Distinctive Japanese Approaches to Enterprise Applications: The Case of ERP

Robert E. Cole
Emeritus Professor: Haas School of Business
UC Berkeley
Visiting Fellow, Doshisha Univ.
Kyoto, Japan

* I am indebted to Michael Ger, Oracle USA, Hideyuki Yamagishi, Oracle, Japan and Josh Greenbaum, Principal at Enterprise Applications Consulting, for their help. None of these gentlemen are responsible for the use or misuse I have made of their feedback.
Rate of Adoption of ERP in Japan and U.S./Europe

• Ratio of adoption of at least some packaged ERP application in large U.S. manufacturing firms far exceeds that of Japanese large manufacturing firms.
# INTRODUCTION STATUS OF ERP IN JAPAN
## BY INDUSTRY AND FIRM REVENUE (2010)

### Overview

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>$120 Million to $360 Million</td>
<td>5.6</td>
<td>38.5</td>
<td>5.1</td>
<td>5.6</td>
<td>11.8</td>
<td>5.1</td>
<td>28.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$360 Million to $600 Million</td>
<td>6.3</td>
<td>44.4</td>
<td>6.3</td>
<td>6.3</td>
<td>8.7</td>
<td>6.3</td>
<td>21.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$600 Million to $1.2 Billion</td>
<td>4.0</td>
<td>44.0</td>
<td>8.0</td>
<td>8.0</td>
<td>4.0</td>
<td>32.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$1.2 Billion to $3.6 Billion</td>
<td>15.8</td>
<td>5.3</td>
<td>15.8</td>
<td>63.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>More than $3.6 Billion</td>
<td>8.0</td>
<td>20.0</td>
<td>4.0</td>
<td>4.0</td>
<td>28.0</td>
<td>8.0</td>
<td>28.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$600 Million to $1.2 Billion</td>
<td>11.1</td>
<td>50.0</td>
<td>5.6</td>
<td>11.1</td>
<td>5.6</td>
<td>5.6</td>
<td>11.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$1.2 Billion to $3.6 Billion</td>
<td>6.7</td>
<td>50.0</td>
<td>10.0</td>
<td>13.3</td>
<td>20.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$600 Million to $1.2 Billion</td>
<td>11.4</td>
<td>31.8</td>
<td>6.8</td>
<td>9.1</td>
<td>6.8</td>
<td>4.5</td>
<td>29.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$360 Million to $600 Million</td>
<td>3.4</td>
<td>44.8</td>
<td>3.4</td>
<td>20.7</td>
<td>13.8</td>
<td>13.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$120 Million to $360 Million</td>
<td>2.0</td>
<td>40.0</td>
<td>4.0</td>
<td>8.0</td>
<td>4.0</td>
<td>4.0</td>
<td>38.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- **Already Introduced & Expanding**
- **Already Introduced & Using**
- **Being Implemented**
- **Under Review**
- **Planning to Introduce**
- **Researched & Rejected**
- **Not Considering**
Japanese Manufacturing Firms Carry Out Much Higher levels of ERP Customization

• Compared to U.S./European firms, large Japanese manufacturing firms are much more likely to customize ERP protocols to fit current organizational practices, rather than adjust the organizational practices to fit ERP protocols.
Key Differences in Building Information Systems

<table>
<thead>
<tr>
<th></th>
<th>Packaged Software With Little Customization</th>
<th>Customized Packaged Software</th>
<th>Developed Own or Ordered Custom Software</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Japan</strong></td>
<td>17</td>
<td>26</td>
<td>54</td>
</tr>
<tr>
<td><strong>United States</strong></td>
<td>29</td>
<td>49</td>
<td>16</td>
</tr>
</tbody>
</table>

Competitive Standing of Japanese Software Industry is Low & its Productivity Contribution is Modest Relative to the Contributions Reported in Europe & U.S.

- Japan’s global competitive standing as measured by trade stats: Japan is a huge importer of software and an extremely modest exporter.
- Can explain these outcomes by the dominant role in the Japanese software industry played by custom software.
- Japanese managers report lower productivity benefits from their use of IT compared to US and European managers.
System Integration Companies Play a More Dominant Role in Corporate Adoption of IT Systems in Japan vs. US.

Software vendors seldom sell directly to end users but rather market their products to system integrators.
What is the Source of the Power of System Integrators in Japan?

- Fewer full time CIOs in Japan
- Less involvement of their CIOs with planning corporate strategy
Weak Position of Heads of Information Management Systems’ Department Has Major Consequences

- Top MIS executive does not report to CEO
- Top MIS executive focused on risk avoidance, maintaining stability of enterprise software system (reliability) and building up the size of their group.
What is Source of Firm’s Heavy Reliance on Customization(1)

• Customization allows them to get exactly the functionality that they want through maintaining and optimizing existing organizational practices
• This allows them, as they see it, to preserve the basis of their existing competitive advantage.
What is Source of Firm’s Heavy Reliance on Customization(2)

• Customization allows them to get exactly the functionality that they want through preserving existing organizational practices.
• This allows them to preserve organizational practice which they believe provide their current competitive advantage.
Downsides of Heavy Customization

• Costly
• Leads to less frequent upgrades
• More focused on optimizing current organizational practices than evolving new capabilities.
Concluding Thoughts

• By seeing enterprise applications primarily as infrastructure and support for optimizing existing organizational practices, Japanese manufacturing firms tend to forego its potential as a driver of organizational innovation.

• Yet, firms can benefit not just from “needs pull” innovation but also “tech push” innovation.
Two Sources
