Reviewing the Strategic Implications of Japanese IT Offshore Outsourcing to China & India

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I. Introduction
II. Focus on Cultural & Institutional Factors
III. Background on the Japanese IT Industry
IV. Comparative View of India & China
V. The Advantage goes to:
VI. Implications for Outsourcing With Japanese Firms
Reviewing Japanese IT Offshore Outsourcing

- The outsourcing phenomenon represents one of the most fundamental developments in global business strategy.

- As globalization accelerates and competition intensifies, outsourcing has become a strategic solution for many corporations.

- Consequently, a lot of research has been done on the decision to outsource and the subsequent impact on firm performance.

- This presentation is part of a research project on cultural & institutional factors impacting outsourcing decisions & performance.
Risk Assessment Factors in Outsourcing

&

A New Focus

Risk Assessment Factors in Outsourcing

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Performance Measurement</th>
<th>Contract Management</th>
</tr>
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<tbody>
<tr>
<td>Political</td>
<td>Cost &amp; Time</td>
<td>Alliance Management</td>
</tr>
<tr>
<td>Financial</td>
<td>Intellectual Property</td>
<td>Disaster Recovery</td>
</tr>
<tr>
<td>Quality</td>
<td>Security</td>
<td>Staff deployment</td>
</tr>
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</table>

Cultural & Institutional Risk Factors

Cultural and institutional risks are related to the potential clash between the culture and business practices of the client and those of the vendor/supplier. These clashes could arise from differences in communication styles, languages, work attitudes, decision-making styles, ethics perspective, customer orientation, relationship management and corporate governance approach.
Comprehensive Framework for Researching Outsourcing: A New Focus on Cultural & Institutional Factors

- **Culture**
  - National
  - Regional
  - Organizational

- **Outsourcing Decision & Success**
  - **Relationship Quality**
    - Language
    - Communication
    - Trust
    - Cooperation
  - **Psychic Distance**
    - Geographically close
    - Institutionally close (Business Practices)

- **Market Factors**
  - Supply of educated workers
  - Lower wage environment
  - Relatively open markets

- **Technical Factors**
  - Sector capability
  - Client capability
  - Vendor capability
  - Infrastructure capability
**Background of Japanese IT Industry**

**Market Size:** Japan has the second largest IT Market in the world; about $130 billion in 2005 & employing approximately 600,000 people. Market Shares: Japan: 13.3%, USA: 40.2%

**Major Players:** The software developers can be categorized into 3 groups:

A. **MAKERS:** consists of computer manufacturers and their subsidiaries that provide total system solutions. Companies in this group include NEC, Fujitsu, Hitachi, IBM & NTT Data with combined mkt. share of over 50%. 5,500 firms make up the other 50%

B. **USERS:** companies in this group are former IT divisions which were spun off from the parent “user” companies in order to transform them into profit centers.

C. **INDEPENDENTS:** these do not have parent companies and they sometimes work as subcontractors for other IT companies in the Maker & User groups.
The Models of Outsourcing in Japanese Organizations

Subsidiary Model (Type A)
Partial Ownership Affiliate Model (Type B)
Third-party Offshore Vendor Model (Type C)

(Source: Tiwana, Bush et al, 2008)
Background of Japanese IT Industry

5) Structure of Japanese IT Service Market

Total Sales (2004):
14,555,500 MJ¥ (132,323 MUS$) / 110 J¥

- Customized Software: 46.3%
- Software Product: 9.4%
- IT Processing Service: 19%
- System Management & Operation: 13%
- Database Service: 2%
- Various Research: 2%
- Others: 13%

Software Development = Customized Software & Software Products:
55.7% => 73,704 MUS$

Source: METI 2005
Institutional Links to Japanese Outsourcing Behavior

Socio-Institutional Sensitivity of IT Software Outsourcing Projects

<table>
<thead>
<tr>
<th>Software Aspects</th>
<th>Socio-Institutional Sensitivity Necessary for Development</th>
<th>Japanese Outsourcing Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component Software</td>
<td>Relatively Low</td>
<td>High</td>
</tr>
<tr>
<td>Embedded Software</td>
<td>Relatively Low</td>
<td>High</td>
</tr>
<tr>
<td>Middleware software</td>
<td>Relatively Low</td>
<td>High</td>
</tr>
<tr>
<td>Business or Full Process Applications</td>
<td>Relatively High</td>
<td>Low</td>
</tr>
</tbody>
</table>
Japanese IT: A key characteristic of Japanese IT is the use of embedded software (built into various electronic products)

7) Importance of Embedded Software

- Examples of embedded software:
  From Rice cooker to Space satellite

- Consumer electronics: Rice cooker, Microwave oven, Air Conditioner, Refrigerator, TV, DVD Recorder, Digital Camera
- Entertainment: Game, Music instrument
- Personal equipment: Car navigator, PDA, Electronic dictionary
- Computer peripheral: Printer, Scanner, Disc, POS terminal
- Communication: Telephone, Mobile phone, Network Device [PBX, Router, Hub]
- Transportation: automobile, Aircraft, Ship, Railway car, Elevator/Escalator
- Industrial equipment: Plant equipment, Industrial Robot, Machine tool
- Medical equipment: Sphygmomanometer, Electrocardiograph, CT scanner
- Aero space: Rocket, Space satellite
Comparative View of India & China

9) India and China: Scale of the IT Service Industry and Exports 2003

**INDIA 2003**
- Breakdown of Exports:
  - USA: 68%
  - Europe: 21%
  - Japan: 2%
  - Others: 3%

**CHINA 2003**
- Breakdown of Exports:
  - Japan: 60%
  - Southeast Asia: 21%
  - Europe: 12%
  - Others: 6%

**India vs. China**
- Total Sales: India 16,000 vs. China 19,439
- Export: India 12,200 vs. China 2,005

*Source: Nikkei Computer, NASCOM, and Others*
## Comparative View of India & China

### 10) India and China: Offshore Software Development Sources for Japan

<table>
<thead>
<tr>
<th>Based on 2003</th>
<th>India</th>
<th>China</th>
<th>JAPAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sales [M us$]</td>
<td>16,000</td>
<td>19,439</td>
<td>132,323</td>
</tr>
<tr>
<td>Total Export [M us$]</td>
<td>12,200</td>
<td>2,005</td>
<td>89</td>
</tr>
<tr>
<td>No. of Software Firm</td>
<td>Over 3,300</td>
<td>Over 10,000</td>
<td>5,500</td>
</tr>
<tr>
<td>No. of CMMI 5 obtained Firm</td>
<td>73</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>No. of IT Professionals</td>
<td>650,000</td>
<td>400,000</td>
<td>573,000</td>
</tr>
<tr>
<td>English Speaking Engineer</td>
<td>All</td>
<td>Many</td>
<td>-</td>
</tr>
<tr>
<td>Japanese Speaking Engineers</td>
<td>Not so many</td>
<td>Many</td>
<td>-</td>
</tr>
<tr>
<td>No. of applicants for Japanese language exam. Level 1</td>
<td>143</td>
<td>31,698</td>
<td>-</td>
</tr>
<tr>
<td>No. of Students in Japan [Share %]</td>
<td>243 [0.3%]</td>
<td>58,533 [61%]</td>
<td>-</td>
</tr>
<tr>
<td>Major Export country [Share %]</td>
<td>USA [68%]</td>
<td>JAPAN [60%]</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Nikkei Computer, NASCOM, and Others
## Japanese IT Offshore Outsourcing

### Offshore Software Development by Major Japanese IT Companies

<table>
<thead>
<tr>
<th>Company Name</th>
<th>2004 Result (US$ M)</th>
<th>2005 Est. (US$ M)</th>
<th>Offshore Ratio</th>
<th>Share of China</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEC</td>
<td>197</td>
<td>224</td>
<td>8%</td>
<td>80%</td>
</tr>
<tr>
<td>Fujitsu</td>
<td>92</td>
<td>135</td>
<td>6 ~ 8%</td>
<td>Over 90%</td>
</tr>
<tr>
<td>Hitachi</td>
<td>77</td>
<td>121</td>
<td>10%</td>
<td>75%</td>
</tr>
<tr>
<td>NRI</td>
<td>61</td>
<td>75</td>
<td>9%</td>
<td>Over 90%</td>
</tr>
<tr>
<td>NTT DATA</td>
<td>19</td>
<td>37</td>
<td>2%</td>
<td>98%</td>
</tr>
<tr>
<td>Hitachi Software Engineering</td>
<td>18</td>
<td>27</td>
<td>12%</td>
<td>85%</td>
</tr>
<tr>
<td>TIS</td>
<td>8</td>
<td>9</td>
<td>3%</td>
<td>80%</td>
</tr>
</tbody>
</table>

Source: Nikkei Computer, May 30, 2005
Strengths of The Outsourcing Sector in China

According to the OECD, China recently surpassed the U.S. as the world’s top producer of laptops, mobile phones, and other ICT devices.

Chinese companies have significant strengths in embedded software development.

In 2003, there were about 206,000 formal Japanese learners (20 times more than India). In addition about 75,000 Chinese students are studying in Japan (65% of foreign students).

China is geographically close to Japan and also has strong domestic demand for IT products.

In 2005, China had over 195,000 new graduates with engineering degrees & wages were lower than in India.
Strengths of The Outsourcing Sector in India

• India’s dominance due to a mix of lower costs, large supply of technical workers, mature vendors & somewhat supportive government policies

• The offshore outsourcing sector employed nearly 700,000 people in 2005

• Many companies are ready for large projects with experienced project managers & programmers.

• India has the largest pool of young university graduates of over 14 million (over 300,000 engineers).

• The major Indian multinationals now have branches overseas to coordinate global & local staff

• Indian companies have excellent reputation in large systems development, package software production, and systems consulting
General Characteristics of The Japanese IT Industry

Characteristics of Japan’s IT Service Industry

- Centered on domestic market
- High share of customized software development

Special features of customized software development
- Short delivery times
- Detailed specifications are often not established at the start of a project
- There are often specification changes after the start of a project
- Demands concerning quality are rigorous
- Demands concerning price are rigorous
- Development takes place on a Japanese-language base

Response of the software vendor in order to meet these needs
- Builds relations of trust with the customer over a long time
- Accumulates abundant work knowledge over a long time
- Promotes development through close ties with cooperative companies
Vendor Expectations and Reality Gap in Japan

<table>
<thead>
<tr>
<th>Offshore IT Vendors Typical Expectations</th>
<th>Tendency in Japanese IT Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precise stable requirements before proceeding</td>
<td>Shifting &amp; volatile requirements as project shifts</td>
</tr>
<tr>
<td>Precise contracts of conditions &amp; expectations</td>
<td>Circles of trust and continual interaction</td>
</tr>
<tr>
<td>Global expertise to be a selling point</td>
<td>Demonstrated technical capability (dummy projects)</td>
</tr>
<tr>
<td>Potential domain knowledge acquisition</td>
<td>Domain knowledge protection (modularization)</td>
</tr>
<tr>
<td>Rapid decisions from client-liaisons</td>
<td>Group consensus and longer decision times</td>
</tr>
<tr>
<td>Full responsibility for outsourced project</td>
<td>Modular pieces of larger projects</td>
</tr>
<tr>
<td>Systems analyst focus (initial &amp; integration phase)</td>
<td>Bridge Software Engineer Focus (life-cycle focus)</td>
</tr>
<tr>
<td>Value-add and cost savings motivations</td>
<td>Technical expertise access main driver</td>
</tr>
<tr>
<td>A clear sign-off schedule and end points</td>
<td>Shifting &amp; flexible sign-off schedule &amp; endpoints</td>
</tr>
</tbody>
</table>
Reasons behind Japanese Preference for China

**Japanese language capability made it easier to relinquish control over certain aspects of the software development process.**

**China’s history and success in manufacturing outsourcing gave them familiarity with Japanese management style and built trust.**

**Chinese firms’ willingness to modify applications frequently to match unique business processes and ill-defined contract specifications; especially important for small & medium-sized firms.**
Key Success Factor for Working with Japanese Software Firms

- Japanese Language Skill
- Adapting to the Japanese Software Development Method
- Mutual and Frequent Communication
- A Focus on Quality Control
- Software Engineering Technology (especially embedded software)
- Cost Management & extensive documentation
- Flexible Project Management Approach
The End

Thanks For Attending The Presentation
# Theoretical Perspective on Outsourcing Research

<table>
<thead>
<tr>
<th>Theoretical Perspectives</th>
<th>Factors Investigated</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Competence</strong></td>
<td>Financial motivations, strategic motivations, complementary services, reliability, quality</td>
<td>Kim et al, 2005; Kakabase &amp; kakabase, 2000; Lever, 1997; Mclellan, Marcolin &amp; Beamish, 1995</td>
</tr>
<tr>
<td><strong>Resource Based &amp;/or Resource Dependency</strong></td>
<td>Strategic resources, strategic orientation, geographic distribution,</td>
<td>Straub, Weill, &amp; Schwaig 2008; Teng, Cheon &amp; Grover, 1995;</td>
</tr>
<tr>
<td><strong>Agency Theory &amp; Partnership Structuring</strong></td>
<td>Partnership quality, structuring of contracts, vendor selection</td>
<td>Gefen &amp; Carmel, 2008; Parikh, 2004; Lee &amp; Kim, 1999;</td>
</tr>
</tbody>
</table>
Background of Japanese IT Industry

2) Worldwide Market Share of Japanese IT Service Industry

- USA: 40.2%
- JAPAN: 13.3%

USA
- 40.2%

Japan
- 13.3%

Others
- 20.2%

Netherlands
- 1.4%

Korea
- 1.7%

Canada
- 2.5%

FRANCE
- 4.3%

UK
- 5.5%

Germany
- 5.7%

Italy

CHINA
Background of Japanese IT Industry

Industry characteristics

Japan’s information services industry has five major characteristics.

- **Oligopoly by the big five.** Five giants – Fujitsu, IBM, NEC, Hitachi, and NTT Data – make up the industry. Their combined market share reaches more than 50% of the entire market. Around 5,500 other companies make up the rest of the 50%.

- **Preference for custom software.** Japanese enterprises generally prefer customized software solutions to off-the-shelf packages. Nearly 50% of the industry’s US$129 billion market is comprised of custom software development, while only 10% makes up the software product market.

- **Domestic market-oriented.** In 2003, Japan’s software export sales of US$84 million was a mere 0.1% of the US$73 billion software industry sales.¹

- **Trade imbalance.** In 2003, Japan imported US$2.6 billion worth of software, and exported only US$84 million (the ratio of import vs. export was 32:1). Whereas custom software is developed for and sold to the domestic market, the Japanese prefer to import software products, which make up 91% of Japan’s software imports.

- **Low profitability.** For the period of 1991 to 2003, the average operating profit of Japan’s information service industry was 4.7%, while its average net income before tax was 4.1%.