Technology Innovation from Fujitsu Laboratories

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FUJITSU LABORATORIES LTD.

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Fujitsu at a Glance

- Headquarters: Tokyo, Japan
- President: Masami Yamamoto
- Established: June 1935
- Net Sales: 4,528.4 billion yen (US$54,559 million)
- Net Income: 55.0 billion yen (US$663 million)
- R&D Expenditure: 236.2 billion yen (As 5.2% of Sales)
- Employees: 172,000 worldwide
- Principal Business Areas:
  - Technology Solutions, Ubiquitous Solutions,
  - Device Solutions
- Stock Exchange Listings:
  - Tokyo (Code: 6702), Osaka, Nagoya, London

Note:
All yen figures have been converted to U.S. dollars for convenience only at a uniform rate of US$1 = 83 yen, the approximate closing rate on March 31, 2011.
FUJITSU’s Business Composition

Device Solutions
- Electronic Components
- LSI Devices

Ubiquitous Product Solutions
- Security
- PCs
- Mobile Phones

Technology Solutions
- System Platforms
  - Storage
  - Server
- Software
- Network Solutions
  - FLASHWAVE Optical Transport

Others

FY 2010 Market Share (IT Services)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Japan</th>
<th>World Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Fujitsu</td>
<td>IBM</td>
</tr>
<tr>
<td>#2</td>
<td>NTT-D</td>
<td>HP</td>
</tr>
<tr>
<td>#3</td>
<td>NEC</td>
<td>Fujitsu</td>
</tr>
<tr>
<td>#4</td>
<td>Hitachi</td>
<td>Accenture</td>
</tr>
<tr>
<td>#5</td>
<td>IBM</td>
<td>CSC</td>
</tr>
</tbody>
</table>

FY 2010 Net Sales
- 23.2%
- 13.0%
- 1.7%
- Others 62.1%

FY 2010 $54.6 B

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Global Subsidiaries: IT Services

FS: Fujitsu Services Holdings PLC (EMEA)
FTS: Fujitsu Technology Solutions (EMEA)

The Americas
Approx. 8,000 employees
- FAI: Fujitsu America Inc (U.S.A.)
  - FMEX (Mexico)
- FBR: Fujitsu do Brazil (Brazil)

China & APAC
Approx. 28,000 employees
- FCH: Fujitsu China Holdings (China)
  - FJSC (South China)
- FTL: Fujitsu Taiwan Ltd (Taiwan)
- FKL: Fujitsu Korea Ltd (S. Korea)
- FAPL: Fujitsu Asia Pte. Ltd. (ASEAN regional HQ) (Singapore)
  - FSBT (Thailand), FMS (Malaysia), FID (Indonesia), FVL (Vietnam)
- FPI: Fujitsu Philippines Inc. (Philippines)
- FIPL: Fujitsu India Private Limited (India)
- FCIPL: Fujitsu Consulting India Private Limited (India)
- FANZ: Fujitsu Australia and New Zealand (Australia & New Zealand)

EMEA
Approx. 30,000 employees
- FS
- FTS

EMEA
Approx. 30,000 employees
- FS
- FTS

FCL: Fujitsu Consulting Limited

*Only subsidiaries pertaining to IT services are shown
* Number of approximate employees are as of March 2011
*”京 (K)” is the cognomen for the next-generation supercomputer named by RIKEN.
Fujitsu Laboratories Ltd. : Overview

- **Capital:** 5 billion JPY
- **R&D Budget:** Approximately 35 billion JPY/420M USD annually as 15% of Fujitsu R&D Expenditure
- **Total Employees:**
  - **Japan:** Approximately 1,300
  - **Global R&D sites** (U.S., Asia excluding Japan: China & Singapore, Europe):
    - Approximately 200

**Research Fields**
- **Systems**
- **Networks**
- **Devices & Materials**
- **Services & Solutions**
- **Human-centric computing**
- **Green ICT**
Fujitsu Group’s R&D Scheme

Technology & Market Trends → Customer & Partner needs

- Fujitsu Group
  - Technology Strategy Task Force*
  - Research Investment
  - Technology Transfer

- Fujitsu Labs.

- Universities & Research Institutes
- Governmental Projects

- Fujitsu & Fujitsu Group Companies

Products, Services & Solutions → Customers

* Technology Strategy Task Force: Internal committee that determines the R&D strategy of the Fujitsu Group
Strategic R&D Framework

Core Strategic R&D

- Human-centric Computing
- Intelligent Society
- Cloud Fusion
- Next-Generation Green Datacenter
- Manufacturing Innovation

Business-Strategic R&D

- Core research projects focused on important themes for future technology of the Fujitsu Group
  - Medium to long-term technology development

Exploratory R&D

- Business-driven themes based on requirements from the business units
  - Short to Medium-term technology development
- New research areas for future emerging technologies
  - Long-term technology development
Open Innovation & Global Reach

Fujitsu Laboratories of Europe Ltd. (FLE) (Estab. 2001)
- London

Fujitsu Research and Development Center Co., Ltd. (FRDC) - China (Estab. 1998)
- Beijing
- Suzhou
- Shanghai
- Tokyo
- Singapore (Estab. 2010)

Fujitsu Laboratories of America, Inc. (FLA) Sunnyvale (Estab. 1993)
- Texas

Global Business/R&D Partners

Technology Marketing

Global Human Resource Development

Universities

Research Institutes

Fraunhofer

parc®

Suzhou Industrial Park

MIT

Berkeley

Stanford University

Massachusetts Institute of Technology

Technische Universitaet Muenchen

Technion

Tsinghua University

Shanghai Jiao Tong University
What is happening in the world?

Increasingly complex societal issues
Great East Japan Earthquake & Tsunami

Nuclear power generation

Typhoons

Building a society that is resilient to disasters
Paradigm Shift in ICT

From “Technology-Centric” to “Human-Centric”

For everyone
Network-Centric

For specialists
Computer-Centric

1990
2000
2010
2020

Reliable environment
Human-Centric

Intelligent Society
Cloud Computing
Sensor Technology
Ubiquitous Terminals
Mobile Communications

Creation of new value
Paradigm Shift in Energy

Economy: Maintaining growth
Energy: From mass consumption to sustainability

GDP Index (1990=100)

Energy Consumption Index (1990=100)

Energy Consumption
Mass consumption
Sustainability

Great East Japan Earthquake
Energy harvesting
Energy saving

Source: BP Energy Outlook 2030
Rise in Population & Aging Societies

Healthcare networks
Remote medicine
Food & water security

Source: United Nations Population Division
Secure and safe utilization of ICT

Increase of menaces
- Natural disasters such as earthquakes, floods
- New-type influenzas

Increase of security risks
- Information leakage by insiders
- External threats such as falsification of websites and computer viruses

External requirements
- Reinforcement of internal controls
- Reinforcement of environmental regulations
- Global support

Changes in ICT
- Diffusion of cloud business: from possession to use
- Fullness of ubiquitous environment
Fujitsu’s Vision

Enabling a Human-Centric Intelligent Society

- Food
- Environment
- Energy
- Health
- Safety
- Security
- Business Efficiencies

Real world

Various Kinds of Information from Human Awareness and Sensing Devices

Big data

Cloud Fusion

New Services & Solutions

Real-world value creation through human-centric ICT
Recent R&D Activities: Focusing on big data

- **Large-Scale Biometrics Authentication**
  Multimodal biometric authentication technology combines palm vein pattern with fingerprint data from three fingers.

- **Spatiotemporal Data Processing**
  Enabling technologies for real-time spatial information service in big data era

- **Market Defect Detection based on Compound Data Analysis**
  Automobile Defect Monitoring and Recall Forecast

- **Advancing Extraction Techniques for Distributed Data**
  Rapid and efficient data extraction from tens of terabytes of data distributed among hundreds of servers by specifying multiple ranges

- **Next-Generation Server Platform**
  Enabling new IT infrastructure of cloud and datacenter by proprietary resource pool architecture

- **Location-Intelligent Auto-Access Technology for Information Devices**
  Delivers application and executes it automatically, then delete it from the desktop by user’s location and time

- **High-Performance Computing**
  From the birth of a star to a nano-sized world
  Reaching to materialize the aspirations of humankind
Technology Innovation
To enable a resilient
“human-centric intelligent society”

Innovative technologies harness collective intelligence and create new value in our lives, in a “human-centric intelligent society”
shaping tomorrow with you
Cautionary Statement

These presentation materials may contain forward-looking statements that are based on management’s current views and assumptions and involve unknown risks and uncertainties that could cause actual results, performance, or events to differ materially from those expressed or implied in such statements. Words such as “anticipates”, “believes”, “expects”, “estimates”, “intends”, “plans”, “projects”, and similar expressions which indicate future events and trends identify forward-looking statements.

Actual results may differ materially from those projected or implied in the forward-looking statements due to, without limitation, the following factors:

• general economic and market conditions in the major geographic markets for Fujitsu's services and products, which are the United States, EU, Japan and elsewhere in Asia, particularly as such conditions may affect customer spending;
• rapid technological change, fluctuations in customer demand and intensifying price competition in the IT, telecommunications, and microelectronics markets in which Fujitsu competes;
• Fujitsu’s ability to dispose of non-core businesses and related assets through strategic alliances and sales on commercially reasonable terms, and the effect of realization of losses which may result from such transactions;
• uncertainty as to Fujitsu’s access to, or protection for, certain intellectual property rights;
• uncertainty as to the performance of Fujitsu’s strategic business partners;
• declines in the market prices of Japanese and foreign equity securities held by Fujitsu which could cause Fujitsu to recognize significant losses in the value of its holdings and require Fujitsu to make significant additional contributions to its pension funds in order to make up shortfalls in minimum reserve requirements resulting from such declines;
• poor operating results, inability to access financing on commercially reasonable terms, insolvency or bankruptcy of Fujitsu’s customers, any of which factors could adversely affect or preclude these customers’ ability to timely pay accounts receivables owed to Fujitsu; and
• fluctuations in rates of exchange for the yen and other currencies in which Fujitsu makes significant sales or in which Fujitsu’s assets and liabilities are denominated, particularly between the yen and the British pound and U.S. dollar, respectively.