Automotive & Industrial Systems Company
Growth Strategy of Automotive and Storage Battery System Businesses

November 22, 2013
Panasonic Corporation
Automotive & Industrial Systems Company
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Notes: 1. This is an English translation from the original presentation in Japanese.
2. In this presentation, “fiscal 2014” or “FY2014” refers to the year ending March 31, 2014.

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1. Outline of automotive business

2. Growth strategy of automotive business

3. Growth strategy of storage battery system business
1. Outline of automotive business

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Organization of Automotive Business

Automotive & Industrial Systems Company (AIS Company)

- Engineering Division
- Business Development Division
  - Automotive BD Center
  - Industrial BD Center
- Automotive Marketing & Sales Division
- Industrial Marketing & Sales Division

Sales Composition*:

- Automotive: 43%
- ICT: 17%
- Industry: 15%
- Other: 25%

* Forecast for FY14

Automotive & Industrial Systems Company (AIS Company)
Features of Automotive Business

Developing Tier 1, Tier 2 and Tier 3 businesses based on wide-range of customers

Business deployment

Sales (FY13)

1 trillion yen

- Electrically powered: 30%
- Security & safety: 19%
- Comfort: 51%

By field: 60%

By customer: 40%

Main Products

Comfort

- Car navigation System
- Portable navigation device (PND)
- Rear seat entertainment system
- Head-Up display (HUD)
- Car speaker

Electrically powered

- Onboard charging system
- Inverter-integrated compressor
- Film capacitor for HEV
- Lead storage battery
- Lithium-ion battery

- Stop lump switch
- Parking brake switch

Security & safety

- 360-degree view camera system
- Camera module
- Engine control unit
- DSRC/ETC onboard unit
- Car approach alarming device
- Steering switch
- Combination switch
- In-car microphone

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1. Outline of automotive business

2. Growth strategy of automotive business

3. Growth strategy of storage battery system business

Business Opportunities and Measures

Increase business opportunities with safety regulation & legislation and environmental awareness

**Comodo**
- Market size in 2018: 4.9 trillion yen
- Demand for easy control through Cloud connectivity and HMI* will increase
- Create comfortable in-car space with user-friendly functions to meet customer demand

**Security & safety**
- Market size in 2018: 7.8 trillion yen
- Standardization of mounting system for security and safety will be accelerated
- Propose safer cars by leveraging our strengths with sensing devices

**Electrically powered**
- Market size in 2018: 6.4 trillion yen
- In order to meet each country's environmental criteria, electrical powered system will be progressed
- Lead electrically powered technology with smaller and lighter devices

*HMI: Human Machine Interface

Market size in 2018: Panasonic estimate
Sales Target
Aim for 2 trillion yen sales, focusing on "comfort", "security & safety" and "electrically powered"

<table>
<thead>
<tr>
<th></th>
<th>FY13 result</th>
<th>FY14 forecast</th>
<th>FY16 forecast</th>
<th>FY19 target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>1.0</td>
<td>1.1</td>
<td>1.3</td>
<td>1.7</td>
</tr>
<tr>
<td>(bil. yen)</td>
<td></td>
<td></td>
<td></td>
<td>1.7</td>
</tr>
</tbody>
</table>

Unconventional measures

Electrically powered
Security and safety
Comfort

Note: Total sales amount of system and device

Growth Strategy(1): ‘Comfort Space’

- Focus on ‘next generation cockpit’ and ‘cloud service’ filling five senses
- Enhance corporate wide automotive core value

Sales Target

<table>
<thead>
<tr>
<th></th>
<th>FY13</th>
<th>FY19(e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>510bil. yen</td>
<td>880bil. yen</td>
</tr>
</tbody>
</table>

Strategy

Develop from single product and module to system

- **<Next generation cockpit>**
  Create ‘comfort space’ with display systemizing and connecting by Cloud

- **<Head-Up display (HUD)>**
  Downsize with optical and projection technology (with AVC Networks Company)

- **<Steering wheel solution>**
  Improve operability equipped switch and sensor
Growth Strategy(2): ‘Security and Safety’

- Contribute ‘security and safety’ offering variety of sensors and system solutions
- Enter ‘run, stop and turn’ with M&A and alliance

<table>
<thead>
<tr>
<th>Sales Target</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: Total sales amount of system and device</td>
<td></td>
</tr>
<tr>
<td>FY13</td>
<td>FY19(e)</td>
</tr>
<tr>
<td>190bil. yen</td>
<td>440bil. yen</td>
</tr>
</tbody>
</table>

**Develop system accessing driving control**

- <Automatic parking & prevention for erroneous operation>
  - Full-automation with sonar, camera, radar

- <Security system communicating with smartphone>
  - Security sensor, wireless authentication technology, engine control unit (ECU)

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Growth Strategy(3): Electrically powered (Automotive Li-ion Battery)

- Expand production capacity to meet high demand
  - CAPEX: 13bil. Yen (business plan) + 18bil. Yen (additional)
- Expand application from cell to system to meet customers perspective

<table>
<thead>
<tr>
<th>Sales Target</th>
<th>Capacity</th>
<th>Customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: Sales of automotive battery and all other products related to ‘electrically powered’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY13</td>
<td>FY19(e)</td>
<td></td>
</tr>
<tr>
<td>300bil. yen</td>
<td>680bil. yen</td>
<td></td>
</tr>
</tbody>
</table>

- Angle type Li-ion battery
  - Expand capacity of Kasai factory in FY14
- Cylinder type Li-ion battery
  - Expand capacity of Suminoe/Kaizuka factories in FY15
- Angle/cylinder type Li-ion battery
  - Have started to negotiate with new customers (HEV/PHEV/EV)
  - Increase supply for Tesla Motors
  - Will supply 2bil. Cells in 2014-17

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Invest on automotive business in system, battery and device

**Investment (FY14-16 in total)**

- **CAPEX: 120 bil. yen**
  - Increase automotive Li-ion battery capacity
  - Introduce new cockpit products
  - Increase device production
  - Angular rate sensor, automotive relay, Film capacitor for HEV etc.

- **R&D: 300 bil. yen**
  - Core devices
    - Sensor: single/fusion products
    - Battery: high capacity Li-ion battery
    - Power semiconductor: SiC, GaN
  - Module, system

**Sales target by business area**

- **System**
  - FY13: 1,050 bil. yen
  - FY19(e): 450 bil. yen

- **Battery**
  - FY13: 450 bil. yen
  - FY19(e): 500 bil. yen

- **Device**
  - FY13: 1 tri. yen
  - FY19(e): 2 tri. yen

**Towards 2018**

Become one of ‘top 10’ global automotive parts manufacturers in 2018

**Sales for automotive parts (FY13)**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Sales (USD billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.1</td>
<td>30</td>
</tr>
<tr>
<td>No.2</td>
<td>20</td>
</tr>
<tr>
<td>No.3</td>
<td>30</td>
</tr>
<tr>
<td>No.4</td>
<td>20</td>
</tr>
<tr>
<td>No.5</td>
<td>15</td>
</tr>
<tr>
<td>No.6</td>
<td>15</td>
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<td>No.7</td>
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<td>No.9</td>
<td>30</td>
</tr>
<tr>
<td>No.10</td>
<td>15</td>
</tr>
<tr>
<td>No.17</td>
<td>10</td>
</tr>
</tbody>
</table>

**FY19(e) Sales:** 2 tri. yen

Source: FOURIN, Inc.
1. Outline of automotive business

2. Growth strategy of automotive business

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**Growth Strategy(1): Business Opportunity**

Expand Li-ion storage battery system market contributing TCO decrease

<table>
<thead>
<tr>
<th>Base station</th>
<th>Data center</th>
<th>Office/residence</th>
<th>Market</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Base station diagram" /></td>
<td><img src="image2.png" alt="Data center diagram" /></td>
<td><img src="image3.png" alt="Office/residence diagram" /></td>
<td><img src="image4.png" alt="Market diagram" /></td>
</tr>
</tbody>
</table>

**Note:** Panasonic estimate
Growth Strategy(2): Storage Battery Systems

- Accelerate shifting Li-ion battery application from ICT to industrial
- Expand business with Panasonic’s advantage

(high capacity, high reliability and controlling technology)

<table>
<thead>
<tr>
<th>Sales Target</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 bil yen</td>
<td>Base station business</td>
</tr>
<tr>
<td>1 bil yen</td>
<td>- Prepare for blackout in emerging countries</td>
</tr>
<tr>
<td></td>
<td>- Conserve space in urban areas</td>
</tr>
<tr>
<td>FY13 FY19(e)</td>
<td>⇒ for telecom careers, base station manufacturers</td>
</tr>
</tbody>
</table>

- Office/residential (UPS) business
  - Prepare for blackout and energy saving demand
  - Maintain long-hour backup
  ⇒ for residential, PV/power conditioner, UPS manufacturers

- Data center business
  - Diversify initial investment
  ⇒ for server manufacturers

- Base station business
  - Conserve space in urban areas

Diversify initial investment

- Base station business
  - Conserve space in urban areas

Base station business

For telecom careers, base station manufacturers

Li-ion storage module

Controling box

Li-ion storage module

Storage system

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