How to Make the Most of Japan's IoT Market Gap

Yoshiaki TOJO

JETRO San Francisco

July 21, 2016
JETRO SF Monthly Webinars
“Opportunities in Japan”

~ 4th Thursday, 11h00-12h00, PDT ~

Apr. 28:  Bio-Medical Industry
May 26:  Energy Industry
Jun. 22:  (Southern California Innovation Webinar)
Jul. 21:  Internet of Things
Aug. 25:  IT in Agriculture
Sep. 22:  IT in Healthcare
Yoshiaki TOJO
Head of JETRO San Francisco

① Technology Commercialization

- NEDO (2011~16): Technology Commercialization Program

② ICT Policy & Business Promotion

  – first use of Salesforce platform for public service
  – formulation of “Security Guideline for Cloud Services”

③ Innovation Economics & Policy

- Kyoto University (2001~2003): Network & Behavioral Economics
Revenue of IoT in Japan

$103 bn (2015) Revenue of IoT in Japan
(CAGR: 11%)
Revenue of IoT in Japan

23% of Asia-Pacific IoT Revenue

Source: IDC 2013-2015
$54\text{ bn (2014)}$ IoT Expenditure in Japan
(CAGR: $17\%$)

- Manufacturing
- Transportation
- Social Infrastructure / Utility

Source: IDC 2016
IoT team building seems stagnated

IoT teams have not been build as planned.

Source: IDC 2016
Barriers to purchasing IoT devices and services (Accenture Global Survey)

<table>
<thead>
<tr>
<th>Weak Value Proposition</th>
<th>Security / Safety Concern</th>
<th>Lack of Information / Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>62%</td>
<td>47%</td>
<td>23%</td>
</tr>
</tbody>
</table>

- find IoT devices are too expensive
- are concerned about privacy and security issues
- are unsure which device will be of use to them
- find IoT devices too confusing

Source: Accenture
Opportunity and Challenge

Matured ICT Market
- Cloud services are well-recognized

Intense Competition
- Incumbents + Startups

Cultural Barrier
- Difficulty in the entry point

Herding Behavior
- Snowball effect?

Commitment for Success
(Localization / Japanese Partner / Sales Office)
Recent Development

Improved privacy laws

~ Amendment of the Act on the Protection of Personal Information (APPI) ~

- Personal Information Protection Commission (PIPC)
- Rules for anonymized information and sensitive data
- Rules for personal data transfer and opt-out policies
  ⇒ APEC Cross Border Privacy Rules (CBPR) system will help address cross-border data transfer issue.
National ID and Data Sharing

~ Amendment of ”My Number Act” ~

• My Number system started in Oct. 2015.
• Enable sharing of information from Jan. 2017 (national level) and Jul. 2017 (local authorities).
• The Specific Personal Information Protection Commission to oversee the My Number system.
IoT Acceleration Consortium
(http://www.iotac.jp/en/)

Recent Development

**General Conference**
- Chairman
- Vice Chairman

**Steering Committee** (15 members)

**Technology Development WG**
(Smart IoT Acceleration Forum)
Development and demonstration, and standardization of IoT-related technologies such as a network

**Advanced Model Business WG**
(IoT Acceleration Lab)
Creation of advanced model business, Improvement of business environment such as regulatory reform

**Specific WG**
Establish in accordance with issues (the time being security, privacy-related)

**Cooperation**

**Ministry of Internal Affairs and Communications**
**Ministry of Economy, Trade and Industry**
Related Ministries and Agencies:
National Institute of Information and Communications Technology (NICT)、JIPDEC etc.
Healthcare Big Data Centre
~ PMDA’s new initiative ~

- The Pharmaceuticals and Medical Devices Agency (PMDA) plans to establish a regulatory science centre to collect and analyse medical Big Data, including electronic data in the Clinical Data Interchange Standards Consortium (CDISC).

- PMDA hopes to create new guidelines for pharma companies developing new drugs.
JETRO has supported more than 14,000 foreign companies in their entry and business expansion in the Japanese market.

We look forward to assisting you.

Talk to the JETRO first!

Hiroyuki ISHIGE
Chairman & CEO of JETRO
Invest Japan:
... assisting US companies at the first entry and business expansion in Japanese market

Business Match-Making:
... promoting US-Japan business partnership, especially for SMEs

Innovation Partnership:
... helping Japanese startups being connected to the US venture community

JETRO Seminars:
... providing updated information on Japanese business environment and policy measures
JETRO Service for Japan Entry

Early Stage
Feasibility Study

Middle Stage
Planning

Late Stage
Execution

- On-demand Market Information
- Eligible subsidies / tax incentives information
- Consultation by Certified Professionals (corporate law, tax, visas, labor contract, etc.)
- Business Networking (business partner / customer, central / local government, professional business services …)
- Temporary Office Space
- PR Support
Subsidy Program for Global Innovation Centers (total budget: 1.0 billion JPY)

- Target Sector: Internet of Things (IoT) Regenerative Medicine,

- Target Project (cost covered by subsidy):
  - Establishing Global Innovation Centers (1/3)
  - Experimental Studies (2/3)
  - Feasibility Studies (1/1)
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For any questions or additional information

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ANNEX: Case for Engaging with Japan

① Healthy & Sizable Market
② Technology & Innovation
③ Pro-business Government
Healthy & Sizable Market

$ 5 trillion GDP

- Chubu region: 930.4
  Netherlands: 836.8
- Kinki region: 981.0
  Korea: 1,116.2
- Chugoku region: 355.3
  Thailand: 345.7
- Kyushu region: 602.5
  Switzerland: 660.8
- Shikoku region: 175.3
  New Zealand: 159.5
- Hokkaido/Tohoku region: 717.8
  Turkey: 774.8
- Kanto region: 2,530.0
  U.K.: 2,428.7

Source: Cabinet Office, "Report on Prefectural Accounts 2014" (FY2014)
Healthy & Sizable Market

GDP Growth Rate

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Real Growth Rate</th>
<th>Nominal Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2011</td>
<td>0.4%</td>
<td>-1.3%</td>
</tr>
<tr>
<td>FY2012</td>
<td>0.9%</td>
<td>0.0%</td>
</tr>
<tr>
<td>FY2013</td>
<td>1.7%</td>
<td>2.0%</td>
</tr>
<tr>
<td>FY2014</td>
<td>-1.0%</td>
<td>1.5%</td>
</tr>
<tr>
<td>FY2015 (Estimate)</td>
<td>2.7%</td>
<td></td>
</tr>
<tr>
<td>FY2016 (Forecast)</td>
<td>3.1%</td>
<td></td>
</tr>
</tbody>
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(%)
Healthy & Sizable Market

Aged population still grows
(Most affluent cohort will be over 75 in 2025)

Japan enjoys highest R&D intensity

Research funding percentage of GDP (G8 comparison)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Percentage of GDP (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Japan</td>
<td>3.75</td>
</tr>
<tr>
<td>2</td>
<td>German</td>
<td>2.98</td>
</tr>
<tr>
<td>3</td>
<td>U.S.</td>
<td>2.79</td>
</tr>
</tbody>
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Number of researchers per 10,000 people (G8 comparison)

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<th>Number of researchers per 10,000 people</th>
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<tbody>
<tr>
<td>1</td>
<td>Japan</td>
<td>52.0</td>
</tr>
<tr>
<td>2</td>
<td>Canada</td>
<td>45.6</td>
</tr>
<tr>
<td>3</td>
<td>German</td>
<td>42.5</td>
</tr>
</tbody>
</table>

4th - France (2.29%), 5th - UK (1.73%), 6th - Canada (1.69%), 7th - Italy (1.27%), 8th - Russia (1.12%)

4th - US (40.2), 5th - UK (39.7), 6th - France (38.3), 7th - Russia (31.0), 8th - Italy (12.7)

Source: Created from Ministry of Internal Affairs and Communication, “Survey Result on Science and Technology Indicators 2014”
Date source: OECD “Main Science and Technology Indicators,” etc.
Japan VC fundraising by year

Source: Japan Venture Research
Total Amount Raised by Unlisted Venture Companies in Japan (billion JPY)

Source: Japan Venture Research
Disrupting technology startups are emerging.

- **Quantum Biosystems**
  - Single-molecule "Quantum DNA sequencer"

- **Cyfuse**
  - Bio 3D Printer
  - Regenova®

- **Cyberdyne**
  - Robotic remedial device HAL®

- **Symax**
  - Automatic biomarker sensor attachment for toilet

- **SanBio**
  - Cell therapies for neurological disorders
Pro-business Government

2nd Stage of Abenomics

Revolution in earning power

Investment for the future

Expansion of labor force

Reform of bedrock regulations

Advancement in wages and work environment

Implementation of Local Abenomics
Strategic Pilot Initiatives

Sendai (Gender Free and Social Entrepreneurship)

Senhoku (Agro-Tourism / Medical Tourism)

Niigata (Large-scale Farming)

Tokyo Area (International Business and Innovation Hub)

Kansai Area (Bio-Medical Innovation and Entrepreneurship)

Nagoya City (Auto / Aerospace / Advanced Manufacturing)

Hiroshima / Imabari (International Exchange and Utilization of Big Data)

Kitakyushu (Declining Population and Population Aging)

Fukuoka (Employment and New Business Creation)

Yabu (*) (Hilly-area Agriculture)

Okinawa (Tourism)

Chiba (Future Technology and Multicultural City)

(*) Pro-business Government

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## 5 Commitments for Attracting Foreign Business to Japan

<table>
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<tr>
<th>Commitment</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1. Overcome language barriers</td>
<td>Retailers: Set the standard for mobile phone QR codes to read product information in English and other languages. Restaurants: Make multiple-language menus widely available.</td>
</tr>
<tr>
<td>2. Facilitate better Internet connectivity</td>
<td>Free Wi-Fi: Create an environment in which foreign visitors can use free public wireless LAN (Free Wi-Fi) simply and easily at various locations around cities.</td>
</tr>
<tr>
<td>3. Accommodate business jets at local airports</td>
<td>Customs, Immigration and Quarantine (CIQ): Consider accepting business jets if CIQ offices are notified one week prior to the flight at local airports (currently requiring two-week advance notice).</td>
</tr>
<tr>
<td>4. Enhance educational environment for foreign children</td>
<td>International schools: Encourage prefectures to loosen their criteria for accrediting international schools as Miscellaneous Schools.</td>
</tr>
<tr>
<td>5. Strengthen services to support foreign enterprises</td>
<td>Consultation services: Establish a system for State Ministers to act as advisors to foreign businesses.</td>
</tr>
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