Japan’s Keiretsu as a Strategic Relationship with Suppliers

The value chain of the new Keiretsu in evolution

CAPS: Center for Strategic Supply Research
Supply Management Research Group, Japan

2005
Japan’s Keiretsu as a Strategic Relationship with Suppliers

The value chain of the new Keiretsu in evolution

Supply Management Research Group, Japan
# Table of Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>5</td>
</tr>
<tr>
<td>What Is a Keiretsu?</td>
<td>6</td>
</tr>
<tr>
<td>Keiretsu Defined</td>
<td>6</td>
</tr>
<tr>
<td>The Current Company Group</td>
<td>7</td>
</tr>
<tr>
<td>Keiretsu: Its History</td>
<td>8</td>
</tr>
<tr>
<td>Keiretsu Characteristics</td>
<td>9</td>
</tr>
<tr>
<td>Keiretsu Objectives</td>
<td>11</td>
</tr>
<tr>
<td>The Japan-U.S. Structural Impediments Initiative</td>
<td>12</td>
</tr>
<tr>
<td>Problems and Subsequent Changes in Keiretsu Relationships</td>
<td>12</td>
</tr>
<tr>
<td>Case Analysis of Two Major Japanese Industrial Fields</td>
<td>14</td>
</tr>
<tr>
<td>Comparisons between the Electrical Machinery and the Automotive Industries</td>
<td>14</td>
</tr>
<tr>
<td>Electrical Machinery Industry</td>
<td>15</td>
</tr>
<tr>
<td>The Automotive Industry</td>
<td>21</td>
</tr>
<tr>
<td>Future Orientation: The New Keiretsu</td>
<td>26</td>
</tr>
<tr>
<td>Survey Results</td>
<td>26</td>
</tr>
<tr>
<td>New Keiretsu Strategies</td>
<td>26</td>
</tr>
<tr>
<td>Management Issues in the New Keiretsu</td>
<td>28</td>
</tr>
<tr>
<td>Conclusion</td>
<td>30</td>
</tr>
<tr>
<td>References</td>
<td>31</td>
</tr>
<tr>
<td>CAPS: Center for Strategic Supply Research</td>
<td>32</td>
</tr>
</tbody>
</table>
Figures

Figure 1: Types of Keiretsu ............... 7
Figure 2: Keiretsu Groups ............... 8
Figure 3: Movement of Keiretsu from 1940 to Present ............... 8
Figure 4: Comparisons of Each Industry .... 15
Figure 5: Six Corporate Electronics Groups. .... 16
Figure 6: Evolution of Strategic Focus in the Electronics Keiretsu ............... 18
Figure 7: Supply Networking ............... 18
Figure 8: The Members of the Supply-Side Network ............... 19
Figure 9: Future Concepts of Transactions in the Electronics Industry ............... 21
Figure 10: Question 1: Selection Criteria .... 27
Figure 11: Question 2: Current Keiretsu Relationships ............... 27
Figure 12: Question 3: Changing Relationships ............... 28
Figure 13: Direction of New Keiretsu Strategies ............... 28
Figure 14: Management Issues in the New Keiretsu ............... 29
The words “Keiretsu” or “Keiretsu transaction” — so common to the Japanese industrial vernacular — are now becoming well-known around the globe. In U.S. or European technical books, they often are used without accompanying translation, like other well-known Japanese terms such as Kanban (JIT system), Hoshin (policy), Kaizen (improvement), and Muda (waste). Although Keiretsu is now recognized globally, it may not be viewed as positively among supply chain professionals as it is in Japan. Many corporate managers may not recognize its unique qualities, and may view it as just another alliance or collaboration for competitive advantage.

The primary focus of this study is to explain and develop the Keiretsu relationship; its historical evolution, and its importance to the supply chain. This study seeks to explain in depth the Keiretsu collaboration and how it affects different aspects of supply chain management.

Companies already create business-to-business alliances to develop and sustain competitiveness as circumstances change. The business-to-business collaboration, or strategic alliance, is indispensable, as no company can perform all its functions without partner support. The business-to-business cooperative relationship may have several objectives, depending on circumstances. A changed objective automatically influences the relationship; often, management must sever, improve, or change a previous relationship and then start the process of establishing a new one.

This report intends to forecast future business-to-business collaborative relationships. To do so, it will examine the changing Keiretsu system within the framework of two of Japan’s major industries, the automotive and the electronics sectors.
What Is a Keiretsu?

Keiretsu Defined

Some researchers have avoided using the word Keiretsu because its meaning can be ambiguous. One definition common to many researchers includes the words “fixed relationship” or “close cooperation” between entities, in some cases between a large company and conglomeration of other companies. In Japan, there is some historical context to the Keiretsu relationship that further clarifies the concept: Keiretsu relationships consist of repetitive transactions that occur long-term, as opposed to one-off or single deals. A second, major characteristic is the asymmetrical nature of the relationship, in that one company or institution uses its position to govern, or rule, the relationship.

The word Keiretsu literally means “series” or “related sequence”; it implies that things are lined up systematically or by rank. A Keiretsu relationship is based on a close and stable business collaboration between affiliated entities, rather than on family or other social ties. One type of Keiretsu has a pyramid structure consisting of a large company that heads a group of related companies.

In the financial Keiretsu, various manufacturers group together by cross-shareholding, -financing, and -human networking with a dominant financial institution, predominantly a bank, at the center.

In the manufacturing Keiretsu, manufacturers supply components to companies on a continual and stable basis. Dr. Tadao Kyonare, president of Hosei University in Tokyo, defines the Keiretsu transaction as “relatively independent parts manufacturers (who) have a long and stable relationship with a particular assembly maker to form a monopolistic market.”

Different forms of the Keiretsu relationship are the “horizontal” and the “vertical,” the latter dominated by manufacturing and distribution industries. These two Keiretsu dominate the Japanese business landscape. The Japan-U.S. Structural Impediments Initiative, which will be discussed later in this report, mentions the negative influence the Keiretsu can have, implying that it constitutes a type of conspiracy between companies. The Keiretsu, the report says, can negatively impact economic activity between the two countries.

It is difficult to narrowly define the term Keiretsu, as it is used to describe a wide variety of business-to-business relationships in Japanese industrial society. The term “long, continual business relationship” may be a less ambiguous and more accurate term for this report. This latter expression is very much a part of Japanese industry.

Various economists have developed theoretical frameworks for the Keiretsu relationship. J.R. Commons, the institutional economist, defines a corporate organization as one that is constantly moving ahead. If an organization forms an ongoing relationship with another business, he says, there needs to be some expectation that dealings between the two will be fairly and properly performed. In other words, there must be “trust” or “confidence” between long-term partners. This trust should be seen as economic property and is an important guarantee that the mutual transaction will be performed uninterrupted.

The types of Keiretsu shown in Figure 1 include: “Zaibatsu (clique) Keiretsu,” “Financial Keiretsu,” “Manufacturing Keiretsu,” and “Marketing Keiretsu.”

The Zaibatsu includes companies that predate World War II: Mitsubishi, Mitsui, and Sumitomo groups.
Another “big three” were formed shortly after the war: Fuyo (Fuji bank), Daiichi-Kangin, and Sanwa.

These six large companies share the following characteristics:

1) Cross-shareholding
2) President’s regular meetings (with an exchange of opinions)
3) Loans to affiliates by its group bank
4) Transactions by its own general trading firm (SOGO SHOSHA)
5) A common investment company established by group member companies
6) An overall industrial system that centers on a heavy-chemical industry

The financial Keiretsu is based on financial transactions among member companies, centered around a core financial institution (a main bank). The manufacturing Keiretsu is based on transactions between assembly makers and parts transformers. The marketing Keiretsu represents the fixed and exclusive transactions between manufacturers and distributors.

The 1980s saw the emergence of consolidated accounting and the management strategy of dividing businesses. Subsidiary companies played an important role as independent side businesses that still reflected the influence of the parent company. The strategic business unit (SBU) would determine how these subsidiaries would be organized.

The 1990s ushered in many changes to the Keiretsu system. Almost all of the subsidiaries were reorganized or restructured due to the collapse of the bubble economy and a recession. These economic factors forced companies to downsize or shut down non-performing subsidiaries. In some cases, this needed to be done, but, at times, the actions taken were reactive, leaving management and staffs too lean. Others used this opportunity to reintegrate the whole group that earlier had been decentralized.

Just as after World War II, when the occupying American administration reorganized the pre-war system of Zaibatsu, the structure of the big six company groups continued to evolve with changing circumstances. These changes are creating many new business relationships.

In Japan, there are two levels to the company group: the Corporate Complexes and the Corporate Groups, each with multilayered relationships. Needless to say, there also are many independent “company groups” that do not belong to the big six group of companies. These new groups wield as much influence in Japan as do the big six.

**Figure 1**

Types of Keiretsu

<table>
<thead>
<tr>
<th>1. Zaibatsu (Clique) type:</th>
<th>Traditional cliques and new konzern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>The Six Groups</strong></td>
</tr>
<tr>
<td>2. Financial type:</td>
<td>Banks’ affiliates transaction</td>
</tr>
<tr>
<td>3. Marketing type:</td>
<td>Exclusive distribution channel</td>
</tr>
<tr>
<td>4. Manufacturing type:</td>
<td>Parts supply network</td>
</tr>
<tr>
<td></td>
<td><strong>Process Groups</strong></td>
</tr>
</tbody>
</table>
Some researchers have divided the new, independent company groups into two categories: horizontal groups and vertical affiliates. However, each group has established many layers of business relationships. For example, Sumitomo Chemical Company is an important member of “Hakusui-kai” (Sumitomo group club), but it also heads the Sumitomo Chemical Group, which is comprised of 172 affiliates.

**Keiretsu: Its History**

In this chapter, we will review the history of Keiretsu since the term’s emergence. Figure 3 summarizes the social and economic circumstances affecting Keiretsu relationships over the past 60 years.

Four significant factors emerge from these six eras:

1) **The term Keiretsu is first used.**

In the middle of 1943, nearing the end of World War II, the term *Keiretsu* began to appear in the Japanese media. The Japanese military needed its country’s industries to rapidly produce aircraft machinery and weapons. New company groups (Keiretsu) formed to realize these critical wartime needs. In the spring of 1944, articles began to appear in economic papers that mentioned Keiretsu subcontracting businesses. Industrial reorganization was an important step in the increased production of machinery and steel products. However, governmental control over fixed Keiretsu did not work. Instead, private parent companies began to establish their own Keiretsu relationships. Still, it can be said that the formation of Keiretsu was an important governmental war policy at the time.

2) **Keiretsu relationships are recognized for their strength.**

During the recession following the Korean War, Keiretsu relationships were recognized as exceptionally strong. In 1952, critics alleged that monopolies were ruling Japanese industry under the guise of the business Keiretsu. This issue took hold in the Japanese media. As a result, lawmakers revised for the first time the country’s anti-monopoly law. Other factors, such as

---

**Figure 2**

Keiretsu Groups

<table>
<thead>
<tr>
<th>The Six Groups</th>
<th>New Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Traditional Financial Clique)</td>
<td>(Sub-Contracting)</td>
</tr>
<tr>
<td>Corporate Complexes</td>
<td>Corporate Groups</td>
</tr>
<tr>
<td><strong>Horizontal Group</strong></td>
<td><strong>Vertical Group</strong></td>
</tr>
<tr>
<td>1) Mitsui</td>
<td>1) Nippon Steel</td>
</tr>
<tr>
<td>2) Mitsubishi</td>
<td>2) Matsushita</td>
</tr>
<tr>
<td>3) Sumitomo</td>
<td>3) Toyota</td>
</tr>
<tr>
<td>4) Sanwa</td>
<td>4) Toshiba</td>
</tr>
<tr>
<td>5) Fuyo</td>
<td></td>
</tr>
<tr>
<td>6) Daiichi</td>
<td></td>
</tr>
</tbody>
</table>

---

**Figure 3**

Movement of Keiretsu from 1940 to Present

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940-1945</td>
<td>Zaibatsu reorganized by government policy following World War II.</td>
</tr>
<tr>
<td>1945-1950</td>
<td>GHQ dissolves the Zaibatsu.</td>
</tr>
<tr>
<td>1950-1970</td>
<td>Zaibatsu are restored.</td>
</tr>
<tr>
<td>1999-2002</td>
<td>Discontinuation of Keiretsu (Nissan is a typical example) and re-creation of new trade relationship.</td>
</tr>
</tbody>
</table>
capital structure, mergers, and technical advancements, may have led to a shift toward Zaibatsu.

3) Keiretsu relationships are said to conflict with international business practices.

The Japan-U.S. Structural Impediments Initiative prompted discussion as to whether the Keiretsu relationships are good for international business, and whether they hinder competition. Details of the initiative will not be discussed in this report. We will point out that the United States has been strongly stating its position on the initiative since 1989. Prior to that, the U.S. Congress addressed these issues in the Kibones Report, published in 1981 by its commerce committee. The Kibones Report sharply criticized the Japanese company groups, as did a United States trade relations report in 1983. Criticism was not confined to the United States, and Europeans also criticized the Japanese companies. Keiretsu relationships were viewed as “evil,” but no concrete actions were taken against them.

The Keiretsu’s infamy continues. Other than economists, who argue that Keiretsu relationships make economic sense and create efficiencies, the international business community does not view them positively. During this time, major Japanese automobile companies moved their production facilities offshore and established supply networks for them. This triggered accusations that the Japanese were exporting the practice of Keiretsu.

4) Keiretsu is evaluated.

As global competition grew and the Japanese economy slowed to the point of stagnation, Japanese industry began evaluating the different forms of Keiretsu to assess which were most competitive. Although many Keiretsu appear similar, they actually differ in important ways. Keiretsu that didn’t work were weeded out, and those that did were studied further.

It was not easy to abolish Keiretsu relationships. Japanese industries had to rely on the support and influence of the international business community.

After 1990, when the bubble economy burst and the yen appreciated, Japanese automakers agreed to decrease their production volume. Then, automobile companies that had lost global competitiveness due to inflexible procurement processes were forced to accept foreign capital. Nissan’s president Carlos Ghosn, after examining the inflexible procurement practices of Nissan’s Keiretsu, reformed the company. He saw it was necessary to buy inexpensive components from outside the Keiretsu in order to lower costs. Economically, that made sense. However, he faced an important barrier: the capital investment Nissan had made with its Keiretsu partners. To rapidly proceed with reform, those bonds had to be severed. The Nissan Revival Plan, published in 1999, outlined the company’s new plans. At that time, Nissan held stock in 1,394 companies. Of those, only four were considered indispensable, and almost all of them objected to the withdrawal of capital. Foreign-capital companies to whom Nissan sold its stock were almost all globally competitive and had global supply capabilities. Through these companies, Nissan’s former Keiretsu partners gained access to offshore production sites, while the foreign-capital companies gained access to Japanese markets. Nissan expanded its trade outside the Keiretsu, realizing 20 percent cost reductions one year sooner than planned. Its sales-profit ratio improved by 10.8 percent by March 2003.

The above story illustrates how changes in a competitive corporate environment leads to diversity in the Keiretsu system. In the past, changing circumstances — due to wars, economic depression, matured markets, or globalization — impacted, often adversely, Keiretsu relationships. Companies were forced to end or restrict some of their Keiretsu subordinates if that relationship did not meet the demands of increased competition. On the other hand, some companies worked within the confines of their Keiretsu relationships to increase their competitive edge. To fully understand the Keiretsu system, one must examine its strengths and positive contributions to industry. One must resist the impulse to focus on the Keiretsu’s flaws. Otherwise, it is pointless to examine the system at all.

**Keiretsu Characteristics**

We can now summarize the features of the Keiretsu system in light of these historical changes. We will focus on two features that were criticized in the Japan-U.S. Structural Impediments Initiative.

The first criticism was that Keiretsus feature long-term trade relationships that prevent third parties from participating freely in the market. Japan’s largest industries have established long-term relationships with a limited number of companies. Such closed-trade custom stifles free-trade relationships that depend on competition.

The second feature is that companies within a Keiretsu hold each other’s stock to prevent other companies from acquiring shares. In Japan, this policy has created stability in the stock market. This reliance on a stable stock environment seems to contradict the basic principles of the free trade of capital.
We will elaborate on these and other features of the Keiretsu system.

1) Long-term, continuous trade
In an intermediate report of the Japan-U.S. Structural Impediments Initiative, it was said that long-term trade agreements create excellent economic efficiencies and make sense among companies that specialize in a particular product. That is, to start a business requires certain startup costs. These expenses can be large depending on conditions that vary among industries. The following are conditions that may impact a startup business’ relationship with a new supplier:

- How can we maintain quality in the goods we trade?
- Does the supplier operate according to safe guidelines?
- How can we reduce costs while maintaining quality?
- Can we maintain a reliable supply in the event of an unforeseen event?
- How quickly can the supplier adapt to new technology?

Risk is inevitable in starting a new company. In light of this, long-term trade arrangements should be evaluated for their economic efficiencies, not just in Japan, but globally.

2) Fixed, non-symmetrical trade between companies
Business continuity is the foundation of long-term, cyclical trade between companies. Fixed trade demands such continuous, cyclical transactions. And, depending on the differences in management resources, one company typically dictates terms to the other. This is another feature of fixed trade. In practical terms, this imbalance of power manifests itself in negotiating strength.

3) “Dispatching” executives into the Keiretsu
The asymmetrical business relationships mentioned above lead us to another feature of the Keiretsu that is criticized by the United States and Europe: dispatching executives into the Keiretsu. In Japan, it is a common practice, once a parent company’s executive or chief employee retires, to dispatch that person to another company in the Keiretsu. This custom is unfamiliar to business people in the United States and Europe.

In Japan, Article 13 of the Anti-Monopoly Law prohibits an executive from serving concurrently in two companies when it limits competition in the business field. In the United States and Europe, it is common for an individual to resign from one company and move to another. It is different in Japan.

After resigning from a company, an executive in Japan is dispatched to a company in the Keiretsu. This requires the executive to do business with the former parent company, adhering to its rules and regulations. With only a small percentage of stock holdings, a parent company can dispatch its executives throughout the Keiretsu, thereby controlling its management. This practice is an inexpensive way to maintain management control and is a defining characteristic of the Japanese Keiretsu.

4) Holding each other’s stock
Companies in a Keiretsu hold a high ratio of each other’s stock. This cross-holding of stock is an important feature of the Japanese stock market. Typically, managers in a Keiretsu respect a company’s management and do not interfere in its decisions. In a crisis, however, executives from a dominant company may issue orders to a smaller company in the Keiretsu.

This practice is logical within the framework of correlative stockholding, but was deemed an invasion of stockholders’ rights in the Japan-U.S. Structural Impediments Initiative. Those include the accumulated right to vote and the right to prevent an external executive from reading a company’s ledger. However, holding each other’s stock is a convenient way to prevent hostile takeovers, a protection that Japanese companies consider indispensable. We note that such a practice would not be accepted in the United States or Europe.

5) Supplementing and replacing through business-sharing
This practice is common in the Japanese automotive industry. The following is a typical case: a Japanese parent company establishes a unique Keiretsu relationship with a component assembly subcontractor. The parent company, with the cooperation of the subcontractor, establishes guidance systems governing production technology and quality control methodology. The extent to which this occurs depends on the long-term business relationship. That is to say, the automobile company carefully and closely guides its Keiretsu component companies. This interdependency further promotes the Keiretsu model.

In the 1950s and 1960s, Toyota and Nissan closely guided its component manufacturers through the process of establishing mass-production technology. This enabled them to maintain the same pace and micro-control over all their Keiretsu companies. However, today it is common practice for an automobile company to simply specify what it needs in component parts. The Keiretsu partner produces those parts according to its own special technology or development
processes. In a sense, the component company performs the supplementing and replacing of technology necessary to meet the automobile manufacturer’s needs. Those component companies are called “suppliers required for its own design.”

One feature of this methodology is that results vary depending on the user’s intentions. Various problems arise from this methodology: critics of this system express concern that it hinders fair trade and promotes market inefficiencies. There is a consensus in Japan that market demands alone should not dictate how businesses operate, but that market demands coupled with these organizational mechanisms work better for society. There is no consensus, however, as to how much control should be left to market forces and how much left to organizational controls. This ambiguity gives rise to criticism of the Keiretsu system.

Keiretsu Objectives

There are three objectives to the Keiretsu system:

1) Outsourcing
The parent company entrusts low-value-added products to the subcontractor. Outsourcing reduces manufacturing costs for sheet metal processing, metal painting, mold forming, the assembling and labeling of materials, and more. In the automotive industry, this is called “supplier subject to drawings method,” meaning that it is a way to entrust a car company’s drawings to a manufacturer. The car company retains responsibility for its core competencies and entrusts subcontractors with common parts and general materials.

Shortcomings to this system have become more apparent recently and have not always been offset by outsourcing’s ability to keep costs down. Affiliated companies that do not have competent research and development functions, varied manufacturing technologies, adequate machinery, or marketing ability may not be able to develop a customer base.

2) Building relationships of mutual trust
This ideal has a long history in Japan, and specialists recognize its economic benefits. Long relationships built on mutual trust allow businesses to rely on fixed, or “sunk,” costs. The cost of ending a long-term relationship can be enormous. In a relationship built on mutual trust, a parts manufacturer closely follows the needs of the automobile company and develops new parts accordingly. Having invested in specific equipment or “dies” required by the customer further embeds the relationship.

3) Risk-sharing
Companies in a Keiretsu share investment risks, even if equipment was originally purchased or on loan from the parent company so an affiliate could follow design specifications. Negotiations allow for flexibility in cost-sharing and for the manufacturer to recoup its investment. Both companies engage in a process of give and take. Often the parent company is hesitant to commit to an investment and it takes time for executives to sanction a purchase. Other times, an affiliate company may quickly invest in the necessary equipment.

Management must base its decision — particularly if faced with increased demand and personnel costs — on how much it wants to risk in capital expenditures.
The Japan-U.S. Structural Impediments Initiative

Problems and Subsequent Changes in Keiretsu Relationships

In the Japan-U.S. Structural Impediments Initiative, begun in 1989, the Americans detailed six practices as barriers to trade:

1) The price mechanism
2) The distribution system
3) The savings and investment balance
4) The land policy
5) Keiretsu’s parent company-affiliate relationships
6) The exclusivity of Keiretsu relationships

This paper will address the parent company-affiliate relationship in a Keiretsu environment.

The Americans said that the horizontal financial Keiretsu and the vertical Keiretsu groupings prevented them from entering the Japanese markets. Japanese companies give priority treatment to the companies in their Keiretsu, preventing outside companies from conducting business on a level playing field — which is the foundation of a free market. Keiretsu relationships also prevent outside companies from making corporate acquisitions — which should be a valid way to enter the Japanese market — particularly through the practice of cross-shareholding within the corporate group. The corporate groups — which consist of manufacturing, finance, and service companies — share each other’s stock.

The Americans and the Japanese discussed these problems at meetings in Tokyo and Washington, D.C., and issued a mid-term report on April 6, 1990.

The Japanese produced a plan to improve trade relations.

While there are rational economic reasons for the Keiretsu system, the Japanese recognized that it obstructs direct investment in their industries and hinders competition. The Japanese government agreed to make Keiretsu relationships more open and transparent. The government also agreed to increase competition within the framework of the Keiretsu system, strictly enforcing existing anti-trust laws, and introducing more foreign companies into the Japanese market.

However, Japanese and American representatives failed to agree on the fundamental questions concerning the Keiretsu system and ultimately, nothing was done to bring the two sides together. The issue arose every time Japanese trade representatives met with their counterparts in the United States or Europe. Because the content of Japanese-U.S. trade discussions are not made public, it is unclear what the Japanese government is doing to allay criticism of the Keiretsu system.

In the mid-term report, the government appeared ambivalent about changing the system; it noted its economic benefits, but also recognized that it impedes fair trade. Therefore, it is important that this report recognize the economic rationale for and the efficiencies of the Keiretsu system.

Many economists have recognized the benefits of the Keiretsu system. In the mid 1990s, scholars published articles in several foreign countries. Economist O.E. Williamson wrote: “The Keiretsu transaction seems to be positioned between market dealings and affiliate dealings (in-house dealings).” These are long-term relationships, based not on market-oriented principles but on trust.

It is difficult to objectively examine or measure relationships based on trust, as opposed to market
forces. One must examine each company's policies to do so. One arrangement that works well is the parts supplier and distributor within a Keiretsu. For example, a company will order the same part from more than one manufacturer, spurring competition between them. In another case, a company will buy from a manufacturer outside of the Keiretsu if that manufacturer possesses excellent technology. It will then allow the manufacturer, and others after it, to join the Keiretsu. Conversely, suppliers whose efforts are inadequate are dropped from the supply base. Omitting inadequate suppliers, even if they are affiliated companies, is a dynamic way of managing competition.

R. Door, the famous Japanologist, has long discussed the efficiencies of the Keiretsu system. He wrote about the above cases in “Flexible Rigidities” (Stanford University, 1986), but his most systematic exposition was “Goodwill and the Spirit of Market Capitalism,” given in 1983 at the London School of Economics. In the latter paper, he discussed what he called relational contracting, or “the dealings concerning relationships of obligation.” This principle explains how Japanese companies value trust relationships, as well as market principles. As a result, they form long-term business relationships that also manage to foster competition.

Author E. Hadley also described the system in his writings:

“The general way of speaking of ‘Company grouping’ in present-day Japanese words is Keiretsu. When using this word without various modifiers, generally, it means a succession group in a plutocratic (Zaibatsu) company or ‘headless combine.’ Actually, it is Mitsubishi Keiretsu, Mitsubishi Keiretsu, Sumitomo Keiretsu and it means the multilateral group of the big businesses, which are connecting with this Keiretsu mutually by the possession, the trust, the management, and the marketing. Therefore, the basis is a multitude of bonds different from other groups, which are mainly based on the line.”

The Japanese Keiretsu cannot be compared to those American businesses that conduct unfair, closed transactions and that manipulate stock holdings. The “stable stockholder policy” described previously is characteristic of the Japanese Keiretsu, but was enacted on a large scale in the 1970s to prevent takeovers by foreign businesses entering the market with foreign capital.

As this phenomenon increased, it caused increased friction between the Japanese and international trade representatives, who decried it as an unfair trade practice. A Japanese company can implement a takeover bid (TOB) in the United States, but an American company cannot do so in Japan.

Another point that must be discussed is the historical differences in industrial development in the Japanese and American automobile industries. A typical difference follows: In the United States, many organized and powerful equipment manufacturers supplied automotive assemblers with parts. In short, equipment makers nurtured the car makers. In Japan, to the contrary, a localized automotive industry — especially the big three manufacturers Nissan, Toyota, and Isuzu — made its own component parts, at least in the early stages, and then nurtured auto parts manufacturers. For this reason, Japanese car manufacturers established the subcontracting relationships of the Keiretsu.

The Japan-U.S. Structural Impediments Initiative continues to address these points. However, it seems as if misunderstandings continue, as neither side has a firm grip on the historical relevance of its opponent's system. The United States' assertion that the Keiretsu system is closed, unfair, and violates anti-trust laws was viewed in Japan as a dishonorable critique. Other international organizations have given opposing opinions that support the Japanese system. The ideals that constitute “the Japanese way” — forming long-term relationships between parts manufacturers and businesses, cultivating mutual education and dependence — are now gaining ground internationally.

In the United States, the American big three automakers, when deciding on a subcontractor, narrow their choices to the manufacturer who supplies system components. This is a form of single sourcing, often manifesting in a contract that lasts from three to five years. (Procurement is limited to a single, reliable parts manufacturer.) The parent company selects the system supplier whose technology can be trusted, and then places long-term orders. This model is found globally, especially among European auto manufacturers, with the exception of Bosch in Germany.

But these business relationships are being reconsidered, and many are looking at Japan's vertical pyramid system, particularly French car companies such as Peugeot and Renault. The Japanese way of doing business may be catching on in foreign countries. Economic scholars who have evaluated Japanese transactions view them as efficient and dynamic models of mutual dependence.
The manufacturing industry now leads the Japanese economy. Since 1975, pundits have predicted that the manufacturing industry would reach the limits of its growth and be surpassed by the postindustrial software and service industries. But in fact, these emerging industries, as well as the information and research and development industries, have caused manufacturing to prosper. This is particularly true with assembly manufacturers in the automotive, electronic, and machine industries. Companies that improve the everyday life of people, such as synthetic resin and textile manufacturers, also are thriving as they combine various technologies, components, and units. So, various companies are linked and cooperating within a divided production system. For example, almost 30,000 components are needed for just one car and even big manufacturers like Toyota, Nissan, and Honda depend on outside subcontractors and subassemblers for important functions.

According to the financial statements of car manufacturers, material costs contribute 70 percent to 80 percent of the cost of a car. Thus, the Japanese manufacturing industry is organized vertically by many component makers who share the business. This structuring strategy and management through business sharing explains the strength of the Japanese automotive industry.

We will now explain the management strategy — transactions through business affiliations — in the Japanese manufacturing, electrical machinery, and automotive industries.

**Comparisons between the Electrical Machinery and the Automotive Industries**

First, we will start by comparing final products. Each industry differs in its management strategies and production systems, and we will show how, as a result, each differs in their subsequent business affiliations.

**Comparing Characteristics of the Final Products from Both Industries**

The electrical machinery industry provides final products for a range of items used in everyday life: household electrical appliances such as refrigerators, fans, air conditioners, lights, and washing machines; light electrical appliances such as televisions, radios, video cassette recorders, telecommunication instruments, and measuring instruments; and heavy electrical appliances such as electric power generators, mega-sized motors or transformers, and electrical machines for any industry. As examples, we chose light electrical appliances for the purposes of this study, as well as one passenger car and one truck.

Comparing the price of final products, we find that light electrical appliances, a public consumer good, average around $2,000 (USD). A passenger car’s price ranges from $10,000 for an economy car to tens of thousands of dollars for a luxury sedan, and $10,000 or more for a truck.

Light electrical appliances, such as televisions or personal computers, are used indoors and generally are smaller in size than vehicles, which are larger and used outdoors.

When we compare support industries, we find that the light electric appliance industry relies on electric components, while the automotive industry relies on a much wider range: electric and mechanical machinery, as well as electric components. The automotive industry also uses more raw materials, such as steel, aluminum, glass, rubber, and plastic, etc.
Comparing speed of technical innovation, we find rapid progress in the electronics industry, with miniaturization and performance improving almost daily, particularly with computer hardware and software. In fact, the intense competition among personal computer manufacturers has reduced its lifecycle to only three months. On the other hand, while the automotive industry has accumulated advanced technology, the speed of technical innovation in this industry is slower. This is true even with Toyota’s advancing hybrid power technology, as shown in its Prius model, and with other manufacturers’ fuel-cell technology.

The lifecycle of a light electrical appliance is approximately one year, especially for a consumer good. Also, as stated above, the lifecycle of the personal computer is three months. But the lifecycle of a car averages four or five years, even if manufacturers introduce minor changes to a model each year. Market competition is tough for both industries, but is more acute for the light electrical appliance industry because of shorter lifecycles.

Transportation costs are greater for the automotive industry due to its products’ capacity and weight.

Products produced by each of these two industries are used in very different ways. Generally, electrical machinery is used inside the home and placed at a fixed site. By definition, the automobile is used to transport people and freight and is therefore subject to such environmental conditions as rain, wind, temperature, and humidity. This difference requires automotive manufacturers to adhere to stricter specifications for their products in order to protect human lives.

These differences are shown in Figure 4.

These different product characteristics impact management’s relationship with parts suppliers and assemblers. For example, a product’s lifecycle impacts production lead times. Or, higher durability requires high-quality specifications. In this case, when demand increases, it is more difficult for a manufacturer to change its supplier. In addition, the complexity of product mix or features will dictate supplier selection and involvement. Ultimately, these differences impact all transactions between manufacturers and suppliers.

**Electrical Machinery Industry**

Due to a growing trade imbalance, the United States and Japan in the 1980s examined the practice of conducting transactions through business affiliations. The United States said that Japan’s import restrictions, coupled with exclusive transactions done only through business affiliations, impeded sales of quality and marketable U.S. products. At that time, Japan was improving the performance of its products, its prices, and its delivery times.

**Type of Keiretsu: Electrical Machinery Industry**

In the electrical machinery industry, “transactions through business affiliations” fall into one of three categories: bank-related corporate groups (banking Keiretsu), technology-sharing corporate group (component-sharing Keiretsu), and production-sharing corporate group (production-sharing Keiretsu).

1) **Bank-related corporate group (banking Keiretsu)**

This corporate group revolves around a bank. Each company in the Keiretsu performs the following functions: crossholds stock, finances loans through the bank in the Keiretsu, attends CEO meetings, exchanges personnel between each company, and interacts within the group via a general trading company. Companies within the group benefit from stable stock shares, cost reductions, close communication, and shared risk-taking. In the electrical machinery industry, most major producers belong to one of six corporate groups, listed in Figure 5.

**Figure 4**

Comparisons of Each Industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>Electric</th>
<th>Automotive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Price</td>
<td>Low in price</td>
<td>High in price</td>
</tr>
<tr>
<td>Physical size</td>
<td>Small</td>
<td>Big</td>
</tr>
<tr>
<td>Range of the industry</td>
<td>Narrow</td>
<td>Wide</td>
</tr>
<tr>
<td>Technology change</td>
<td>Very fast</td>
<td>Moderate</td>
</tr>
<tr>
<td>Product life cycle</td>
<td>One year</td>
<td>More than five years</td>
</tr>
<tr>
<td>Competition</td>
<td>Very tough</td>
<td>Tough</td>
</tr>
<tr>
<td>Transportation costs</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Usage conditions</td>
<td>Fixed installation</td>
<td>Mobile</td>
</tr>
<tr>
<td>Product liability</td>
<td>Moderate</td>
<td>Critical</td>
</tr>
<tr>
<td>Number of components</td>
<td>Less than 1,000</td>
<td>More than 10,000</td>
</tr>
</tbody>
</table>
2) Production-sharing corporate group (production-sharing Keiretsu)
This relationship is between a major manufacturer and the subsidiaries to which it outsources production capacity. These dependent companies are organized informally. They enjoy stability in request orders and maintain interdependent relationships with each other. Until the mid 1980s, these contract companies concerned themselves with preserving resources. In fact, the purpose of their informal organization was to guarantee resources.

It is said that this type of Keiretsu mirrors the character and familial relationships found in Japanese society. They also are criticized most often for their exclusivity.

History of the Management Strategy in the Electrical Machinery Industry
We explained above that the Japanese electrical machinery industry has three categories of Keiretsu. In this section, we will examine in detail the relationship between one major manufacturer and its subsidiaries.

After the Second World War, the electrical machinery industry in Japan flourished remarkably. By the 1970s, Japanese society was quite stable. Its standard of living had improved, and most people owned household electrical appliances, such as washing machines, refrigerators, televisions, and audio equipment, etc.

Japanese household electrical appliances appeared not only in the domestic market, but in international ones as well. They were known for their high quality and advanced technology. Many Japanese companies contributed to the high quality of these products by participating in programs like Quality Control Circle (QCC), Japan's original bottom-up program, and Total Quality Control (TQC), its top-down program. The Just-In-Time (JIT) system also contributed to improved production planning and control in the field. Each company studied these programs and operated so efficiently that they actually changed their corporate structures.

When the diode and transistor replaced the vacuum tube, products became lighter and more compact. Because each electric product used many of the same components, parts makers worked with all the major companies and evolved as businesses in their own right, not necessarily linked with a single customer.

Large companies relied on subsidiaries (smaller enterprises) for such processes as sheet metal cutting, injection molding, metal die production, etc.

Businesses that produced transistors or diodes became a larger part of the semiconductor industry. The electrical machinery industry grew more in the 1980s and became a part of the Keiretsu system, i.e., “transaction through business affiliation.” At that time, production processes improved even more as foreign companies began studying them. Due to growth within the Japanese market and to high numbers of exports — spurred by high quality and low prices — every electric product manufacturer had to expand its production and sales capacity. Also, because of diverse user needs, electric machinery makers had to develop differentiated market strategies.

Following this industry growth, Japan's main exports changed from textile goods to household electrical appliances and automobiles. The electric machinery makers expanded, especially those that sold computers, semiconductors, and telecommunications equipment. Those companies include Fujitsu, NEC, HITACHI, and TOSHIBA. Legacy and mid-size computers became popular, and companies developed online banking, POS, and auto-process control systems. Eventually, sales of computer hardware and software increased dramatically. In the semiconductor field, NEC led other companies in DRAM sales. At that time, friction increased between the United States over trade barriers in the semiconductor industry, and the issue was discussed in the Japan-U.S. Semiconductor Initiative. Japan was known then for its strength in manufacturing and for its companies’ initiatives to increase production capacity.

<table>
<thead>
<tr>
<th>Six Corporate Electronics Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitsui Group: Toshiba, Nihon Unisys</td>
</tr>
<tr>
<td>Mitsubishi Group: Mitsubishi Electric</td>
</tr>
<tr>
<td>Sumitomo Group: NEC, Sumitomo Electric</td>
</tr>
<tr>
<td>Fuyo Group: Yokogawa Electric, Showa, Denko, Oki Electric</td>
</tr>
<tr>
<td>Sanwa Group: Sharp, Iwasaki Electric, Kyocera</td>
</tr>
<tr>
<td>Ichikan Group: Fuji Electric, Fujitsu, Yasukawa Electric</td>
</tr>
</tbody>
</table>
One strategy to increase production capacity was to establish subsidiary companies. Almost all of the major Japanese companies built subsidiary companies in the country to assemble final products. This was done to retain production capacity as a corporate group. If a company could not expand its capacity, it established an OEM contract with a capable manufacturer. Production-sharing Keiretsu served as subsidiaries for the purpose of increased production capacity. Companies organized these groups in order to control and retain resources for increased production.

The reasons for establishing the Keiretsu are as follows:

1) Major companies moved the production of low-value-added products to their subsidiaries in order to concentrate on high-value-added products and to expand their market share for new technology.
2) In any market, it is essential to produce a reliable final product. The Japanese emphasize quality. Thus, manufacturers chose good suppliers to provide continuous high-quality production capability. This helped them avoid excess production and problems with consumers.
3) Management had to manage certain risks, particularly those that required adjusting production loads. For example, in some circumstances orders exceeded production capacity and new equipment and personnel were needed.
4) Increased sales for major companies meant a corresponding increase for subsidiary companies. Accordingly, both tried to maintain the close and cooperative organizational structure.
5) Major companies maintained close and continuous relationships with their Keiretsu in order to prevent technological information from being disclosed to competitors.

In the late 1980s and early 1990s, the Japanese economy began to stagnate. In the computer business field, the era of the legacy computer evolved into the era of the client-server. Because of these changes, businesses that produced legacy computers, such as IBM and Fujitsu, saw sales decline, and businesses that produced servers, like Sun Microsystems, grew rapidly.

In the semiconductor field, Intel, Samsung, and Taiwanese chipmakers achieved great advances, causing Japanese companies to lose their dominant position. Advances in computer microchip technology meant that it was used in more and more items, such as household electrical appliances, automobiles, and industrial machines.

Global competition intensified. The collapse of the bubble economy caused production capacity to exceed market demand. To cope with a collapse in prices, Japanese companies transferred production overseas. Many Japanese companies had to address excess capacity and bad assets. The ability of overseas companies to produce items at lower costs squeezed the Japanese economy even more. Eventually, almost all Japanese companies had to reorganize and rethink their management strategies.

To compete globally and to counter the collapse in prices, each Japanese company returned to its core competency. During this “restructuring,” each company narrowed its focus and concentrated on its strong points. From the mid-to late-1980s and the early 1990s, the yen appreciated to almost 80 yen to the U.S. dollar. This affected Japanese exports and contributed to the trend of moving Japanese plants overseas. The volume of manufacturing in Japan decreased.

Of the three types of Keiretsu, the production-sharing Keiretsu was affected most by this business environment. Major companies loosened connections with their subsidiaries and created new ones overseas. As a result, major companies liquidated their cooperative organization of subsidiaries.

This paper focuses on the following reasons this happened:

1) The architecture of the final product became more open-ended and the position of the subsidiaries decreased.
2) Production costs in Japan were too expensive.
3) The quality of production overseas improved, especially in Asia.
4) The IT infrastructure and networks improved, making overseas transactions easier.

Contract owners shifted their focus from retaining resources to keeping costs down. Eventually, major companies felt burdened with the responsibility of subsidiaries’ managements and broke loose from those connections.

They then created relationships with overseas enterprises. These relationships differed from those in the former Keiretsu in that they were based on typical business transactions and contracts. An example of this is a contract with an electronics manufacturing service (EMS).

The Japanese subsidiaries found it difficult to obtain orders from major companies and in many cases either shut down, changed their business focus, or left the
Keiretsu. The interdependence between major companies and subsidiaries ended. This had been based on the subsidiary earning a long-term contract by meeting design specifications. It was a system that allowed for flexibility. But the growth and increased clout of overseas subsidiaries weakened these interdependent relationships in Japan. Figure 6 summarizes the strategic changes in the electronic machine industry after the 1980s.

**Supply-Side Networking**

Currently, there are two ways companies in the electronic industry share their manufacturing processes.

1) They share more often with overseas EMS companies.

2) They switch purchasing systems, from a parts-unit model to a module-units model. They also purchase rather than manufacture many products.

The transactions with overseas EMS companies are not exclusive, as they were in the former Keiretsu groups. Almost all are based on a Service Level Agreement (SLA). Consequently, companies frequently switch subcontractors and they are not accused of being closed or anti-competitive.

When a company purchases rather than manufactures a product, it generally uses a large, general supplier. It tends not to select cooperative suppliers, but chooses suppliers based on their performance. These are not Keiretsu relationships. Rather, it is the process of constructing a good supplier base.

In this relationship, a contract owner and a supply-side company aim to build a "win-win" relationship. We cannot call this a Keiretsu transaction. Electronics companies are at a crossroads. Their success will be measured by their ability to accumulate powerful supplier groups. Figure 7 shows the present extension of the supply-side network.
Trends in the Keiretsu Network
Electronic products are made using specialized technology and manufacturing processes. Figure 7 shows the network of businesses involved in this process. A technology subsidiary that has a robust relationship with its parent company specializes in that company’s needs, and vice versa. In the manufacturing field, subcontractors specialize in the module and component parts that constitute the core strength of the parent company. Manufacturers specializing in parts production are connected to the network by a contract with the parent company.

It is clear that the gap between winners and losers is expanding. Many parent companies have shut down their money-losing subsidiaries and product manufacturers, and have created a new production network system. The purpose of this system is to increase their integrated power. They do this by dispatching directors, specializing in technology, and educating companies in the network about their guiding principles. Also, many parent companies have evaluated their overseas subsidiaries and, as a result, changed locations or built new ones. Noteworthy shifts in production have been to China. Japanese subcontractors have thoroughly examined and reduced their production capacity, but have become more flexible and capable.

For example, Yokogawa Electric Corporation conducted a performance evaluation and, as a result, consolidated its 15 domestic subsidiaries into three. Hitachi, Ltd. cut its number of suppliers by half. Figure 8 illustrates this.

A parent company closely cooperates with its domestic and overseas subsidiaries and has the power to control management principles, technology, and production systems, etc. They conduct transactions with suppliers using contracts and try to gain the following advantages over their rivals.

Advantages of the networking system:
1) Diversification of management risk
2) Actualization of human resources (by sending expert staff into the companies in the network)
3) Maintaining a stable production system
4) Protecting technology

On the other hand, there is less fear that subsidiaries will lose their competitive edge by relying too much on the parent company. This is because the collapse of the bubble economy forced them to learn to compete with each other. Every parent company has strengthened its purchasing function with domestic and overseas non-group suppliers and is poised to begin a more open process of procurement. This will be based on the development of technological collaborations.

The Future Course of Keiretsu Transactions in the Electronics Industry
We are going to review the history of the Keiretsu in the Japanese electronics industry and forecast trends.

The most dramatic change in the Japanese economy following World War II was the collapse of the bubble economy in the 1990s. The predominant Keiretsu system had functioned well during the growth years
prior to that collapse. During the 1970s and 1980s, Japanese electronics companies provided a large quantity of high-quality products to markets all over the world. During this time, they grew in order to meet product and sales demands. They formed a Keiretsu structure with the following characteristics:

1) Business relationships built through stable and exclusive transactions, all carried out under the umbrella of the parent company
2) Long-term, continuous transactions, also controlled by the parent company
3) Subsidiary dependence on the parent company, built via a system of financial support, the dispatching of staff, custom-made supplies, and the exclusive possession of information
4) A management policy that did not rely on contracts, but on tacit understandings, and that required the cooperation and continual effort (Kaizen) of the contractors to always pursue technology improvements

Several factors combined to prompt the Japanese to reconsider and restructure the Keiretsu system. They include the Japan-U.S. Structural Impediments Initiative, which was highly critical of the Japanese; economic stagnation beginning in the late 1980s, which preceded the collapse of the bubble economy; rapidly developing global transaction relationships; the ability of neighboring countries to improve their manufacturing processes, production control and quality control; and the ability of countries like South Korea, Taiwan, and China to maintain low labor costs. These developments prompted the Japanese to reconfigure relationships with subcontractors, as shown in Figure 8. These changes are still being carried out in the technical fields. Company groups have established joint ventures to cooperate with rival groups in the areas of technology and development.

For example, Hitachi Ltd and Mitsubishi Electric Corporation have established Renesas Technology Corp., a semiconductor manufacturing company; and Hitachi, Ltd. and NEC Corporation have established Elpida Memory, Inc., a DRAM manufacturing company. Mitsubishi Electric Corporation later joined Memory, Inc. Thus, networking among rival companies has increased, irrespective of each other’s previous Keiretsu relationships.

These new relationships within the semiconductor industry established in the midst of keen global competition, have impacted the entire electronics industry. Figure 9 shows typical relationships between these companies. The Y axis shows the process integration rate and the X axis shows the management integration rate. The process integration rate includes the role of the vertical supply chain, as well as development, production, and marketing. The management integration rate includes strategic and administrative objectives and distribution of an outcome. We can divide Figure 9 into four sections and can draw lines showing relationships within and external to a company.

The first cell represents the group of companies that have few partnerships with other companies. We call it “integration based on self-sufficiency.” Sharp Corporation’s LCD-TV production company is typical of this first section. Moving along the X axis one finds companies that have accelerated integration with an outside supply chain. Moving up the Y axis we find companies that have maintained independence from outside companies. The relationship between Sony Corporation and Samsung Corporation, and the outsourcing of custom IC production, are examples of this independence. To promote integration of management means to do so using traditional Keiretsu methods. Companies in this cell do not have a high rate of management integration because ownership tends to take priority over integration. In contrast to their “win-win” relationships with supply side companies, owner companies do not work to strengthen the integration process in these cases. Moving up the X and Y axes we see companies that have incorporated integration generally. In these cases, companies become stronger competitors. We call this “integration based on partnering.”

“Integration based on partnering” exemplifies the progressive future of the Keiretsu. In this scenario, development, production, and marketing are integrated at a higher level than ever before. Companies that embrace it are better positioned to compete in a global economy.

Companies have started enterprises based on self-sufficiency irrespective of manufacturing technology and production capacity. Many big manufacturers have built their own networks with subcontractors while growing their businesses, and in that way have expanded production capacity. They have built their supply-side network according to their own needs. On the other hand, some companies have maintained their independence and their management strategies, even while forming cooperative relationships in development, manufacturing, and management. We call this “integration based on an independent style.” A highly competitive market is prompting companies to strengthen management and to optimize their relationships with suppliers, particularly by integrating processes and management. The companies mentioned above are indicative of this trend.
Integration by partnering is the most promising trend in transactional relationships. Companies who embrace it improve their merchandising and manufacturing technology in a highly competitive environment. We can explain why companies are moving away from self-sufficiency to partnering: a contract owner who operates by its own selfish interests cannot improve its transactional relationships, as evidenced by the collapse of the traditional Keiretsu system.

It is probable that “integration based on partnering” will be the predominant system of the future. But we must emphasize that it is difficult to progress to “integration based on partnering” if one cannot achieve results when working self-sufficiently. It is desirable to progress from self-sufficiency to partnering. However, it is very likely that such a transition must happen in stages — from independence, to self-sufficiency, to partnering. It is difficult to create productive alliances with other companies if one cannot master self-sufficiency.

**The Automotive Industry**

The automotive industry compares to the electrical machinery industry (shown in Figure 4) as follows:

1) High in price per unit
2) Large and heavy in size
3) Wide industrial range
4) Moderate technological change
5) Product lifecycle relatively as long (as long as four years)
6) High transportation costs
7) Usage conditions change (mobility)
8) Product liability critical
9) Number of components more than 1,000 per unit

Transactions between the automotive companies and their suppliers have tended to be stable and long-term. In other words, new car development required a stable process of design development for cost and safety reasons. This required car makers to have long and fixed relationships with parts suppliers. To increase competition, car makers also required more than two suppliers. This stable and reliable process allowed suppliers to better serve the car makers.

To summarize the current state of the Keiretsu system in the automotive industry, one must look at 1) strategy and 2) future trends.
The Automotive Keiretsu
The automotive industry group differs from the financial Keiretsu and the Zaibatsu. Large-scale assemblers form a group that serves as a supply network. The large-scale assemblers are the five major manufacturers: Toyota, Nissan, Honda, Mazda, and Mitsubishi Motors. Some parts suppliers do business with non-Keiretsu car makers, but this is an exception. The company groups are as follows:

1) Toyota group: Hino Motors, Ltd. (trucks, buses, large-sized car manufacturer); Daihatsu Kogyo Co., Ltd. (light car manufacturer); Kanto Auto Works, Ltd. (vehicle assembler); Toyota Auto Body Co., Ltd. (vehicle assembler); Toyota Kouki (engines); DENSO (air conditioners); and Aisin Seiki Co., Ltd. (transmission cylinder heads).
2) Nissan group: Nissan Diesel Motor Co., Ltd. (large-sized car manufacturer, i.e., trucks and buses); NISSAN SHATAI (vehicle assembly); and Calsonic Kansei.
3) Honda groups: Honda R&D; Honda access; Keihin; Showa; and Yachiyo Industry, etc.
4) Mazda group: Mazda E&T and Visteon Japan, etc.
5) Mitsubishi group: Mitsubishi (large-sized car manufacturer, i.e., trucks and buses); Mitsubishi Heavy Industries; and Mitsubishi Electric Corporation, etc.

Suzuki, Fuji Heavy Industries, and Isuzu are now part of a General Motors group, so they are not included in this report.

Automotive parts suppliers historically have had the same goal as the assemblers: to establish a stable supply base that can support growth. Following a collapse of Japanese industry after World War II, every core Keiretsu company faced the same circumstance: to build its industry from scratch. All companies embraced the Keiretsu system in order to leverage their competitiveness against European and U.S. competitors. Their goal was to compete in product development, quality, and cost.

Parent companies made changes to the Keiretsu after the 1970s energy crisis, which increased demand for smaller-sized Japanese cars that could conserve gasoline. They had to produce more of these cars and maintain the quality of their product. This was a transitional period in which Japanese cars were produced not only for local markets, but for export.

Changes in Management Strategy in the
Japanese Automotive Industry
Japanese car makers took advantage of the 1970s energy crisis to expand their export business. They marketed their cars as “energy-saving, high-performance, low in cost, and smaller-sized.” They succeeded in that quest, and exports began exceeding domestic sales. The big three American auto makers, General Motors, Ford, and Chrysler, were slow to meet the demand for energy-efficient cars. Japan’s success in this market caused friction between the Japanese and U.S. governments. In the United States, companies faced a depressed economy, unemployment, and labor union difficulties.

In the 1980s, the Japanese dramatically changed this strategy and began focusing on local markets in order to ease friction between the two governments. In the United States, companies began promoting the idea that products sold in the United States should be made in the United States. This strategy forced parts suppliers to build new U.S. production sites and car manufacturers to expand local procurement of parts and components. Many of these local parts manufacturers were instructed and nurtured by Japanese assemblers and component suppliers. This strategy worked well and the Japanese car industry continued to grow, as did the Japanese economy.

In the early 1990s, the economy continued to grow, but later in the decade the bubble economy burst, forcing Japanese companies to address a sluggish market and lower earnings rates. Many companies had to revise their tactics. And, Japanese car makers’ expansions overseas created tough competition among automakers globally. These conditions led to enhanced collaboration globally and to restructuring in Japan. In the automotive industry, Japanese, U.S., and European manufacturers were the key players in reconstructing supplier groups.

Local production and global competition have greatly impacted the Japanese Keiretsu relationships. But strategies vary according to each supplier group’s internal and external circumstances. Toyota’s and Nissan’s changes are described below.

New Orientations for Toyota and Nissan
The Toyota group stands in remarkable contrast to its competitor, Nissan. Over the past 30 years, Toyota grew unabated to become the second largest car manufacturer in the world, while Nissan failed to adapt to changing circumstances and needs. As a result, Nissan merged with Renault, whose French chief executive consolidated control of the company. Toyota’s success is instructive, particularly when we examine its Keiretsu relationships.

1) Toyota
Toyota’s changes included a shift to partnering integration. This included:
A) Enhanced cooperation in its organization of Keiretsu suppliers (syndicate). In the automotive industry, a syndicate often takes the form of a “cooperative organization,” which enhances a car maker’s relationship with its suppliers. Toyota is involved with a parts suppliers’ organization (Kyohokai) and an equipment and logistics organization (Eihokai). In the 1990s, almost all companies tried to source new suppliers or reduce their supply bases to cope with a rigid economy, often disregarding traditional cooperative syndicates. However, Toyota took different measures, and its sales grew domestically and globally: they enhanced their cooperative syndicates.

B) Enhanced communication and the transfer of technology by loaning employees. One way Toyota enhanced its supplier relationships was by loaning employees to its suppliers. These employees taught Toyota’s technologies, such as Kanban, to the suppliers involved with its production system. Suppliers accepted the loan of a Toyota employee to help them restructure.

C) Investment in production capacity and research and development to lessen management risk. As its sales grew, Toyota maintained investment in these areas as a way to enhance its relationship with suppliers. Toyota’s Keiretsu suppliers are indispensable partners in the effort to cover shortcomings. Toyota invested in the suppliers’ equipment and its installation. It did so with its new brake system company, ADVICS, which was established by Toyota, Aisin, Denso, and Sumitomo Denso; and with its new power steering company, Fabes, which was established by Toyota, Denso, Toyota Koki, and Koyo Bearing. Toyota reforms its suppliers’ methods and updates suppliers’ technology, creating a new kind of alliance that operates efficiently and easily incorporates new technology. This is a quick and efficient way for Toyota to maintain sales and integrate new technology.

The two companies mentioned above are described as follows:

ADVICS, the new brake system company founded by four companies: Toyota, Aisin Seiki Co., Ltd., DENSO, and Sumitomo Electric Industries, Ltd. (www.sei.co.jp/news/press/01/prs172_s.html).

The advanced brake system company founded by a joint investment of the above companies was established on July 3, 2001. In terms of the investment ratio, Aisin Seiki Co., Ltd., is at 40 percent and the remaining three companies are at 20 percent each.

The president and others were recruited from Aisin Seiki Co., Ltd. As a result, ADVICS adopted systems from Aisin Seiko Co., Ltd.

Three years after its founding, sales from April 2003 to March 2004 were 211.8 billion yen. As of March 31, 2004, there were 734 employees.

As a result of technological innovations, the brake — which functions as one of the most important components of a vehicle — is not viewed as a solitary part. Rather, it is a system to be developed and that competes with other brake design systems. Brake system development has become part of a car maker’s company plan. The design and manufacturing of these entire “systems” creates a new market for firms to compete. A car company systems supplier aims to manufacture the best, most-widely used brake system and sell it globally.

Farr Bess, the new electric power system company founded by four companies: Toyota, DENSO, Toyota Kouki, and Koyo Seiko (www.koyo-seiko.co.jp/japanese/corpo/news/pdf/KoyoNRJ021003.pdf). The company was established on November 1, 2002.

In terms of the investment ratio, Koyo Seiko is at 45 percent, Toyota Kouki is at 35 percent, and DENSO and Toyota Motors each are at 10 percent. Workers were recruited from Toyota Kouki.

Development is at Farr Bess and production is at Toyota Kouki. Beginning in January 2004, the company began developing and producing an electric power steering system. (http://chubu.yomimuri.co.jp/news_k/chei-040114_2.html)

The company plans to have 300 employees and to have 40 billion yen in sales by 2007. As called for in its charter, the company seeks to develop the next generation of electric power steering systems that are accepted globally.

D) Maintain the Keiretsu suppliers’ mutual competitive advantage. Toyota’s policy is to maintain the competitive circumstances that increase suppliers’ competence.

2) Nissan

During the years 1993 through 1997, Nissan Motors had only one profitable year, in 1997, according to its consolidated accounting system. During this time, Toyota grew steadily. After Nissan merged with a Renault group in 1998, it produced the Nissan Revival Plan (NRP) in October 1999. The plan called for reducing by 20 percent its total cost of ownership (TCO) by March 2003.

Nissan called this strategy the “Nissan 3-3-3 program.” The first three stands for renewed teamwork between the supply, purchasing, and technology development
functions. The second three stands for increased activity in the regions of Japan and Asia, America and Europe, and the Middle East and Africa. The final three stands for the three years that Nissan scheduled to implement its plan. After introducing the NRP, Nissan was able to reduce its costs by 15 percent by March 2003.

The following list shows how Nissan implemented its plan:

1) **Nissan dismantled its system of Keiretsu suppliers.**
Nissan already had dissolved “Takara-kai” in 1991. While “Nissho-kai” had 193 suppliers registered in 1996, that number dropped to 170 by 2004. All but four of Nissan’s 1,394 stock holdings were sold. Well-known traditional Keiretsu suppliers seceded from the Nissan Keiretsu group: Fuji-Kiko, Tachiesu, Ichiko, Ikeda bussan, Yorozu, and Niles parts.

Nissan took a hard look at its supply base, part by part, a process called supply base rationalization. It adopted a new management strategy: to increase volume in orders, but to reduce costs as low as possible. It became evident that some suppliers failed to meet this criterion. Nissan continued to sell its stock in Keiretsu suppliers to increase its cash flow. Between March 1999 and March 2004, 102 companies left the Nissan Keiretsu.

2) **Nissan implemented a new supplier selection system, developed by a Renault-Nissan team.**
In 2001, Renault and Nissan formed a cooperative purchasing organization called Renault Nissan Purchasing Organization (RNPO) in order to more effectively procure all materials used directly and indirectly in production. They hoped to realize economies of scale by purchasing larger volumes. The group increased its purchases to 70 percent of the companies’ total purchases.

3) **Nissan developed new ways to use the Keiretsu.**
What is the future of the Keiretsus’ involvement with Nissan? Nissan’s NRP strategies prompted it to reorganize suppliers in two ways: One was through the potentially powerful RNPO and the other was to enhance relationships with current suppliers. For example, Calsonic Kansai is implementing module-oriented systems in order to strengthen its relationship with Nissan in the areas of finance and human resources. Other examples of companies who are serving important functions in module-oriented systems are Nissan Koki, with engines; JATCO, with transmissions; and Aichi Kikai, with engine transmission systems. These companies remain as pure Keiretsu suppliers and will support Nissan indefinitely. Nissan still is considering reforms that will form new Keiretsus with other important suppliers.

### The Direction of the Keiretsu in the Automotive Industry

The trends depicted in Figure 9 for the electronics industry can be summarized and applied to the automotive industry.

1) **Integration inside the company (vertical integration):** Until the 1970s, the big three automakers in the United States were in this group. This method of internal production resulted in about 70 percent of their parts being internally manufactured, and was effective under the circumstances. Few model numbers were mass produced. However, as the need increased for high-variety, low-volume manufacturing and companies had to invest in more production facilities, this method proved too rigid. Companies became inefficient and less able to compete. Technological innovation and quality became obsolete. Organizational paralysis, the so-called “large corporation disease,” occurred.

2) **Integration of the traditional Keiretsu:** In Japan, automotive companies did not have the capital to internally produce their own parts. After World War II, it became common for them to procure parts from other companies and assemble them. This became the basic method of operation. Because the industry needed a broad range of parts and services — the power train, transmission, body shaping, and assembly — many companies played key roles in the Keiretsu structure. These companies had close ties to the parent company.

3) **Integration of independence:** There are some automotive parts that are used in other industries. The steel plate, tire, brake, paint, and electronic components are some of them. While suppliers of these products have a close relationship to the parent company, it would hinder sales if car companies demanded these parts for their exclusive use. In this case, the supplier maintains independent capital and management. Although the parent company provides instruction, the supplier can produce all parts with its own technology. In this sense, the company is independent.

4) **Integration of partnering:** even independent companies and companies within a traditional Keiretsu have been increasing their technical skill and capital. In recent years, companies that provide electrical parts, new materials, and new technologies have formed new systems. Under the circumstances, automotive companies and parts suppliers develop as partners. The relationship between automotive companies and parts suppliers will change to one that integrates partnering in the form of joint ventures, such as ADVICS and FARDES, mentioned previously in the Toyota section.
The trend is for supply chains to move from low managerial and process integration to high managerial and process integration. Partnering is considered essential to improving competitiveness. The automotive industry is being asked to overcome a range of problems: global warming, pollution, and traffic and safety issues. It seems difficult to resolve these, but the industry must do so. It is even more necessary to promote integration of partnering.
Future Orientation: The New Keiretsu

Japanese Keiretsu relationships and their ensuing production systems enhanced the competitiveness of the country’s economy, spurred economic growth, and enabled companies to form relationships based on mutual trust and cooperation. However, the Keiretsu system has gradually and steadily changed from the inside due to globalization, economic changes in Japan, and labor shortages. Parent companies accelerated this trend by altering their business strategies and forming new relationships with suppliers. It was difficult for both parent companies and suppliers to make changes. After all, the traditional Keiretsu historically had been a source of strength for the Japanese economy. But its shortcomings became apparent during the emergence of the global economy.

The following results are from a March 2004 CAPS Japan questionnaire, in which we saw some of these trends emerge. We will summarize the results.

Survey Results

Overview

Subject: Number of parent companies surveyed about new Keiretsu relationships: 1,128 (Tokyo Stock Exchange).

Management position: Head of procurement and purchasing

Method: Mail (Some replies were sent by fax or e-mail.) Number of companies that replied: 49 (rate of reply: 4.3 percent)

Survey period: March 5, 2004 to March 26, 2004

Question 1 asked about past and future criteria and important characteristics for a supplier. This change showed marked differences in past and future Keiretsu relationships.

Figure 10 shows how the importance of six supplier selection criteria rate, now and in the future. Cost is still the most important criteria, but the survey suggests that social responsibility, development, and environmental preservation as emerging concerns in terms of supplier selection. Suppliers who can provide requested items and also adapt to emerging trends in Keiretsu relationships will be highly valued. Quality still cannot be underestimated, but it is evaluated with other criteria.

Question 2 asked about the current state of Keiretsu relationships (see Figure 11). More than half of the companies said the Keiretsu still exists. The number of companies is increasing that said those relationships are waning. This suggests traditional Keiretsu relationships are becoming less common.

Question 3: When asked how their Keiretsu relationships will change, few companies said it will stay “as it is.” Close to 70 percent of the companies said they would like to either abolish or reconsider their Keiretsu relationships.

It is clear that companies want to transform Keiretsu relationships. Only about one-third of the respondents said they should not change. Keiretsu relationships are evolving. This change is inevitable.

New Keiretsu Strategies

We have investigated trends in Keiretsu relationships in the electrical machinery and automotive industries. As
shown in Figure 13, the starting point in this matrix is the lower left, the “self-completion” category. U.S. automakers maintain some aspects of this, i.e., they have their own managerial resources and manufacture and assemble final products. A company in this category will transfer to outsourcing only if it finds a better product outside its purview. When a company is outsourcing items, or subcontracting, there is a higher level of managerial integration. On the other hand, independent subcontractors integrate their processes, but maintain independence at the managerial level. Sony and Samsung are examples of this in the electrical machinery industry. Subcontractors expand their businesses outside of the Keiretsu, as shown by the arrow in the center of Figure 13. Denso, in Toyota’s Keiretsu, is another example. “Dependence” is a type of partnership integration, or strategic alliance. In other words, multiple companies work together in a specific
business arena, by collaborative investments or by contract. When competition is fierce, they will form collaborative companies. Companies need strategic alliances to become stronger. We mentioned “partnering integration” in a previous chapter. This trend emerged during a time of economic downturns and fierce global competition. It is difficult to say how many companies will follow the trend and develop dependent relationships. As we have said, companies that can self-integrate will have the economic clout to continue growing. This transformation is inevitable.

Management Issues in the New Keiretsu

We depict here the point of process integration and managerial integration in Toyota and Nissan. We concluded that both companies have the same goal.
Nissan had used its Keiretsu relationships extensively, but four years ago, changed its direction. Now it is integrating its processes with suppliers, looking for new suppliers, and building relationships that are mutually beneficial.

On the other hand, Toyota has strengthened Keiretsu relationships by developing independent companies that can compete globally. Toyota considered the strengths and weaknesses of its Keiretsu relationships, coordinated alliances, and merged Keiretsu companies. Toyota and Nissan differed in their approaches, but their results may be similar.

Figure 14
Management Issues in the New Keiretsu
Conclusion

Manufacturing was the core industry that drove the Japanese economy after World War II. After 1975, economists predicted software companies and the service industry would become stronger, and many Japanese worried about the future of manufacturing. Software companies and the service industry, along with tertiary industries surrounding manufacturing, i.e., research and information technology, contributed to Japanese prosperity. Manufacturers, especially assembly companies (automotive, electronics, mechanical) and every-day-life-related industries (plastics, fibers) were tied to a wide range of industries and technologies. For this reason, a wide range of companies participated in Japanese economic prosperity. For example, automotive products are comprised of more than 20,000 parts. Toyota, Honda, and Nissan (brand manufacturers) only designed final products and left the design and manufacturing of important functional components to outside firms. Most procurement was done outside the company. According to financial statements from each company, up to 80 percent of production costs were from outsourcing and procurement. Japanese companies could not exist without supplier companies. Component suppliers in a divided production system strengthened the Japanese economy. Of course, there are production divisions in Europe and the United States. The Japanese differed from them in that divided production systems were pervasive throughout all main industries. We examined Keiretsu relationships and their emerging trends in these major industries.

CAPS Japan explores one theme every year. In the past, we studied purchasing issues in the Japanese economy and supply management (strategic procurement) in large corporations. We found that the automotive and electrical machinery industries drive much of the Japanese economy. They contributed to the strength of traditional Keiretsu relationships, but are now leading the changes to those relationships. We believe that new Keiretsu models will emerge not only in Japanese countries, but around the world. Supply managers of the future will have to lead the way in developing new Keiretsu relationships.
Explanation: Introduction of institutional economists

O.E. Williamson: Mr. Williamson is an institutional economist who divided trade into "spot trade," "continuous trade," "internal trade," and stated trade stability.

J.R. Commons: Mr. Commons is an institutional economist who stated, "Organization is going concern."

H. Leibenstein: Mr. Leibenstein is an institutional economist who stated "Company is a human organization which has emotion and mind. The efficiency of organization is dependent on person."

(1) "The Merits and Demerits of Keiretsu," Hiroyuki Ogiwara, Hiroshi Kariyu (D & M, Nikkei Mechanical, Sept., 2003)

(2) "Counterattack by Keiretsu Country Japan," Iwn Zusherinof, translated by Heihachi Nakamura (Kobunsha)

(3) Tadao Kiyose, Koichi Shimokawa, "Current Keiretsu" (Nihon Keizai Hyouronsya)

(4) Shuichiro Nakamura, "Beyond the Keiretsu" (NTT Shuppan, 1992)

(5) Masahiro Shimoya, "Japanese Keiretsu and Group" (Yuuhi-kaku 1996)

(6) Hiroshi Okumura, "Dismantle Keiretsu and Company Capitalism" (Shakai-shisousya)

(7) Yukinobu Murakami “The Bankrupt Day of Automotive Component Suppliers” (Apple Shuppansha)

(8) Hiroshi Shioji, T.D. Killy, “The Comparison between Japanese Automotive Dealer and USA from a Point of Keiretsu” (Kyuushu-Daigaku Shuppankai)

(9) Shijyo Muramatsu “Outline of Management” (Chuo-Keizaisha, 1995)

(10) Kunihiko Fujiki “Change of Automotive Component Trade-Dismantle Keiretsu”

(11) “Japanese Company Group” (ToyoKeizai, 1992)


(13) “History of Hitachi (1), (2)” (1960)

(14) Masaru Udagawa “Managerial Thinking of the Process of Nissan Concern” (1972)

(15) Katsumi Shimada “The Merit and Demerit of Keiretsu and Future” (Fair Trade No. 491, 1991)

(16) Seicho Yonekura “What is Keiretsu” (Nihin-keizai Shinbun, Easy Economics) (Sept., 1991)

(17) Koichi Shimokawa “Keiretsu System in Japan-Case of Japanese Automotive Industry” (Organizational Science No. 17)
CAPS was established in November 1986 as the result of an affiliation agreement between the W. P. Carey School of Business at Arizona State University and the Institute for Supply Management. It is located at the Arizona State University Research Park, 2055 East Centennial Circle, P.O. Box 22160, Tempe, Arizona 85285-2160, telephone 480-752-2277.

The Mission Statement: CAPS contributes competitive advantage to organizations by delivering leading-edge research globally to support continuous change and breakthrough performance improvement in strategic sourcing and supply.

Research published includes more than 60 focus studies on purchasing/materials management topics ranging from purchasing organizational relationships to CEOs’ expectations of the purchasing function, as well as benchmarking reports on purchasing performance in 26-plus industries.

Focus study research under way includes: Major Changes in the CPO and Reporting Line; Integrating the Supply Chain; and Sourcing in China.

CAPS, affiliated with two 501(c)(3) educational organizations, is funded solely by contributions from organizations and individuals who want to make a difference in the state of purchasing and supply chain management knowledge. Policy guidance is provided by the Board of Trustees consisting of:

Craig Brown, Intel Corporation
Phillip L. Carter, D.B.A., CAPS
Ken Carty, The Coca-Cola Company
Willie Deese, Merck & Company, Inc.
Harold E. Fearon, Ph.D., C.P.M., CAPS (retired)
Kathleen R. Fuller, IBM
Bradley Holcomb, Waste Management, Inc.
Judith Hollis, Wendy's International, Inc.
Cecil House, PSEG Services Corp.
Vince Hrenak, Raytheon Network Centric Systems
Daniel Krouse, Hallmark Cards, Inc.
Becky Lancaster, First National Bank of Arizona
Mary McDaniel, FedEx
Maureen Merkle, SBC Services, Inc.
Theresa M. Metty, Motorola, Inc.
Robert Mittelstaedt, Jr., W. P. Carey School of Business at Arizona State University
Robert Monczka, Ph.D., C.P.M., CAPS/ASU
Dave Nelson, C.P.M., Delphi Corporation
Anthony S. Nieves, C.P.M., Hilton Hotels Corporation
Paul Novak, C.P.M., Institute for Supply Management
James Patterson, Ph.D., Western Illinois University—Quad Cities
William Ramsey, Honeywell, Vice Chair, CAPS
Jim Scotti, Fluor Corporation
David Sorensen, General Mills, Inc., Chair, CAPS
Keith Strange, United States Postal Service
Vic Venettozzi, LORD Corporation
Joseph Yacura, InterContinental Hotels Group
CAPS: Center for Strategic Supply Research
2055 E. Centennial Circle
P.O. Box 22160
Tempe, AZ 85285-2160

Telephone (480) 752-2277
www.capsresearch.org

ISBN 0-945968-64-7