Connected Solutions
Fiscal 2020 Second-half and Medium-term Initiatives

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Connected Solutions Company
Panasonic Corporation

Notes: 1. This is an English translation from the original presentation in Japanese.
2. In this presentation, “Fiscal 2020” or “FY20” refers to the year ending March 31, 2020.

Fiscal 2020 Full-Year Forecast
Forecast for FY2020

<table>
<thead>
<tr>
<th>(yen: billions)</th>
<th>First-Half Results</th>
<th>vs. FY19</th>
<th>Second-Half Forecast</th>
<th>vs. FY19</th>
<th>Full-year Forecast (10/31)</th>
<th>vs. FY19</th>
<th>vs. Published value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>518.6</td>
<td>-30.5</td>
<td>591.4</td>
<td>+12.8</td>
<td>1,110.0</td>
<td>-17.7</td>
<td>-40.0</td>
</tr>
<tr>
<td>Adjusted Operating Profit</td>
<td>36.8 (7.1%)</td>
<td>-12.9</td>
<td>47.2 (8.0%)</td>
<td>-3.0</td>
<td>84.0 (7.6%)</td>
<td>-15.9</td>
<td>-5.0</td>
</tr>
<tr>
<td>Other income/loss</td>
<td>-0.5</td>
<td>-2.6</td>
<td>-1.5</td>
<td>+6.1</td>
<td>-2.0</td>
<td>+3.5</td>
<td>--</td>
</tr>
<tr>
<td>Operating profit</td>
<td>36.3 (7.0%)</td>
<td>-15.5</td>
<td>45.7 (7.7%)</td>
<td>+3.1</td>
<td>82.0 (7.4%)</td>
<td>-12.4</td>
<td>-5.0</td>
</tr>
<tr>
<td>Capital investment</td>
<td>8.4</td>
<td>-0.5</td>
<td>13.6</td>
<td>-0.2</td>
<td>22.0</td>
<td>-0.7</td>
<td>-3.0</td>
</tr>
</tbody>
</table>

**Full-year forecast / 2H initiatives**

- **Connected Solutions**
  - The impact of sluggish investment demand in China, restrained investment in some airlines, the impact of exchange rates, and other factors. Decrease in profit.
  - Strengthen efforts to improve fixed costs throughout CNS.
  - IFEC*1 demand decreased. Decrease in profit.
  - Promote sales expansion of digital services.

- **Avionics**
  - IFEC*1 demand decreased. Decrease in profit.
  - Promote sales expansion of digital services.

- **Process Automation**
  - Impact of postponing investment in mounting machines due to sluggish Chinese market and restraining investment by electrical equipment manufacturers due to decreased automobile sales. Decrease in profit.
  - Catch up 5G base station, China + 1 investment.

- **Media Entertainment**
  - Demand for projectors has been sluggish due to the European economic slowdown, and demand for professional cameras in China has decreased. Decrease in profit.
  - Launched new projector products in the second half and strengthened sales activities.

- **Mobile Solutions**
  - Due to the end of Windows7 support in Jan 2020, the increase in PCs for domestic corporations contributed. Increased profit.
  - Promote strengthening of operational capabilities.

- **PSSJ*2**
  - PC replacement demand due to the end of Windows7 support, and Olympic-related projects contributed. Increased profit.
  - Secure delivery of orders for Olympic-related projects.

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**Medium-term Initiatives**

*1 Inflight Entertainment & Connectivity, *2 Panasonic System Solutions Japan Co., Ltd
Transformation of Connected Solutions Company

[ FY 2018 - FY 2019 ]

- Promote operational efficiency of each business, increase the profit ratio.
- Reform the Culture and Mindset (C&M) of staff completely which is the basis for implementing all strategies, and break out of the "Big Company Disease" to create a dynamic organization.

All Business Divisions achieved a profit margin of over 5%.

<table>
<thead>
<tr>
<th></th>
<th>FY2017</th>
<th>FY2018</th>
<th>FY2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 5%</td>
<td>2</td>
<td>4</td>
<td>All BD</td>
</tr>
</tbody>
</table>

A series of actions for C&M reform

1. Relocation of the Head Office to Tokyo (October 2017)

- Company Head Office was relocated from Osaka to Tokyo, to promote "co-creation" activities with customers.

2. Enhance the level of cooperation between the organizations.

- Shared offices across the business divisions.

3. Communication evolution

- Abolish executive officer’s room. Abolish dress code. Use ICT. Quick decision making.

Transformation of Connected Solutions Company

[ FY 2018 - FY 2019 ]

- Promote operational efficiency of each business, increase the profit ratio.
- Reform the Culture and Mindset (C&M) of staff completely which is the basis for implementing all strategies, and break out of the "Big Company Disease" to create a dynamic organization.

[ FY 2020 - FY 2022 ]

- To achieve medium-long term goal, promote "Selection and Concentration."
**Connected Solutions Company Business Perspective**

**Consciousness**

It shall not be possible to survive just by following the scale of sales in the hardware business area where commoditization has proceeded.

**Action**

Focus on the market segments where differentiation is possible by avoiding direct competition with China, Korea and Taiwan

Promote solution businesses to become a partner of the customers

Aim to be a primary integration contractor in the market segments where the upper layer exists

Build CNS’s business portfolio with profitable businesses such as software and maintenance

**Focus to the good area of “business positioning scale”**

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**Concept of Business Portfolio**

**Portfolio management is currently undertaken based on scale of business and positioning**

<table>
<thead>
<tr>
<th>Category</th>
<th>Concept</th>
<th>Main business</th>
<th>FY20 Sales composition ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core business</td>
<td>• A business that can provide comprehensive solutions by combining hardware and software.</td>
<td>Gemba process business</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• A business including ancillary businesses such as maintenance service, etc. that can be expected to be highly profitable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharpening hardware business</td>
<td>• A business that has the most advanced features and continues to be a leading company in the industry by improving advantages to maintain its competitiveness.</td>
<td>IFEC*, projector, etc.</td>
<td>58%</td>
</tr>
<tr>
<td>Strategic capital alliance business</td>
<td>• A business that introduces external capital and combines its advantages with partner’s advantages to increase competitiveness.</td>
<td>Security system, etc.</td>
<td>42%</td>
</tr>
<tr>
<td>Downsizing / terminating businesses</td>
<td>• Businesses that are difficult to continue to generate profits due to poor positioning.</td>
<td>Assess as required.</td>
<td></td>
</tr>
</tbody>
</table>

* Inflight Entertainment & Connectivity

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Strategic Capital Alliance for Security System Business

Maximize business value by combining external strengths based on Panasonic's strengths.

- Extensive knowledge and experience gained through multiple capital alliances.
- Management resources.

Business that can be expected to grow by continuing to invest in the long term.

Aiming for further leap forward through strategic capital alliance.

In case of Panasonic alone

Security System Business

Gemba process business

Innovate the process of “Manufacture”, “Transport”, and “sell” in customers.

Provide value across customer’s value chain

Digital

Individual System

Data

Gemba (Scene)

Product Service

Data

Consumers

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Gemba process business

With expanding supply chain area, addressable market scale in 2025 will be 6.7 trillion yen.

Source: estimated by the Company based on research data

Reasons to focus on Gemba process business

Market environment
- Site operation became complicated
- Rapid increase in logistics due to EC development
- Labor shortage
- Spread of AI / IoT
- Customer's process transformation needs

Advantage of Panasonic
100 years of manufacturing know-how

Strategic significance
Analog alignment
The maintenance business is profitable

Gemba process business
Supply chain
(Manufacture, transport, and sell)

Fine process
(Exquisite and precise processing)
Scope of Gemba process business

Growth focusing on two pillars of “fine process area” and “supply chain area” in good business Positioning.

### Fine process

**Expand hardware business domain**
- Expanded from mounting field to semiconductor manufacturing process.
- In the thermal processing field (welding / cutting), expand the business area with new laser technology.

**Making manufacturing processes smarter with AI and data analysis**
- Combine software such as AI and data analysis, etc. and hardware to reduce man-hours and improve productivity in areas that were difficult to automate.

### Supply chain

**Expand business domain to upstream process.**
- Expanding the useful range of upstream processes, such as consulting and requirement definition, to solve on-site issues in the supply chain.

**Create customer value through a combination of hardware and software.**
- Cooperate with external partners to enhance software and consulting capability, and combine them with hardware to develop new solution business.

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**Fine process**

Expand hardware business domain

**Circuit formation process**
(Mounting business)

Expand business area to semiconductor intermediate process and module process.

**Thermal processing system**
(welding business)

By capturing the rapidly increasing demand to reduce car body weight, expand existing area with laser technology.

**Pre-process**

- **Process method innovation**
  - Cut out micro and thin chips.
  - Surface modification and terminal cleaning
  - Plasma dicing machine
  - Plasma cleaner
  - APX300-DM
  - P8X307
  - P8X307A

**Post-process**

**Mounting process**

- **Process control**
- High-speed high-precision technology and process know-how

**Circuit formation process**

- **Fusion of pre-process and post-process technologies**

**Thermal processing system**

- **Wavelength synthesis technology**
- and welding know-how

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**Roof**
- Aluminum
- CFRP

**Side / rear windows**
- Plastic

**Trunk lid**
- Aluminum
- Plastic / CFRP

**Fender**
- High tensile steel
- Aluminum
- Plastic / CFRP

**Body frame**
- High tensile steel
- CFRP

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Fine process
Expand business domains through software collaboration

Innovating manufacturing in the semiconductor manufacturing process through collaboration with IBM Japan.
(Aims to stabilize the manufacturing quality of semiconductor manufacturing and improve the capacity utilization rate.)

Value to be supplied to customers

- Maximize productivity.
- Achieve full production volume at the launch of new product.
- Improvement and stabilization of quality
- Improvement of operating ratio
- Advanced packaging technology

Supply chain
To support customers by creating new added value

1. Introduce consulting / requirements definition to solve customer site problems.

   Newly enhance
   
   Create a project  Consultation to develop a concept  Defining requirements
   
   Manufaturing know-how  Project Management know-how  Consulting know-how
   
   Own strengths  Strengthen from the outside.

   Conventional approach
   
   Development / Introduction  Operation & Maintenance

2. Create customer value through a combination of hardware and software.

   Digitalization of on-site analog information and optimization through consulting
   
   Advancement of supply chain planning through on-site data linkage

   Support for customer management

   Sales expansion: Improve demand prediction accuracy, reduce opportunity loss
   Cost reduction: labor saving, efficiency, inventory optimization
Supply chain  Solution examples

Worked through customer's on-site process deeply to propose and implement solutions. Inquiries from customers increased.

Activities with food manufacturers

Shipping sorting system
(a part of smart factory project)

Work through a customer's on-site process to uncover potential issues. → Establish the system to realize a smart factory.

Activities with general merchandise stores

Solutions to visualize inventories
(a part of a store operation process innovation)

Visualize the volume and locations of inventories by using IT tool. → Establish the system to reduce individual inventory judgment.

Unloading from production line to the warehouse by using stacker crane, etc. Storage Picking Dispatching

Division of labor between the store and storage area

Visualizes the locations of inventories.

Supply chain  Concluded partnership agreement with JDA Software Group, Inc.

The joint venture will be established to support solutions sales activities in the Japan market. (in November 29)

Collaboration with JDA Software Group, Inc. who owns software which uses AI/ML*1 to solve the customer's issues comprehensively

(*1 Artificial Intelligence, Machine Learning)
Supply chain Collaboration with JDA Software Group, Inc.

Promote collaboration with JDA to complement software capabilities and collaborate with our product technologies.

Connected Solutions Company's goal to achieve in FY2026

Increase the constituent ratio of Gemba process business to become a sustainable, highly profitable business entity whose operating profit margin exceeds 10%.

**Forecast for FY2020**
- Gemba process 58%
- Operating profit margin 7.4%
- Others

**Goal for FY2026**
- Gemba process
- Operating profit margin over 10%
- Others
- Over 75%

- Accelerate to shift to a new solution.
- Achieve high profits with software and maintenance.
- Increase recurring sales ratio.

*The size of the circle is the image of sales.*

*New goodwill that can be generated through M&A and amortization of intangible assets are not taken into consideration.*
Transformation of Connected Solutions Company

[FY 2018 – FY 2019]
- Promote operational efficiency of each business, increase the profit ratio.
- Reform the Culture and Mindset of staff completely which is the basis for implementing all strategies, and break out of the "Big Company Disease" to create a dynamic organization.

[FY 2020 - FY 2022]
- To achieve medium-long term goal, promote "Selection and Concentration."

[FY 2023 - FY 2026]
Grow as a sustainable, highly profitable business entity.
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(Reference) FY20 1H Results

<table>
<thead>
<tr>
<th>Sales (yen: billions)</th>
<th>FY20 1H results / initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connected Solutions</strong></td>
<td>Sales and profit decreased due mainly to postponed investment associated with weakening Chinese market conditions and held-back investments by certain airline companies</td>
</tr>
<tr>
<td><strong>Avionics</strong></td>
<td>Sales and profit decreased due to sales decrease in IFEC* hardware, resulting from held back investments by certain airline companies</td>
</tr>
<tr>
<td><strong>Process Automation</strong></td>
<td>Sales and profit decreased; in line with weakening Chinese market conditions, postponed investment in mounting machines, and held-back investment by electrical component manufactures due to decreased automobile sales</td>
</tr>
<tr>
<td><strong>Media Entertainment</strong></td>
<td>Sales and profit decreased due to weakening demand for projectors in Europe and in impact of previous year's large-scale orders for entertainment park project in North America</td>
</tr>
<tr>
<td><strong>Mobile Solutions</strong></td>
<td>Sales and profit increased due to special demand with end of Windows 7 support leading to sales expansion of PCs for corporate clients in Japan</td>
</tr>
<tr>
<td><strong>PSSJ</strong></td>
<td>Sales and profit increased due to replacement PC demand for corporate clients in Japan and favorable sales arising from Olympic-related projects</td>
</tr>
<tr>
<td><strong>Other income/loss</strong></td>
<td>Impact from gains of insurance in the previous year, etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operating profit (yen: billions)</th>
<th>FY20 1H results / initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adjusted OP</strong></td>
<td>-12.9</td>
</tr>
<tr>
<td><strong>Other income/loss</strong></td>
<td>36.3</td>
</tr>
</tbody>
</table>

* IFEC (Inflight entertainment + connectivity) * Panasonic System Solutions Japan Co., Ltd.
## (Reference) Disclosed Business Categories

<table>
<thead>
<tr>
<th>Business Categories</th>
<th>Main products and services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avionics</td>
<td>In-flight entertainment &amp; connectivity system, digital solution &amp; services, repairs and maintenance</td>
</tr>
<tr>
<td>Process Automation</td>
<td>Chip mounters, screen printers, FDP bonders, electronic component insertion machines, welding-related systems, lasers, integrated line control systems</td>
</tr>
<tr>
<td>Media Entertainment</td>
<td>Projectors, professional displays, audio equipment, professional broadcasting equipment, total spatial design solutions</td>
</tr>
<tr>
<td>Mobile Solutions</td>
<td>Personal computers, tablets, payment systems, supply chain solutions</td>
</tr>
<tr>
<td>PSSJ*</td>
<td>Development of system solutions, system integration, installation, operation, maintenance</td>
</tr>
</tbody>
</table>

* Panasonic System Solutions Japan Co., Ltd.

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## Avionics Business

Expand digital solutions and service business and global maintenance business, armed with the business foundation of IFEC (In flight entertainment + communication) to aim for growth.

**Sales**

<table>
<thead>
<tr>
<th>(yen: billions)</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>($2,620M)</td>
<td>284.3</td>
<td>($2,460M)</td>
<td>272.0</td>
</tr>
<tr>
<td>2018</td>
<td>260.9</td>
<td>247.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Promote new high speed and large capacity IFE system “NEXT” and cloud type solutions that meet the needs of airline companies to provide diversified services, on a full scale.**

**Expand maintenance and repair business armed with global network and quality management system.**
Process Automation

Expand hardware business domain, and making manufacturing processes smarter with AI and data analysis

![Graph showing sales growth over years](image)

Expand hardware business domain

*Circuit formation process (Mounting business)*

Expand business area to semiconductor intermediate process and module process.

*Thermal processing system (welding business)*

By capturing the rapidly increasing demand to reduce car body weight, expand existing area with laser technology.

Making manufacturing processes smarter with AI and data analysis

Innovating manufacturing in the semiconductor manufacturing process through collaboration with IBM Japan.

**Control the system and process for the semiconductor manufacturing process.**

IBM Japan

System solution data analysis technology for semiconductor processes.

Panasonic

Edge devices and process technology

Media Entertainment

Improve the core products continuously and promote the creation of a video production platform by taking our own advantage further.

![Graph showing sales growth over years](image)

Further improvement of the core products

Concentrate resources on high luminance projector.

(Sales of world’s first 50 klm)

Enhance system product group.

4K remote-control camera

Live switcher

Promote business centered on video production platform
Mobile Solutions

Shift to software service business from hardware only business.

Expand supply chain solution business.
- Expand Gemba process innovation by cooperating with ZETES.
- Develop business in Japan from Europe (solution to visualize deliveries, etc.)

Visualize the entire process (cloud service)

Expand software service business by utilizing competitive hardware.

**Laptop PC**
- Work practice reformation support service (“Slim work support”)

**Robust PC**
- Automotive solution

**Robust handheld**
- Logistics terminal application
- Next generation ticketing solution

**Payment terminal**
- Cashless payment solution

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PSSJ (Panasonic System Solutions Japan Co., Ltd.)

Provide better contributions to customers at the supply chain such as distribution and stores.

Promote collaboration of “Next-generation convenience store” with Family Mart Co., Ltd.

Create a new service that Panasonic operates a real store to resolve issues of store operations with customers.

**Olympics and Paralympics**

Ensure delivery of orders as it is less than a year away before Tokyo Olympics and Paralympics start.

[Delivery examples] Projectors and displays, etc. are delivered to Japan Olympic Committee.