ANALYSIS OF JAPAN'S B2B PUBLIC E-MARKETPLACES

By

TAKAYUKI MIZUNO

M.E. Information Electronics
Nagoya University, 1993
B.E. Electronics
Nagoya University, 1991

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ON MAY 10, 2002 IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF

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Signature of Author: __________________________

Sloan School of Management
May 10, 2002

Certified by: __________________________

Starling David Hunter III
Assistant Professor of Management
Thesis Supervisor

Accepted by: __________________________

David Weber
Director, Management of Technology Program
Analysis of Japan's B2B public e-marketplaces

By

Takayuki Mizuno

Submitted to the Sloan School of Management on May 10, 2002
in Partial Fulfillment of the Requirements for the Degree of
Master of Science in the Management of Technology

Abstract

Japan's industries have great expectations for the future of B2B public e-marketplaces, but the e-marketplace revolution in Japan is still at an early stage of development, and most have not yet produced satisfactory results.

In this thesis, my objectives are to investigate and report on the major issues and challenges that impact the future success of Japan's public e-marketplaces, as well as to identify critical success factors. I conducted interviews with representatives of eight e-marketplaces in different industries. In those interviews, I learned that the unique characteristics of Japan's business environment, such as intermediates, Keiretsu-based business, and delays in the penetration of IT into small and medium-size enterprises, have had a major influence on the development of Japan's public e-marketplaces. Moreover, since it is customary for companies that try to change their internal business processes to encounter resistance and political pressure from both inside and outside companies, the e-marketplaces must expend an extraordinary amount of company effort and time to achieve success.

The following are the key critical success factors I identified during the interviews:
• take an honest and sound approach
• respect traditional business practices
• offer value-added services that benefit customers
• offer off-line customer support as well as on-line services
• develop an effective alliance strategy

I believe these critical success factors are fairly universal, and could be equally useful in the public e-marketplaces of Japan's other industries.

Thesis Supervisor: Starling David Hunter III
Title: Assistant Professor of Management
ACKNOWLEDGEMENTS

First, I would like to express my gratitude to Professor Starling David Hunter III, who willingly worked with my poor English while giving me a great deal of helpful advice as my thesis advisor.

I also extend my deep appreciation to the representatives of Japan’s public e-marketplaces, who accepted my requests for interviews and spent their precious time with me. Without their help and kindness, I could not have completed this thesis.

Finally, I would like to dedicate this thesis to my wife, Miho, who continually gave me her sincere encouragement and support.

Takayuki Mizuno
Cambridge, Massachusetts
May 2002
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</tbody>
</table>
CHAPTER 1

Introduction

1.1 OVERVIEW

With the explosive spread of Internet, a public e-marketplace, one form of business-to-business (B2B) electronic commerce, began to attract considerable attention during the latter half of the 1990s. The introduction of public e-marketplaces began in the U.S., and the rapid spread of U.S. public e-marketplaces became the motivation for many of Japan's industries to implement something similar, with the result that many public e-marketplaces also began to emerge in Japan in the late 1990s.

Notwithstanding the excitement caused by public e-marketplace sites in Japan and the U.S., the results so far remain less than satisfactory. Sustainable business models have not been developed in any industry, and consequently substantial re-consideration is being given to e-marketplace strategies. However, if one considers the difficulty of moving any new e-business initiative forward, the current
situation is not quite so negative. Japan's e-marketplace revolution is still in its early stage of development, with every expectation that it will grow in the future and step by step overcome the major issues confronting it today.

1.2 THESIS OBJECTIVE

The main objective of this thesis is to investigate the major issues and challenges impacting on the success of Japan's public e-marketplaces. I focus on two types in particular - trading company-led e-marketplaces and industry consortium e-marketplaces - both of which are typical public e-marketplaces in Japan.

The success of public e-marketplaces is contingent upon several factors: the target industry, the products it deals with, and the target customers, and a business model successful in one industry may not be so successful in another. However, it seems clear that successful e-marketplaces have some success factors in common. Therefore, I also seek to identify the critical success factors for public e-marketplaces in Japan by analyzing several current Japanese e-marketplaces.

The following key questions summarize the focus of this thesis:

- What is the status of public e-marketplaces in Japan?
- What are the characteristics of public e-marketplaces in Japan?
How do business practices and industry structure influence the business model of a Japanese e-marketplace?

What are the major issues that hinder the success of present e-marketplaces in Japan? What major issues are unique to Japan?

What roles do trading companies play in Japan's e-marketplaces?

What kinds of functionalities or services should e-marketplaces offer in the future?

What kind of incentives can/should e-marketplaces provide for buyers and suppliers?

What features do successful e-marketplaces have in common?

1.3 RESEARCH METHODS

My research was conducted by using the following methods and sources of information.

- Articles and news information from the Internet
- University and institute research reports
- Related books
- Telephone interviews with representatives of several public e-marketplaces in Japan, listed below:
  - Smart Online Corporation (steel industry)
  - MetalSite Japan Corporation (steel industry)
  - Kouzai.com Corporation (steel industry)
  - Chemical Mall Asia-Pacific Co., Ltd. (chemical industry)
1.4 OUTLINE

In Chapter 2, I categorize B2B e-marketplaces and give a brief explanation of the characteristics of each category. Here, I also clarify the scope of this thesis. Chapter 3 gives a brief history of public e-marketplaces.

Chapter 4 describes the state of IT-related infrastructure, and Chapter 5 describes the market size of B2B electronic commerce. Both chapters give useful data about the background and current status of Japan's public e-marketplaces.

In Chapter 6, I explain the business model on which public e-marketplaces are created, and describe the impacts they can exert on traditional business. Chapters 7 and 8 discuss specific issues and challenges facing Japan's public e-marketplaces. This is done by making a case study of three typical public e-marketplaces in Japan today. The three are MetalSite Japan (a trading company-led e-marketplace in the steel industry), Construction-EC.com (an industry consortium e-marketplace in the construction industry), and GlobalNetXchange Japan
(the Japanese subsidiary of a global industry consortium e-marketplace in the retail industry).

Chapter 9 considers the influence that Japan’s business environment has had on the development of public e-marketplaces; I also explain their critical success factors. Finally, I conclude by expressing in Chapter 10 my own opinions about the development of Japan’s public e-marketplaces and their potential for the future.
CHAPTER 2

Classification of B2B e-Marketplaces

2.1 TYPES OF E-COMMERCE

The trading forms of B2B electronic commerce can be classified into two broad groups\(^1\). One is the Internet version of conventional Electronic Data Interchange (EDI) or "closed" B2B electronic commerce (p to p\(^2\)), in which commercial transactions between specific companies are managed according to a long-term contract. The other is the so-called e-marketplace, which is "open" electronic commerce among companies and assumes the participation of new partners (see Exhibit 2-1).

\(^{1}\) Hodo, 2001
\(^{2}\) "p" indicates a particular company (generally, p is single company), and "n" indicates any company.
2.2 TYPES OF E-MARKETPLACES

The e-marketplace includes two types (see Exhibit 2-2). One is the private type, in which a specific major company trades openly with its existing customers, both buyers and suppliers. The private type can be further subdivided into procurement type (n to p) and sales type (p to n). At present, there are many procurement-type e-marketplaces in both the U.S. and Japan, but relatively few sales-type e-marketplaces.

Exhibit 2-1: Classification of e-marketplaces by Trading Form

![Exhibit 2-1 Diagram]

Source: Hodo, Accenture E-Commerce Report, 2001
(partially adapted by the author)
### Exhibit 2-2 Comparison of public and private e-marketplaces

<table>
<thead>
<tr>
<th>Private</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Opportunity to trade with potential trading partners is not provided.</td>
<td>• Participant companies can not only increase business opportunity to trade with potential trading partners, but also trade products at the optimized price.</td>
</tr>
<tr>
<td>• Deep integration among backend systems of the existing trading partners can be realized relative easily.</td>
<td>• It is possible to integrate backend system with trading partners, but, in many case, it is not enough.</td>
</tr>
<tr>
<td>• Since it is necessary to cover huge construction and management expense, entry is impossible except the large company that have a moderate number of large-volume business partners.</td>
<td>• Since entry cost is cheap (Typically, participants need to pay only commission per transaction or monthly fee).</td>
</tr>
<tr>
<td>• Since participants are restricted and higher level of privacy and service are provided, dealings of strategic products are possible.</td>
<td>• Since public offering of the strategic information may lead the decline of competitive power, the products dealt with are restricted. (Commodities are mainly traded).</td>
</tr>
</tbody>
</table>

Source: Author, 2002 (based on related articles)
The other type of e-marketplace - the public type (n to n), in which unspecified suppliers and buyers participate and trade freely - is the target of this thesis. This type can also be further subdivided into several types based on founders (see Exhibit 2-3), such as independent type, industry consortium type, trading company-led type, and high-tech company-led type. When comparing Japan and the U.S., the most common e-marketplaces in the U.S. are independent type and industry consortium type, while the most common in Japan are the trading company-led type, the industry consortium type, and the high-tech company-led type.

The most dominant type in Japan is the trading company-led e-marketplace, and its influence is extensive, from vertical markets in many industries to horizontal markets across industries. It is also typical of Japan’s public e-marketplaces that most e-marketplaces were founded as a result of a joint venture among several traditional companies.

In this thesis, I will begin with a broad analysis of Japan’s public e-marketplaces in general, and then focus specifically on the trading company-led e-marketplaces and industry consortium e-marketplaces.
<table>
<thead>
<tr>
<th>Type</th>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public</strong></td>
<td></td>
</tr>
<tr>
<td>Independent</td>
<td>Neutral third-party establishes, unspecified number of customers (buyers and suppliers) participate. Unlike US, only a small number in Japan.</td>
</tr>
<tr>
<td>e-marketplace</td>
<td></td>
</tr>
<tr>
<td>Hi-tech Company-led</td>
<td>Trading company establishes, unspecified number of customers (buyers and suppliers) participate. Dominant in Japan, usually established and operated as a joint venture by several trading companies. Examples: Metalsite Japan, Smart Online (Steel), Chemical Mall Asia-Pacific (chemical).</td>
</tr>
<tr>
<td>e-marketplace</td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>A specific major company establishes and trades with existing trading partners. Most successful e-marketplace type although best for large companies.</td>
</tr>
</tbody>
</table>

Note: shaded areas are the main targets of this thesis.

Source: Author, 2002 (based on related articles)
2.3 AGGREGATION AND INTEGRATION

The benefits of e-marketplaces are realized by two essential functions. One is "aggregation", which results in an increase of business opportunities and optimizes trading prices by bringing more companies into the e-marketplace. The second function is "integration", which results in trade efficiency and automation by integrating business process among companies.\(^3\)

However, there is a major tradeoff when choosing between the two functions (see Exhibit 2-4). For example, to realize integration, it is essential to standardize specifications and then require participants to follow the standards. The problem is that as the number of participants increases, standardization becomes more difficult, thus weakening integration. Although the Internet has the potential to dramatically reduce this tradeoff, it is still not easy to blend these two functionalities. Therefore, at present, integration is mainly promoted by the private e-marketplaces, and aggregation is mainly promoted by the public e-marketplaces, such as independent marketplaces.

The current trend, however, is to improve integration. At present, several major software companies, such as Oracle, aggressively promote their collaborative commerce solutions which provide integration

\(^3\) Hodo, 2001
functionality, and several standardization organizations, such as RosettaNet, have been established. Moreover, many public e-marketplaces, especially global industry consortium e-marketplaces like Covisint and E2open are willing to invest considerable money to improve integration functionality.

Exhibit 2-4. Tradeoff between Aggregation and Integration

Source: Author 2002 (adapted from Evans, 1999)
CHAPTER 3

Brief History of Public e-Marketplaces

Some say that the business model of a public (n to n) e-marketplace uses characteristics of the Internet (a region-independent, highly open environment) more effectively than a business model for other types of B2B e-commerce. Whether this be the case or not, the development of public e-marketplaces is not proceeding smoothly. But before getting into causes, I will first briefly examine the history of public e-marketplaces in the U.S. and Japan.

3.1 PUBLIC E-MARKETPLACES IN THE U.S.

However, with the collapse of the dot.com bubble in 2000, independent e-marketplaces faded quickly. For example, MetalSite and Chemdex (owned by Ventro), which were recognized as flagship e-marketplaces, were closed, and many firms, like FastParts and PartMiner, were forced to lay off employees. Others, like VerticalNet and SciQuest, abandoned their initial business models as public e-marketplaces, and instead positioned themselves as B2B software vendors. Where as many as 1,000 e-marketplaces may have been in existence in the U.S. in 2000, according to Forrester Research, there will be fewer than 200 e-marketplaces by 2003 because of attrition and mergers between e-marketplaces.

In 2000, however, industry consortium e-marketplaces began to flourish. Examples include Covisint (established by DaimlerChrysler, Ford, and General Motors), and Converge and E2open, marketplaces for major world electronics companies from countries such as the U.S., Japan, and South Korea. Similar moves occurred in other industries: Worldwide Retail Exchange, GlobalNetXchange, and Transora (retail), Aeroxchange (aviation), Avendra (hospitality), and Elemica (chemical). Although skeptics wonder about the possibility of competing companies developing

---

4 Hicks, 2001
5 Forrester Research, August 2000
an e-marketplace together, the industry consortium e-marketplaces eventually stole the spotlight from independent e-marketplaces.

There are several reasons why industry consortium e-marketplaces are regarded as more advantageous than independent e-marketplaces:

- Since suppliers, buyers, or both have a vested interest in the success of the e-marketplace, participants use the marketplace positively, which means a ready-made trading volume is available.
- A company that operates its own e-marketplace obviously understands the business practices and needs of the industry well.
- These e-marketplaces make it possible to balance "aggregation" with "integration".

As mentioned above, independent e-marketplaces are in poor shape, with the result that industry consortium e-marketplaces so expected to become the mainstream of public e-marketplaces in the U.S., although there is some sense of disappointment stemming from the delayed start.

However, the actual conditions cannot be simplified as much. Industry consortium e-marketplaces have just started their businesses, and few enterprise achievements can be cited yet. Moreover, some independent e-marketplaces, such as FreeMarkets, have expanded their trading scale every year. Alliances and acquisitions occur frequently:

\[\text{\textsuperscript{6}}\] Such pessimism stems from the slow launch of these e-marketplace, which instead promoted the popularity of private e-marketplaces.
• E-Steel (an independent e-marketplace) entered into an alliance with Covisint (an industry consortium e-marketplace).

• VerticalNet became a technical partner by financing Converge, also selling off its subsidiary NECX to Converge.

• ChemConnect, which owns World Chemical Exchange (an independent e-marketplace in the chemical industry), merged with Envera (an industry consortium e-marketplace) and Chematich (the independent e-marketplace).

It is clear that the public e-marketplace sector is still chaotic.

3.2 PUBLIC E-MARKETPLACES IN JAPAN

Japanese companies started feasibility studies of e-marketplaces after witnessing the U.S. boom, and in 2000 the moves to establish e-marketplaces finally became active. Interestingly enough, when action finally got underway, both trading company-led e-marketplaces and industry consortium e-marketplaces appeared at virtually the same time, although a few independent e-marketplaces did appear. One reason for fewer independent e-marketplaces is that historically Japanese industries tend not to accept independence. A larger reason is that implementation of e-marketplaces would enable Japan to somewhat mirror the progress being made in the U.S.

It would be difficult to explain Japan's e-marketplaces without a parallel discussion of trading companies. For the trading companies,
whose commission-based business model was collapsing and their very existence was being questioned, e-marketplaces represented much-needed opportunities to serve an intermediary function. Therefore, from the earliest stages of Japan's e-marketplaces, trading companies, especially Sogo-Shosha (general trading companies), established and led many e-marketplaces. Their forms are diverse, from industry-dependent vertical e-marketplaces to cross-industrial horizontal e-marketplaces. In fact, trading companies have had a major impact on the development of Japan's public e-marketplaces. Examples of trading company-led e-marketplaces are Smart Online and MetalSite Japan in the steel industry, and Chemical Mall Asia-Pacific in the chemical industry.

As for industry consortium e-marketplace, several domestic e-marketplaces, such as Construction-ec.com in the construction industry, Japan eMarket in the electric power industry, and Marine-Net in the marine industry, started to emerge in 2000. Moreover, in 2001, global industry consortia, such as Covisint in the automotive industry, E2open in the electronics industry, and GlobalNetXchange in the retail industry, started to open subsidiaries in Japan gradually.
CHAPTER

4

Internet-related Infrastructures in Japan

In this chapter I briefly explain the Internet-related infrastructure that exists in Japan.

4.1 HOUSEHOLDS

Exhibit 4-1 shows the rate of personal computer use (individual use) in Japan and the U.S.\textsuperscript{7} It shows that in 2000 use in Japan was 32.8%, up 15.8% from 1997; in the U.S. use was 57.8%, and increased 12.8% from 1997. Thus the disparity between the two countries has not dropped significantly. There is also a large disparity in keyboard literacy rates, as shown in Exhibit 4-2. According to research in 2000\textsuperscript{7}, the rate of those who can type quickly without looking at the keyboard is only 8.4% in Japan, compared with 33.6% in the U.S. With regard to the rate

\textsuperscript{7} Nomura Research Institute, 2001
of Internet diffusion\(^7\) (see Exhibit 4-3), although it increased rapidly from 1997 to 2000, the level is still low in Japan, only 22.8%, compared with 48.9% in the U.S.

This sluggish Internet diffusion is caused by several problems. One is a high Internet use fee (see Exhibit 4-4) and another is the delay in making high-speed Internet service more widely available (see Exhibit 4-5)\(^8\). Recently, however, inexpensive high-speed Internet access (especially DSL) at a fixed-fee became available, so these two problems should begin to disappear.

4.2 BUSINESSES

According to research in 2000\(^9\), 86.5% of Japanese companies with more than 100 employees have built company LANs, 44.2% have built intranets, and 9.4% have built extranets (see Exhibit 4-6).

There are important disparities between large companies and small companies in terms of networking:

Intranet: 43.7% of companies with 100-299 employees

77.9% companies with more than 2000 employees.

Extranet: 9.4% of companies with 100-299 employees

32.3% of companies with more than 2000 employees.

---

8 METI, May 2001
9 MPHPT, 2001
We can also find the disparities in the diffusion of EDI (see Exhibit 4-7).

**Exhibit 4-1: Personal Computer Use Rates**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Have a PC at home and use it</td>
<td>32.8%</td>
<td>17.0%</td>
<td>57.6%</td>
<td>44.8%</td>
</tr>
<tr>
<td>Have a PC at home but not use it</td>
<td>21.5%</td>
<td>16.0%</td>
<td>9.8%</td>
<td>7.8%</td>
</tr>
<tr>
<td>Not have a PC</td>
<td>45.0%</td>
<td>66.7%</td>
<td>32.3%</td>
<td>46.0%</td>
</tr>
<tr>
<td>No answer</td>
<td>0.6%</td>
<td>0.3%</td>
<td>1.1%</td>
<td>1.4%</td>
</tr>
</tbody>
</table>

Source: Nomura Research Institute, 2001

**Exhibit 4-2: Keyboard Literacy**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Can strike quickly without seeing a keyboard</td>
<td>8.4%</td>
<td>5.2%</td>
<td>33.6%</td>
<td>29.8%</td>
</tr>
<tr>
<td>Can strike quickly with seeing a keyboard</td>
<td>21.5%</td>
<td>17.5%</td>
<td>22.1%</td>
<td>24.6%</td>
</tr>
<tr>
<td>Can strike slowly with seeing keyboard</td>
<td>42.1%</td>
<td>39.2%</td>
<td>31.8%</td>
<td>31.8%</td>
</tr>
<tr>
<td>Can't use keyboard very much</td>
<td>27.5%</td>
<td>36.7%</td>
<td>11.5%</td>
<td>11.4%</td>
</tr>
<tr>
<td>No answer</td>
<td>0.4%</td>
<td>0.4%</td>
<td>1.0%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

Source: Nomura Research Institute, 2001
Exhibit 4-3: Internet Use Rates

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>2000</td>
<td>22.8%</td>
</tr>
<tr>
<td></td>
<td>1997</td>
<td>5.9%</td>
</tr>
<tr>
<td>US</td>
<td>2000</td>
<td>48.9%</td>
</tr>
<tr>
<td></td>
<td>1997</td>
<td>30.9%</td>
</tr>
</tbody>
</table>

Source: Nomura Research Institute, 2001

Exhibit 4-4: Fees for Using the Internet

<table>
<thead>
<tr>
<th></th>
<th>Access Fee</th>
<th>Communication Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>$18.1</td>
<td>$55.2</td>
</tr>
<tr>
<td></td>
<td>$18.1</td>
<td>$92.3</td>
</tr>
<tr>
<td>US</td>
<td>$22.0</td>
<td>$25.1</td>
</tr>
<tr>
<td></td>
<td>$22.0</td>
<td>$27.3</td>
</tr>
</tbody>
</table>

Note: This figure is based on only dial-up connection.

Ministry of Economy, Trading and Industry, 2001
Exhibit 4-5: Diffusion of High-Speed Internet

<table>
<thead>
<tr>
<th></th>
<th>CATV</th>
<th>DSL</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea</td>
<td>22.8%</td>
<td>34.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Japan</td>
<td>3.4%</td>
<td>0.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>US</td>
<td>3.1%</td>
<td>1.3%</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

Note: This figure is a rate of people who use high-speed internet in the people who use internet.

Ministry of Economy, Trading and Industry, 2001

Exhibit 4-6: Construction of Networks by Company Size

<table>
<thead>
<tr>
<th>Company Size</th>
<th>With Extranet</th>
<th>With Internet, no Extranet</th>
<th>With LAN, no Internet</th>
<th>No Internet</th>
<th>No Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>9.4%</td>
<td>34.8%</td>
<td>42.1%</td>
<td>6.3%</td>
<td></td>
</tr>
<tr>
<td>100 to 499</td>
<td>7.4%</td>
<td>31.7%</td>
<td>44.5%</td>
<td>7.2%</td>
<td>6.1%</td>
</tr>
<tr>
<td>500 to 999</td>
<td>11.8%</td>
<td>40.1%</td>
<td>34.5%</td>
<td>6.3%</td>
<td>6.1%</td>
</tr>
<tr>
<td>1000 to 1999</td>
<td>12.2%</td>
<td>43.3%</td>
<td>38.1%</td>
<td>5.3%</td>
<td>6.1%</td>
</tr>
<tr>
<td>2000 to 4999</td>
<td>18.5%</td>
<td>47.2%</td>
<td>31.6%</td>
<td>2.8%</td>
<td>5.1%</td>
</tr>
<tr>
<td>More than 5000</td>
<td>32.1%</td>
<td>45.6%</td>
<td>20.9%</td>
<td>1.6%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Trend Research Report on Communication Usage
Ministry of Public Management, Home Affairs, Posts and Telecommunications, 2001
Exhibit 4-7: EDI Diffusion by Company Size

- More than 2,500 employees
- 1,000-2,499 employees
- 500-999 employees
- 249-499 employees
- 49-240 employees
- 1-4 employees

- All

75.7%
64.1%
51.6%
40.6%
36.0%
23.8%
20.4%
15.6%
22.4%
30.2%
39.5%
40.8%
50.8%
51.6%
62.6%
46.1%
38.5%
37.0%
24.4%

5.1 U.S. B2B E-COMMERCE MARKET

According to Jupiter Media Metrix\textsuperscript{10}, U.S. B2B e-commerce will grow from $336 billion in 2000, with an EC rate (e-commerce rate: the percent of B2B e-commerce within total U.S. B2B commerce) of 3.0\%, to $4.6 trillion in 2004 with an EC rate of 32\%, to $6.3 trillion in 2005 with an EC rate of 42\% (Exhibit 5-1). For comparison, I also give data from a major research firm's survey (Exhibit 5-2).

U.S. e-Markets

Jupiter Media Metrix estimated that the U.S. e-marketplace would grow from $25 billion in 2000, with an EMP rate (e-marketplace rate: the percent of e-marketplace within U.S. B2B e-commerce) of 7\%, to $1.5

\textsuperscript{10} Jupiter Media Metrix, 2000
trillion in 2004 with an EMP rate of 32%, to $2.2 trillion in 2005 with an EMP rate of 35%\textsuperscript{11}.

In fact, the U.S. e-marketplace encountered some difficulties in 2000 and the number of new e-marketplaces decreased. But Forrester Research found that the substantial growth of B2B e-commerce would be accelerated by the rapid development of the e-marketplace\textsuperscript{12}. Moreover, according to Jupiter Media Metrix\textsuperscript{10}, an e-marketplace can completely disrupt current channels and alter how companies and industries conduct business.

\textbf{Exhibit 5-1: US B2B market size}

\begin{center}
\begin{tabular}{|c|c|c|}
\hline
Year & B2B EC Size (B) & E-marketplace Size (B) & EMP Rate (%) \\
\hline
2000 & 0 & 0 & 0 \\
2001 & 1,000 & 1,000 & 5.00 \\
2002 & 3,000 & 3,000 & 10.00 \\
2003 & 5,000 & 5,000 & 15.00 \\
2004 & 7,000 & 7,000 & 20.00 \\
2005 & 6,000 & 6,000 & 25.00 \\
\hline
\end{tabular}
\end{center}

\textbf{Source:} Jupiter Media Metrix, 2000

\textsuperscript{11} include only public e-marketplaces (model of many buyers and many sellers)
Exhibit 5-2: US B2B market size (major research firms)

<table>
<thead>
<tr>
<th></th>
<th>Jupiter Research</th>
<th>2000</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2B EC size ($B)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jupiter Research</td>
<td>336 (3.0%)</td>
<td>4,592 (32%)</td>
<td></td>
</tr>
<tr>
<td>Boston Consulting Group</td>
<td>1,200</td>
<td>4,800 (40%)</td>
<td></td>
</tr>
<tr>
<td>Gartner Group</td>
<td>433</td>
<td>6,000</td>
<td></td>
</tr>
<tr>
<td>Forrester Research</td>
<td>406</td>
<td>2,700</td>
<td></td>
</tr>
<tr>
<td>Yankee Group</td>
<td>-</td>
<td>2,800</td>
<td></td>
</tr>
</tbody>
</table>

|                  | Jupiter Research | 2000  | 2000  |
| e-marketplaces size ($B) |                  |       |       |
| Jupiter Research | 25 (7.4%)        | 1,457 (35%) |
| Forrester Research | -        | 1,400 (53%) |
| Yankee Group     | -                | 850 (30%) |

Note: () in the table shows EC rate for B2B EC size and EMP rate for e-marketplace size.


5.2 JAPAN'S B2B E-COMMERCE MARKET

According to the Electronic Commerce Promotion Council of Japan (ECOM)\textsuperscript{13}, Japan's B2B e-commerce market was worth approximately $180 billion ($1 = ¥120) in 2000, with an EC rate (e-commerce rate: the percent of B2B e-commerce within total Japan's B2B commerce) at 3.8%. Compared to 1998, the B2B e-commerce market more than doubled in 2000, a growth of 60% per annum (Exhibit 5-3). In addition, the e-commerce market is expected to grow to $921 billion by 2005, with an EC rate of around 17.5%. This means a five-fold increase over the next five years, with growth at 39% per annum.

\textsuperscript{12} Forrester Research, February 2000
\textsuperscript{13} ECOM, 2001
The market's growth in 2000 can be attributed to electronics/IT products, and automotive/auto-parts (Exhibit 5-4). The electronics/IT sector was worth approximately $100 billion, while the automotive/auto-parts sector was around $61 billion (Exhibit 5-5). These two sectors combined to equal $161 billion, almost 90% of the entire market. The EC rates for these two sectors were much higher than other sectors. The survey shows that a huge gap existed between industries in Japan's B2B market in 2000.

**Japan's e-Marketplace**

As for Japan's e-marketplace, it size for 2000 was approximately $1.7 billion, with an EMP rate (e-marketplace rate: the percentage of e-marketplace within Japan's B2B e-commerce) of 0.9%¹⁴. This figure shows that almost all of Japan's B2B market is composed of an Internet version of conventional EDI transactions, and that the e-marketplaces have not yet produced satisfactory results. Japan's e-marketplace is at present led by electronics and IT products, mainly personal computers (approx. $1.25 billion), followed by office supplies (approx. $0.13 billion).

Forecasts for 2005 show the e-marketplace growing rapidly, to $363 billion, with an EMP rate of 39% (see Exhibit 5-6).

---

¹⁴ include both public and private e-marketplaces
Exhibit 5-3: Japan's B2B EC market size

Exhibit 5-4: Japan's B2B EC market composition ratio by segment
Exhibit 5-5: Composition of Japan’s e-marketplace market (by segment)

Source: Electronic Commerce Promotion Council of Japan, 2001
## Exhibit 5-6: Japan’s B2B e-commerce market

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Size ($B)</td>
<td>EC Rate (%)</td>
<td>Share (%)</td>
<td>Size ($B)</td>
</tr>
<tr>
<td>Electronic / information equipment</td>
<td>100.0</td>
<td>31.10%</td>
<td>55.43%</td>
<td>1.25</td>
</tr>
<tr>
<td>Automotive and auto-parts</td>
<td>60.8</td>
<td>15.00%</td>
<td>33.72%</td>
<td>0.00</td>
</tr>
<tr>
<td>Chemical</td>
<td>0.2</td>
<td>0.00%</td>
<td>0.11%</td>
<td>0.00</td>
</tr>
<tr>
<td>Utilities</td>
<td>0.0</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00</td>
</tr>
<tr>
<td>Paper / office supplies</td>
<td>0.1</td>
<td>0.10%</td>
<td>0.07%</td>
<td>0.13</td>
</tr>
<tr>
<td>Transport / logistics</td>
<td>2.4</td>
<td>1.10%</td>
<td>1.34%</td>
<td>0.00</td>
</tr>
<tr>
<td>Food</td>
<td>5.7</td>
<td>1.10%</td>
<td>3.14%</td>
<td>0.02</td>
</tr>
<tr>
<td>Textile / consumables</td>
<td>4.8</td>
<td>1.00%</td>
<td>2.68%</td>
<td>0.08</td>
</tr>
<tr>
<td>Construction</td>
<td>2.9</td>
<td>0.20%</td>
<td>1.25%</td>
<td>0.00</td>
</tr>
<tr>
<td>Industrial machinery</td>
<td>0.9</td>
<td>0.40%</td>
<td>0.51%</td>
<td>0.00</td>
</tr>
<tr>
<td>Steel / non-ferrous metal / raw material</td>
<td>3.4</td>
<td>0.70%</td>
<td>1.6%</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>180.0</strong></td>
<td><strong>3.80%</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>1.67</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Size ($B)</td>
<td>EC Rate (%)</td>
<td>Share (%)</td>
<td>Size ($B)</td>
</tr>
<tr>
<td>Electronic / information equipment</td>
<td>243.9</td>
<td>4.90%</td>
<td>4.2%</td>
<td>114.6</td>
</tr>
<tr>
<td>Automotive and auto-parts</td>
<td>177.2</td>
<td>0.90%</td>
<td>12.1%</td>
<td>6.00</td>
</tr>
<tr>
<td>Chemical</td>
<td>44.9</td>
<td>0.90%</td>
<td>1.5%</td>
<td>0.89</td>
</tr>
<tr>
<td>Utilities</td>
<td>4.2</td>
<td>1.50%</td>
<td>3.3%</td>
<td>2.50</td>
</tr>
<tr>
<td>Paper / office supplies</td>
<td>204.3</td>
<td>0.90%</td>
<td>0.0%</td>
<td>15.00</td>
</tr>
<tr>
<td>Transport / logistics</td>
<td>49.2</td>
<td>10.00%</td>
<td>0.0%</td>
<td>21.62</td>
</tr>
<tr>
<td>Food</td>
<td>50.8</td>
<td>2.00%</td>
<td>5.0%</td>
<td>8.33</td>
</tr>
<tr>
<td>Textile / consumables</td>
<td>87.5</td>
<td>10.00%</td>
<td>0.0%</td>
<td>20.00</td>
</tr>
<tr>
<td>Construction</td>
<td>154.2</td>
<td>10.00%</td>
<td>0.0%</td>
<td>24.17</td>
</tr>
<tr>
<td>Industrial machinery</td>
<td>31.7</td>
<td>0.00%</td>
<td>2.0%</td>
<td>5.83</td>
</tr>
<tr>
<td>Steel / non-ferrous metal / raw material</td>
<td>43.3</td>
<td>0.00%</td>
<td>0.0%</td>
<td>5.83</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>921.7</strong></td>
<td><strong>17.50%</strong></td>
<td><strong>100.00%</strong></td>
<td><strong>363.33</strong></td>
</tr>
</tbody>
</table>

A public e-marketplace is an Internet site that facilitates trading among companies via the Internet. There are several types of e-marketplace trading models: catalog, RFQ (Request for Quotation), exchange, or auction, differentiated by the negotiation method among the companies. A trade is executed using a model suited to the feature of the purchased product(s) and the characteristics of the industry. Exhibit 6-1 illustrates the trading models that are in general use in today's public e-marketplaces. Typically, each e-marketplace provides its services through the use of several models, and today there are many variations of these primary models in use.
### Exhibit 6-1: E-Marketplace Trading Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Trading Model Description</th>
<th>Suitable Products and Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog</td>
<td>Buyers search for products using the catalog database, and place an order. Sometimes the trade is handled at the fixed catalog price; other times the price is not stated in the catalog (for supplier strategic reasons) and the trade is conducted in combination with an RFQ.</td>
<td>General-purpose products, for which there are many items and suppliers; prices change very little.</td>
</tr>
<tr>
<td>RFQ (Request for Quotation)</td>
<td>Buyers ask suppliers to give a quotation for the product's price.</td>
<td>Raw materials and general-purpose products, with standard specifications; prices tend to fluctuate.</td>
</tr>
<tr>
<td>RFP (Request for Proposal)</td>
<td>Buyers ask suppliers to make a price proposal for products fitting the buyer's requirements.</td>
<td>Products that are complicated or unique.</td>
</tr>
<tr>
<td>Exchange</td>
<td>Trade occurs when the price conditions, which both buyer and suppliers indicate, match.</td>
<td>Raw materials and general-purpose products, with standard specification; prices fluctuate considerably.</td>
</tr>
<tr>
<td>Auction</td>
<td>Several buyers offer a bid for products posted by a supplier; highest bidder buys the product.</td>
<td>Unique products, surplus stock, used products, and real estate</td>
</tr>
<tr>
<td>Reverse Auction</td>
<td>Several suppliers offer bids for products being sought by a buyer; the supplier(s) whose offer satisfies the buyer's needs sells the product to the buyer.</td>
<td>Large companies (automotive, electronics) seeking to procure products in large quantities.</td>
</tr>
</tbody>
</table>

Source: Author, 2002 (based on the article "Fujitsu Research Institute, 2001")
6.2 SUPPORT EXTENT IN THE GENERAL TRADING PROCESS

The trading process between companies can be divided roughly into two processes: *purchasing*, which handles the purchasing activity, and *sourcing*, whereby buyers select suppliers and negotiate a trading price (see Exhibit 6-2). Thus the trading models support efficiency improvements and standardization of the sourcing process. This is a major difference from the EDI approach, which aims for an efficient purchasing process between two pre-defined companies - the buyer and the supplier.

Efficiency improvements and standardization of the sourcing process are very important. A salesperson from the buyer side must search for candidate suppliers, generate a list of prospective candidates, and then negotiate with each one individually. This means the sourcing process is very time-consuming and its success depends heavily on the negotiating ability of the salesperson. On the other hand, if the salesperson goes to an e-marketplace that handles reverse auction sourcing, the salesperson can quickly identify an appropriate supplier even if the salesperson has little negotiating know-how or experience, simply by using the functions of a reverse auction properly.

The next step for many e-marketplaces is to broaden the services that support the purchasing processes, such as account settlement, credit management, and logistics. However, most of Japan's
e-marketplaces are just at the point of providing the fundamental functionalities. And since the e-marketplaces will have to assume some element of risk if they provide such services, support for them is not fully functional yet, but many Japanese e-marketplaces announced to provide those services in the near future.

Exhibit 6-2: Level of support in the general trading process

Source: Author, 2002 (based on related articles)
6.3 IMPROVEMENT OF INTEGRATION

One big trend in e-marketplaces - primarily among the global industry consortium type - is to provide a collaboration infrastructure. This infrastructure facilitates closer integration with the customer's back-end systems of finance, inventory management, production management, and order system, and/or it enables them to share and analyze information, such as inventories and past trade results, among companies that form the supply chain. By providing this infrastructure, and depending on the level of integration in the e-marketplace, the companies that participate in the e-marketplace can enjoy several advantages, namely, efficiency improvements in the trading process, reduction of inventory, optimized supply forecasting/scheduling, and collaborative new product development among related companies. Even in the U.S., the introduction of these functions has just started.

E-marketplaces that construct and provide this infrastructure face several issues such as how to deal with new standards that are essential for collaboration among companies, and whether they can offer advantages that make it worth the price their customer have to pay. Since construction costs for this infrastructure are never cheap, e-marketplaces need to charge a suitable fee for customers. However,

---

15 Typically, this infrastructure is provided for the companies, which have a strong relationship with each other based on long-term contract to create a private collaboration space on the e-marketplace. From this meaning, I can say that this is a shared infrastructure for constructing private e-marketplace.
this functionality is generally recognized as being essential to improving the efficiency of the entire supply chain, so it is expected that it will spread in the future.

6.4 E-MARKETPLACE IN THE VALUE CHAIN

Traditionally, most industries have linear value chains that follow the distribution route of products moving from player to player. These value chains are very ineffective from the viewpoint of information transformation 16. Particularly in Japan, several intermediaries such as trading companies and wholesalers exist between the suppliers and buyers; sometimes trades even take place between intermediaries on the same layer, all of which makes the value chain quite complex. Typically, however, trade negotiations between companies are conducted via phone and fax, so managing trade information and past trade records is not only labor-intensive but also different among the companies in the value chain.

E-marketplaces make it possible to promote more efficiency by providing a trading infrastructure with multiple connections among players, as well as gathering, synthesizing, and distributing information for the players. One could say that e-marketplaces are "informediaries" (information intermediaries) rather than simple

16 Weill, 2001
intermediaries. Exhibit 6-3 compares a traditional value chain with
the new value-added chain promoted by e-marketplaces.
Exhibit 6-3: Public E-Marketplace Value Chain

- Labor intensive
- High search cost
- Unoptimized purchase cost
- Regional Market
- Separate and independent trade process
- Ineffective supply chain
- Low level business collaboration
- Slow supplier response
- Excess inventory
- Each intermediary provide its own value added services such as financial and logistics
- Intermediaries construct information wall between makers and consumers

- Computer supported
- Low search cost
- Transparent and Optimized purchase cost
- Wider Market
- Integrated trade process among whole supply chain
- Promote business collaboration among whole supply chain
- Reduce time to market
- Less Inventory
- Unified and effective value added services
- Lower the information wall between makers and consumers

Source: Author, 2002 (based on related articles)
7.1 INTRODUCTION

Some believe that public e-marketplaces shorten the traditional supply chain by eliminating intermediaries and promoting direct communication between buyers and suppliers. Of course, this is a direct threat to trading companies that have long acted as intermediaries on many fronts including the supply chain. On the other hand, e-marketplaces themselves are a form of intermediation, and as such they represent a new business opportunity for trading companies. Therefore trading companies, especially Sogo-Shosha, are investing in public e-marketplaces, and many trading company-led e-marketplaces have been established in Japan, taking diverse forms - from industry-dependent vertical e-marketplaces to cross-industry horizontal e-marketplaces. If one considers all the e-marketplaces to which trading companies are
related in some manner, it quickly becomes clear that the extent of trading company influence on Japan’s e-marketplaces is tremendous.

7.2 CASE STUDY: METALSITE JAPAN

7.2.1 OVERVIEW

There are three major public e-marketplaces in Japan’s steel industry, all of which were established during the early stages of Japan’s e-marketplaces by major Sogo-Shosha and specialty trading companies. They are MetalSite Japan Corporation (MSJ), Smart Online Corporation, and Kouzai.com Corporation. MSJ was established in July 2000 by a partnership among three Sogo-Shosha (Itochu Corporation, Marubeni Corporation, and Sumitomo Corporation) and U.S. MetalSite\(^\text{17}\) (see Exhibit 7-1). MSJ is the largest e-marketplace serving the Japanese steel industry.

These e-marketplaces have attracted considerable attention for two reasons:

- What changes will they bring to the Japanese steel supply chain?
- Given the traditional cooperation among companies in Japan's steel industry, what will be the impact of the major trading companies forming new coalitions and establishing e-marketplaces?

\(^{17}\) U.S. MetalSite sold its holdings of MetalSite Japan to three shareholders, Itochu, Marubeni, and Sumitomo in April 2001 (MetalSite Japan, April 2001).
**Exhibit 7-1: Company profile of MetalSite Japan**

<table>
<thead>
<tr>
<th>Corporate Name:</th>
<th>MetalSite Japan Corporation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Established:</td>
<td>July 14, 2000</td>
</tr>
<tr>
<td>Capital:</td>
<td>One billion Yen</td>
</tr>
<tr>
<td>Category:</td>
<td>Trading company-led e-marketplace</td>
</tr>
<tr>
<td>Contributors:</td>
<td>Marubeni-Itochu Steel Inc., Sumitomo Corporation, Kawasho Corporation, NKK Trading Inc.</td>
</tr>
<tr>
<td>Commerce Services:</td>
<td>■Catalog, ■Request for quote, □Exchange, ■Auction, ■Reverse Auction</td>
</tr>
<tr>
<td>Additional Services:</td>
<td>■Financial, ■Logistics, □Collaboration</td>
</tr>
<tr>
<td>Legend:</td>
<td>■ supported, □ not supported, ▲ forthcoming</td>
</tr>
</tbody>
</table>

### 7.2.2 THE JAPANESE STEEL INDUSTRY

Within the steel industry, it is rare that steel makers sell their products directly to consumers. Most of the time, trading companies and wholesalers function as intermediaries between buyer and seller, and these intermediaries also offer functions such as account settlement, credit management, and logistics support. From the standpoint of a supply chain model, the markets are roughly divided into two types (see Exhibit 7-2):

- **Himotsuki market**

This market is based on a long-term contract among companies, and buyers consist mainly of large companies such as electronics makers and automobile makers. In this market, EDI has been built throughout
the supply chain from the early period as compared with other industries.

- *Miseuri market*

In this market, end buyers are rarely identified, and the supply chain is complex. Intermediaries handle the transactions, and there are multiple intermediaries, often on the same layer, who trade frequently with one another. The introduction of IT technology has been slow, so most intermediaries still use fax and phone for trade negotiations.

The power of large steel makers, as suppliers of steel products, has historically been very strong, and it has been customary for trading companies to act as their selling agents. Moreover, the steel industry has long been a key industry in Japan, and its influence reaches to many other industries and many players related to this industry. Therefore, if the form of distribution changes dramatically, the impact would be huge.
Exhibit 7-2: Traditional markets in the steel industry

Miseuri Market

Himotsuki Market

Steel Makers

Trading Companies

Wholesalers,
Special Agents

Processors

Buyers

Large Buyers

Fax and phone are normally used for trading negotiation

Source: Smart Online, 2001 (from presentation material)

7.2.3 SERVICES OFFERED

MSJ provides the following services:

- Trading Services

MSJ provides three trading services: MSJ Catalog (a catalog sales support tool), Quotation Search (an effective tool for requesting quotations), and Auction/Reverse Auction. All of these services are
considered to fit within the current business practices in Japan's steel industry. MSJ is the first and currently the only e-marketplace to provide auctions and reverse auctions within the steel industry.

- Additional Services

Financial services and logistics services are provided through MSJ's alliance partners, such as ORIX Corporation. MSJ also provides value-added services such as electronic certificate-issuing, a company information service, a private site construction service, and a new product marketing service.

7.2.4 ANALYSIS OF BUSINESS MODEL

Here, I analyze MSJ's business model based on Hamel's framework.\(^{18}\)

Strategic Resources

MSJ's core competencies are an abundant knowledge of all steel industry business practices, and extensive know-how for operating an intermediation business like an e-marketplace, including the ability to offer value-added services. Both the knowledge and the experience stem from MSJ's contributors, all of whom played significant roles as intermediaries in the steel industry for a long time. Other strategic assets are MSJ's contributor customer base and its strong brand name.

\(^{18}\) Hamel, 2000
As MSJ's representative said during the interview, "The most effective way to bring customers is to do business in the name of contributors."

**Value Network**

The most important value network for MSJ is its coalition among several major trading companies. Their participation offers peace of mind to potential customers because it means risk is diversified and MSJ is well funded, in addition to its knowledge, experience, and strong customer base. Moreover, MSJ continues to expand its services by entering into alliances with other e-marketplaces and companies that provide financial and logistics services.

**Core Strategy**

MSJ's target customers are all players, mainly in the Miseuri market, in the steel industry. The range of the steel industry is wide, and a huge number of small and medium-size enterprises (SMEs) with various business practices are included. The business mission of MSJ is to support customers' seamless transformation to e-business in the manner customers can enjoy clear benefits.

MSJ already supports a series of trading processes in the steel industry, but MSJ currently doesn't expect customers to use MSJ's services fully. The MSJ representative said,
Ultimately, our aim is not whole optimization but partial optimization. If I take into account the lack of IT literacy and the weakness of network infrastructure in Japan, it is difficult to imagine that customers can make their business processes effective by doing all of their business on the e-marketplace. What they want is to pick up only functionalities that result in clear benefits to them, and then to integrate them into their existing business process.

Therefore, MSJ’s current growth strategy is to provide its target customers with a wide variety of attractive services, which they can integrate into their existing process easily.

The other primary strategy is to make alliances with influential buyer-led e-marketplaces such as Construction-ec.com, which is operated by a group of the largest general construction companies in Japan, and increase the opportunities for the sellers to trade with valuable buyers through such alliances. This strategy is derived from the fact that when the Internet is well penetrated in some market, the buyers’ influence will become the dominant factor of the market, and thus the existence of the influential buyers will be of great value to the site members.

The MSJ representative also mentioned that in order to motivate customers to use the e-marketplace it was very important to provide services that customers can’t receive in the traditional business by utilizing the features of the Internet. MSJ provides services that
capitalize on the extensive reach of the Internet, and new trading mechanisms that are unique to the Internet.

A good example of the former is MSJ’s service that promotes a supplier’s products across a wide array of potential customers, with whom the supplier would not be able to do business without the Internet. This service offers direct e-mail promotion utilizing MSJ’s CRM system whose mailing list contains not only the official members of the site, but also the potential companies which are not yet official members but have showed some interest in MSJ’S site in the past by ways such as requesting a brochure. The service also enables the suppliers to do the promotion through MSJ’s alliance.

An example of the latter is the auction tool. The MSJ representative said,

With our auction tool, we have deployed a mechanism that can automatically pick up offers exceeding the minimum successful bid price decided beforehand. This kind of trading method is new in Japan’s steel industry and we could not offer it without the Internet.

Customer Interface

MSJ’s customers enjoy many benefits of using MSJ’s services that use the Web interface effectively. However, MSJ’s interface with its customers occurs via other avenues as well. In the real world, MSJ offers consulting activities to help customers seamlessly incorporate MSJ’s
services into their traditional business processes without requiring major change and in a way that brings the most benefit. MSJ's product promotion service mentioned above also includes an off-line interface through the secretariat of MSJ or the partner e-marketplaces.

MSJ's business model has not been finalized. MSJ's approach is not to force an idealistic thought on their customers, but to listen to their opinions, consider the actual situation of the industry, and add or improve their service flexibly. The MSJ representative said,

There are several development stages for the customers' transformation to e-business. From the long-term view, I think about 20% to 30% of all B2B commerce in the steel industry may be managed on the e-marketplaces, and the key will be the maturity and spread of integration with the customers' backend systems. However, there are many obstacles we need to resolve before we can begin to offer integration. That is, the most important success factor for us is whether we can always provide services, which services produce the most benefits for customers in the development stage of customer transformation to e-business in the most timely manner. Finally, I believe that the present approach toward partial optimization, not whole optimization, is most applicable in the current stage.

7.3 ADDITIONAL OBSERVATIONS

My research found that most public e-marketplaces have taken a conservative but steady approach whereby they create their systems after carefully considering traditional business practices in the target
industry, and then improve their services in response to changes in the customers' trading process. They do not single-mindedly pursue the ideal system and force their customers' business process to fit into their business model.

In this approach, the e-marketplaces are never in hurry to offer all the potential services blindly, but instead expand their services according to priorities that are decided after listening to their customers' opinions and seeing the progress and status of other e-marketplaces.

I do not know the exact status of all the e-marketplaces because none of them have gone public. But it would appear that they have not ensured sufficient liquidity yet, and one of their biggest issues is to achieve critical mass, although they have gathered customers in their own way, including the existing customers of contributors, so their status is never substantially separate from their original plan.

However, I found several e-marketplaces that are already profitable. For example, Foods Info Mart, an e-marketplace in the food industry, gathered many customers soon after launching the e-marketplace (about 4,600 customers at the end of 2001\(^1\)). I believe the reason for their success is that commerce in the retail market is not transparent and the margin of intermediaries is very high because

\(^{19}\) Foods Info Mart, 2001
there is little rationalization in the food industry. Usually special products are sold for several times the original price, largely because of the high margin of intermediaries. However, if there were no intermediaries, the suppliers would not be able to find the customers who live far from their region, and buyer might not even be aware of the existence of the special products. Thus intermediaries take advantage of the narrow reach of information.

In this kind of market, the benefit stemming from extending the information reach for buyers and suppliers is apparently high, and that motivates customers to visit the site, especially if their own Internet environment is poor. Granted, this may be an unusual example, but it highlights the fact that if e-marketplaces can correctly catch a market situation and offer a clear benefit for its customers, they will surely secure enough liquidity and critical mass.
8.1 INTRODUCTION

8.2 CASE STUDY: CONSTRUCTION-EC.COM

8.2.1 OVERVIEW

Established in August 2000 by Japan's top five general construction companies (Kajima Corporation, Shimizu Corporation, Taisei Corporation, Obayashi Corporation, and Takenaka Corporation), Construction-ec.com (CEC.com) is the first major e-marketplace in Japan's construction industry (see Exhibit 8-1).

Exhibit 8-1: Company Profile of Construction-ec.com

| Corporate Name: Construction-ec.com Co., Ltd. |
| Established: August 1, 2000 |
| Capital: ¥0.9 billion |
| Category: Industry consortium e-marketplace |
| Contributors: Kajima Corporation, Shimizu Corporation, Taisei Corporation, Obayashi Corporation, Takenaka Corporation, NTT Date Corporation, Oracle Corporation Japan |
| Commerce Services: ■Catalog, ■Request for quote, □Exchange, □Auction, □Reverse Auction |
| Additional Services: ▲Financial, ▲Logistics, □Collaboration |
| Legend: ■ supported, □ not supported, ▲ forthcoming |

The construction industry market is facing heavy competition during the current recession. All players in the construction industry are looking for ways to reduce costs in order to survive. Under such circumstances, the major competitors in the industry have banded together to form an industry consortium e-marketplace.
8.2.2 SERVICES OFFERED

CEC.com divides its services into three categories as listed below.

- Basic service

It supports a series of procurement processes such as catalog search, RFQ and accepting the response, selection of suppliers, sending/accepting orders, and reporting/approving the turnover.

- Extended service

Authenticity guarantee service for online contracts is provided. In addition, C-NET ASP service will be provided in August 2002. C-NET is an EDI standard in the construction industry, and customers can construct EDI connections on CEC.com's infrastructure.

- Additional service

A variety of additional services are provided, such as an advertising service and an industry information service.
8.2.3 ANALYSIS OF BUSINESS MODEL

Strategic Resources

For CEC.com, which includes all of Japan's top five general construction companies as contributors, its significant strategic assets are the contributors themselves, which provide strong brand names, an extensive customer base, and buying power. In that respect, CEC.com's core competencies are its knowledge of the construction industry and its influence on industry players, both of which flow from the contributors. These strategic resources form a huge barrier that keeps other organizations from constructing new e-marketplaces with the same concept.
Value Network

Needless to say, the most important value network for CEC.com is the coalition among the top five general construction companies. In addition, the coalition includes NTT Data Corporation, the biggest systems integrator in Japan and a company that knows Japan’s IT business very well, and Oracle Corporation Japan which is the world’s foremost total software solution vendor. Oracle has extensive knowledge of e-marketplaces not only in Japan but other countries, including the U.S. so the coalition adds CEC.com’s strong familiarity with both the market and the technology. Such familiarity is extremely important when starting a new business. In addition, CEC.com has entered alliances with other e-marketplaces such as Smart Online Corporation and MetalSite Japan.

Core Strategy

CEC.com’s business mission is,

By utilizing the newest information technology at all times, to provide truly useful standard infrastructure which can minimize investment in IT for the companies relevant to construction industry, and moreover, by pursuing what the construction business should be, to plan and provide the rational and effective business process\(^2\).

\(^2\) Extracted from CEC.com’s website
Moreover, since the company’s contributors are general construction companies, making their procurement more rational and effective is one of the company’s most important missions.

What the company first tried to achieve was an open e-marketplace that promotes effective procurement beyond the Keiretsu (corporate family), and would bring contributors significant cost reductions. The wide variety of products in the e-marketplace vary from relatively general-purpose utility items to highly specialized materials, such as building materials, construction materials, and construction machines. Moreover, CEC.com also provides open-procurement of sub-constructors.

In addition to procurement, CEC.com also gives high priority to enlarging its private procurement functions. CEC.com will offer the C-NET ASP service in August 2002. The service enables customers to have their own private procurement system within CEC.com’s infrastructure, which can improve the degree of integration between customers. CEC.com also provides a procurement system rental service with which customers can use CEC.com’s open procurement system as their own private procurement system. According to a CEC.com representative, in many cases, as the products traded become more specialized, quality becomes more important. Therefore, especially in the procurement of special products, once buyers find suppliers who can provide the high-quality products, the buyers hope they can construct a good relationship and improve the efficiency of the trading process with the suppliers by using
a private procurement system rather than lowering the procurement cost by developing new suppliers who can offer a lower price on the open procurement system. This means the expectation of CEC.com's customers for these services is very high.

With regard to infrastructure, CEC.com's strategy is to provide a common infrastructure which is equipped with all network standards for B2B e-commerce in the construction industry, thereby enabling customers to execute all B2B e-commerce related activities on the infrastructure. One example is the C-NET ASP service mentioned above. C-NET is an EDI standard in the construction industry, and customers can build an EDI connection using CEC.com's infrastructure, which means CEC.com can provide EDI connections on its infrastructure at less cost. I believe this service has two benefits for the company: (1) it lowers the barrier for SMEs who hesitate to invest in systems integration with their partner companies, and (2) it encourages large companies that have already implemented EDI service in their own environment to make more use of services offered by CEC.com.
Customer Interface

CEC.com’s main interface with its customers is its website. Although websites are capable of offering rich information, it is usually not as good as that provided in the real world. Therefore, CEC.com offers several services to improve the richness of its website. For example, CEC.com puts information about construction sites, where the products traded on CEC.com’s e-marketplace are actually used, on view to the public visually, to help suppliers better understand the products that buyers are requesting.

In general, e-business shifts the balance of power to buyers, because it abolishes information fragmentation and brings transparency to the market. This means that in order to gather as many suppliers as possible to their site, it is important for e-marketplaces to provide services that are attractive to those suppliers. So in order to improve the selling power of suppliers, CEC.com provides a private promotion service which enables suppliers to show their past trading results and thus reassure potential buyers of the supplier’s trustworthiness. CEC.com can also handle marketing activities aimed at buyers of their products.

Since the time CEC.com was established, the company realized that its objective had to be transformed to something much different. The original view of competition believes that "Since differentiation from competitors is very important to maintaining competitive advantage,
each company promotes its own business without joining together."
CEC.com's view is that "With regard to the portion which does not bring
competitive advantage, competitors should try to standardize their
business as much as possible together in order to improve efficiency."

However, the CEC.com representative said in his interview that
"Those are very difficult problems," never easy to realize, because
CEC.com must seek unification of purpose among companies have
historically been competitors.

From the customer's viewpoint, there is a big problem of
segmentation between trading on CEC.com's site and traditional trading,
because e-marketplaces can improve the rationality and efficiency of
the customers' trading processes, but that may also lead to
commoditizing the processes and products they use.

Therefore the decision as to how to separate business on the site
from traditional business is related to the same deeply engrained
strategy of competition. CEC.com is asking to secure a position where
it can participate fully in the customer's procurement strategy, and
receive positive feedback from the customer, not just to provide useful
services or mechanisms on its site.
8.3 CASE STUDY: GLOBALNETXCHANGE JAPAN

8.3.1 OVERVIEW

GlobalNetXchange Japan (GNX-J) was established in December 2000 as a subsidiary of GlobalNetXchange, LLC (GNX), with the help of two outstanding Japanese retail partners, MYCAL Corporation and Daiei, Inc., to serve the unique needs of the retail industry in Japan (see Exhibit 8-3).

GNX is the leading global industry consortium e-marketplace for the retail industry, and GNX solutions help retail trading partners interact more efficiently, reducing the costs of procurement and supply chain management. GNX contributors include many of the world's largest retailers: Carrefour, SA, Karstadt Quelle, Kroger Co., Metro AG, J. Sainsbury Plc, Coles Myer, Pinault-Printemps-Redoute SA, and Sears, Roebuck and Co. Oracle Corporation is also a contributor, as GNX is powered by Oracle Exchange, Oracle's online e-business marketplace.

Why did GNX need to establish GNX-J? Answers to that question can be found in press releases at the time of GNX’s establishment. According to the GNX press release\textsuperscript{21},

\begin{quote}
We have been discussing the opportunity to bring our supply chain solutions to the Japanese retail industry for several months. Our research to understand the unique needs of the
\end{quote}

\textsuperscript{21}GlobalNetXchange, December 2000
Japanese market indicated that a subsidiary with Japanese partners was the best approach. Through GlobalNetXchange-Japan we will leverage the global retail industry's best practices and solutions, and adapt the technology of GNX to meet the unique needs of the Japanese retail industry.

Moreover, according to an Oracle-Japan press release\textsuperscript{22},

In deploying in Japan, GNX customizes the global system of GNX in order to correspond to Japan's existing trading customs efficiently. This means to implement systems enhancement corresponding to Japan's business practices and Japanesization of the system on Japan's own terms.

\textbf{Exhibit 8-3: Company Profile of GlobalNetXchange Japan}

<table>
<thead>
<tr>
<th>Corporate Name:</th>
<th>GlobalNetXchange Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Subsidiary of GlobalNetXchange, LLC</td>
</tr>
<tr>
<td>Established:</td>
<td>December 13, 2000</td>
</tr>
<tr>
<td>Category:</td>
<td>Industry consortium e-marketplace</td>
</tr>
<tr>
<td>Contributors:</td>
<td>MYCAL Corporation, Daiei, Inc., GlobalNetXchange, LLC</td>
</tr>
<tr>
<td>Commerce Services:</td>
<td>■Catalog, ■Request for quote, □Exchange, ■Auction, ■Reverse Auction</td>
</tr>
<tr>
<td>Additional Services:</td>
<td>□Financial, □Logistics, ■Collaboration</td>
</tr>
<tr>
<td>Legend:</td>
<td>■ supported, □ not supported, ▲ forthcoming</td>
</tr>
</tbody>
</table>

\textsuperscript{22}Oracle Japan, December 2000
8.3.2 THE JAPANESE RETAIL INDUSTRY

Here I will explain the features of Japan's retail industry, focusing on contrasts with the U.S.

- In Japan, the retail market share held by major large retailers, such as supermarkets and department stores, is much lower than that of the U.S. Medium and small retail stores, including convenience stores, hold approximately 80-90% of the market (see Exhibit 8-4)\(^{23}\).

- In Japan's retail industry, several wholesalers exist between manufacturers and retailers in the supply chain, and there is a strong relationship between retailers and wholesalers. A good example is the issue of inventory risk. In Japan, wholesalers take over most product remainders, but in the U.S. retailers usually take the inventory risk.

- There are some items for which retailers take an inventory risk, including private brand products, and the private brand products tend to increase in number, although the rate for which they account is not as large as the U.S.

- Domestic stocking is done in much greater amounts than overseas stocking. Also overseas stocking is usually done through trading

\(^{23}\) METI, December 2000
companies or wholesalers; it is difficult to imagine that retailers themselves would stock in overseas locations.

Exhibit 8-4: Distribution ratio of annual sales by business type

<table>
<thead>
<tr>
<th>Business Type</th>
<th>1998</th>
<th>1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department stores</td>
<td>6.7</td>
<td>7.2</td>
</tr>
<tr>
<td>Speciality supermarkets</td>
<td>16.5</td>
<td>13.8</td>
</tr>
<tr>
<td>Other supermarkets</td>
<td>4.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Semi-specialty stores</td>
<td>5.3</td>
<td>5.8</td>
</tr>
<tr>
<td>Supermarkets</td>
<td>43.5</td>
<td>40.4</td>
</tr>
<tr>
<td>Convenience stores</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Specialty store</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other retail stores</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


8.3.3 SERVICES OFFERED

The services GNX provides are divided into three categories. GNX-J also provides services in the first two categories.

- Marketplace Tool (Auctions)

GNX Marketplace is an online auction, reverse auction, and negotiating tool that provides an efficient way to procure goods, mainly MRO (Maintenance, Repair, and Operations) products, and to communicate with global trading partners. Savings vary by category, but the
average auction savings are 10%-12%, and can be as high as 30-60%. Additional savings are realized in time and process efficiencies.

• Collaboration (CPFR)

Collaborative CPFR (Planning Forecasting and Replenishment) optimizes the end-to-end replenishment process, providing visibility across the entire supply chain, improving forecast accuracy, optimizing planning, and standardizing workflow. GNX was the first retail exchange to install and become operational with its CPFR application. GNX provides a one-stop source for CPFR services, including a CPFR hosted environment, rapid implementation and scalability, training and consulting services, and significant licensing and hosting cost savings.

• Perishables Exchange

The GNX Perishables Exchange is a tracking, management, and replenishment tool for GNX members, their suppliers, and transportation carriers to collaboratively manage the process of purchasing and transporting perishable products - produce, meat, fish and floral items - from purchase order generation to warehouse receivables management. GNX is the first retail exchange to provide a functional, integrated solution for grocery retailers to process all of their perishable product purchase orders. The GNX Perishables
Exchange integrates with multiple ERP (Enterprise Resource Planning) /legacy systems, within distribution centers, central buying offices, suppliers and carriers.

**8.3.4 ANALYSIS OF BUSINESS MODEL**

**Strategic Resources**

The greatest strategic asset for GNX-J is its excellent system infrastructure and applications on it, which are always updated to keep pace with the progress of technology and business. They are backed by the abundant funding ability and excellent technology of the GNX contributors and GNX’s actual business results. GNX has about 10,000 customers who have actually trade on the site, and the accumulated trade amount is more approx. $3.3 billion.

GNX-J’s core competence is indispensable knowledge of e-marketplace operations in Japan’s retail industry, which came about through synergistic effects between know-how cultivated by GNX in global competition and Daiei and MAICAL’s knowledge of Japan’s retail market.

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24 This application, GNX Collaboration Suite, was created based on Manugistics’ technology, and formally launched in Jan. 2002 after successful completion of a trial project among GNX’s key customers (GlobalNetXchange, January 2002).
25 from the GNX-J’s presentation material on August 30, 2001
26 GlobalNetXchange, April 2002
Value Network

The important value network for GNX-J is its coalition of the world's largest retailers and a customer base of thousands. GNX also has entered an alliance with Transora, one of the world's largest industry consortium e-marketplaces in the retail industry, which was established by prominent customer product makers. Therefore, GNX-J customers can also do business with Transora customers. Because companies in Japan's retail industry have done little business with foreign companies, this will mean big business opportunities for GNX-J's customers.

Core Strategy

GNX-J's business mission is to offer attractive services for companies in Japan's retail industry based on GNX's global-standard trading services. Therefore, GNX-J's first challenge was to cope with two relatively incompatible requests: to use GNX's excellent software systems as much as possible, and to offer software systems that are suitable to the business practices, industry structure, and culture in Japan's retail industry. A GNX-J representative said,

GNX's software systems are always updated to offer the latest technology for customers. Therefore, if we customize the software systems too much, we cannot provide new functionality for Japanese customers in a timely manner. Moreover, if Japanese customers use different software
As a result, GNX-J started their business by minimizing customization of its software systems wherever possible, handling whatever Japanese business practices fit with the software and then changing it gradually based on customers' opinions. For example, GNX-J focused on products that retailers usually take as inventory risk, such as private-brand products, to follow the global trading model.

GNX-J's target customers are all players in the retail industry, including retailers, wholesalers, and customer product makers. It offers an open market for all players without asking the company's scale. One problem, however, is that the handling quantity for one trade is relatively large (at least ¥20-30 million, and normally hundreds of millions of yen²⁷). In many case, this makes it difficult for small and medium-size enterprises (SMEs) - which is the large majority in Japan's retail industry - to trade at GNX-J. Therefore, the company has devised a system which enables the participation of SMEs by identifying and promoting a group purchase mechanism through aggregator companies.

The current strategy of both GNX-J and GNX is to become an excellent provider of shared infrastructure for the group of companies that have built strong business relationships rather than a place where
unspecified customers can gather and trade. Since companies need to cover expensive construction and management costs, it is difficult for any but the largest companies to have their own private e-marketplace. However, since shared infrastructure of a private e-marketplace is cheaper, not only large companies but also SMEs that have no budget for such a private e-marketplace can have a private e-marketplace. This enables them to use the latest best-of-breed services in the industry because the infrastructure is updated as technology and business progress. In fact, the CPFR service, one of GNX-J’s most important selling points, helps improve business process efficiency among companies that have strong relationships with each other as a result of a long-term contract. According to a GNX-J representative, there are many cases in which even auctions have been held in the closed environment, where only the players specified beforehand can participate.

Customer Interface

As standard services, GNX-J offers many user support services, including the orientation of new members, strategy consulting, and training for buyers and suppliers. GNX-J promotes knowledge and experience sharing among member companies to help them utilize GNX-J’s

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27 According to the GNX-J representative, since the apparent cost reduction benefit is not obtained unless the trading amount is level, the request for trade itself was not offered after all.
online negotiation functionality by, for example, holding best practice sharing forums once a month. According to the GNX-J representative, the most important success factor of an e-marketplace is to support customer business from both sides - digital and analog. That is, even if the e-marketplaces offers excellent functions for the digital world, if it is doing business only in places where it cannot see the customers' faces directly, over time the business will not work.

8.4 ADDITIONAL OBSERVATIONS

The key point in an industry consortium e-marketplace is conversion of the relationship among companies from one of competition to one of cooperation, and moving it toward a process of standardization. This process has two essential issues that relate to competitive advantage for companies: one is the issue of differentiation from other companies, and the other is the issue of standardization itself.

Making progress toward standardization among companies means that companies must have some other way to compete. That is, if manufacturers who compete with each other over one product agree to standardize 90% of the product's parts, they will then need to differentiate the other 10% of the parts. Therefore, they are asked to clarify their own core competence and to define where they will produce their own value. From the companies' viewpoint, however, putting information that has helped them maintain their own competitive
advantage into the public space may ultimately lead to lowering the companies' own competitive advantage. Therefore, the decision must be made as to which portion(s) the companies will use e-marketplaces and which portions they will not use them, and this decision may be critical to their business strategy. My research found that most e-marketplace customers still have not decided how to use the e-marketplaces, so that at present most have not really used an e-marketplace in earnest.

Next is the issue of standardization itself. It is natural that each company wants standardization for its own convenience. It usually takes a long time to make adjustments, and as a result standardization does not follow changes in business. This is an obstacle facing global industry consortium e-marketplaces that aim to do business in Japan, but it is difficult to determine how the standard - created mainly for U.S. companies - will apply to Japanese companies. For example, according to an E2open Japan representative, U.S. E2open announced that it would adopt the RosettaNet standard. But the process flow provided by that standard is different from Japan's process, and therefore it poses a major problem.
CHAPTER
9
Analysis of Japan's e-Marketplaces

9.1 THE INFLUENCE OF JAPAN'S BUSINESS ENVIRONMENT

If one takes a broad view of trends among Japan's e-marketplaces, they seem to follow U.S. trends with a one or two year delay. However, when considered in greater detail, Japan's business environment that I discuss in this chapter has had a major influence on the development of Japanese e-marketplaces and thus promoted the formation of "Japanese-type e-marketplaces".

SLOW IT PENETRATION TO SMEs

IT penetration into small and medium-size enterprises (SMEs) has been slower than into large enterprises because IT literacy among SMEs is lower and their Internet infrastructure is immature. Although most SMEs have implemented some type of Internet environment, the majority of them still use a dial-up connection, which means re-connecting for
every use and greater difficulty navigating Web pages because of the narrow bandwidth. This is one of the big reasons that SMEs hesitates to use Internet for their business.

When I took into account that more than 99% of Japanese firms are classified as SMEs, that they employ 72% of the workforce, and are responsible for 42% of total revenues\(^{28}\) (see Exhibit 9-1), it was obvious to me that delay of IT penetration to the SMEs is one of the major issues for e-marketplaces, especially those that target a broad range of buyers and suppliers.

**Exhibit 9-1: Comparison between SMEs and large enterprises**

<table>
<thead>
<tr>
<th></th>
<th>No. of Firms</th>
<th>99.7%</th>
<th>13,451</th>
<th>0.2%</th>
<th>5,102,642</th>
<th>100.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Employees</td>
<td>41,677,536</td>
<td>72.7%</td>
<td>15,669,234</td>
<td>27.3%</td>
<td>57,346,770</td>
<td>100.0%</td>
</tr>
<tr>
<td>Revenue (million Yen)</td>
<td>366,818,586</td>
<td>42.5%</td>
<td>496,168,759</td>
<td>57.5%</td>
<td>862,987,345</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Note: The primary industries are not included in this figure.
SMEs are firms or individual entrepreneurs whose number of regular employees is less than 300 (100 in wholesale and service industry, and 50 in retail industry) or whose capital is less than ¥300 million (¥100 million in the wholesale industry, and ¥50 million in the retail and service industry)


\(^{28}\) METI, May 2000
Intermediaries

It is believed that in general e-business shortens the traditional supply chain and promotes direct interaction between buyers and suppliers by eliminating intermediaries. However, in actual business it is not so simple.

Japanese intermediaries, such as Sogo-Shosha, have acted in other capacities beyond intermediating trades between buyers and suppliers. Their business also involves complementing the weak points of both buyers and suppliers, and providing value-added services for them. For example, in the steel industry, there are many cases when buyers, typically SMEs, do not have sufficient knowledge about steel materials. Knowing this, they ask an intermediary for advice, such as, "Since we want to make this type of product, please introduce us to steel materials that are appropriate for the product." And since large steel makers typically do not have the ability to manage small amounts of trading and cope with particular logistical and processing requirements, intermediaries can play an important role as agents for the buyer. Thus, the reasons why it is difficult to eliminate intermediaries do not always stem from existing relationships or a power balance between companies.

It is clear that current e-marketplaces cannot become complete substitutes for traditional intermediaries. Traditional intermediaries, who can provide useful, value-added services, are still
indispensable in the value chain, and e-marketplaces are asked to cooperate with them.

**Keiretsu Business**

Traditionally, Japan's B2B business has been based on long-term, continuous, fixed business relationships, as represented by the corporate family, or *Keiretsu*. These relationships are important for Japanese companies because they enhance the ability to cultivate, share, and utilize information and knowledge, which can be very expensive to acquire in other ways. With the advance of Internet technology, the cost of obtaining and analyzing information has decreased dramatically, and therefore Japanese companies are asking to reconsider this kind of relationship\(^2\). However, the relationship still produces big value for Japanese companies, and it is not easily broken.

**Rigid Corporate Culture**

One notable characteristic of Japanese business is that Japan's industry structure, relationships among companies, and company structures are very rigid, and resistance to change is strong\(^2\). Perhaps one reason why the IT revolution began first in the U.S. is that most of the advanced information technologies were developed in the U.S.; I also believe another major reason is that relationships among U.S.

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\(^2\) Nakatani, 2001
companies, including the exchange of talented personnel, has always been flexible. And while today there is some movement in Japanese business circles to reorganize these traditionally rigid structures in response to intensifying competition and industry globalization, change still does not come easily, even if a prominent IT solution, with strong potential for improving the business process, is available.

Proprietary Standards

During the time the management that supported the importance of Keiretsu was in place, relationships with external companies other than the Keiretsu were generally weak. While it may be true that Japan's historical systems of lifetime employment and the seniority system were useful from the perspective of knowledge accumulation, these systems also restricted the creation and exchange of talented personnel. As a result, Japanese businesses have a variety of proprietary business practices. The term "global standard" is heard frequently in Japan, but it would be difficult to say that it is reflected in actual business situations.

Many IT solutions not limited to e-marketplaces, which were developed in the US, have been introduced in Japan, but when they were implemented, certain Japan-specific features became obstacles. For example, implementation of the ERP (Enterprise Resource Planning) tool, which created a boom in the mid-1990s, never proceeded smoothly in Japan.
There were several reasons, but I think the most biggest reason was that Japanese companies' backend processing was mostly proprietary, differences between companies were large, and the workflow that ERP proposed did not fit with Japanese business practices. Indeed, ERP did not diffuse easily in the U.S. either because it forced changes in the business process itself, which was a big challenge for most companies. However, the Japanese companies' individuality made the situation more difficult.

9.2 CRITICAL SUCCESS FACTORS

It appears that sustainable business models of e-marketplaces do not yet exist in Japan (or even in the U.S.). Moreover, the success of e-marketplaces is contingent on several factors, such as the target industry, the products they deal with, and the target customers. A business model that succeeds in some industries may not succeed in others. However, successful e-marketplaces do have some common success factors. In this section, I describe critical success factors that can lead e-marketplaces to success, based on knowledge I acquired through interviews with representatives of several Japan's e-marketplaces.

- Construct solid business models, concepts, and policies, backed by abundant industry knowledge

In order to create successful businesses, companies need solid business models, concepts, and policies. But for the companies that
operate e-marketplaces - especially those that aim at industry-vertical e-marketplaces - the needs and circumstances of the industry must be carefully considered. The top managements of the e-marketplaces need to be well-versed in the business of the target industry.

- **Take an honest and sound approach**

Considering present conditions in Japan, a rapid shift to e-marketplaces is not desirable. E-marketplaces should make a business plan from the long-term view, and then secure sufficient funding to execute it. Typically, they should avoid excessive initial investment in favor of an honest and sound long-term view, by convincing players in their industry, and by gathering contributors from the entire industry. In the short term, it is better to focus on providing benefits to high-priority customers because I believe, in the e-marketplace business, a "first proving-person" advantage exists, not a "first mover" advantage.

- **Respect traditional business practices**

With the decision to do business in an e-marketplace also comes the requirement for customers to change their business processes in no small way. Frequently, companies that try to change their internal business processes or reconsider their trading processes encounter
significant resistance and political pressure from both inside and outside the company. Strong leadership from top management and considerable understanding from employees are indispensable to realizing that large-scale business process reengineering that comes with doing business in an e-marketplace. For the e-marketplaces that are outsiders to the customer companies, extraordinary time and effort are required to encourage the companies to make the major changes. Therefore, at least at first, one solution for e-marketplaces is to respond thoughtfully to the business practices that are widespread within the industry, and not force rapid change.

- Offer value-added services that result in benefits to the customer

There is not a company today that has not executed some kind of efficiency improvement plan in its business. But sometimes it is difficult to find any apparent benefit to customers just by replacing an existing business process. This is also true for e-marketplaces, which are being asked to provide value-added services that produce clear benefits for many of their customers by utilizing features of the Internet. Moreover, since the services that customers want tend to evolve with changes in the business environment, e-marketplaces are continually being asked to add new services in a timely manner as well as to improve their existing business models.
• **Offer off-line customer support as well as on-line services**

For companies that participate in e-marketplaces, one big issue is how to integrate the services from the e-marketplace into their existing business process. Therefore, e-marketplaces are being asked to provide consultation in which they become more involved in the customers’ strategy, in order to suggest the most profitable way to integrate the e-marketplace services into the customer’s business process, i.e., not taking the position “because we are offering these good services, please use them for your own convenience.” This approach is also important for e-marketplaces in order to construct strong relationships of mutual trust with their customers and to improve customer loyalty.

Moreover, e-marketplaces cannot forget that their mission is not only to improve individual customer business efficiency, but also to improve the entire value chain’s business efficiency as one important member in the value chain. E-marketplaces are being asked to understand their customers’ problems, some of which become obvious in the flow of the whole value chain, and to provide solution aggressively. E-marketplaces can also take a neutral position as a core player when balancing interests and promoting cooperation among participating companies.
• **Offer services that respond to the nature of the industry and its customers**

It will not work to offer an expensive systems integration solution to a company with a low volume of business transactions or whose system infrastructure is not fully equipped to handle such a solution. When an e-marketplace handles products whose quality is more important than price, trading models such as auctions usually will not work. It is a requirement, then, to be prepared to offer services that can respond to the nature of the target industry and its customers.

• **Develop an effective alliance strategy**

It is important for e-marketplaces to secure sufficient liquidity and to attain critical mass. In order to realize this, however, e-marketplaces need to provide attractive services for as many target customers as possible. However, it is often difficult for the e-marketplaces to provide many useful services before they have collected enough customers, from the standpoint of achieving a balance between investment and performance. Therefore, it may be necessary to expand the services offered by an e-marketplace by vigorously seeking effective alliances.
- **Consider suppliers and intermediaries**

Some believe that e-business abolishes information fragmentation, brings transparency to the market, and therefore makes the power of buyers very strong. This is also applied to e-marketplaces. In fact, many suppliers and intermediaries are hesitant to make full use of the services of e-marketplaces. From the suppliers’ perspective, an auction is viewed as a tool that lowers market price. As for the sale of stock based on a catalog, many suppliers are reluctant to state an exact price or the amount of inventory in an open catalog because they believe it works negatively when entering a trading negotiation. Intermediaries feel threatened by the possibility that their position will be eliminated because the information wall - which has been one of their strategic resources - may be taken away. Therefore, it is very important for e-marketplaces to provide services for which both suppliers and intermediaries will clearly see the benefit.
Since the time e-marketplaces first appeared, some believe that disintermediation will occur and suppliers and buyers can trade directly. It has also been said that public e-marketplaces promote commerce beyond the traditional trading relationship among companies, and will eventually destroy Japan's traditional enterprise groups represented by the Keiretsu. Is this true? My research leads me to conclude that the answer is clearly "No". If anything, the contrary appears to be the case: it would be more appropriate to regard public e-marketplaces as tools for improving the value of the enterprise group.

There is no doubt that there are many benefits to be gained by pursuing efficiency improvements in the enterprise group, reconstructing conventional role assignments, and restructuring the allotment of management resources and functional assignments. However, this does not necessarily mean disassembling the enterprise group itself.
Under the current severe recession in Japan, companies are now seeking structural reform, including the demolition or reorganization of subsidiaries within the group, in order to survive. I believe that in this situation there is a major role for public e-marketplaces to promote structural reform. If they are positively utilized as one arm of structural reform, synergistic effects could be expected for the entire group as a result of maximizing practical resources and standardizing procurement processes. The group can raise the effective utilization of its own property and produce new value.

Taking into consideration the benefits and usefulness that have been discussed in this thesis, e-marketplaces could strategically combine the merits of enterprise structures and the business practices of Japan, with the benefits and usefulness of electronic commerce itself. However, it is important for public e-marketplaces hold a neutral position that supports the seamless structural reform of Japanese companies, not only by continually providing useful IT solutions for customers, but also helping the enterprise group’s internal restructuring. Only then will real "Japanese-type e-marketplaces" be formed.
References


Construction-ec.com.
http://www.construction-ec.com/visitor/v_top/index.html


http://www.forrester.com/ER/Press/Release/0,1769,243,00.html

Fujitsu Research Institute. "The method for cyber business".
http://www.fri.fujitsu.com/hypertext/fri/cyber/b2b/emp01.html

GlobalNetXchange. https://www.gnx.com/home.jsp


GlobalNetXchange. April 17, 2002.


http://www.eweek.com/article/0,3658,s=703&a=12728,00.asp


http://www.jup.com/company/pressrelease.jsp?doc=pr000626

MetalSite Japan. http://www.msjc.com/

http://www.msjc.com/MetalSite_Is/articles/press4.cfm


Yankee Group.

http://www.yankeegroup.com/webfolder/yg21a.nsf/Press/78BEE5798DFEA62D852568C800619B77?
