The Impact of e-Commerce on the Japanese Raw Fish Supply Chain

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and
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1. Introduction

- **Purpose** – conduct primary research to determine the state of e-Commerce in Japan
- **Expectation** – observation of a group of innovative companies attempting to revolutionize the complex Japanese distribution system
- **Method** – examination of the fresh fish supply chain, interviews conducted in Japanese
- **Result** – observed structural issues leading to unanticipated lack of e-Commerce penetration in the Japanese market
1. Introduction (continued)

- E-Commerce Projections (Japanese Government)
  - Increase from $6.6\text{ billion} \text{ in 2000 to } $106\text{ billion} \text{ in 2005}
  - 16 times larger in five years
- Benefits
  - Japanese customers expected lower prices
  - Japanese and foreign business expect lower barrier of entry
  - Japanese government expected economic revival and source of future growth
2. Literature Review

- Few references written in English about Japanese e-Commerce
- Large number of publications written in Japanese
- Japanese focus on fraud and security
- Large contrast with American situation
  - Cross-industrial perspectives
  - Pricing and brand name
  - Security
  - Agents
  - Legal issues
## Complexity of Distribution System: Comparison Between the United States and Japan

<table>
<thead>
<tr>
<th>Measure of Distribution</th>
<th>Japan</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of retail establishments (in thousands)</td>
<td>1,407</td>
<td>1,526</td>
</tr>
<tr>
<td>Number of retail establishments per 10,000 population</td>
<td>111</td>
<td>54</td>
</tr>
<tr>
<td>Number of wholesale establishments (in thousands)</td>
<td>426</td>
<td>495</td>
</tr>
<tr>
<td>Number of wholesalers per 10,000 population</td>
<td>34</td>
<td>17</td>
</tr>
<tr>
<td>W/R</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

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Why so Many Stores and Wholesalers?

- Small homes with limited space for refrigerated food storage (Japan is about the size of California with 127 million people, much of the country is not utilized).
- Congested traffic conditions encouraged walking to stores
- Importance of fresh food, especially fruits and vegetables – frequent shopping trips
- Relatively high land prices
- Large-Scale Store Law (1974)
Changes in the Retail Supply Chain (1982-1999)

- The number of retail outlets declined 18%
- The number of wholesalers declined 7.8%
- Sales per store increased (1.5% of total stores accounting for 35% of National retail sales)
- Large retailers were gaining power, and began to reduce the number of wholesalers
- E-Commerce offered opportunity for Wholesalers to do direct marketing to consumers.
# Japan-US Retailers Comparison

<table>
<thead>
<tr>
<th></th>
<th>Japan</th>
<th>United States</th>
<th>Japan/US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue per employee ($/person)</td>
<td>222,128</td>
<td>133,989</td>
<td>1.66</td>
</tr>
<tr>
<td>Revenue per shop floor ($/sq. ft)</td>
<td>657</td>
<td>294</td>
<td>2.23</td>
</tr>
<tr>
<td>Inventory turns</td>
<td>25.04</td>
<td>10.40</td>
<td>2.41</td>
</tr>
<tr>
<td>Revenue per tangible asset</td>
<td>5.50</td>
<td>3.97</td>
<td>1.39</td>
</tr>
</tbody>
</table>

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Analysis of Japan-US Comparison

- Individual Japanese retailers appear to be very efficient (1995)
- Assume $=Yen 188 (prevalent purchase power parity)
- Exchange rate in 1995 quoted as $=Yen 95
- Great deal of waste in the supply chain
  - Complicated rebates and post-mortem pricing agreements.
  - Emphasis on relationships
E-Commerce experience and Future Usage
“Have you ever used e-commerce? Will you use it in the future?”

<table>
<thead>
<tr>
<th></th>
<th>Will use</th>
<th>Will not use</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have used</td>
<td>7.0%</td>
<td>4.0%</td>
<td>11.0%</td>
</tr>
<tr>
<td>Have not used</td>
<td>28.5%</td>
<td>49.4%</td>
<td>77.9%</td>
</tr>
<tr>
<td>Total</td>
<td>35.5%</td>
<td>53.4%</td>
<td>88.9%</td>
</tr>
</tbody>
</table>

No idea  1.8%

Don't know what it is  9.4%

n=2,099
Japanese consumers viewed the use of e-Commerce to order merchandise as “entertainment.”

The process was “fun” to do once.

Not a strong view of using the technology as a productive tool for daily shopping.
The Fresh Fish Supply Chain

- Freshness is top priority
  - Many participants, transact quickly, share risk of spoilage
  - Use of Auto-ID technology to monitor the temperature of tuna during transport to port

- Strengthening Yen, more imports, shift in channel captain to retailers (imports take 40% share)

- Influence of central market wholesaler decreased

- Supply chain remains inefficient (70% increase for fish compared to 50% for fresh vegetables)
Traditional Channel for Small Retailers and New Channels for Large Retailers (fresh tuna)
3.0 Methodology

- Two groups
  - Small and medium enterprises (SME)
  - Large retailers
- Interview research, all done in Japanese
- Sample size n=20 for SME
- Large Retailers - limited interview information disclosed
  - Short sales history (since 2000)
  - Reluctance to speak openly
4. Results

• **SME’s** were the most active
  – Low cost to set up operations in “web malls”
  – Opportunity for sales growth
  – Counter threats from customers (retail chains) and large trading companies)

• Typical Outcome since 1997
  – Limited variety offered online
  – Sales = 1% of total company revenue
  – Outsourced logistics
4. Results (continued)

• **Large retailers**
  – 6 of the 10 largest retailers had e-Commerce programs
  – Use of private fleets to cover a limited delivery area
  – Less variety of fish products than typical retail store
4. Results (continued)

- **Service Providers**
  - Yamato, Sagawa, Seino and Japan Post Office
  - Cost was about $8 per delivery
  - Pricing identical in the market
  - Lead-time was two days
  - High population density did not appear to reduce delivery costs
5.0 Discussion

No evidence of entrepreneurial activity to revolutionize the complex Japanese distribution system.

E-Commerce activity concentrated among existing SME wholesalers.

Attempts at e-Commerce were largely unsuccessful in generating new revenue and profit for SME’s.
5. Discussion (continued)

• Channel Conflict
  – SME customers (the retailers) posed largest challenge
  – Disintermediation of the wholesaler base created a harsh business environment
  – SME voluntarily limited the scope of e-Commerce in terms of products and pricing
  – Maintain good relationships with the large retailers
5.0 Discussion (continued)

- **Logistics Challenge**
  - Wholesale direct transaction with customer a new activity
  - Delivery cost high for fresh food.
  - Spoilage problems caused higher costs
  - Hard to coordinate delivery date with customer
5.0 Discussion (continued)

• **Lack of Resources**
  – low motivation for e-Commerce
  – objective to defend against competitive threats rather than desire to exploit new opportunities
  – Large retailers noticed cannibalization of sales
  – Little initial evidence that large retailers were reaching new markets such as
    • Households with limited access to stores
    • New customer segments such as senior citizens
    • “social logistics” increased costs
## Summary of Observations and Analysis

<table>
<thead>
<tr>
<th>Players</th>
<th>Observation and analysis</th>
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</table>
| Traditional, small to medium fish-related businesses | • Motivated by competitive pressure  
• Hard to meet consumer requirements  
  - Channel conflict with large retailers  
  - Logistics challenge  
  - Lack of resources to innovate |
| Large retailers                | • Better position with fewer constraints  
• Less motivation; focus on existing stores  
• e-Commerce intended to fill some niche not served by stores  
• e-Commerce causes cannibalization of existing business |
| New entrants                  | • Few, due to remaining barriers/inefficiencies in the distribution system                                                                           |
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- Research regional logistics systems
- Provide teaching materials, including case studies, discussion questions and Power Presentations
- Develop techniques of comparative analysis
- WSJ – “Wal-Mart's Foray Into Japan Spurs A Retail Upheaval”
  Sept. 19, 2003
- Participants in the project:
  - Edmund W. Schuster
  - Kazunari Watanabe
  - Ping Wang
  - Kuang Ler