Mitsubishi Electric Key Growth Businesses

Factory Automation (FA) Control Systems

[PLC, Servo, and CNC]

November 8, 2021
Mitsubishi Electric Corporation
Executive Summary

1. FA Systems Division formulates medium-term business plan aiming for sales of 800 billion yen or more and operating profit ratio of 17% or more in FY2025.

2. The FA Control Systems Business, a key growth business for the entire company, aims for sales of 400 billion yen or more and an operating profit ratio of 23% or more in FY2025, by focusing management resources.


4. Contributing to the solution of social issues, such as decarbonization and labor shortage, through use of automation technology and energy-saving equipment and solutions at production sites.
1. Business Overview
1-1. Business Structure
1-2. Business Details and Areas
1-3. FY 2021 2Q Result Highlights
1-4. Our Strengths
1-5. Business Management Policy

2. Medium-term Management Plan of Key Growth Businesses
2-1. Our Vision
2-2. Business Environment
2-3. Direction of Business Expansion
2-4. Growth Strategy
2-5. Initiatives to meet Social Challenges

Note
FY 2018: April 1, 2018 - March 31, 2019
FY 2019: April 1, 2019 - March 31, 2020
FY 2020: April 1, 2020 - March 31, 2021
FY 2021: April 1, 2021 - March 31, 2022
FY 2025: April 1, 2025 - March 31, 2026
Business Structure

Segment

Energy & Electric Systems

Industrial Automation Systems

Information & Communication Systems

Electronic Devices

Home Appliances

Sub-segment

Social Infrastructure

Building Systems

Factory Automation (FA) Systems

Automotive Equipment

Information Systems & Service

Electronic System

Electronic Devices

Home Appliances

Key Growth Businesses

Building Systems

FA Control Systems (PLC, Servo, and CNC)

xEV/ADAS

Power Semiconductor Devices

Air Conditioning & Refrigeration Systems

ADAS: Advanced Driver Assistance System
Providing a wide range of products, services, and solutions to support customers' manufacturing

<table>
<thead>
<tr>
<th>Business Group</th>
<th>Product</th>
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<tbody>
<tr>
<td><strong>Control and Drive Products</strong></td>
<td></td>
</tr>
<tr>
<td>FA Control Systems</td>
<td>PLC</td>
</tr>
<tr>
<td>Other Control and Drive Products</td>
<td>Servo</td>
</tr>
<tr>
<td></td>
<td>CNC (Numerical Controller)</td>
</tr>
<tr>
<td><strong>Processing Machine</strong></td>
<td></td>
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<td></td>
<td>HMI</td>
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<tr>
<td></td>
<td>Inverter</td>
</tr>
<tr>
<td></td>
<td>Robot</td>
</tr>
<tr>
<td><strong>Rotary Motor Power Distribution Control equipment</strong></td>
<td>Laser Processing Machine</td>
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<td></td>
<td>Electric Discharge Machine</td>
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<tr>
<td></td>
<td>Laser Processing Machine for CFRP¹</td>
</tr>
<tr>
<td></td>
<td>Metal 3D Printer</td>
</tr>
<tr>
<td><strong>Integrated Solution</strong></td>
<td></td>
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<tr>
<td></td>
<td>Consulting</td>
</tr>
<tr>
<td></td>
<td>Software</td>
</tr>
<tr>
<td></td>
<td>Remote Services</td>
</tr>
</tbody>
</table>

*¹: Laser processing machine for Carbon, Fiber, Reinforced and Plastics
FY 2021 2Q Result Highlights

Demand increased from FY 2020 3Q and further from FY 2021 1Q

<table>
<thead>
<tr>
<th>(¥bn)</th>
<th>FY 2020 2Q</th>
<th>FY 2021 2Q</th>
<th>Year-on-year change</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orders received</td>
<td>281.2</td>
<td>462.8</td>
<td>+181.6</td>
<td>165</td>
</tr>
<tr>
<td>Net sales</td>
<td>272.3</td>
<td>366.7</td>
<td>+94.4</td>
<td>135</td>
</tr>
<tr>
<td>Operating profit [Operating Profit Ratio]</td>
<td>25.5 [9.4%]</td>
<td>63.0 [17.2%]</td>
<td>+37.5 [+7.8pt]</td>
<td>247</td>
</tr>
</tbody>
</table>

Demand Growth Factors

- **Type of business**: Digital: Electronics, Semiconductors, 5G, etc.
- **Decarbonization**: EV, Battery, Solar power, etc.
- **Region**: All regions (especially East Asia)
- **Model**: All products (especially PLC/Servo/CNC/Processing machine)

**Orders Received (¥bn)**

- FY 2019: 1Q 145.5, 2Q 148.6, 3Q 143.7, 4Q 136.5
- FY 2020: 1Q 144.7, 2Q 164.3, 3Q 201.5, 4Q 215.6
- FY 2021: 1Q 226.2, 2Q 236.6

**Net Sales (¥bn)**

- FY 2019: 1Q 139.9, 2Q 158.6, 3Q 150.1, 4Q 132.8
- FY 2020: 1Q 139.1, 2Q 150.1, 3Q 139.5, 4Q 152.0
- FY 2021: 1Q 163.7, 2Q 189.1, 3Q 177.6

**By Region**

- **Japan**: 140.0 (113%)
- **China**: 107.4 (166%)
- **Asia**: 73.5 (134%)
- **Americas**: 23.1 (153%)
- **India**: 5.4 (179%)
- **Europe**: 23.1 (165%)

*In parentheses: YoY percentage change*
Our Strengths (1) Technology Asset

Core of our FA products: Control and drive technologies, synergy, and in-house key parts.
Our Strengths (2) Sales and Service Assets

Sales and service network covering the global FA market

Mitsubishi Electric

69 Countries
177 Sites

Sales and Service Network

94 Countries
1,480 Sites +

Customer

Manufacturing Equipment and Machine Tool Builders

End Users
Ecosystem with partners to meet diverse customer needs

**In-plant Layer**

- **IT System**
- **Edge**
- **Production Site**
- **Power Receiving and Distribution Facilities**

**Edge Computing**

**Partners to realize a smart factory**

- **e-Factory Alliance**
  - 1,058 Partners
  - SI 486 Partners
  - Software 290 Partners

- **EDGECROSS CONSORTIUM**
  - 373 Partners
  - SI 166 Partners
  - Software 36 Partners

- **CLPA**
  - 4,004 Partners

- **Ryoban kai**
  - 480 Partners
  - Partners for building power receiving and distribution facilities

**Products and Partners**

- **Equipment**
  - 307 Partners
- **Equipment and machinery**
  - 96 Partners
  - Other 75 Partners

*As of September 2021*
Our Strengths (4) Customer Assets

Connection with customers gained through abundant delivery records and operating units

- **Number of Installations (Cumulative)**
  - **e-Factory**: 35,000 Cases
  - **EDGECROSS**: 3,300 Licenses

- **Number of Units in Operation (Estimated from shipments over past 10 years)**
  - PLC: 11 Million Units
  - Servo: 12 Million Units
  - CNC: 900,000 Units

- **Customer Connection**
  - Number of registered members of FA web site: 680,000 Members
  - Access per day: 330,000
  - Number of Social Media followers: 800,000 Followers

*As of September 2021
### FY 2025 Growth Targets: FA System Business

<table>
<thead>
<tr>
<th></th>
<th>FY 2020 Actual</th>
<th>FY 2021 Forecast</th>
<th>FY 2025 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td>¥587.9 billion</td>
<td>¥750 billion</td>
<td>¥800 billion+</td>
</tr>
<tr>
<td><strong>Operating Profit Margin</strong></td>
<td>10.5%</td>
<td>16.8%</td>
<td>17.0%+</td>
</tr>
<tr>
<td><strong>Exchange Rate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US $</td>
<td>106 yen</td>
<td>110 yen</td>
<td>105 yen</td>
</tr>
<tr>
<td>Euro</td>
<td>124 yen</td>
<td>128 yen</td>
<td>115 yen</td>
</tr>
<tr>
<td>Renminbi</td>
<td>15.7 yen</td>
<td>17.0 yen</td>
<td>15.0 yen</td>
</tr>
</tbody>
</table>
Our FA system business consists of a wide range of products. Clarify resource input policies for each business segment and accelerate growth.

<table>
<thead>
<tr>
<th>Business Category</th>
<th>Product</th>
<th>FY 2020</th>
<th>FY 2021</th>
<th>FY 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Growth Businesses</td>
<td>PLC, Servo, CNC</td>
<td>265</td>
<td>355</td>
<td>400</td>
</tr>
<tr>
<td>Stable Profit Businesses</td>
<td>Processing Machine, Inverter, HMI</td>
<td>149</td>
<td>197</td>
<td>210</td>
</tr>
<tr>
<td>Integrated Solution, Potential and New Businesses</td>
<td>e-Factory, Robot, New Processing Machine Business</td>
<td>56</td>
<td>65</td>
<td>93</td>
</tr>
<tr>
<td>Value Recapurting Businesses and Other Businesses</td>
<td>Other Business</td>
<td>167</td>
<td>184.5</td>
<td>155</td>
</tr>
<tr>
<td>Consolidated Total</td>
<td></td>
<td>588</td>
<td>750</td>
<td>800</td>
</tr>
</tbody>
</table>

April 2022 (planned): Establishment of a new industrial sewing machine company (20% owned by Mitsubishi Electric)
Medium-term Management Plan of Key Growth Businesses
Our Vision

Enriching the lives of people around the world by contributing to co-innovation with industry and infrastructure customers utilizing automation technology
Our role will become increasingly important for technological innovation and the realization of a sustainable society.
Our FA business has expanded steadily by providing value to growth areas. We formulate strategies for growth based on the business environment.

**Business Environment**

- Expansion of domestic business
- Expansion of overseas business
- Expansion of East Asian Market
- Smartphone-related Investment
- Automobiles, Semiconductors, Display-related Investments

Technological Innovation (Digital and Decarbonization), Intelligent Manufacturing

Providing new value & building the business model

Business expansion by contributing to technological innovation

(Fiscal year)
Focusing on “Technological innovation (digital and decarbonization)” and “Intelligent manufacturing” for future business expansion, we will acquire appropriate technology / human resources and establish a "business driving" structure.

Approach customers who prioritize technological innovation

Co-creation of Machinery

Delivering New Value to Manufacturing Sites

Strengthening Key Growth Businesses

Solutions for Intelligent Manufacturing

Establish a business structure to drive new value

M&A
Acquire external human resources
Open innovation
Our FA business continuously generates stable free cash flow. We will strengthen growth investments to realize further expansion of operating cash flow.

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating Cash Flow</th>
<th>Investment Cash Flow</th>
<th>Free Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>90.7bn</td>
<td>60.9bn</td>
<td>29.8bn</td>
</tr>
<tr>
<td>2017</td>
<td>85.5bn</td>
<td>56.1bn</td>
<td>29.8bn</td>
</tr>
<tr>
<td>2018</td>
<td>85.5bn</td>
<td>47.8bn</td>
<td>37.7bn</td>
</tr>
<tr>
<td>2019</td>
<td>80.5bn</td>
<td>30.6bn</td>
<td>50.9bn</td>
</tr>
<tr>
<td>2020</td>
<td>80.0bn</td>
<td>57.9bn</td>
<td>22.1bn</td>
</tr>
<tr>
<td>2021</td>
<td>86.0bn</td>
<td>55.9bn</td>
<td>30.1bn</td>
</tr>
<tr>
<td>2025</td>
<td>120bn</td>
<td>60bn</td>
<td>60bn</td>
</tr>
</tbody>
</table>

Growth Investment

- **FY 2016 to 2020**
  - R&D: 158bn
  - Facilities: 86bn
  - M&A, etc.: 15bn

- **FY 2021 to 2025**
  - R&D: 178bn
  - Facilities: 108bn
  - M&A, etc.: 60bn

**Strengthen Core Components**
- Intelligent devices and others
- Special purpose motors, etc.

**Provide Value to Growth Industries**
- Software
- Security
- Consulting, etc.

**Expand Integrated Solutions**
- Software
- Security
- Consulting, etc.

- Servo/CNC production capacity: ¥26bn
- New production facility in Chubu region: ¥17bn
- Expansion of production facility in China: ¥13bn
- New production facility in India: ¥3bn
(There is some overlap in the amounts)
### Growth Strategy

#### Our Growth Strategy

- **Provide Value to Growth Industries**
- **Strengthen Core Components**
- **Expansion of Integrated Solutions**

#### Strengthening Business Infrastructure

- **Technology Assets**
- **Sales Service Assets**
- **Partner Assets**
- **Customer Assets**

#### Key Growth Businesses

<table>
<thead>
<tr>
<th></th>
<th>FY 2020 Actual</th>
<th>FY 2021 Forecast</th>
<th>FY 2025 Target</th>
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</thead>
<tbody>
<tr>
<td><strong>Net Sales</strong></td>
<td>¥265 billion</td>
<td>¥355 billion</td>
<td>¥400 billion</td>
</tr>
<tr>
<td><strong>Operating Profit Margin</strong></td>
<td>~20%</td>
<td>20%+</td>
<td>23%+</td>
</tr>
</tbody>
</table>

#### Integrated Solutions, Potential & New Businesses

<table>
<thead>
<tr>
<th></th>
<th>FY 2020 Actual</th>
<th>FY 2021 Forecast</th>
<th>FY 2025 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Sales</strong></td>
<td>¥56 billion</td>
<td>¥65 billion</td>
<td>¥93 billion</td>
</tr>
<tr>
<td><strong>Operating Profit Margin</strong></td>
<td>~3%</td>
<td>5%+</td>
<td>10%+</td>
</tr>
</tbody>
</table>
Growth Strategy (1)
Strengthening Core Components

Introducing next-generation products that meet cutting-edge customers’ needs

Product Roles
- **PLC**: Optimal control of manufacturing equipment and production lines
- **Servo**: High speed and high accuracy control of manufacturing equipment
- **CNC**: High speed and high accuracy control of machine tools

Growth Strategy
Contribute to technological innovation through co-creation and development with advanced manufacturing equipment manufacturers,
Strengthen global business structure (manufacturing, development, sales, service, IT)

Core Components
Development of next-generation products with maximum performance and scalability
- Next-generation PLC: Under development
- Released May 2019
- Released in July 2021

Field Knowledge
Application development for growth industries

Advanced Digital Technology
Integration with digital technologies such as 5G, AI, and Cloud technologies
- **5G**
  - Verification test using PLC production line
  - Started in November 2021
- **AI**
  - Applied to 21 products
- **Cloud**
  - Started in April 2016
- **Digital Twin**
  - Released in August 2021
- **Cybersecurity**
  - IEC62443-4-1
  - Acquired in May 2021
Establishing business structure to support customers’ innovation globally

**Growth Industries**

- EV
- Semiconductor
- Display
- EMS
- Battery
- Logistics
- Data Center
- Food, Beverage, Medical Care

**Environmental Change**

**Acceleration of Technological Innovation**

**Global Diversification**

**Normalization of Uncertainty**

**Strengthening sales organization for growth industries**

**Global 260+**
(As of September 2021)

April 2021: Dedicated organization established

Optimal proposal by industry

Customer support for overseas expansion

**Expansion of innovation labs for the global market**

More than 200 engineers
(Planned for FY2025)

Regions:
China, Europe, North America, India

**Creation of innovation unique to Mitsubishi Electric**

Corporate Research and Development Group

Advanced Technology R&D Center

Information Technology R&D Center

Integrated Design Center

**Co-creating to meet the customer's ideal status**
Growth Strategy (3)  
Expansion of Integrated Solutions

Providing integrated solutions that leverage our strengths to meet the needs of intelligent manufacturing

### FA Systems Business

<table>
<thead>
<tr>
<th>IT</th>
<th>ERP</th>
<th>PLM</th>
<th>SCM</th>
<th>MES</th>
<th>Partner Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edge</td>
<td></td>
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<tr>
<td></td>
<td>Industrial PC</td>
<td>SCADA</td>
<td>Digital Twin</td>
<td>Data Analysis</td>
<td>Energy Saving Analysis and Diagnosis</td>
</tr>
<tr>
<td></td>
<td>Released May 2018</td>
<td>Acquired Aug 2019</td>
<td>Released Aug 2021</td>
<td>Released May 2018</td>
<td>Released Oct 2020</td>
</tr>
<tr>
<td></td>
<td>Key Growth</td>
<td>Key Growth</td>
<td>Key Growth</td>
<td>Key Growth</td>
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<tr>
<td>OT (FA)</td>
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<tr>
<td></td>
<td>PLC</td>
<td>Motion</td>
<td>CNC</td>
<td>HMI</td>
<td>Software</td>
</tr>
<tr>
<td></td>
<td>Key Growth</td>
<td>Key Growth</td>
<td>Key Growth</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Inverter</td>
<td>Servo</td>
<td>Servo System</td>
<td>Robot</td>
<td>Motors</td>
</tr>
<tr>
<td></td>
<td>Key Growth</td>
<td>Key Growth</td>
<td>Key Growth</td>
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<tr>
<td></td>
<td>Sensor</td>
<td>Power Distribution &amp; Control Devices</td>
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<tr>
<td></td>
<td>Key Growth</td>
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<td>Key Growth</td>
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### Characteristics of Mitsubishi Electric

- Offering a diversified product lineup, technology, knowledge and comprehensive value as a general electronics manufacturer
- Edge products and IoT platform to connect IT and OT
- Capable of dealing with variety of customer needs through ecosystem with our partners
- Integration of digital technology to production sites; e-F@ctory (since 2003)

### Technologies

- Real-time Control Technology
- Power Electronics Technology
- Motor Technology
- Manufacturing Technology
- Maisart (AI)
- ClariSense
- Communication Technology (5G utilization)

### Assets

<table>
<thead>
<tr>
<th>Customer Assets</th>
<th>Partner Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Deliveries</td>
<td>e-F@ctory Partners: 1,058 companies, Edgecross Partners: 373 companies, CC-Link Partners: 4,004 companies</td>
</tr>
<tr>
<td>No. of Units in Operation</td>
<td></td>
</tr>
<tr>
<td>PLC: 11 Million Units</td>
<td></td>
</tr>
<tr>
<td>Servo: 12 Million Units</td>
<td></td>
</tr>
<tr>
<td>CNC: 0.9 Million Units</td>
<td></td>
</tr>
<tr>
<td>Customer Contact</td>
<td></td>
</tr>
<tr>
<td>Registered Members on FA Web Site: 680,000 Members</td>
<td></td>
</tr>
</tbody>
</table>
Accelerate the use of digital technology within the company, establish foundation for DX, and build a new business model
Growth Strategy (3)
Expansion of Integrated Solutions

Creating value throughout the customers’ life cycle using digital technology and field knowledge

**Consulting**
- **e-F@ctory (China: since 2014)**
  Support for automation, productivity, quality improvement
  - Total 125 Cases
- **Data Analysis (Since 2018)**
  Task definition, data collection and learning model creation support by experts
  - Total ~10 Cases
- **Energy Saving (since 1997)**
  Unit consumption management, utility renewal, operation optimization support by experts
  - Total 500 Cases

**Software**
- **MELSOFT**
  - SCADA (Monitoring & Control)
    - GENESIS64 (March 2021)
  - Digital Twin
    - 3D Simulator (August 21)
  - Data Analysis Software
    - (May 2018)
  - Energy Saving Analysis & Diagnosis
    - Eco Adviser (October 2020)

**Remote Services**
- **iQ Care Remote 4U (Since 2016)**
  - Mitsubishi Electric
  - End User
  - Processing Machine Sales
  - Remote Services
  - Equipment machine manufacturers

- **iQ Care Platform (Under Development)**
  - Mitsubishi Electric
  - FA Products
  - Product Sales
  - Remote Services Foundation

**Company wide IoT platform**
- Technological Assets (AI, security, etc.)
- Solution Library
- Database

**Creation of new value at manufacturing sites**
Build a solid, stable supply system by increasing production capacity and establishing a global trilateral manufacturing structure.

**Establish new production facility**
- Location: Chubu region
- Completion: FY2024
- Total floor area: 33,000㎡ +

**Use of internal facility**
- Start of production: FY2022

**Consideration for expanding existing sites**
- Dalian No. 4 Factory
- Changshu No. 3 Factory

**Establish new production facility**
- Location: Talegaon, Pune
- Completion: FY2023
- Total floor area: 15,000㎡ +

**Planned construction site**

**Mitsubishi Electric Dalian Equipment Co., Ltd.**

**Mitsubishi Electric Automation Equipment (Changshu) Co., Ltd.**

**Nagoya Works**

**Industrial Mechatronics Systems Works**
Initiatives to meet Social Challenges

Provide solutions to social challenges through our business efforts

1. Contribute to a decarbonized society by providing Energy-saving equipment and solutions for production sites

   **Example (1)** Fiber laser processing machine
   Reduction of electricity consumption to 1/3 (compared to conventional CO2 laser processing machines)

   **Example (2)** Energy-saving support application “EcoAdviser”
   Support for energy conservation measures through automated diagnosis of energy loss factors with Maisart (AI technology)

2. Contribute to solving social issues through automation technology

   **Examples**

   **Overcoming issues caused by labor shortages**
   Robot utilized for automatic tire replacement system (RoboTire, Inc.)
   Tire replacement on one vehicle in 15 minutes
Cautionary Statement

While the statements herein including the forecast of the Mitsubishi Electric Group are based on assumptions the Group considers to be reasonable under the circumstances on the date of announcement, actual results may differ significantly from forecasts. Such factors materially affecting the expectations expressed herein shall include but are not limited to the following:

1. Any change in worldwide economic and social conditions, as well as laws, regulations, taxation and other legislation
2. Changes in foreign currency exchange rates, especially JPY/dollar rates
3. Changes in stock markets, especially in Japan
4. Changes in balance of supply and demand of products that may affect prices and volume, as well as material procurement conditions
5. Changes in the ability to fund raising, especially in Japan
6. Uncertainties relating to patents, licenses and other intellectual property, including disputes involving patent infringement
7. New environmental regulations or the arising of environmental issues
8. Defects in products or services
9. Litigation and legal proceedings brought and contemplated against the Company or its subsidiaries and affiliates that may adversely affect operations or finances
10. Technological change, the development of products using new technology, manufacturing and time-to-market
11. Business restructuring
12. Incidents related to information security
13. Large-scale disasters including earthquakes, typhoons, tsunami, fires and others
14. Social or political upheaval caused by terrorism, war, pandemics, or other factors
15. Important matters related to the directors and executive officers, major shareholders and affiliated companies of Mitsubishi Electric Corporation