Business Strategy of Social Solutions

August 18, 2010
Fuji Electric Holdings Co., Ltd.
1. Business Outline

2. Business Policies

3. Growth Strategies

4. Overseas Strategies

5. Performance Trends / Targets
Business Organization

Social Environment Field
Providing a safe and secure social environment through the social environment infrastructure field
- All areas related to garbage and water treatment facilities

Facility Field
Creating the optimal space for IT, communications, and other social infrastructure systems
- UPSs (Stand-alone/Systems)
- Switching power supplies
- Cleanroom systems
- Social information systems

Store / Distribution Field
Contributing to food safety and improved productivity by increasing energy usage efficiency and optimizing work environments in the food distribution field
- Showcases
- Cooling / freshness management technologies

FY2009 Consolidated Net Sales ¥118.0
# Major Fields and Products

## Facility Field

<table>
<thead>
<tr>
<th>Major Fields</th>
<th>IDC / IT and communications / Industrial</th>
<th>Major Products</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Switching power supplies</td>
<td>Emergency power generation systems</td>
</tr>
<tr>
<td></td>
<td>Mini UPSs</td>
<td>Localized air-conditioning systems</td>
</tr>
<tr>
<td></td>
<td>Medium- and large-capacity UPSs</td>
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## Store / Food Distribution Field

<table>
<thead>
<tr>
<th>Major Fields</th>
<th>Food distribution / Convenience stores / Super markets</th>
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<tbody>
<tr>
<td></td>
<td>STPP (Store total plan and produce)</td>
</tr>
<tr>
<td></td>
<td>Design ⇒ Implementation</td>
</tr>
<tr>
<td></td>
<td>Ecolo units (Unit-assembly style store system)</td>
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</tbody>
</table>

## Key components

- Mini UPSs—domestic market share 18% (No. 2) \(^*1\)
- Medium- and large-capacity UPSs—domestic market share 32% (No. 1) \(^*2\)

## Major technologies

- High-efficiency power semiconductors technology
- High-efficiency circuit design technology
- Refrigeration/Freshness management technology
- Comprehensive store energy saving control technology

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\(^*1\) Calculated by Fuji Electric based on figures publicly released by the Japan Electrical Manufacturers’ Association (JEMA) and from surveys conducted by the Yano Research Institute (Monetary share after the merging of Fuji and TDK-Lambda Corporation)

\(^*2\) Calculated by Fuji Electric based on figures from surveys conducted by Denki Nichi nich Shimbun (Volume share after the merging of Fuji and TDK-Lambda Corporation)

\(^*3\) Calculated by Fuji Electric based on figures compiled by the Japan Refrigeration and Air Conditioning Industry Association (Unit share)
Business Strengths

High-value-added key components
- Uninterruptible power supply systems
- Switching power supplies
- Freezing/Refrigerating showcases
- Cleanroom equipment

Highly reliable systems/technologies
- Power electronics and energy saving technologies
- Freezing technology
- Localized air-conditioning systems
- Social information systems

High-performance engineering/implementation capabilities
- Project management
- Comprehensive store construction
- Power supply engineering

Strong components / Systems / Engineering × Service
Providing customer-based solutions through the social infrastructure field

24 hours-a-day, 365 days-a-year response
- Maintenance service
- Outsourcing maintenance service

Complete-peace of mind providing service systems
1. Business Outline

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### Market Trends in the Social Solutions Business

#### External Environment

- Development of an information society
- Enhancement of information networks and transition to cloud computing
- Growing environmental awareness
- Institution of the Revised Energy Saving Law
- Fewer children, aging population
- Appearance of massive markets in emerging countries

#### Social Solutions Market

- Increasing demand for data management
  - Expansion of the market in the IDC field
- Increasing demand for energy-saving measures
  - Growing business chances in the food distribution field (energy saving / home delivery infrastructure)
- Increasing demand for food distribution by means of home delivery
- Increasing demand for new infrastructure
  - Advancement into overseas markets
  - Expansion of Chinese and Asian markets
Business Policies

Basic Policy

Providing comprehensive solutions to contribute to the realization of a low-carbon society by consolidating the resources supporting social infrastructure

From individual optimization to comprehensive optimization

Transform into a comprehensive solutions supplier that can freely utilize electricity and heat

Power supply field
Freezer/Refrigeration field
Information system field

Growth course

2009
Structural reorganization (Consolidation of resources)

2010
Maximization of synergies (Providing comprehensive solutions)

2011
Solidification of domestic operating foundations
Full-fledged overseas expansion

Growth strategies

◆ IDC field
Develop comprehensive energy-saving solutions using strong components as the key

◆ Food distribution field
Develop comprehensive store energy-saving solutions
Expand business domain in the food distribution field
<table>
<thead>
<tr>
<th></th>
<th>Title</th>
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<td>1</td>
<td>Business Outline</td>
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<td>Business Policies</td>
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<td>3</td>
<td>Growth Strategies</td>
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<td>4</td>
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<tr>
<td>5</td>
<td>Performance Trends / Targets</td>
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Growth Strategies in the IDC Field: Market Trends

The rapidly expanding market for capital investment related to IDCs
⇒ Fuji Electric will focus on the facility field (Electricity facilities, air conditioning, racks, electrical power monitoring)

Japanese market: calculated by Fuji Electric based on forecast figures released by the Yano Research Institute
Chinese market: calculated by Fuji Electric based on forecast figures released by CCID

Our focus field
The rapidly expanding market for capital investment related to IDCs
⇒ Fuji Electric will focus on the facility field (Electricity facilities, air conditioning, racks, electrical power monitoring)

Growing business chances in the IDC field
—the progression of IDC-based business

Correlation diagram of market trends

Japan

Average annual growth rate 10%

Construction
Facilities
Other facilities

Japan

Average annual growth rate 45%

Construction
Facilities
Other facilities

Growing business chances in the IDC field
—the progression of IDC-based business

Correlation diagram of market trends

Growing needs for differentiation and profitability
(accelerated development of data center operations as a business)

Business scale (form)
Large-scale IDCs
(Specialized IDC facilities)
Small- to medium-sized IDCs
(Floors of buildings and open spaces)

Comprehensive solutions for IDCs

Pursuit of energy saving
• Reduction of PUE index
  (Reduction of electrical power consumption)
• Heat countermeasures

Effective utilization of high-density spaces
• Localized cooling

Continuation of optimal operation (Peace of mind)
• Reliability maintenance (24 hours-a-day, 365 days-a-year)
Growth Strategies in the IDC Field: Overview of Comprehensive Solutions

**Energy saving for air conditioning**
1. High-efficiency air-conditioning systems (Those that utilize natural refrigerants)
2. Localized air-conditioning systems (Those that reduce heat accumulation)

**Clarification (Improving operational problems)**
1. Watt-hour meter units (Intelligent distribution boards)
2. Environment monitoring sensors (Temperature / Wind speed)
3. Energy saving management systems (Real-time monitoring)

**New energy utilization**
1. Solar power generators
2. Fuel cells
3. Cogeneration

**Saving electrical power**
1. Power supply facilities (Top runner transformers)
2. High-efficiency UPSs (Industry leading efficiency: 98.5%)
3. Bus duct energy supply

PUE: Power Usage Effectiveness
A figure that displays the energy effectiveness of data centers
(PUE=Overall electrical power consumption of the data center ÷ electrical power consumption of servers and other IT equipment)
The PUE of a data center with the highest possible effectiveness would be PUE=1.0.

**Effects of Solutions (Targets)**

<table>
<thead>
<tr>
<th>Year</th>
<th>PUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2.0</td>
</tr>
<tr>
<td>2010</td>
<td>1.7</td>
</tr>
<tr>
<td>2011</td>
<td>1.4</td>
</tr>
<tr>
<td>2012</td>
<td>1.2</td>
</tr>
</tbody>
</table>

- Switch over to inverters used in freezing equipment
- Intelligent boards
- Measuring units
- Transformers used to lower voltage
- High-efficiency UPSs
- BACKUP-LOCALIZED AIR CONDITIONING
- Free cooling systems
- External air cooling
- Energy saving management systems
- Rack cooling systems
- Utilization of snow ice
- DC electrical current
- LED lighting

Haraguchi of the Ministry of Internal Affairs and Communications’ Vision
Achieve PUE 1.2 by 2015
Growth Strategies in the IDC Field: Ultra-high-efficiency UPSs, localized air-conditioning units

Ultra-high-efficiency uninterruptible power supply systems

Industry leading level of ultra-high-efficiency: 98.5%
⇒ 77% reduction in annual energy loss volume

Characteristics

- **Efficiency**: 98.5% (98.2% for units currently in operation)
- **Space saving**: 30% miniaturization realized
  (Units currently in operation: 2,800 mm × 2,000 mm)
- **Improved reliability**: compatible with backup systems
- **Lead-free**: reduced life cycle costs through the use of lithium ion capacitors (LiC) (Replaced after 15 years)

<Comparison of efficiency>

<table>
<thead>
<tr>
<th>UPS Type</th>
<th>Efficiency (%)</th>
<th>Volume of energy lost annually: 500kVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual processing type UPS</td>
<td>98.5%</td>
<td>304.7 MWh</td>
</tr>
<tr>
<td>Insulated on-line type UPS</td>
<td>92%</td>
<td>71.5 MWh</td>
</tr>
<tr>
<td>Non-insulated on-line type UPS</td>
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</tr>
</tbody>
</table>

Energy saved:

- Electricity fees reduced ¥3.5 million
- CO₂ reduced by approximately 90 tons

Localized air-conditioning unit

Improved efficiency of server space usage

<Method using localized air-conditioning units>

- Efficiency of server space usage ⇒ high
- Risk of leakage ⇒ low (Condensation: Low, Water piping: No)

<Traditional method>

- Efficiency of server space usage ⇒ low
- Risk of leakage ⇒ high (Condensation: Yes, Water piping: Yes)

Data is a comparison to Fuji Electric's 500kVA unit and is calculated by the Company using the index of 15 ¥/kWh

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Realize comprehensive solutions for food distribution by leveraging Fuji Electric’s total engineering capabilities and strong technologies

- STPP (Store total plan and produce)
  - Store planning⇒design/layout/implementation
  - ⇒construction⇒maintenance
- Energy management system
- Freezing/Refrigeration, freshness management, current control
- Power receiving and distribution substation equipment, various electric equipment
- Complete service system

The only one supplier that can offer service from store planning and construction, to maintenance

A total planner for the entire food distribution chain, from the production region all the way to consumers

**Overview of basic strategies**

- **Power electronics technologies**
  - Automated warehouse (Picking equipment)
  - Power receiving and distribution substation equipment
  - Proposal of energy-saving solutions
  - Power monitoring
  - New energy (Photovoltaic)
  - Commercial air conditioning

**Cold-chain technologies**

- Sales/Production system Traceability
- Power receiving and distribution substation equipment
- Traceability
- Food processing
- Intensive-type food processing plant
- Storage
- Cold storage warehouse
- Distribution warehouse
- Store
- Convenience store
- Super market
- Commercial store
- Consumer
- Showcase Ecoo unit
- Construction technology
- Vegetable production plant
- Refrigeration warehouse
- Refrigeration picking equipment
- Producers
- Production region
- Traceability
Growth Strategies in the Food Distribution Field: Market Trends

Food product sales trends and forecasts for retailers (super markets / convenience stores)

<table>
<thead>
<tr>
<th>Year</th>
<th>Super markets</th>
<th>Convenience stores</th>
<th>Home delivery and Internet stores</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>7.7</td>
<td>5.1</td>
<td>0.83</td>
</tr>
<tr>
<td>2008</td>
<td>8.0</td>
<td>5.2</td>
<td>0.89</td>
</tr>
<tr>
<td>2009</td>
<td>8.0</td>
<td>5.1</td>
<td>0.94</td>
</tr>
<tr>
<td>2013 Forecast</td>
<td>8.0</td>
<td>5.1</td>
<td>1.10</td>
</tr>
</tbody>
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Growing business chances in the food distribution field

- Sluggish growth of sales of food and drink products in super markets and convenience stores
- Fewer openings of new super markets and convenience stores
- Acceleration of industry reorganization
  - Focus on supporting current stores
    - Total number of convenience stores as of the end of 2009: 45,000
    - Market for renovating existing convenience stores
- Shift to home delivery and internet stores
  - Total sales of food and drink products through home delivery and internet stores in fiscal 2010: approx. ¥1 trillion
  - Market for developing infrastructure for home delivery of food products

Source: compiled by Fuji Electric based on data provided by the Yano Research Institute (Values for food and drink products only)

Total number of convenience stores as of the end of 2009: compiled by Fuji Electric based on data provided by Japan Franchise Association
Growth Strategies in the Food Distribution Field: Comprehensive Solutions for Convenience Stores

**Shift to environmentally friendly stores**
- Response to the Revised Energy Saving Law
  ⇒ introduction of energy saving equipment
- LED lighting
  (Inside the store and freezer cases)
- Introduction of natural light
- Use of eco-panels (heat insulation)

**Improvement of store revenues**
- In-store food preparation
- Enrichment and expansion of stores that offer fresh foods
- Introduction of self-pay systems
- Collaboration with other industries (Drug stores, etc.)
- Relocation
  (Inside buildings, small stores, hospitals, public facilities)

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37% reduction in overall store electrical power consumption

- **Energy saving by means of basic technologies**
- **Incorporation of new energy saving technologies**
- **Energy monitored measures related to electrical power supply**
- **Smart meters**
- **Power supply equipment**
- **Chargers for EVs**
- **Energy saving air-conditioning equipment**
Growth Strategies in the Food Distribution Field: Refrigeration Preservation and Picking

Response to the construction and expansion of cold chains accompanying increasing sales of food products through home delivery services
(Refrigeration preservation, refrigeration picking, refrigerated shipping)

Construction of optimal systems for air-conditioned and refrigerated flow racks
(Comfortable work environment, management of product temperatures)
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Overseas Strategies

Full-fledge Overseas Expansion Starting Fiscal 2011

<table>
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<th>Target Regions</th>
<th>China and Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus Fields</td>
<td></td>
</tr>
<tr>
<td>・Advance into the IDC field</td>
<td></td>
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<tr>
<td>・Food distribution field (Convenience stores / Frozen distribution)</td>
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<tr>
<td>Principal Measures</td>
<td></td>
</tr>
<tr>
<td>・Uniformly expand into Chinese and Asian markets by applying the knowledge and technologies accumulated through operations in Japanese markets</td>
<td></td>
</tr>
<tr>
<td>・Establish a supply system based on local production (Low-cost operation)</td>
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<tr>
<td>・Advance the market through cooperation with customers</td>
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Performance Trends / Targets

Expand operations in the IDC and food distribution fields (Growth markets)

Fiscal 2011 targets:
Aim for net sales of ¥133.0 billion and ratio of operating income to net sales of 6%

Net sales (¥ billion)

FY2009 Actual: 118.0
FY2010 Forecast (2010/7/30): 124.5
FY2011 Medium-term Management Plan: 133.0

Sales growth in the IDC field: +6.5
Sales growth in the food distribution field: +15.0

Ratio of Operating Income (%)

FY2009 Actual: 4%
FY2010 Forecast (2010/7/30): 3%
FY2011 Medium-term Management Plan: 6%
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