nm semiconductors & beyond
Clarification of atomic level semiconductor physics
New manufacturing equip
New analytical equip.

Hitachi Group

Statistical traffic info. processing (Collect local data)
Machatronics modeling
Close to customers / prompt response

R&D customized for US automobile manufacturers

Automotive Products Research Lab.
Est. 1989 Staff 19 (local staff 10)

Power & Industrial Systems R&D Lab.

Joint research (Feb. 2008 start)

Statistical traffic info. processing
CD-SEM

Electro-magnetic noise measurement /improvement

Local manufacturers: GM, Ford, Chrysler

Up-to-date information on customer needs, etc.

(Conduct test locally: alone or jointly)
1. Reinforce global warming countermeasures
   Contribute to 100 million ton reduction in CO$_2$ emission through Hitachi group products by 2025

2. Strengthen environment business
   Aspire to transform all Hitachi products to Eco-products by 2025

3. Promote collaborative creation projects on a global scale
   Form alliances with corporate partners worldwide, governmental institutions, universities

4. Strengthen structure for promoting environmental management
   Hitachi Group Chief Environmental Strategy Officer (CEnO) appointed 1$^{st}$ December 2007;
   Environmental Strategy Office established 1$^{st}$ January 2008
3-5. Increase Eco-products

FY 2006 achievements

- Reduction in power consumption during operation (compared with previous year)

FY 2005: 720 million kWh
FY 2006: 810 million kWh
(equivalent to 234,000 households)

<table>
<thead>
<tr>
<th>Business division</th>
<th>Information &amp; Telecommunication systems</th>
<th>Electronic devices</th>
<th>Power &amp; Industrial systems</th>
<th>Digital media &amp; Consumer products</th>
<th>Highly functional materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of models</td>
<td>1,473</td>
<td>206</td>
<td>1,331</td>
<td>1,529</td>
<td>952</td>
</tr>
<tr>
<td>Product examples</td>
<td>Enterprise storage equipment</td>
<td>Clinical testing equip.</td>
<td>H-25 gas turbine</td>
<td>Plasma TV</td>
<td>Anisotropic conductive film for displays</td>
</tr>
<tr>
<td></td>
<td>2.5” HDD</td>
<td>TFT module</td>
<td>Amorphous transformer</td>
<td>Refrigerator</td>
<td>Eco-cables (vinyl-chloride-less)</td>
</tr>
</tbody>
</table>

FY 2006 achievements

<table>
<thead>
<tr>
<th>Year</th>
<th>Models</th>
<th>(No. of models)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>3,294</td>
<td></td>
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<tr>
<td>2005</td>
<td>4,506</td>
<td></td>
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<tr>
<td>2006</td>
<td>5,491</td>
<td></td>
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<tr>
<td>2010</td>
<td>7,000</td>
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</table>

2025 (FY)

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Broadgather: Large-scale monitoring using network cameras

- **Market size:**
  - 3,23.2 billion JPY (2005) → 420.0 billion JPY (2010)
    - Service • ASP market: 179.4 billion JPY → 2,600 billion JPY
    - Hardware/Software market: 143.8 billion JPY → 160.0 billion JPY

- **Technology developed**
  - Efficient transmission
  - Image enlargement of emergency situations
  - Seamless search of similar images from the screen

Announced February 2008
3-7. Core technology for environment & energy

**CO₂ reduction**
- Increasing efficiency of coal thermal power plants
- Retrieve CO₂ emission from fossil fuels

**IT energy conservation**
- Low-power multi-core LSI
  - Achieved with vanadium system
  - Reserves: 38 million tons
  - Conventional: Bismuth systems
  - Reserves: 680,000 tons

**Transferring to electricity-base technology**
- Battery, inverter, motor technology
- Hybrid electric vehicle (HEV)
- Low-loss & high power density inverter
  - Automatic reduction of 86% power
    (NEDO project: Joint research with Waseda Univ. & Renesas Technologies Corp.)
  - Announced Feb. 2008 @ ISSCC*

**Reducing environmental burden**
- High-temp lead free solder
  - Temp. raised from 150°C ⇒ 200°C
  - <Applicable to power semiconductors>
  - Achieved with vanadium system
  - Reserves: 38 million tons
  - Conventional: Bismuth systems
  - Reserves: 680,000 tons
  - Announced Jan. 2008

- Lead-free glass
  - Announced Feb. 2008
Contents

1. “R&D Management Vision” for Hitachi growth
2. For the expansion of current business areas
3. Fortifying the growth strategy
4. Creation of innovative technology
### 4-1. Century of Industry & Century of Prosperous Human Society

#### 20th Century

**A century of industry pioneered by science**

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy</strong></td>
<td>Electricity ⇒ Nuclear, Solar, Fuel cell battery</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td>Automobiles, Large-scale jets, Super sonic transport, Precision machinery ⇒ robot</td>
</tr>
<tr>
<td><strong>Information</strong></td>
<td>Transistor ⇒ VLSI, Computer ⇒ Internet</td>
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<tr>
<td><strong>Human</strong></td>
<td>DNA, Immunology, Cranial neuroscience, Generative and regenerative medicine</td>
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<tr>
<td><strong>Materials</strong></td>
<td>Nylon, Alloy materials, Nano-materials</td>
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<tr>
<td><strong>Fundamental</strong></td>
<td>Quantum mechanics, Theory of relativity</td>
</tr>
</tbody>
</table>

#### 21st Century

**A century of prosperity**

- **Clean energy industry**
  - Environment•energy innovative technology
  - Clean vehicles
- **Human-centric business industry**
  - Visualization of business productivity
  - Virtualization of business systems
- **Human-friendly industry/consumer products**
  - Human-symbiotic robot
  - Brain machine interface
- **Ambient information society**
  - 3rd Information Revolution
  - New electronics
- **Society with life-long health**
  - Spread of regenerative medicine
  - Health maintenance industry

Source: Innovation 25 strategy council material, etc.
Current Hitachi business (Revenues at end of March 2007)

Digital media & Consumer products 1,506.1 Billion JPY

Power & Industrial systems 3,022.3 Billion JPY

Information & Telecommunication systems 2,472.2 Billion JPY

Paradigm shift

- Thoughtful
  - An interface which operates as desired

- Harmonic
  - System to minimize accidents
  - Stress-free driving operation

- Sensible
  - Securing security
  - Stress-free management
  - System with minimum scope for human-error

Brain science

- Brain activity measurement
- Keyboard-less interface

Brain Machine Interface

Nanoelectronics

- Intelligent Device
  - High-speed
  - Large capacity
  - Non-volatile

Spintronics device (MEXT Project: Joint research with Tohoku Univ.)

Robotics

- Autonomous movement
- Voice conversation /intelligence
- Obstacle avoidance
- Ultimate movement mechanism & control
  - (2-wheel ⇒ 4-wheel transformation)

Announced Nov. 2007

R&D for a century of prosperity: MONOZUKURI
**Productivity**

- Interaction map generating server
- Wireless base station
- Topographical interaction map of an organization

**Visualization of business activity**
⇒ **Business-Microscope** (June 2007)

**Safety**

- A car not requiring a key
  ⇒ steering wheel embedded finger vein authentication (Oct. 2007)

**Health maintenance**

- Measurement of brain activity during ordinary daily activities
  ⇒ Wearable optical topography (May 2007)

- Medical advice via the Internet for metabolic syndrome
  ⇒ **Harasuma Diet** (May 2007)

- Visualization of daily rhythm over a long period time (temp., movement, pulse)
  ⇒ **Life-Microscope** (Sept. 2007)
4-4. Human resource for innovation

1 Platform structure for human resources

- Experienced person from university, research organization
- Secure personnel
- Effective use of personnel
- Education
- R&D division
- Business group, Group company
- Foster global personnel
- Researcher exchange with overseas R&D facility

2006-2007 flow in corporate researchers: 16.8%

2 Human resource diversity

(1) Hitachi Fellow system (since 1999): position equivalent to a Board Director (currently 6 Fellows)

- an employee who has contributed to the progress of science and technology on a world-level
- an employee who has contributed to the international acknowledgement of Hitachi’s high standard of technology

(2) Use of doctoral degree holders (approx. 700 as at March 2008)

Doctoral degree support (since 2005): apply the experience of coalescing work to the generation of innovation

(3) Use of young researchers

Left: Mr. Nakamura
EMI EW 2 Project leader (joined Hitachi 2004)
Right: Mr. Amino
Mechanical system leader (joined Hitachi 2005)

ISSCC Presentation
Mr. Wachi
(joined Hitachi 2006)
Realization of the world’s lowest noise levels using a mm-wave high frequency circuit with CMOS

CEO, Hitachi High-Technologies Corp.
CEO, Hitachi Maxell, Ltd.
Former CEO, Hitachi ULSI Systems Co., Ltd. etc.

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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:

- increasing commoditization of information technology products, and intensifying price competition in the markets for such products, particularly in the Information & Telecommunication Systems segment, Electronic Devices segment and Digital Media & Consumer Products segment;
- fluctuations in product demand and industry capacity, particularly in the Information & Telecommunication Systems segment, Electronic Devices segment and Digital Media & Consumer Products segment;
- uncertainty as to Hitachi’s ability to continue to develop and market products that incorporate new technology on a timely and cost-effective basis and to achieve market acceptance for such products;
- rapid technological change, particularly in the Information & Telecommunication Systems segment, Electronic Devices segment and Digital Media & Consumer Products segment;
- fluctuations in rates of exchange for the yen and other currencies in which Hitachi makes significant sales or in which Hitachi’s assets and liabilities are denominated, particularly between the yen and the U.S. dollar;
- uncertainty as to Hitachi’s ability to implement measures to reduce the potential negative impact of fluctuations in product demand and/or exchange rates;
- general socio-economic and political conditions and the regulatory and trade environment of Hitachi’s major markets, particularly the United States, Japan and elsewhere in Asia, including, without limitation, a return to stagnation or deterioration of the Japanese economy, or direct or indirect restrictions by other nations on imports;
- 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 results of litigation and 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;
- uncertainty as to the success of restructuring efforts to improve management efficiency and to strengthen competitiveness;
- 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 ability to access, or access on favorable terms, liquidity or long-term financing; and
- uncertainty as to general market price levels for equity securities in Japan, declines in which may require Hitachi to write down equity securities it holds.

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