Japan's Long-Term Population Decrease and the Implications for Corporate Management

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1. Basic Trends in the Business Environment

Japan's population is projected to peak out in 2006, and then start to decline over an extended period. This structural population decline, which is unprecedented for Japan, means that domestic demand will no longer expand as in the past, while the structure of demand will radically alter due to aging. The impact of these changes on corporate management will undoubtedly be extensive, but difficult to predict with any accuracy. In this paper, we consider the implications of population decrease for corporate management by examining long-term trends in the business environment, including those in the industrial structure and structure of demand.

(1) Domestic Demand Growth is No Longer a Certainty

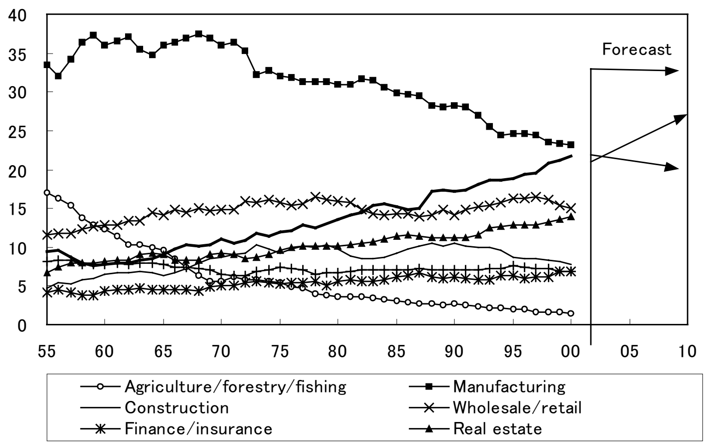
During the era of high growth and even up to quite recently, consistent growth in domestic demand had been regarded as a near certainty. However, as the population starts to decline ahead, the overall premise will be zero to slightly negative growth for domestic demand. Moreover, even as the overall economy slows, some segments are certain to grow, such as businesses that serve the elderly, biotech businesses, and environment related businesses. Given the fixed size of the economic pie, growth in new businesses implies that other segments of demand will shrink. Thus for the majority of existing industries, corporate management must face the harsh reality of a long-term decline in domestic demand.

(2) Industrial Structure to See Shift to Services and Business Fusion

With regard to the industrial structure, the basic trend toward a services-oriented economy will continue (Figure 1). In the mid 1990s, most economic forecasts for the first half of 2000 predicted that since slower population growth meant less labor had to be absorbed by labor-intensive services, Japan's service sector would expand less than in the U.S., and manufacturing would not decline in weight. However, the opposite has happened—the services-oriented economy has continued to grow. As in the U.S., this is because the demand for new services has continued to evolve and grow.

As the population ages in the future, businesses will increasingly specialize and upgrade their core capabilities, and outsource non-core functions such as accounting, employee welfare, and administration. Moreover, compared to the U.S., Japan still has much room to grow demand for new services (in 2000, services accounted for 21.8% of Japan's economy, compared to 25.0% for the U.S.). We thus predict that Japan's services-oriented economy will continue to grow led by health services, long-term care services, medical services, and services that provide business support. As a result, manufacturing, construction, and real estate industries will decline in weight, while services and communications industries will grow.

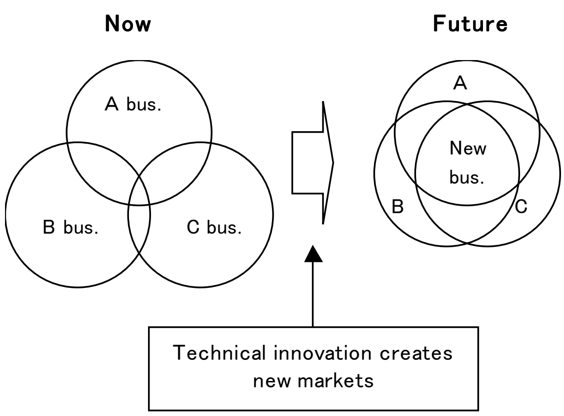
Figure 1　GDP Composition by Industry



Source: Cabinet Office, *Annual Report on National Accounts*.

Another important change in the industrial structure is that barriers separating industries will drop. Prominent examples include the fusion of communications and broadcasting, the fusion of retail, services, and finance by convenience stores, and bio-informatics, or drug development using IT to fuse pharmaceutical and electronics industries.

Figure 2　Fusion of Industries

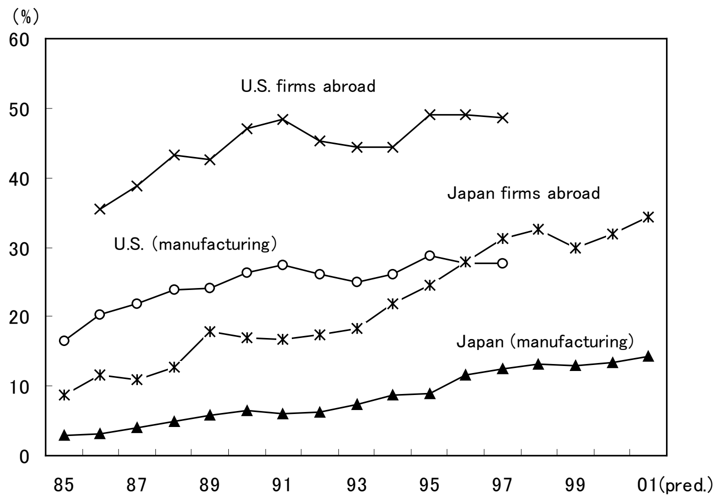


Moving toward 2050, technical innovations not yet even imaginable today will cause business fusion to accelerate, creating new industries out of what once were separate industries. At the company level, this phenomenon will occur in the form of business diversification, making it increasingly difficult to distinguish companies based on present industrial categories (Figure 2).

(3) More Deindustrialization and International Competition

Turning to conditions abroad, the issue of greatest concern is Japan's deindustrialization, or hollowing-out of industry. Japan's overseas production ratio has risen consistently in the past, but still remains below that of the U.S. (Figure 3). Unfortunately, the transfer of manufacturing abroad will continue in the future due to such factors as economic growth in China and Southeast Asia, domestic infrastructure development, and technical progress. Amid the ongoing deindustrialization, what will remain in Japan are high value-added production, research and development functions, and headquarter functions. Meanwhile, in the non-manufacturing sector, foreign companies are moving into Japan with increasing vigor. As is the case with manufacturing, major foreign firms will pose a growing competitive threat to Japanese firms.

Figure 3 Overseas Production Ratio of U.S. and Japanese Manufacturers



Sources: METI, *Basic Survey of Overseas Business Activity*; U.S. Dept. of Commerce, *Survey of Current Business*; QFR.

(4) Growing Business Uncertainty

The most prominent characteristic of business in the era of population decrease will be the growing uncertainty of the business environment. Already, final consumption demand has matured in goods and services for daily living, and will be centered around replacement and incremental demand. Since this demand is strongly affected by consumer confidence and preferences, product and service differentiation will become critical to success. Moreover, any increases in product demand will likely be temporary rather than sustained. Product and service lifecycles will also shorten, while the line separating success and failure of new products will become more distinct.

Advances in technology—some of which we cannot even imagine today—will constantly remake the business landscape. We can get a sense of this from how the Internet's sudden growth has spawned electronic commerce and other Internet businesses. And new technologies will constantly create new markets to replace old ones—just as digital cameras and cell phones are driving out conventional cameras and wire-line phones.

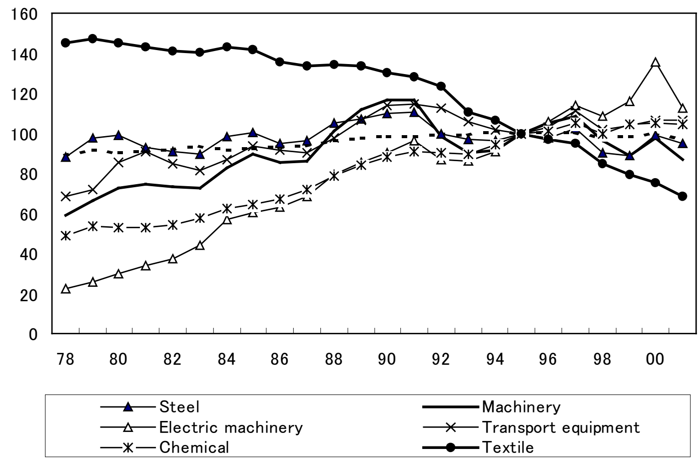
The diverse issues confronting companies in the era of population decrease can be grouped into three main themes: (1) how to manage matured or declining businesses amid deindustrialization and the transfer of corporate functions abroad, (2) how to grow new businesses as part of a diversification strategy, and (3) how to deal with growing uncertainties caused by changes in demand and technology.

2. Management of Matured and Declining Businesses

When businesses mature or start to decline, management basically has two options: (1) to continue focusing on the core business, or (2) to diversify by shifting management resources into more promising business areas. Of course, the correct choice will differ based on the particular circumstances. To see how such strategic decisions can affect businesses in decline, we examine the textile industry in the 1990s. How businesses responded to the near fatal blow from inexpensive imports offers clues to future corporate management (Figure 4).

Since the textile industry was among the first to decline in the 1960s, all textile companies have diversified their operations to some extent. Among the 18 major textile companies, the ratio of non-textile operations had already reached 40.5% in fiscal 1990, and rose further the 1990s due to the increase of imports to 52.7% in fiscal 2991. Meanwhile, sales declined 29.3% from fiscal 1990 to 2001. Thus for the industry overall, businesses have clearly withdrawn from textiles or diversified. However, at the company level, we can see significant differences in the change in textile revenues and extent of diversification (Figure 5). This is because companies made different strategic decisions. Below we compare corporate performances in the 1990s based on the difference in strategies.

Figure 4 Industrial Production (1995 = 100)



Source: Ministry of Economy, Trade and Industry, *Indices of Industrial Production*.

Figure 5 Performance of 18 Major Textile Companies

Company	Change in profit rate	Specialization ratio	Change in specializaton ratio	Sales growth (%)
Toyobo Co.	−2.8	51.9	−14.7	−47.5
Kanebo	−0.3	30.5	−12.7	−45.1
Unitika	0.8	46.1	−14.9	−50.1
Fuji Spinning	−2.7	80.5	−8.5	−40.7
Nisshinbo Indus.	−1.6	34.6	−14.5	−41.9
Kurabo Indus.	0.9	61.1	−12.0	−20.1
Daiwabo Co.	2.7	83.0	32.0	−28.9
Shikibo	3.7	79.3	−9.6	−45.4
Nitto Boseki	2.6	14.0	−15.4	−69.0
Omikenshi Co.	9.0	83.5	−10.1	−56.1
Teijin	−3.0	56.1	−4.0	36.5
Toray Indus.	−3.0	42.5	−7.6	−11.7
Toho Tenax Co.	−4.2	36.3	−43.0	−82.6
Mitsubishi Rayon	−2.8	31.7	−8.4	−31.9
Kuraray Co.	−1.8	26.8	−15.5	−45.6
Asahi Kasei Corp.	0.0	10.7	−6.8	−44.1
Katakura Indus.	−1.9	16.7	−20.3	−67.5
Gunze	−1.8	66.5	−11.8	−33.6

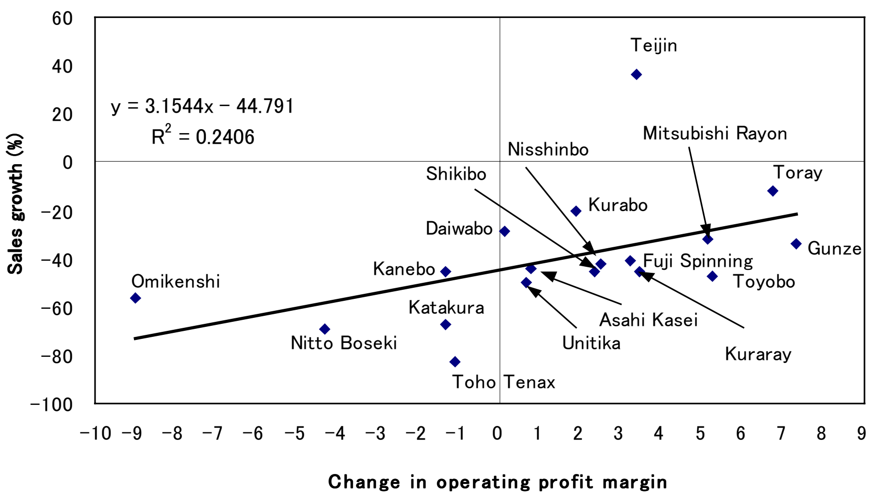
Note: Change is from fiscal 1990 to 2001; specialization ratio is for fiscal 2001.

First, to see how sales growth affected business, we compare sales growth in the 1990s against operating profit margin in the early 1990s (average of 1991 to 1993). Figure 6 plots the change in sales from fiscal 1991 to 2001 against the average operating margin from fiscal 1991 to 1993. Except for Teijin, sales fell for all companies (Teijin's sales growth is attributed to a shift to consolidated reporting for foreign subsidiaries, and to the acquisition of Toho Tenax). As for the other firms, the sales decline ranges from a single digit decline for Toray, to over 80% for Toho Tenax. Thus we can see a correlation between declining sales over the 1990s and low profit margin in the early 1990s. Two possible explanations exist:

(1) Low profit rates led companies to consolidate production and improve efficiency.
(2) Low profit rates imply noncompetitive products, which caused sales to decline.

If the second explanation is correct and sales declined because of noncompetitive products, declining sales should push the profit rate down further. On the other hand, if sales declined because production capacity was consolidated to boost efficiency, companies with the greatest sales decline should have the most improved profit rates.

Figure 6 Sales Growth and Operating Margin of 18 Major Textile Companies



Another important factor is the specialization ratio—the ratio of a company's textile operations to total operations. There was a wide discrepancy across companies in fiscal 2001.

However, the specialization ratio (from fiscal 1990 to 2001) declined for all firms by a widely varying extent, except for Daiwabo, whose ratio rose because its much larger subsidiary Daiwabo Information Systems was excluded from consolidated results.

A low or declining specialization ratio is indicative of a decision to scale down or pull out of the core textile business. This can cause the profit margin to drop because management has given a lower priority to allocating resources such as personnel, materials, funds and information. The cutback in resources and drop in employee morale reduce competitiveness. Given the intense competition in textiles especially from imports, the lack of resources will reduce competitiveness. Thus a low or declining specialization ratio is a good predictor of a declining profit margin.

To test the above hypothesis, we performed a statistical analysis of the 18 major textile companies. Specifically, the explained variable is the difference in average profit margin from fiscal 1999-2001 to fiscal 1991 to 1993. We performed regression analysis using the following explanatory variables: specialization ratio, change in specialization ratio from fiscal 1991 to 2001, and change in sales from fiscal 1991 to 2001. The results are as follows (p-values are in parentheses).

$$\text{Change in profit margin} = \underset{(0.099)}{5.26} * \text{Spec. ratio} + \underset{(0.032)}{24.72} * \text{Change in spec. ratio} \underset{(0.015)}{- 9.53} * \text{Sales growth} - \underset{(0.127)}{3.46}$$

Adj $R^2 = 0.342$

Coefficients are positive for the specialization level and change components, and negative for sales growth. Thus the higher the specialization ratio, or the larger the increase in specialization ratio, or the larger the decline in sales, the greater is the improvement in profit margin.

Our analysis of past corporate activity shows that companies who enhanced their core textile business (raised the specialization ratio) and then underwent a contractionary equilibrium (sales decrease) were most successful in the textile business. The pattern in which strong companies in a mature or declining industry have a high specialization ratio can also be confirmed with Imabari Shipbuilding Co., the shipbuilding industry leader.

On the other hand, the analysis also shows that a simple diversification (decline in specialization ratio) leads to a decline in profit margin in the core business. To pursue diversification and maintain profit margins, companies need to devise ways not to lose competitiveness in the core business as well.

A viable diversification strategy that protects profit margins is to form a separate company for the declining business. This strategy increases the independence of the declining business, clarifies profit management, facilitates business specialization, and raises employee morale despite accompanying wage cuts. In fact, Kanebo did precisely this in October 1996, Toho Tenax in September 1998, Unitika in March 1999, and Kuraray in October 2001. In addition, Asahi Kasei announced a shift to a holding company organization in October 2003. Though late in coming, these decisions are considerably wiser than the alternative of holding onto a noncore business.

Figure 7　Business Diversification and Operating Margins of Major Textile Companies

<table>
<tr><th>Company</th><th>Textile</th><th>Pharma-ceutic</th><th>Chemi-cal</th><th>Machin-ery</th><th>Housing</th><th>Real estate</th><th>Other</th></tr>
<tr><td>Toray Industries</td><td>2.0</td><td>2.4</td><td>0.5</td><td colspan="2">0.4</td><td></td><td>IT equip. 0.6, services etc. 2.3</td></tr>
<tr><td>Teijin</td><td>1.8</td><td>24.4</td><td>−1.2</td><td>3.6</td><td></td><td></td><td>Magnetic recording media 3.3</td></tr>
<tr><td>Unitika</td><td>1.2</td><td></td><td>11.0</td><td>8.3</td><td></td><td>5.4</td><td>Lifestyle & health 7.9</td></tr>
<tr><td>Mitsubishi Rayon</td><td>2.8</td><td></td><td>11.3</td><td></td><td></td><td></td><td>Functional products 2.7</td></tr>
<tr><td>Kanebo</td><td>−2.7</td><td>−3.6</td><td></td><td></td><td></td><td></td><td>Foods 5.4, cosmetics 22.3, home products 12.2</td></tr>
<tr><td>Toyobo Co.</td><td>0.3</td><td>13.2</td><td>8.2</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Asahi Kasei Corp.</td><td>−0.7</td><td>12.4</td><td>3.3</td><td>4.0</td><td>9.0</td><td></td><td>Liquor, services 0.1</td></tr>
<tr><td>Nisshinbo Indus.</td><td>0.2</td><td></td><td colspan="2">−4.0</td><td></td><td>14.1</td><td>Brakes 3.5, paper 5.6</td></tr>
<tr><td>Kuraray Co.</td><td>0.2</td><td>7.7</td><td>6.5</td><td></td><td></td><td></td><td>Synthetic leather etc. 4.3</td></tr>
<tr><td>Kurabo</td><td>3.2</td><td></td><td>1.7</td><td>2.7</td><td></td><td>14.5</td><td>Other 3.0</td></tr>
<tr><td>Nitto Boseki</td><td>0.1</td><td></td><td></td><td></td><td>−1.4</td><td>4.9</td><td>Glass fiber −3.0</td></tr>
<tr><td>Shikibo</td><td>5.4</td><td></td><td></td><td>−11.0</td><td></td><td>4.1</td><td>Other 5.9</td></tr>
<tr><td>Fuji Spinning</td><td>1.5</td><td></td><td>7.2</td><td></td><td></td><td></td><td>Nonwoven fabric 5.4</td></tr>
<tr><td>Toho Tenax Co.</td><td>−9.8</td><td></td><td>−5.5</td><td>5.3</td><td></td><td></td><td>Services 5.6</td></tr>
<tr><td>Omikenshi Co.</td><td>1.3</td><td></td><td></td><td>−1.4</td><td></td><td>3.9</td><td>Temp staff 5.7</td></tr>
<tr><td>Daiwabo Co.</td><td>2.7</td><td></td><td></td><td>−0.5</td><td></td><td>3.4</td><td></td></tr>
<tr><td>Katakura Indus.</td><td>−3.6</td><td></td><td></td><td>9.1</td><td></td><td>8.2</td><td></td></tr>
<tr><td>Gunze</td><td>6.7</td><td></td><td>8.2</td><td>−0.6</td><td></td><td>7.5</td><td>Sports facilities −3.1</td></tr>
</table>

Note: Shows operating margin for fiscal 2001.

3.　New Business Development

When a company shifts its core business to another business area, what factors need to be considered? A diversification strategy is more likely to succeed when the new business bears close similarities with the present core business in terms of management resources and expertise.

Many textile companies have successfully diversified out of textiles (Figure 7). Synthetic textiles have spawned many derivative businesses in chemicals, pharmaceuticals, cosmetics, while companies have also started a real estate business by taking advantage of their abandoned factory sites. However, some diversification attempts are either money-losing or borderline businesses, such as Nisshinbo's mechatronics and electronics equipment, Nitto Boseki's construction materials, Daiwabo's electric components, and Omikenshi's electronics unit.

Aside from the real estate business, we found that successful businesses have on the whole been those derived from textile-related technologies. The key to diversification appears to be in choosing business areas that share the company's core expertise and capabilities.

The next major point is that as technological change accelerates and uncertainties grow regarding the direction of change, businesses must respond more quickly to new opportunities. In the past, Japanese firms have generally built new businesses from the ground up using internal resources, which can require many years to accomplish (Figure 8). For example, successful cases such as Teijin's pharmaceutical business and Asahi Kasei's housing and construction materials business took several decades to become viable concerns. Kuraray needed twenty years to commercialize thermoplastic elastomers. But as the pace of change accelerates, businesses will need to resort to M&A activities to acquire necessary resources from elsewhere. Fortunately, the dissolution of cross-shareholding and other trends are creating an increasingly favorable M&A environment, which will help speed up business changes.

However, it is also true that the overwhelming majority of M&A's by Japanese firms have failed due to errors in execution or post-merger mistakes by management. Prominent examples from the bubble era include Mitsubishi Estate's purchase of Rockefeller Center and Matsushita Electric's acquisition of MCA, and more recently, NTT Docomo's unsuccessful overseas strategy. Thus Japanese firms desperately need to improve their capabilities in M&A execution and post-merger management.

Figure 8 Business Diversification of Major Textile Companies

Company	Year	Description
Kanebo	1961	Recovers cosmetics div. from Kanegabuchi Chemical Ind.
	1964	Kanebo Harris (confectionary business)
	1966	Enters pharmaceuticals by obtaining control of Yamashiro Pharmaceutical
	1985	Establishes electronics operations, starts IC operations
Nisshinbo Indus.	1980	Starts mechatronics
Toyobo Co.	1970	Enters plastics
	1973	Enters biochemistry
Asahi Kasei Corp.	1967	Enters housing, construction materials
	1970	Enters pharmaceuticals
	1983	Enters electronics
Toray Indus.	1959	Starts production of polyester film
	1980	Enters pharmaceuticals
Teijin	1973	Enters pharmaceuticals
Kuraray Co.	1972	Enters isoprene
	1975	Enters synthetic organs
	1978	Enters dental materials
Gunze	1985	Enters electronic components
Katakura Indus.	1946	Enters machinery electronic components

Source: Media reports

4. Responding to Increasing Uncertainty

The growing uncertainty regarding changes in demand and technology points to two things: (1) companies assume an increasing level of risk by undertaking R&D and capital investment on their own, and (2) it is of paramount importance to devise a corporate strategy and organizational structure that responds to change sensitively.

1. Strategic Tie-ups

Rather than competing in all areas in the same industry, companies can benefit by cooperating in certain activities to diversify risk and extend management resources. This calls for a flexible management stance that enables cooperation with rivals in certain activities, while remaining competitors elsewhere. For example, companies can cooperate in research on product components, while still competing vigorously in the end product market; or they can integrate certain product lines while competing in others.

In recent years, as the legal framework for corporate restructuring has developed, cooperative relationships have increased for the purpose of integrating operations (Figure 9). However, a closer look reveals most to be problem cases necessitated by poor performance—particularly among semiconductors, home appliances, and the steel division of trading companies. Given that the era of decreasing population offers risks as well as opportunities, companies that pursue integration should be good condition.

Figure 9 Recent Business Mergers

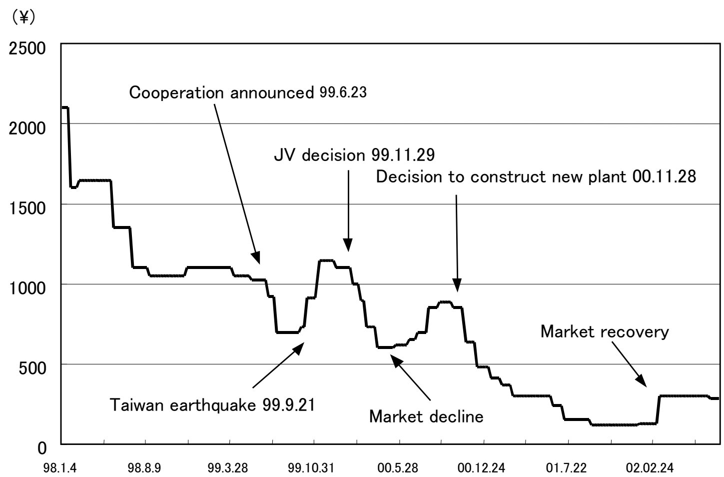
Date announced	Date effected	Companies	Merged business
Mar 2000	Apr 2002	Nissho Iwai, Kanematsu Corp.	Paper & pulp
Oct 2000	Oct 2001	Itochu Corp., Marubeni Corp.	Steel products
Jan 2001	Oct 2002	Mitsubishi Corp., Nissho Iwai	Steel products
Jun 2001	Oct 2001	Nissho Iwai, Sumitomo Corp.	Liquified natural gas
Oct 2001	Apr 2002	Toshiba Corp., Matsushita Elec. Ind.	LCD
Nov 2001	Oct 2002	Ishikawajima-Harima Heavy Ind., Sumitomo Heavy Ind.	Shipbuilding, naval vessels
Jan 2002	Oct 2002	Mitsui Mining & Smelting, Sumitomo Metal Mining	Zinc
Mar 2002	Apr 2003 (f)	Hitachi, Mitsubishi Electric	System LSIs
Apr 2002	Jul 2002	Hitachi Construction Machinery, Sumitomo Heavy Ind.	Cranes
Jul 2002	End 2002 (f)	Asahi Kasei, Mitsubishi Chemical, Idemitsu Petrochem.	Polystyrene
Aug 2002	Aug 2002	Nissho Iwai, Nichimen Corp.	Chemical products
Oct 2002	Spring 2003 (f)	Dowa Mining, Mitsubishi Materials	Zinc

Source: Compiled from media reports.

Moreover, in merging operations, companies should avoid the struggle to gain control. All too often, Japanese companies focus on control issues instead of formulating a viable strategy for the joint venture.

A classic example is the joint venture between Hitachi and NEC. After announcing a basic agreement in June 1999, the two agreed to integrate operations in November 1999, and formed NEC Hitachi Memory (later called Elpida Memory) in December as a 50-50 joint venture. But the going was rough from the start. NEC wanted to claim a majority stake because its DRAM operation was 1.8 times larger than Hitachi's, but Hitachi insisted on a 50-50 split based on its possession of advanced technology. And when the Taiwan earthquake caused supply uncertainties and boosted the DRAM market, both sides confided their desire to survive in the DRAM market without the merger (Figure 10).

Figure 10 DRAM Market Trend (64M)



While top level negotiations ultimately produced a 50-50 joint venture, disputes continued to fly at the working level. Moreover, the deteriorating DRAM market not only caused delays in the decision to construct a new plant, but scaled down initial investment plans. As a result, the plant, which will not fully come on line until January 2003, missed out on the recovery in fiscal 2002 and will be benefit less from economies of scale. A similar power struggle could be seen in negotiations between Toshiba and Fujitsu this year.

The Elpida case shows that as long as participants vie for control, strategic tie-ups will fail to produce win-win relationships. Clearly, to be successful, strategic tie-ups will need to exhibit greater vision and stronger leadership.

(2) Organizational Changes for Speedier Decision-Making

Corporate organizations need to be able to respond flexibly to changes in the business environment. As discussed earlier, in a rapidly changing business environment, the prospects of success will be increasingly unclear at the time of diversification. But since companies must take risks to grow, the important point is how quickly they can ascertain the business prospects and take appropriate action. If results fail to meet predictions, companies must promptly decide to pull out quickly before they pile up losses.

In many cases, Japanese companies have delayed the decision to withdraw from ailing businesses, and thus accumulated larger losses than necessary. Decisions tend to be delayed more often as companies grow large and bureaucratic. In a business environment characterized by growing uncertainty, hesitation in pulling out can be fatal. Managers need the foresight to discern subtle changes in the business environment, and the ability to quickly make appropriate decisions. In addition, they must be able to construct and refine a corporate organization and climate that support speedy decision-making.

Once companies grow to a certain size, they should consider shifting to a multi-division or other type of organization that delegates more authority and facilitates speedy decision-making. While Japanese companies have long formed subsidiaries, the overwhelming majority of subsidiaries are in fact not independent of the parent company. In many cases, strategic considerations play a secondary role to power relationships—managers sent from the parent company wanting to please their superiors, or entrenched managers at the subsidiary stubbornly resisting the parent company. Clearly, reorganization must be accompanied by more thorough delegation of authority and accountability.

In the future, as the population decreases and the business environment grows increasingly uncertain, the highest priority for companies is to devise clear strategies at the group level, and construct a corporate organization in which group companies and divisions are independent and can exercise speedy and flexible management.