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New Trends of Japanese Management under IT Revolution

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New Trends of Japanese Management under IT Revolution

1. Introduction

The effects of Information Technology on social as well as economic life are sometimes called the “Third Industrial Revolution”. In the business world, it changed significantly the way of management, strategies of companies, production system, human resource management, corporate governance, accounting system, distribution channel, marketing system and so on. These trends are often reported in business journals and academic papers.

This paper intends to access the following research questions based on the experience of Japanese large companies since 1990.

- 1) How much is the investments for IT in private sector among private facility investment since 1990 in Japan?
- 2) What are the directions of such changes of Japanese management under the effects of IT revolution, especially among production system, human resource management and corporate governance?

2. Japanese Trends of IT Investment since 1990

Japanese industries made a lot of investment for IT use especially since 1990 when the “bubble” economy finished its prosperity and Japanese economy went down into deflation. Investment in IT as a whole has to include investment in IT facilities, development of software and systems, training and education of the usage of IT facilities and many intangible activities related to IT. However, here we will refer only to the hardware aspect of IT investment.

According to the Japanese white paper on communication published in 2000, real amount of IT investment in private sector was 6,101 billion yen in 1990, but it increased to 10,387 billion yen in 1998. The ratio of IT investment to GDP was 1.4 % in 1990 but 2.2 % in 1998. The ratio of IT investment to facility investment in private sector was 7.3 % in 1990 but 12.4 % in 1998. These figures indicates a large amount of IT investment since 1990 and make us to expect drastic changes of industrial as well as social life due to the diffusion of IT. IT, in this case, means personal computers in office and at home, many types of machines supported by computers, internet and many systems using the internet and any kind of systems connected by computers. Office automation and many systems using IT in

companies brought drastic transformation in production systems and management style

Figure 1 Trends of IT Investment since 1990 in Japan

3. Changes of production system

3.1. Multi-product small-volume production system

The introduction of computers into production system brought a fundamental shift of production principle from single-product mass-production to multi-product small-volume production system. In electronics industry, for example, new products are quickly developed and sold within a short period of time. The first comer of electronics products can get major parts of the gain in that market. They have to produce a new product one after another and continue that process to get a lion's share of that market. Many other industries like automobile and chemicals also follow the new principle of production system. Even service industries have to apply the new production principle to respond quickly to the changing demands of their customers.

3.2. Shift from manufacturing to solution business

Many manufacturers in Japan started to shift their main activities from manufacturing to research and development as well as marketing to get higher share of added value. They thought that they could not obtain high added value by manufacturing standardized products, which would be transferred to Asian countries with low labor cost. They intend to concentrate their energy on higher- added -value stage of production process such as R&D and marketing. Sony and Matsushita, for example, invested their efforts to develop a new business system or new field of business by introducing Electronics Manufacturing Service , which is often categorized into solution business.

Figure 2 Sony's R&D and Manufacturing System in 1999

3.3. Loosely-structured organization

The new production system will result in the transformation of traditional structure of company organization. The traditional structure of organization with mechanistic work organization and hierarchical management organization is named here "tightly-structured organization". On the contrary, a new structure of organization with organic work organization and flat management organization is named here

“loosely-structured organization”.

The tightly-structured organization fits to single-product mass-production system to accomplish high performance of organization. This type of organization is usually seen at the long belt conveyer line of automobile assembly shop. On the other side, loosely-structured organization is quite effective for organizational performance of multi-product small-volume production system. That type of organization is often identified at the cell production system of electronics appliance. Many advanced Japanese manufacturing companies are shifting their organizational structure to loosely-structured organization to adapt to turbulent management environment.

Figure 3 Four Types of Organizational Structure in 1993

3.4. E-net purchasing system of product parts

Keiretsu-shitauke was one of main mechanisms to connect buyer-supplier relations especially in automobile and electronics industry in 1970 and 1980s. A supplier in some shitauke keeps technical, management, financial and personnel relations with its assembler to maintain mutual-aiding corporate group. However, these assemblers nowadays try to enlarge the group of suppliers by using e-net to discount the price of these parts and stimulate competition among suppliers for improving the quality and design of their parts. Through the e-net, the assemblers can easily find out suppliers even abroad who can offer high-quality parts with low price. Therefore, e-net transforms drastically the traditional buyer-supplier relations in many industries.

Figure 4 E-net Purchasing System

4. New trends of Human Resource Management

4.1. Education and training based on employability

The life-time employment (shushinkoyo) provided all of the training and education of employees necessary for carrying out their jobs at their company. However, after the economic depression in 1990' even Japanese big companies could not keep the life-time employment for all of their employees. They insist on supporting the employability of their employees by providing many types of training and education only for employees who will be eager to improve their skills and knowledge for their carriers. Employees themselves sometimes have to pay some money to attend training course prepared by their company. It indicates an establishment of new company-employees relations different from the traditional life-time employment. Workers themselves can not trust

in the life-time employment under recent economic conditions.

4.2. Management by objective

Japanese companies introduced the practice of management by objective in 1990' so that they can simulate the performance of their employees for their survival under severe market condition. They evaluated the contribution of the employees to their company by the ability accumulated by their experience at the company, which is usually called ability-based wage system. However, the ability itself would be useless if it cannot result in concrete performance of their company. They could not pay only for the ability of their employees to keep their employment to the company. To measure the concrete contribution of each employee to the total performance of the company, they introduced MBO. According to the degree of accomplishment of the objective, they could pay large or small amount of rewards to each employee, quite independent from their age, length of service, educational level and potential ability. This is a new principle of payment different from seniority wage system.

4.3. Annual salary for managers

Another payment system introduced in 1990' was annual salary for managers. Japanese companies have to revise seniority wage system especially of managers who shared more than ten percent of all of the employees. In the rapid economic growth period of 1960's and 1970's', the percentage of managers among employees was 3—4 percent. But due to aging of employees and shortage of management positions under low economic growth, Japanese companies prepared unnecessary management positions to keep the traditional incentives for all employees. This labor cost of managers imposed heavy burden on the companies. Therefore, they introduced at the first stage the MBO for managers and then introduced annual salary based on MBO. The annual salary is determined not by the ability of managers, but by the degree of the accomplishment of their target. The amount of annual salary will vary depending on the result of MBO. This flexible salary results in stimulating morale of managers and reducing the fixed labor cost of managers.

5. Corporate Governance

5.1. Rebinding of Kigyo-shuudann

Kigyo-shuudann(Corporate Assemblage) was also one of the main characteristics of Japanese corporate system. The main six Kigyo-shuudann (Sumitomo, Mitsui, Mitsubishi, Fuyou, Sanwa, Daiiti-kangyou-ginkou) shared major part of economic

activities in the rapid economic growth period and exerted strong influence on Japanese economy. The corporate assemblage intended to maintain their mutual economic benefits among their members and to compete with other assemblage. This mutual benefits and competition among assemblage members promoted positive economic activities of Japanese companies after the Second World War. The main banks of these assemblages played an important role of coordinating business activities of their member corporations and distributing financial resources to these activities.

However, under the long depression and bankruptcy of financial organizations, many of these main banks have to merge or reorganize among themselves beyond the boundary of kigyoushuudann. Mitsui Bank and Sumitomo Bank merged into Mitsui-Sumitomo bank. Mizuho bank is composed of Fuji, Daiiti-kanngyou, and Nihonkougyou Banks. UFJ Bank is a result of merger between Sanwa and Toukai Banks. These mergers of banks will lead to reorganization of kigyoushuudann and industries as a whole.

Table 1 The Main Corporate Assemblies in 1989

5.2. Decrease of mutual stock holding

Companies in a kigyoushuudann hold their stock each other to keep financial relations and group identity. However, under the low stock price in the depression and a new practice of accounting based on present value of stock, many companies even among kigyoushuudann started to reduce their mutual stock holding. The ratio of mutually-held stock among total stock in the stock market in non-financial companies decreased from around ten percent in 1987 to four percent in 1999. This reduction of mutual stock holding means to the companies within kigyoushuudann a decrease of their stable stock- holders. Top management of these companies has to take care of the interests of stock- holders and to be keen about their stock price to obtain financial resource from stock market. The executives of these companies were moved into unstable position compared with the former one.

Figure 5 Trends of Mutual Stock Holding since 1987

5.3. Introduction of managing directors and “company” system

Some of Japanese leading companies like NEC and Sony introduced a new practice of managing directors and “company” system meaning a company within company. Many opinions concerning corporate governance were presented by managers and academics

on the occasions of corporate scandals and bankruptcy of banks and security companies. Some companies shifted their target of investor relations from stable to active stock-holders to keep friendly investor relationship.

At the same time, restructuring of top management organization came from the demand of speedy decision making at the board of directors and clarification of responsibility of each executive. The “company” system was an effective reply to these requests to top management organization.

1) Case of Toyota

Toyota announced the introduction of a new system of corporate governance installing ‘standing managing officers’ in a newspaper on March 28,2003. Detail information cannot be obtained only from this newspaper, but some assessment on this statement would be necessary and useful.

Toyota’s new corporate governance is shown in Figure 3.

Conventional Board of Directors consisted of 58 members. As the left side of the figure 3 shows, all of the board members shared the final responsibility for the management of Toyota. However, some division of management role was established among them. Chairman, vice chairman and president supervised the enterprise directors and each enterprise directors was responsible for their own enterprise.

In the new system, the board members are reduced to around 20 to 30 members and former senior managing directors and managing directors are called ‘standing managing officers’ who are no more members of directors and responsibility only of the execution of the management of their own enterprise.

These ‘ standing managing officers ’ concentrate on the execution of management strategies of their own enterprise. They are supervised by executive officers who are usually senior executive directors and board members.

In this new system, chairman, executive vice chairman, president and vice president play a role of supervision towards the executive officers within the board. Therefore, the function of decision making of strategies and the function of their execution are not divided in the governance organization, but they are different roles of directors within the board. This is one of the main reasons that they call the new governance system not to be American style but to be “Toyota style”.

This reorganization of corporate governance in Toyota was introduced in the process of carrying out of “ Global Vision 2010” that intended to strengthen the competitive power of Toyota. The aims of that Vision are as following:

- 1) Making lean the board members; Top management higher than senior managing

director can be a member of the board and appointed only one year.

- 2) New establishment of managing officers: They are assigned responsibility of operation of their own function or enterprise. Among these managing officers will be assigned many foreigners and young managers. They have to work on the base of performance-based control.
- 3) Flat structure of decision- making: Operation management of each enterprise is finished at the level of senior executive directors.
- 4) Strengthening the supervising function of directors: 4 members among 7 auditors are appointed outside the company.

This reconstruction of corporate governance of Toyota was introduced within the main strategy of the 'Global Vision 2010' (as of April 2002) that intended to change the organizational structure for speedy decision- making and flat organization. Therefore, the transformation of corporate governance in Toyota was brought not by the pressure of capital market but by the demand of organization for efficient management.

Figure 6 Corporate Governance of Toyota

2) Case of Matsushita

Matsushita Electric (National/Panasonic) announced a new structure of corporate governance on April 24,2003 that does not systematically separate directors and executive officers in the process of restructuring the management organization of the Matsushita Corporate Group. The present and new top management organization is indicated in Figure 7.

In the present system, the board of directors consists of 27 members excluding the representatives from subsidiaries and chief staff member of corporate headquarter. In the new system, on the contrary, the members of director are reduced and only 20 persons who are ranked higher than managing directors are board of directors. Chairman, vice chairman, president and vice president, senior managing directors and managing directors who are top management of her strategic business parts of enterprise compose the board of directors. This board plays roles of speedy decision making of the corporate group as a whole and of supervising and monitoring of the activities of member enterprises. The board intends to decide the basic strategies of the Matsushita group from the standpoint of stock-holder and to concentrate its activities on supervising the member companies.

The officers are supposed to execute the decision done by the board. The separation between decision making and its execution at the top management organization seems to be realized by this new structure. However, the new organization of Matsushita yet keep some mechanism for officers to be able to participate in the discussion at the board with the system that some senior managing directors and managing directors who are very familiar with the business activities of strategic enterprises of Matsushita corporate group can be members of the board. The new organization intends to make a realistic decision making of corporate strategies by inviting the officers of strategic enterprises to the corporate board of directors. It also makes the coordination of many enterprises within the corporate group quite easy and effective.

The senior managing officers, managing officers, and officers have to engaged mainly in execution of the corporate strategies given by the directors. However, they are treated as the same rank with directors and rewarded on the same principle with the of directors. Therefore, the representatives of subsidiaries within the Matsushita group are located at the same rank as the directors of Matsushita Electric. Their rewards are calculated on the same standard as that of directors that is based on the performance of their business activities. The stock-option for the officers and directors are abolished due to the same reason.

Concerning the auditing system under the new corporate governance, she introduced standing auditors to strengthen the auditing function of the company and organized “meeting of auditors within Matsushita group” to intensify the cooperation among the auditors of member companies of Matsushita group.

Matsushita Electric did not clearly separate the decision -making and execution within corporate governance by inviting the officers to the board to coordinate various business units. Toyota also follows the same policy concerning restructuring corporate governance. NEC and Sony seem to introduce the separation between decision-making and its execution at the top management organization from the viewpoint of organizational structure. However, some directors occupy the same positions of executive officers. They did not introduce the system of outside auditors. Therefore the control by stock-holders over the directors or top management does not seem to be so strong as that of American or German companies.

Figure 7 Reform of Matsushita’s Top Management

6. Concluding Remarks

Rapid spread of IT such as internet, office computer, mobile telephone and cell production system is changing the traditional style of Japanese management as well as life style of ordinary people in 1990s. These fundamental changes of working life and management style can be named “ the third industrial revolution” in the beginning of 21st century.

The IT revolution transformed fundamentally the relationship between companies and customers, between company and employees, between company and stock-holders.

First, IT changed the principle of production system from single-volume mass production system to multi-products small-volume production system to adapt quickly to changing product market.

This transformation of production system leads to transformation of organization structure of companies from hierarchical structure to flat management organization and from mechanistic to organic work organization. It also leads to company relations from Keiretu-sutauke to network purchasing system.

The transformation of organizational structure of company results to transformation of human resource management. Under the traditional employment system of “shushinkoyo”, a company had some morale obligation of training employees, but now she insists on a new principle of employability for training and education of the employees. The relationship of that company with her employees has changed from the dependent to contract-based employees relations.

The target of work activities of the employees changed from ability-based to performance-based activity under the principles of performance in the practice of management by objective. The employees themselves have to show their own ability by their own performance under the severe market conditions.

The rewards of the employees were determined not by their ability but their performance actually realized. The rewards of managers are calculated not by their ability but by their performance in a certain term by annual salary. Therefore, the relations between company and her employees are changing from ability-based to performance-based contract relations.

The relationship between a company and her stock-holder is at the same time changing. In the traditional kigyo-shudann relationship, stock-holders intended to be “quiet stock-holders” to hope the prosperity of their company. However, the stock-holders themselves intended to keep the value of their stock to be high under the depression. The companies themselves intended to be free to utilize their capital without long fixing. Therefore mutual stock-holding among kigyo-shudann decreased

under the severe depression in 1990s. The top management have to consider the level of the stock price to keep good relations with ordinary stock-holders.

The relations of the companies with their stock-holders stimulated to reconstruction of corporate governance of big companies in Japan. Sony and NEC are the good examples to follow the American model of new corporate governance. However, Toyota and Matsushita intended to keep the power of executive directors to control the power of top management against other managers and subsidiaries. They introduced a new type of corporate governance compared with American or German style of corporate governance.

Japanese style of management is changing under the great impacts of IT revolution. The impacts have in some parts common characteristics with those of other developed countries. On the other hand, Japanese management responded to these impacts with different way compared with Western countries. It is urgent necessity to compare the different responses of industrialized countries toward IT spread in management.

(The end)

[2004.1.7 668]

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Figure 1 Trends of IT Investment Since 1990

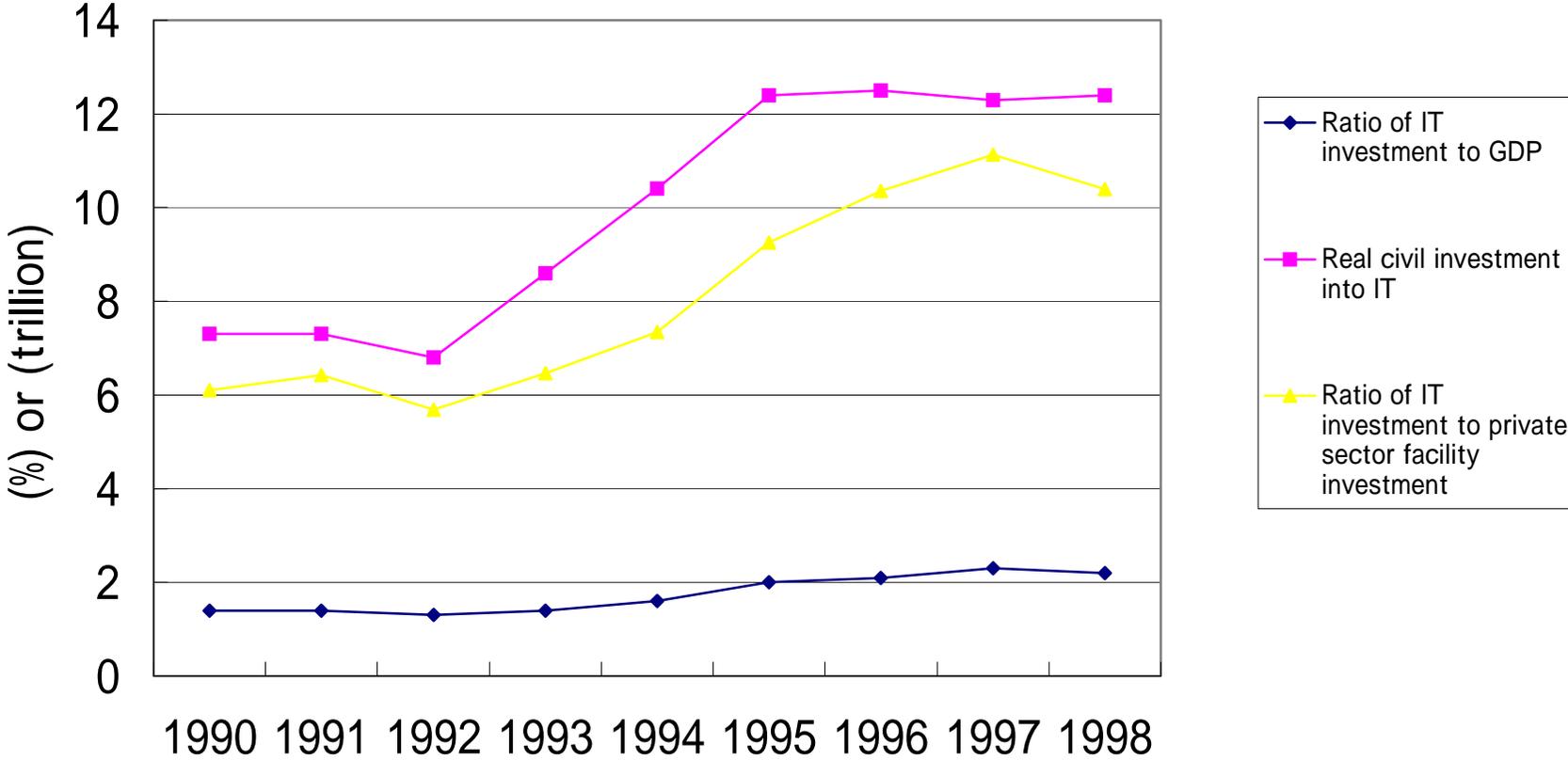


Figure2 SONY'S R&D AND MANUFACTURE SYSTEM

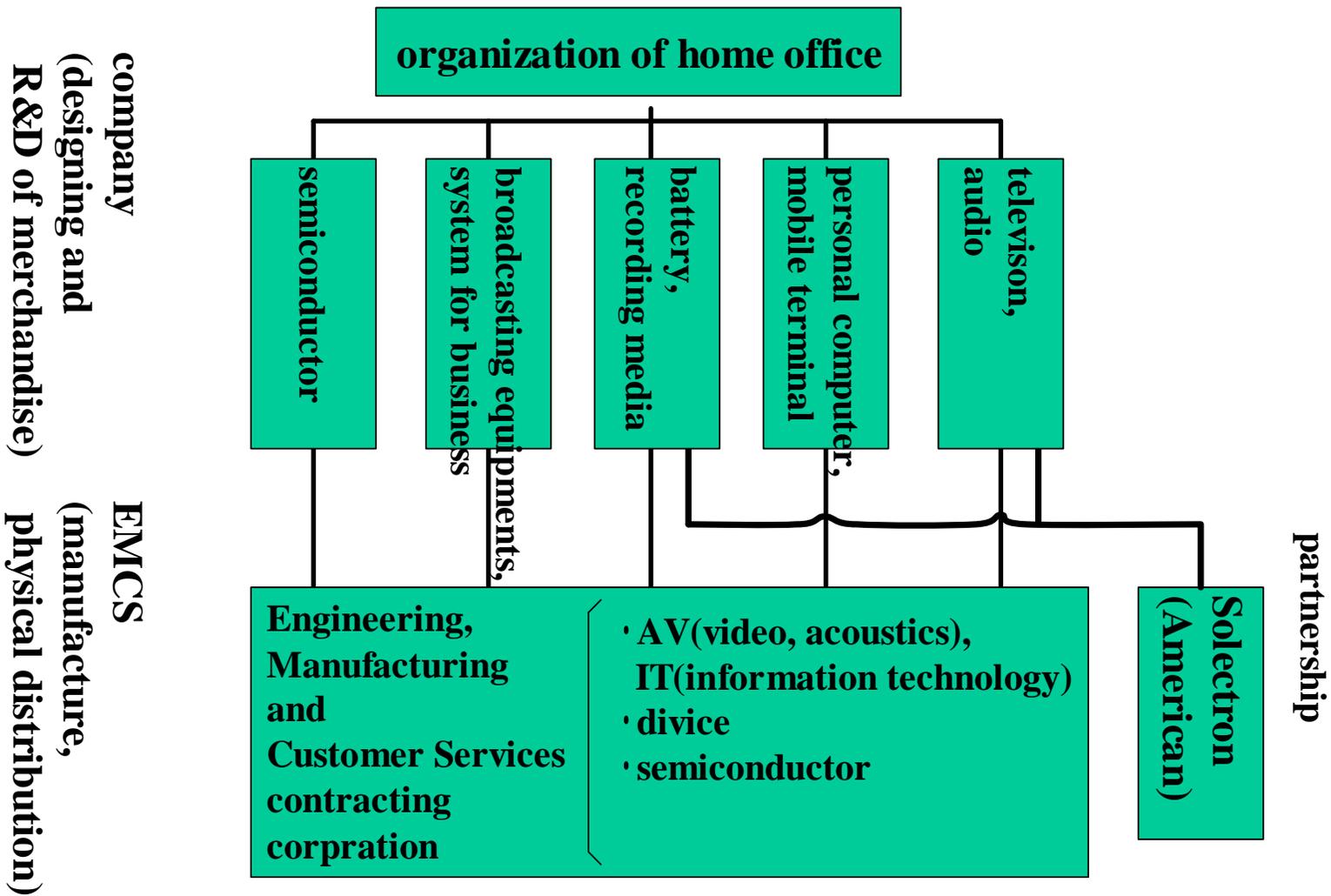


Figure 3 Four Types of Organizational Structure

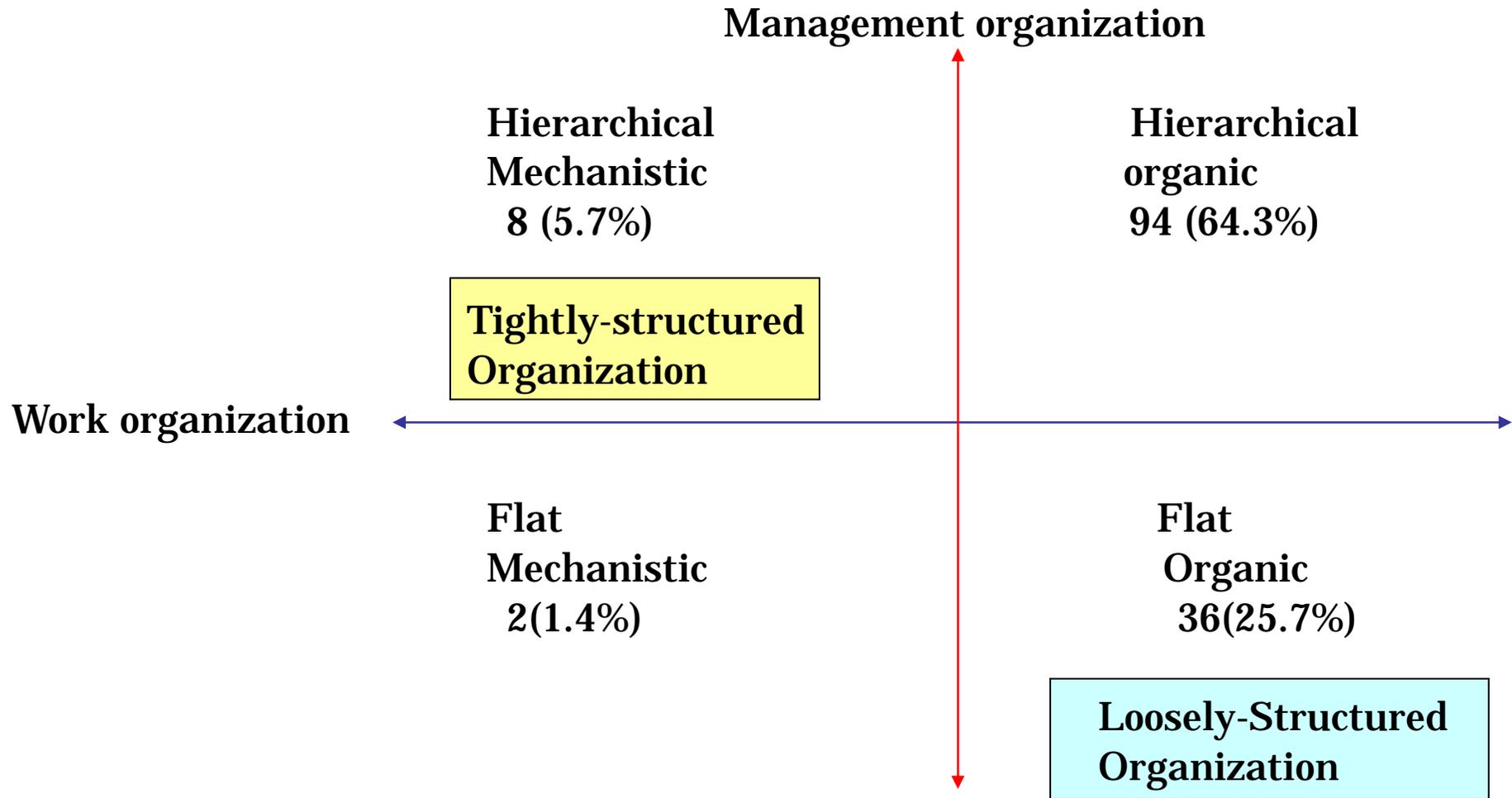
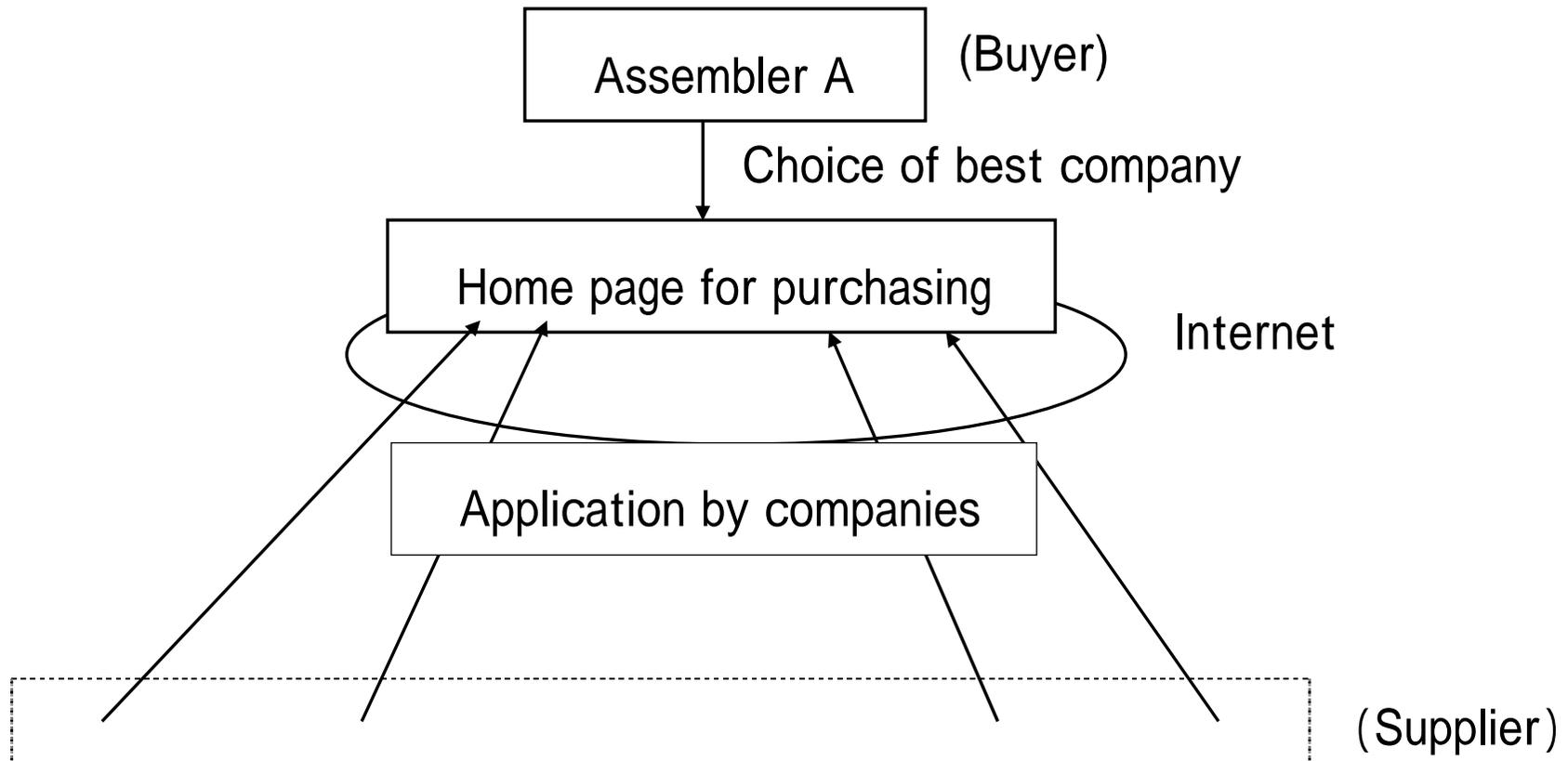


Figure 4 E net Purchasing System



Ken Nakayama, *Network Strategy of Medium and Small-sized Company*, Douyuukan, 2001, p.142.

Table 1 The Main Corporate Assemblages

1989.10.1 (1)

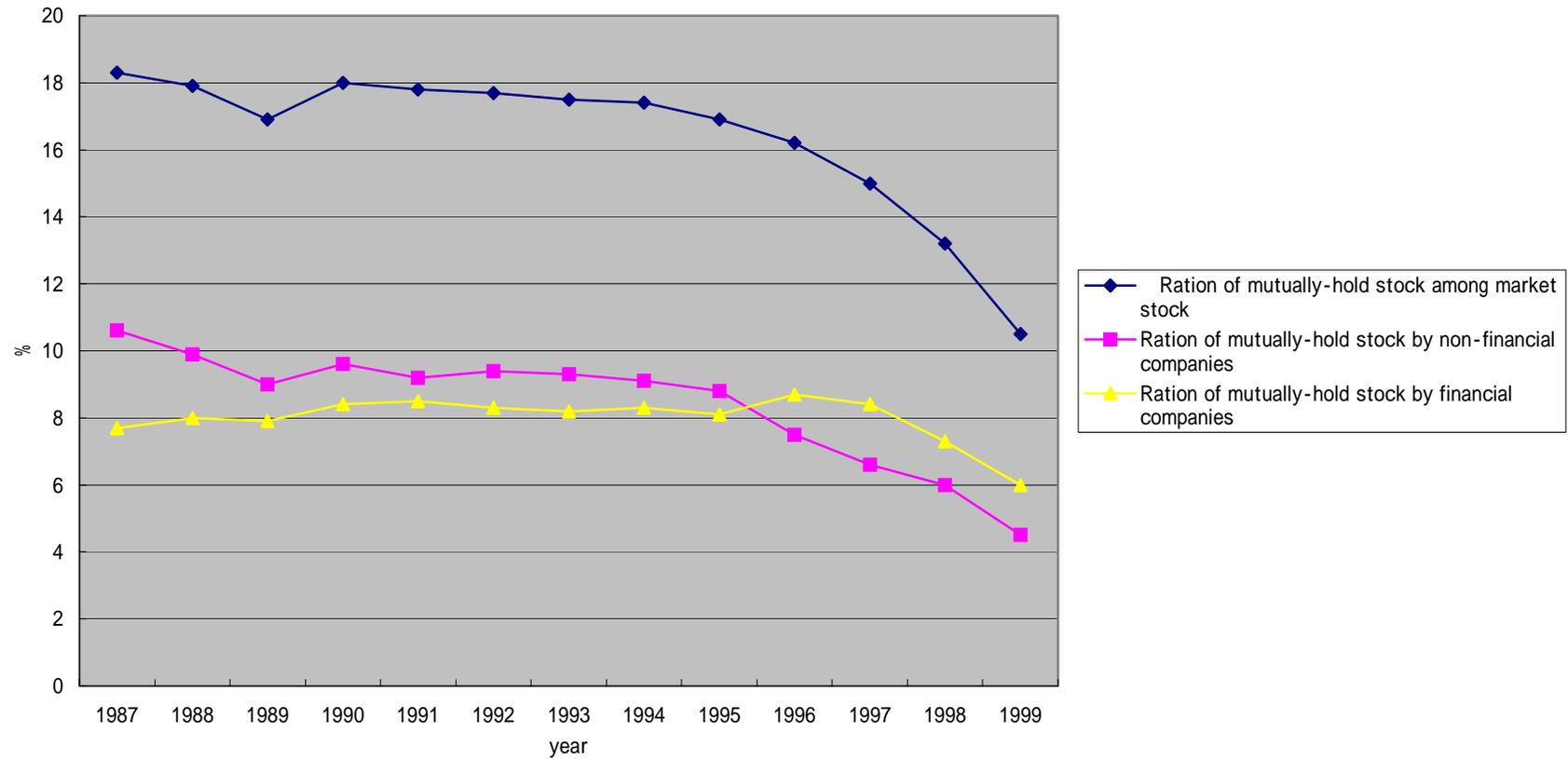
Corporate assemblage	Mitsui kei Nikikai 24 Foundation 1961.10	Mitsubishi kei Kinyoukai 29 Foundation 1955	Sumitomo kei Hakusuikai 20 Foudation 1951.4
Industry			
Bank · Insurance	Mitsui Bank Mitsui Trust Finance * Mitsui Life Insurance Taisho Marine & Fire Insurance	Mitsubishi Bank Mitsubishi Trust Finance * Meiji Life Insurance Tokyo Marine & Fire Insurance	Sumitomo Bank Sumitomo Trust Finance * Sumitomo Life Insurance Sumitomo Marine & Fire Insurance
Trading company	Mitsui & Co.	Mitsubishi	Sumitomo
Agriculture · Forestry · Mining	Mitsui Mining * Hokkaido Tanko Kisen		Sumitomo Forestry Sumitomo Coal Mining
Construction	Mitsui Construction Sanki	* Mitsubishi Construction	Sumitomo Construction
Foods	Nippon Flour Mills	Kirin Brewery	
Textiles	Toray Industries	Mitsubishi Rayon	
Pulp and paper	Oji Paper Mills	Mitsubishi Paper Mills	
Chemistry	Mitsui Toatsu Chemicals Mitsui Petrochemical Industry	Mitsubishi Kasei Mitsubishi Gas Chemical Mitsubishi Plastics Industry * Mitsubishi Monsanto Chemical	Sumitomo Chemical Sumitomo Bakelite
Oil		Mitsubishi Oil	
Rubber			

Table 1 The Main Corporate Assemblages

(2)

Corporate assemblage	Huyou kei Huyoukai 29 Foundation 1966.1	Sanwa kei Sannsuikai Foundation 1967.2	Ikkan kei Sankinkai Foudation 1978.1
Industry			
Bank · Insurance	Fuji Bank Yasuda Trust & Banking *Yasuda Life Insurance Yasuda Fire & Marine Insurance	Sanwa Bank Toyo Trust & Finance *Nippon Life Insurance	Dai-ichi Kangyo Bank *Asahi Life Insurance *Fukoku Life Insurance Nissan Fire & Marine Insurance Taisei Fire & Marine Insurance
Trading company		Nichimen Nissho Iwai Iwatani International	Itochu Kanematsu Kosho Nissho Iwai Kawasho
Agriculture · Forestry · Mining			
Construction		Obayashi Zenitaka Toyo Construction Sekisui House	Shimizu
Foods		Itoham Foods *Suntory	
Textiles		Unitika Teijin	Asahi Chemical Industry
Pulp and paper			
Chemistry		Tokuyama Soda Sekisui Chemical Ube Industies Hitachi Chemical Tanabe Pharmaceutical Kansai Paint	Denki Kagaku Kogyo Kyowa Hakko kogyo Nippon Zeon Asahi Denka Kogyo Sankyo Shiseido Lion
Oil		COSMO OIL	Showa Shell Sekiyu
Rubber		Toyo Tire & Rubber	Yokohama Rubber
Glass · Cement	Nihon Cement	Osaka cement	Titibu cement

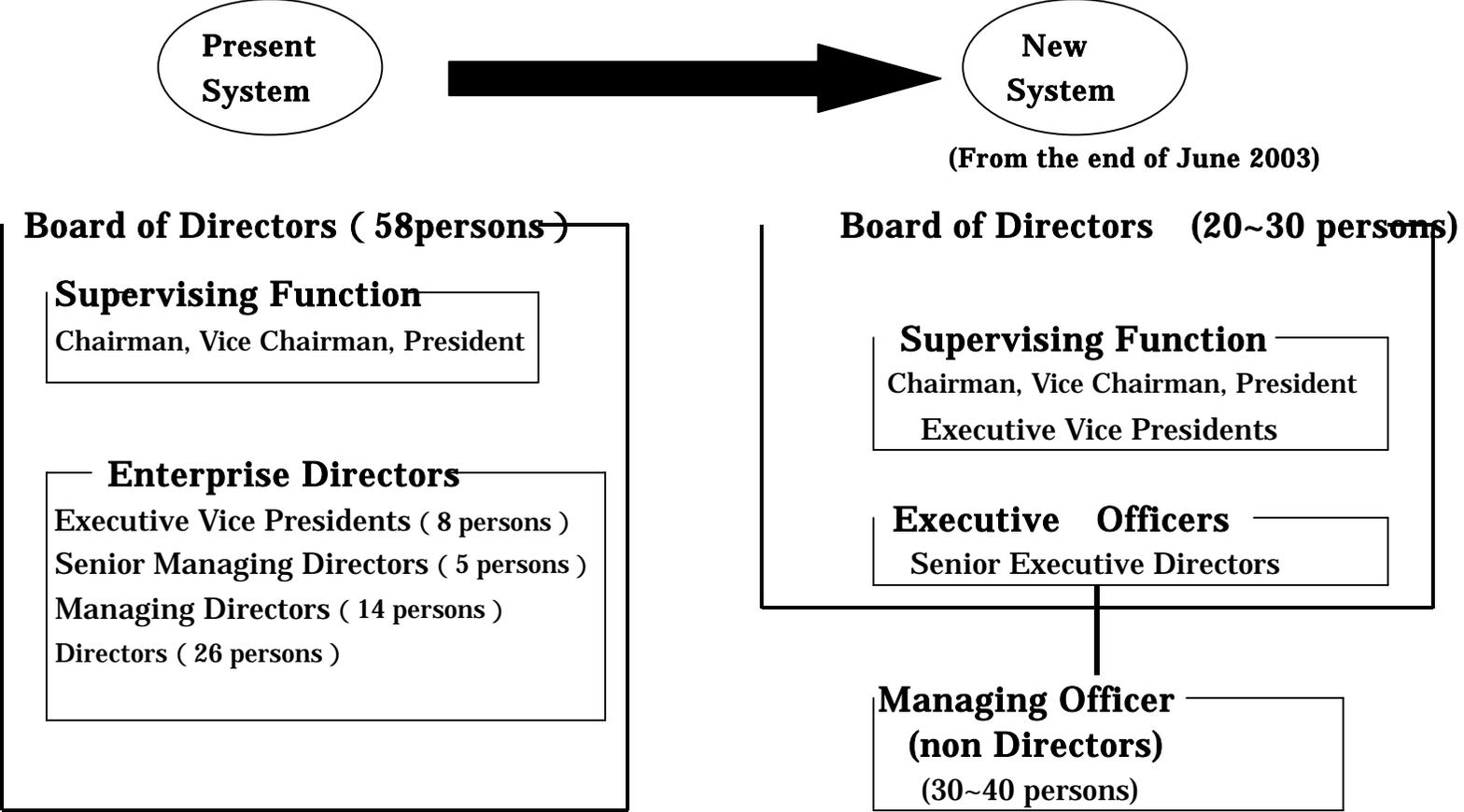
Figure5 Trends of Mutual Stock Holding since 198



Source: Mitsuaki Okabe "Mutual Stock Holding and Japanese Economic System",

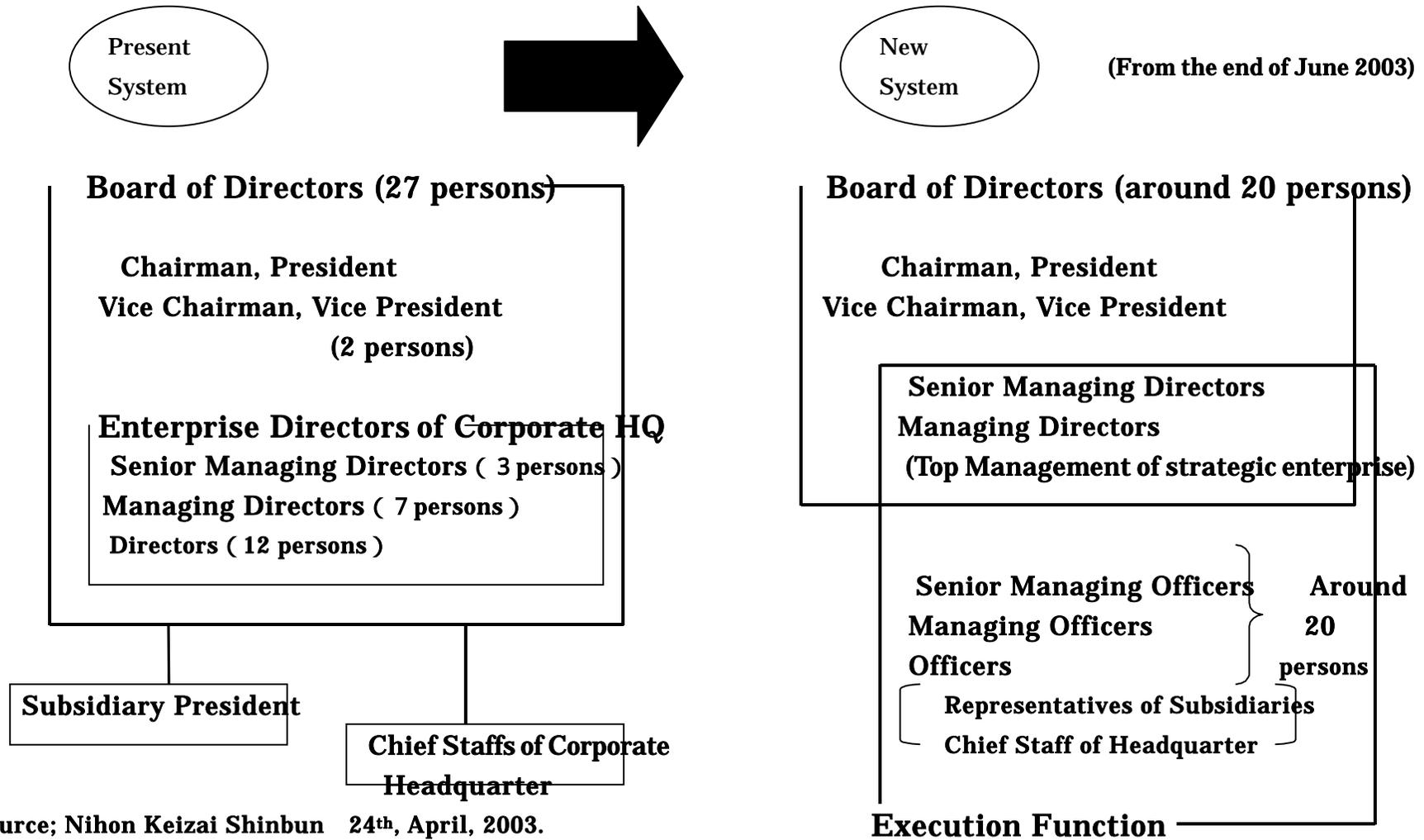
Keiougijyukudaigaku-shuppankai, 2002, p.34

Figure6 Corporate Governance of Toyota



Source: Nihon Keizai Shinbun 29th March 2003.

Figure 7 Reform of Matsushita's Top Management Organization



Source; Nihon Keizai Shinbun 24th, April, 2003.

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