

OEM Parts Purchasing: Shifting Strategies

Final Report

January, 2001

**Office for the Study of Automotive Transportation
University of Michigan Transportation Research Institute
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Executive Summary

The beginning of the 21st century finds manufacturer-supplier relations in the North American automotive industry much as they have been for the past two decades—in a continuing state of flux. This is a period in which significant change has not only been occurring but is anticipated to broaden and accelerate even further with the introduction of the Internet exchanges, increased modularity, and enhanced systems integration. This report focuses on developments in the U.S. market while making comparisons across U.S., European, and Japanese OEM-supplier relationships.

The report is based on the results of high-level executive interviews from five leading manufacturers and four major supply firms. Through these interviews we investigate the industry's current thinking on manufacturer purchasing strategies and manufacturer-supplier relationships. The introduction and manufacturer purchasing profiles largely reflect public sources on the industry, and thus conventional wisdom. The remainder of the report is built on our industry interviews, and in some instances challenges, and in others, confirms that conventional wisdom.

Relationship Evolution

Nearly all of the interviewees mentioned the increase in responsibilities transferred from OEMs to the supply base. Most respondents mentioned increased reliance upon suppliers for design and engineering services. They note a key challenge in the need for large suppliers to better manage their relationships with lower tier suppliers because they are assuming value chain management burdens typically associated with OEMs. Suppliers report a relentless cost reduction pressure exerted on the supply base by the OEMs. They face contradictory demands to accept engineering and design leadership responsibility and reduce total costs at the same time.

Relationship Success Factors

The interviews identified elements of trust, alignment of values and positive relations, and performance as critical factors for successful OEM-supplier relationships. Manufacturers emphasized trust, while suppliers identified good relationships as the top critical success factor.

Convergence or Divergence?

As the industry becomes more global, automakers and their suppliers face a more common business environment and source on a more global and common basis. This may well shape more similar approaches to these relationship choices. Most interviewees agreed that relationships are converging, generally to a Japanese model. However, some respondents noted that the Japanese companies seem to be moving in the direction of the model associated with the U.S. manufacturers, a model they describe

as more cost-conscious. In either case, there is certainly some lessening in the differences that may have characterized national models in the past.

Of course, each national industry has companies that have been closer to models from other regions, and there is great variation in how closely any company approximates one particular model. Indeed, the manufacturer's home base confers no obligation or rights with regard to any one model.

Supplier Selection Criteria

Both OEM and supplier respondents agree on the importance of supplier selection criteria such as design, development, engineering, R&D capability, and global presence. OEMs stressed the importance of quality and delivery reliability, while several suppliers described these as standards for entry, rather than as differentiating factors.

Industry Consolidation and Power Shifts

Industry consolidation is importantly affecting OEM-supplier relationships. Formation of "megasuppliers" through mergers and acquisitions has raised issue as to whether the traditional power balance between OEMs and suppliers has shifted. Suppliers seem to think that power has not exactly been transferred, but rather that it is becoming more equal and that the large suppliers will be the likely gainers of power. OEMs express concerns about suppliers gaining power due to their size and increasing potential to be the sole source of a component. Further supplier consolidation is expected to occur with a slowdown or downturn in the U.S. economy that may be looming on the horizon.

Internet Parts Exchanges

All eyes are on the automotive industry as it creates online purchasing activities. E-commerce has major implications for OEM-supplier relationships, a fact that is reflected in the remaining sections of the report.

Relationship Implications

There seems to be an already emerging consensus that Covisint is unlikely to force basic change in manufacturer-supplier relationships. Suppliers and OEMs see potential advantages of Covisint and other trading exchanges as cost reductions, standardization, tool sets, speed, and openness. The OEMs also emphasized ownership value. All of the interviewed companies will use the Internet and trading exchanges, although they will use them for differing purposes, exchange different content, and have clearly different expectations for the role and value of the Internet and exchanges.

Potential Cost Savings

The conventional wisdom holds that the centralized online marketplace should bring considerable efficiencies and cost reduction. Our respondents reveal varying opinions; however, nearly all evidenced skepticism about the larger estimates and numbers published by analysts. Our respondents expect cost savings to come primarily from reduced administrative cost and through increased Internet communication, inventory control, and coordinated production. Other benefits, such as speed and efficiency, will amplify the cost savings. The allocation of any such savings across the value chain is, and will continue to be, a persisting source of tension in the industry.

What will be Exchanged?

Considerable discussion centers on exactly how many and what kind of components will be traded over the Internet exchanges. Our interviewees provide highly variable estimates and reveal a variety of ways that the industry is considering this new technology and its potential. They view the likelihood of trading commodities as higher than trading engineered components and modules; however, the definition of a commodity varies by responding company and by industry segment. The manufacturers clearly expect more activity on the exchanges than do the suppliers.

Modular Assembly and System Integration

Most of our respondents believe that we will see further development of modular assembly and system integration, although some remain uncertain as to exactly how much more modular activity we will see. Internet exchanges should facilitate system integration and modular sourcing by enabling collaborative engineering and supplier coordination.

Supply Base Size and Structure

Most of our respondents believe that the supply base will continue to consolidate. There will also be restructuring beyond simple consolidation, as some suppliers leave the first-tier ranks and move into the second tier.

Threats to Manufacturer-Supplier Relationship

Threats to the stability of the relationship, according to our respondents, include the uncertain capability of suppliers to manage their own costs and to manage their customers. In addition, economic threats, consolidation, technology, and globalization all could destabilize these relationships further.

Conclusions

The interviews provide useful information. However, they leave some questions unanswered, and even raise a set of different, but equally important, questions.

The convergence of supplier relationship models seems likely to continue, although it will not be complete, as regional and individual companies adapt differently and apply distinct philosophies. Indeed, rather than competing national models, supplier relationships will become more a question of each company selecting and adapting the approach that best suits its own business model and goals.

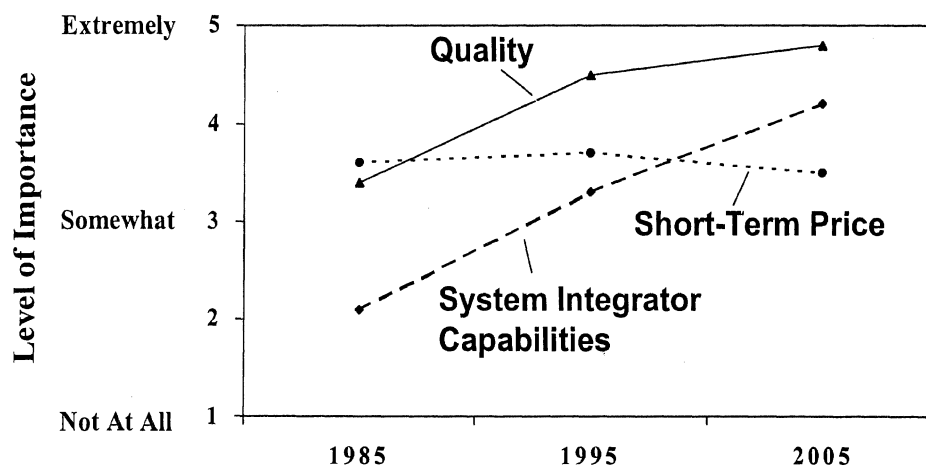
Consolidation will continue, according to our respondents, although how this will affect the OEM-supplier relationship is less clear. How much further consolidation occurs at each of the two levels will determine shifts in the relative dependence of OEMs on their suppliers and of the suppliers on their OEM customers. In turn, that will shape the industry's changing power relationships.

Our respondents agree that the development of trading exchanges like Covisint will probably be a critical stage in the industry's evolution, but there is little agreement as to exactly how it will influence the OEM-supplier relationship. The respondents were often critical of the conventional wisdom, and we believe that their remarks and cautions merit careful consideration.

Nevertheless, because the industry is learning the Internet and its potential through trial and error, and is still at an early stage in this process, it is difficult to specify exactly where the industry is headed and when it will arrive. However, it is not too early to confirm that the Internet will have a major effect on the way the industry will do business and that it is likely to foster more open and rigorous competition. Trading exchanges will shift some relationships to more a market basis, but it remains unclear what the balance of more partner-like and more market-like relationships will be.

Introduction

Manufacturer-supplier relations in the North American automotive industry have undergone substantial transformations during the past two decades. Gone are the days when supply contracts were allocated almost solely on price and seldom covered terms that lasted more than one year. Today, virtually no automotive executive would report that price is the sole criterion considered when making a sourcing decision. Instead, price is but one – albeit an especially important one – of a number of factors, including quality, design capability, delivery, part durability, and reliability, that manufacturers use to identify and evaluate potential suppliers (Figure 1). To be sure, short-term price has not become any less important, but the decision has become more complex as other factors have increased in importance.



Source: OSAT and A.T. Kearney, *The 21st Century Supply Chain*

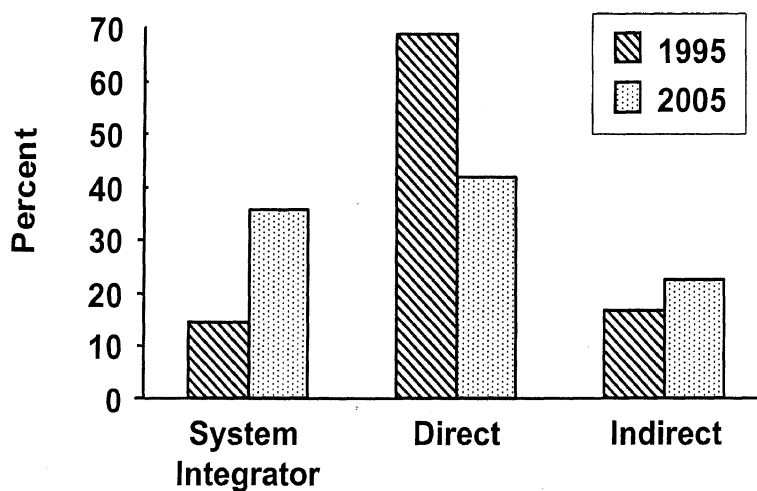
Figure 1: Supplier Selection Criteria: How Important?

This change in selection criteria has developed in parallel with a shift in the perception of the manufacturer-supplier relationship. Whereas the U.S. Big Three automakers had traditionally kept an arm's-length – some would even say adversarial – relationship between themselves and their supply base, the last several years have seen a dramatic increase in the number of purchasing arrangements that could be considered as approaching “partnerships.” That is, these relationships involve significant exchanges of resources and intellectual capital as well as featuring more open dialogue and longer contract duration.¹

Certainly, some of this relational change has been associated with structural changes in the automotive supply chain. For example, vehicle manufacturers are increasingly

¹ Helper, Susan. “Supplier Relations in Japan and the United States: Are they Converging?” *Sloan Management Review*, Spring 1995, p.77.

dependent on their supply base to provide design, engineering and manufacturing expertise, a development difficult to credit in a world of shifting, unstable, and narrowly focused relationships. Indeed, the 1996 OSAT-A.T. Kearney study, *The 21st Century Supply Chain: The Changing Roles, Responsibilities and Relationships in the Automotive Industry* indicated that the manufacturers will turn in particular to systems integrators for these services. The study also projects that the number of suppliers acting as systems integrators will increase from 14 percent to 36 percent of the major supplier companies by 2005, while the number of direct suppliers will fall from roughly 70 percent of total suppliers to 42 percent (Figure 2). Given the increased responsibilities of the supply base, traditional, detached, transaction-focused relationships have become riskier and thus less viable.



Source: OSAT and A.T. Kearney, *The 21st Century Supply Chain*

Figure 2: Supplier Roles: A Future Shift

Interestingly, though, some movement toward a partnership model between the Big Three manufacturers and suppliers began before the widespread move to systems integration and the dramatic consolidation in both the manufacturer and supplier communities. This earlier impetus for relational change began in the 1980s, when the Big Three automakers—and their suppliers—realized that the close ties between Japanese manufacturers and their suppliers constituted an important source of their competitive advantage. And it thus was a contributor to the Big Three's eroding share of the U.S. vehicle market.

Early supplier involvement in product design was shown to be a key to the Japanese automakers' edge in introducing new models both faster and with fewer total labor hours than their U.S. and European counterparts. A 1984 University of Michigan study estimated that superior supplier relations gave the Japanese a \$300-600 per car cost

advantage in the early 1980s.² The differences between the U.S. and Japanese supplier relationships were brought home even more vividly when the Japanese assembly operations in North America, begun in the early 1980s, rapidly expanded in the mid and late 1980s.

However, while it seems clear that the western automakers have been moving nominally towards a more Japanese model of supplier relationship, some questions still remain open. Are the two models really converging, or will some elements of the relationship remain regionally unique? If they are converging, is it to some intermediate model, especially as some Japanese companies have shown evidence of adopting elements of the U.S. model as they have faced the economic challenges of the 1990s? Are the underlying forces that foster partnership-style relationships common across regions, or are we seeing apparently similar patterns that actually differ and reflect different sources? In any case, how is the shifting industry structure likely to affect the nature of supplier relationships for both U.S. and Japanese firms? Will the development of information technology initiatives such as Internet purchasing exchanges change the rules of the game such that the relationships between manufacturers and suppliers will again alter?

Ultimately, this report seeks to shed light on all of these questions. It provides a review and consideration of the progression of U.S. manufacturer-supplier relations, based largely on secondary research, in comparison with the traditional Japanese partnership structure. It also draws heavily on the experiences of those involved with these core issues on a daily basis. Throughout July and August 2000, the project team interviewed high-level executives from five OEMs (DaimlerChrysler, General Motors, Honda, Toyota, and Volkswagen) and from four major supply firms (Dana, Denso, MSX, and TRW Automotive). We present the insights of these interviewees throughout the report, and we believe they provide an intriguing look at the evolution of the manufacturer-supplier relationship from a broad spectrum of functional and geographic perspectives. They also serve to highlight some of the key developments that are likely to impact the shape of these relationships in the future.

Before we turn to the results of our interview efforts, we provide capsule descriptions of the purchasing approach of the major manufacturers in North America as a basis for considering and evaluating the later discussion. We stress that these descriptions represent the popular view of these companies in the summer of 2000. We present them not as factual, but as the conventional wisdom, drawn from public sources rather than our own research. References to manufacturer sourcing strategies in these profiles are probably more applicable to complex parts, modules, or systems rather than to commodity products.

² Cole, Robert E. and T. Yakshiji (eds.). *The American and Japanese Auto Industries in Transition*. 1984, p. 114.

OEM Purchasing Profiles

DaimlerChrysler

The Chrysler portion of DaimlerChrysler has probably been the closest of all the U.S. manufacturers to the Japanese model of supplier relationships, although the company's current purchasing strategy may have emerged initially out of economic necessity rather than a philosophical transformation. During Chrysler's financial crises of the 1980s and early 1990s, the company was forced to turn to its suppliers to share the risk and cost burden of developing new product lines. In return, Chrysler granted many long-term, single-source contracts, which in turn necessitated a closer working relationship with its supply base. Chrysler credits its supplier partnerships with helping it post a strong financial comeback; and the improved relationships are also reflected in the fact that supplier surveys consistently report that DaimlerChrysler continues to be the most preferred customer of all the U.S.-based manufacturers.³

Traditional bidding processes have been phased out at DaimlerChrysler. Instead, the company chooses suppliers years ahead of production and guarantees their contracts. In return, suppliers are expected to invest heavily to boost quality and cut costs. Having such long-term relationships has resulted in DaimlerChrysler enjoying an almost keiretsu-like network. In fact, Thomas Stallkamp, then Chrysler's vice president of purchasing, maintained that the American version of the keiretsu has advantages over the traditional Japanese model, wherein the institutional linkages have been likened to drowning swimmers dragging each other down during hard financial times. He noted, "We're getting many of the advantages of a Japanese-style partnership without the disadvantages that come with ownership or close control."⁴

While suppliers definitely assume a higher amount of risk upon entering into such partnerships, DaimlerChrysler has sought to lessen the sting a little through its Supplier Cost Reduction Effort (SCORE) program. Through this program, DaimlerChrysler solicits supplier ideas on how to reduce cost and improve process or product performance. Savings generated from a SCORE proposal are split equally between the manufacturer and the supplier responsible for the idea. In addition, the SCORE results are used as criteria to determine which suppliers will win new business.⁵

As will be seen, the view of our respondents, as well as recent press coverage, is that Chrysler purchasing has changed since the merger, and the underlying philosophy may have changed. A recent front-page headline in the industry press reads "DCX Squeezes Suppliers," and on December 7, 2000, DaimlerChrysler announced that it expected a 5 percent price reduction from all suppliers in January.⁶

³ Child, Charles. "Chrysler, Suppliers Teamwork Today: Automaker Tears Down Walls to Build Its Own Version of Keiretsu." *Automotive News*. July 18, 1994. Ward's AutoWorld 22nd Annual Supplier Survey, August, 2000.

⁴ Child.

⁵ Minihan, p.65.

⁶ *Automotive News*, October 23, 2000 and *New York Times*, December 8, 2000.

Ford

Although, Ford was generally considered to be the member of the Big Three most like the Japanese during the 1980s, this reputation would undergo a transformation in coming years.⁷ Throughout the 1990s, Ford endeavored to reduce its procurement costs and the size of its supply base. During this period, Ford lagged behind benchmarks Chrysler and Toyota in terms of product development costs. By 1995, Ford's development cost per vehicle was \$785 compared to Chrysler's \$481.⁸ In that same year, Ford institutionalized the need to cut costs through its Ford 2000 initiative.

Ford 2000 called for the consolidation of Ford's North American and European automotive units into a single entity called Ford Automotive Operations (FAO). As part of the initiative, Ford's purchasing head, Carlos Mazzorin, called for unilateral 20 percent price reductions over four years for the entire supply base. The suppliers, many of whom were fresh from a similar experience with Jose Ignacio Lopez and GM, joined forces against the demands.⁹ They argued that such cost cuts would completely erode their already slim profit margins and absorb funds previously allocated to research and development activities.

Despite supplier protests, Ford did manage to realize more than \$3 billion in overall cost savings by 1998, with much of that accounted for by purchasing reforms. Ford has also had some success with more Japanese-style partnerships. For example, Ford and ABB collaborated on the design, construction, and operating procedures of a \$300 million paint finishing facility in the mid-1990s.¹⁰ However, the general industry consensus is that Ford has been closer to GM than to DaimlerChrysler or the Japanese manufacturers on the market vs. relationship supplier continuum.

General Motors

GM has recently been more willing to choose suppliers by emphasizing price reductions. The company has also traditionally used multiple vendors for the same component and has been reluctant to offer long-term contracts. GM's poor financial performance in the early 1990s led to a draconian series of cost-cutting measures spearheaded by purchasing czar Jose Ignacio Lopez.

GM adopted a notoriously combative approach with its suppliers, demanding double-digit price reductions in many instances. It also broke the tradition of renewing one-year contracts with long-term vendors, instead often switching the business to the lowest bidder. On several occasions, it is alleged, after a supplier helped GM develop a new part—while absorbing part of the development cost—GM then shopped the proprietary designs to competitors, searching for the best production prices. In the short run, GM did achieve a phenomenal \$4 billion savings in annual materials, but it did so to the long-term detriment of GM's supplier relationships. Suppliers became less likely to

⁷Flynn, Michael S. and Robert E. Cole. "Automotive Suppliers: Customer Relationships, Technology and Competition." *Report of the Supplier Change Project*. Industrial Technology Institute. June, 1986.

⁸"Ford Setting the Agenda in Vehicle Manufacturer/Supplier Relationships." *Automotive Components Analysis*. December, 1995.

⁹Ibid.

¹⁰Frey, Sherwood *et al.* "ABB and Ford: Creating Value Through Cooperation." *Sloan Management Review*. Fall, 1993.

reserve their best ideas for GM, choosing instead to market them to companies like Honda and Chrysler that tended to value supplier partnerships more.

After the Lopez era ended, the new head of purchasing, Richard Wagoner, attempted to smooth things over with GM's suppliers. He stopped short of completely repudiating Lopez's methods, but the worst elements seem to have generally ceased when Lopez left. Wagoner stated back in 1993 that, "GM will remain tough but fair with suppliers. We don't believe in the old traditional bear hugs, talking about how we love each other or don't. Partnerships have to be based on market demands and customer expectations."¹¹

This general philosophy has been adopted by GM's current purchasing chief, Harold Kutner, who has said, "Our focus is not necessarily having great partnerships with assumed relationships for life with suppliers. It's having relationships with suppliers, with very high expectations. The suppliers should expect me to be a good customer. I should share data. I should share global opportunities and volume forecasts. And I should give them any kind of information that will eliminate waste within the system. On the other hand, we have very high expectations: one, that the supplier should become global, and two, that his performance can be benchmarked with anybody's around the world."¹²

Honda

The Honda Motor Company has had a good track record in terms of balancing the need for close supplier ties with the goal of component cost reduction. Honda cites quality, cost, delivery, and development as the most important considerations when selecting a supplier. Honda has stated that its goal is to have the same supplier for every component wherever it produces worldwide, but recognizes that this is not always possible. While global capacity is valued by Honda, there seems to be concern that, with the trend toward supplier consolidation through mergers and acquisitions, some firms may be losing sight of their core competencies. Honda Japan does give a certain amount of sourcing autonomy to its overseas production facilities, but only up to a point. Given the fact that Honda has a worldwide strategy with regard to product development, product specifications, and platform types, there needs to be some correlation between component sourcing and this strategy. Autonomy is thus somewhat limited in this regard, and is dependent on the type of component.

Honda's philosophy of frank and open communication, cooperation, and collaboration with suppliers extends even to sharing cost-modeling data. If cost negotiations stagnate, it is Honda's policy to send in its engineers to help the supplier find a way to meet the cost target and still retain acceptable margins.

Honda has made a strong commitment to local sourcing for its U.S.-made vehicles. Like other manufacturers, Honda has a supplier development program, which it uses to synchronize suppliers' capabilities with Honda's manufacturing philosophy. Former

¹¹ Fleming, Al. "Wagoner Initiates Peace Plan: Five GM Low Bidders Are Replaced." *Automotive News*. October 18, 1993.

¹² "GM Doesn't Seek 'Mr. Nice Guy' Label." *Automotive News*. March 27, 1995.

senior vice-president of purchasing Dave Nelson noted that the critical factor is how much time, money, and effort Honda invests in building and sustaining its supplier relationships. He states, "When we select suppliers, we expect to be with them for years. Other companies don't put the appropriate amount of resources against supplier development, so their programs aren't as well received. To score big with suppliers, you have to win their hearts."¹³

This type of commitment routinely extends past the initial development process. Nelson cites a case where Honda physically relocated four staff members to live and work with a supplier for ten months to help it restructure and build the capacity to meet Honda's needs. Although the cost to Honda was substantial, Nelson points out that "there was plenty of benefit to be gained on both sides by making sure we kept this supplier for the long term."¹⁴ Suppliers tend to notice and appreciate the long-term commitment demonstrated by Honda, which increases their willingness to make investments on its behalf.

Toyota

Long considered the most efficient vehicle manufacturer in the world, Toyota has pushed very hard to implement its lean production system all the way through the supply chain. In the U.S. (as well as in Japan and Europe), the company has instituted a Toyota Supplier Support Center, a school for suppliers to learn the core concepts of the Toyota Production System and to develop strategies for its implementation at their own plant. Since 1992, senior management teams from nearly 100 supply firms have attended the Center.¹⁵

It is one of Toyota's main tenets that any organization can learn the concepts of lean production, but only if management understands that implementation requires a total commitment. Management must recognize that the system will not work if it is treated as something that can be acquired and installed without a significant transformation.

Toyota appears to be sourcing business only to suppliers that can provide global presence, technical innovation, and speed. Issues such as quality, reliability, and commitment to cost reductions seem to be prerequisites for consideration, as indeed is the case for other manufacturers as well. A typical trajectory for a supplier relationship with Toyota starts with the supplier manufacturing a part or system designed entirely by Toyota. Only after a long period of high performance and continued relationship building will the supplier progress reach a point where its own design and technical expertise can be leveraged. Even when a firm becomes a preferred supplier, it is unlikely that Toyota will cede complete design responsibility. Toyota has historically been opposed to the use of so-called "black box" designs, particularly in core components such as engine and powertrain.

¹³ "How Honda Cuts Costs, Satisfies Suppliers." *Automotive News*. November 9, 1998.

¹⁴ *Ibid.*

¹⁵ Couretas, John. "Toyota's Parts Makers Learn Lean Production." *Automotive News*. May 26, 1997.

Volkswagen

Although VW does not currently produce vehicles in the U.S., it has assembly plants in Mexico and we have included it as a European representative in our study for the purposes of geographic balance. Because it has no U.S. assembly operations, data on how VW interacts with North American supply firms have been difficult to find.

It is reasonable to speculate that VW had undergone an upheaval in its sourcing strategy with the arrival of Lopez following his move from General Motors in 1993. Yet assessing his impact on VW's purchasing procedures is difficult, because his accomplishments there were never cited in terms of costs saved per year, as they were at GM. It is estimated, however, that Lopez held more than 1,200 workshops with suppliers to improve production processes during his tenure at VW. He also instituted a system called the Continuous Improvement Process (CIP2). In it, suppliers were asked to draw up and implement proposals for new modules and new materials as well as complete systems.¹⁶ VW applied the modular concept to its Resende truck plant in Brazil, where suppliers are responsible for all aspects of the final assembly process. VW provides only production and development guidance as well as logistics and marketing support.

There were no widespread complaints of questionable purchasing practices similar to what happened at GM during Lopez's time at VW. In 1995, he commented, "[This year] I did not receive a single complaint from a supplier. The relationship is the best in the industry."¹⁷ However, in 1997, allegations surfaced that people connected with VW had demanded bribes in return for supplier contracts.¹⁸

These profiles provide a basic understanding of each company that is needed as we move on to discuss some general issues in the differing models of manufacturer-supplier relationships and our own interviews.

Manufacturer-Supplier Relationships: U.S. and Japan

Many observers and analysts have suggested that there are fundamental differences among the supplier relationships that exist in the United States, Europe, and Japan. In a somewhat simplified schema, the U.S. relationship has been portrayed as short-term and anchored in a continuing market test among available alternatives. The Japanese relationship has been described as quite enduring, built on recognized dependency and characterized by a mutual commitment, sometimes including cross-holding shares. The Europeans are often described as somewhere between the Japanese and U.S. models, with elements similar to each of the others, combining a particularistic, often nationalistic relationship with elements of competition.

We stress that all three industries have companies that are closer to models from different regions than they are to their own, and there is great variation in how closely

¹⁶ "The \$100 Billion Buyers." *Automotive News*. May 27, 1996.

¹⁷ Ibid.

¹⁸ "Four Years Ago, Volkswagen Woke Up." *Business Week International Edition*. March 17, 1997.

companies approximate any particular model. In a sense, these models really are not “citizenship” issues, because the manufacturer’s home base confers no obligation or rights with regard to any one model. For example, Honda finds the keiretsu concept of little relevance to its own practices, and Nissan historically was probably closer to Ford than to Toyota in some of its purchasing practices. Moreover, as the industry becomes more global, automakers and their suppliers face a more common business environment and source on a more global and common basis. This will in all likelihood shape more similar approaches to these relationship choices.

The following sections summarize some of the major differences between the more or less typical “Japanese” and “U.S.” models of supplier relationships, although these national identifiers can be misleading.

Structure

- A Japanese-style partnership is a long-term (though not necessarily exclusive), highly interactive supplier-purchaser relationship that focuses on optimizing the entire value chain. These supplier partners are called *kankei-gaisha* (affiliated companies) and are considered to be a part of the parent company’s keiretsu. Independent firms (called *dokuritsu-gaisha*), though not necessarily part of a keiretsu, will often work with parent firms in much the same way.¹⁹ The goal of the partnership is to increase quality while minimizing the value-added costs on both sides.
- The relevant literature suggests that a useful way to classify a supplier relationship is by the methods used to resolve problems that arise between the two parties. In an “exit” relationship, a customer that has a problem with a supplier finds a new supplier. In a “voice” relationship, the customer works with its supplier to resolve any problem. Historically, Japanese manufacturers have employed the “voice” relationship. At the highest level, this type of relationship requires continuous feedback and suggestions for improvement about each other’s operations. In addition, it requires a high level of commitment on the part of the OEM. In Japan, this commitment may take several forms, including equity investment, implicit long-term contracts, employee co-location, and customized plant investment. In this model, a one-time shortcoming will trigger efforts to fix the problem instead of a search for an alternate vendor. Though to be sure, continued problems can eventually result in the withdrawal of a contract.²⁰

In response to the Japanese challenge of the early 1980s, U.S. manufacturers adopted variants of these strategies. Some used an “exit” approach in that they threatened to terminate relationships with suppliers that did not provide new services such as product design and just-in-time delivery for little or no cost. In many of these instances, suppliers still felt a lack of customer commitment even within a partnership model because performance improvements came at their expense, and

¹⁹ Kim, J.B. and Michell, Paul. “Relationship Marketing in Japan: The Buyer-supplier Relationships of Four Automakers.” *Journal of Business and Industrial Marketing*. Vol. 14, No. 2. 1999, p. 119.

²⁰ Helper, p. 79.

their level of trust in the customer did not increase.²¹ On the other hand, some assemblers recognized that establishing long-term relationships could help reduce costs by fine-tuning efficient techniques over time.

Processes

- In the U.S., between 1984 and 1994, the percentage of suppliers that provided their customers with a detailed breakdown of the steps in their production process increased from 38 percent to 80 percent. This also indicates a trend towards cooperative relationships. The rate for Japan in both periods was approximately 80 percent.²² During the same time period, the average supply contract length in the U.S. doubled from 1.2 years to 2.4 years. Although contract length cannot be used as a proxy for customer commitment in Japan (even implicit long-term contracts have to be renewed annually), 87 percent of Japanese suppliers in 1994 thought their customer commitment would last more than four years. In comparison, 68 percent of U.S. supply firms expressed a similar sentiment.²³
- Since the 1980s, partnership-style relationships have resulted in continued improvements in inventory costs for the OEMs, but not necessarily for the supplier. Since 1984, the average supplier production lot size has fallen, but still remains, on average, significantly larger than the delivery lot size, indicating that the suppliers are stockpiling inventory. In Japan, about half of all suppliers continue to stockpile inventory, but they also produce batch sizes one quarter the size of U.S. firms and deliver to the assemblers roughly five times as often. Presumably, this is a function of physical proximity to the plant as well as the adoption of lean production techniques. Nevertheless, in a 1994 survey, one third of Japanese suppliers, but half of U.S. suppliers, agreed with the statement that "JIT only transfers inventory responsibility from customers to suppliers."²⁴

From the manufacturer's standpoint, the key point often missed by the suppliers is that they must continually improve upon the traits that initially secured them the partnership stage in the first place. As former Chrysler president Thomas Stallkamp noted, "Suppliers often confuse that being in a partnership means that the relationship is not measured. On the contrary, we must constantly measure progress toward expressed and defined goals. Even good performance toward goals can be superseded by competition doing even better."²⁵

- In a 1993 survey by the U.S. Fair Trade Commission, Japanese suppliers were asked to identify, in their view, the major and the most critical reason(s) they are selected by an automaker. Of the major reasons, parts quality, technical capability, and trust based on previous transactions were the most frequently mentioned. When asked to

²¹ Helper, p. 81.

²² Dyer, J.H. and Ouchi, W.G. "Japanese-style Partnerships: Giving Companies a Competitive Edge?" *Sloan Management Review*, Fall, 1993, p.52

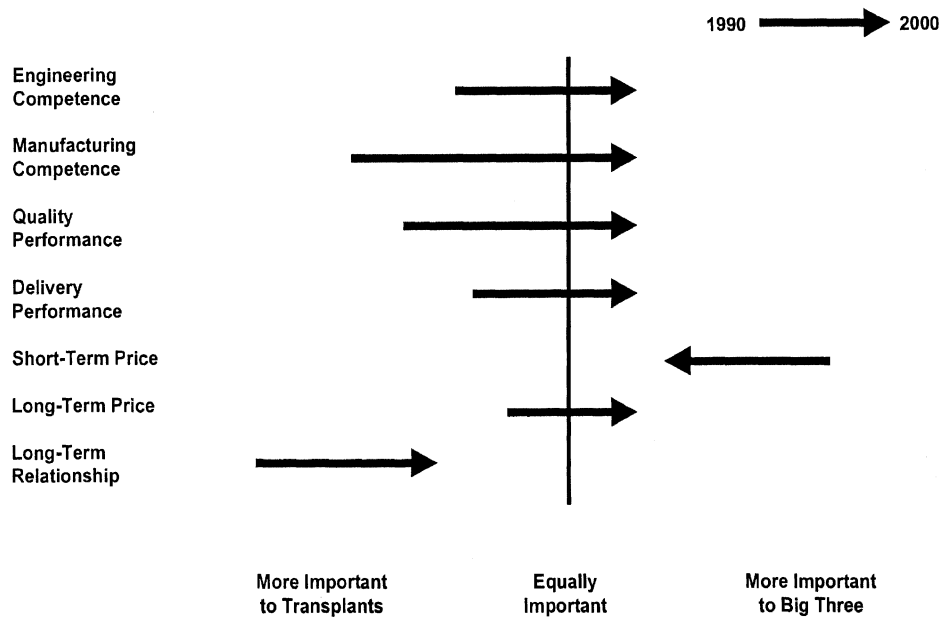
²³ Ibid., p. 55.

²⁴ Ibid, p.57.

²⁵ Minahan, Tim. "Is Partnering a Sham?" *Purchasing*, Vol.124. February 12, 1998, p.63.

name the single most critical factor, however, the suppliers most often mentioned reliability and trust. Such a result seems to conform to the philosophy of the relationship model.

- Traditional U.S. purchasing philosophy involved managing multiple suppliers for similar components, ostensibly to prevent dependency on one vendor or being exploited by an unscrupulous supplier. In 1986, General Motors employed 3,000 purchasing staff to procure parts for 6 million cars. In contrast, Toyota employed 340 people to procure parts for 3.6 million.²⁶ Although the gap, measured in cars per buyer, has shrunk over time, it remains considerable, reflecting, among other factors, U.S. firms' continuing reluctance to single-source parts.
- A joint OSAT-Ernst & Young survey showed that by the early 1990s, suppliers believed that the differences between the Big Three and Japanese OEMs in terms of supplier selection criteria would lessen over time, as shown below.²⁷ Note that it is in the core differentiation of the two models—short-term price and long-term relationships—that the suppliers expected differences to persist through today.



Source: OSAT and Ernst & Young, The Car Company of the Future

Figure 3: Big Three and Japanese Assembler Supplier Selection Criteria

- When Japanese assemblers started U.S. production in the 1980s, they either imported parts from Japan or sourced them from Japanese-owned local firms. This undoubtedly reflected a complex mix of reasons, and probably varied from OEM to OEM. One reason may well have been the inexperience of U.S. firms in early involvement in design and engineering (“design-in” in Japanese industry parlance).

²⁶ Dyer and Ouchi, p.58.

²⁷ OSAT and Ernst & Young, The Car Company of the Future

Today, Honda and Toyota both source heavily from many traditional U.S. suppliers that have become more versed in “design in” approaches. It merits comment that this “design-in” experience now comes not only from suppliers’ work with the Japanese OEMs, but also from their experience with the Big Three, as these OEMs have also come to rely on “design-in” in their operations.

Method

We investigated these issues through selected interviews of executives at five OEMs and four large, systems integrator suppliers. In total, thirteen executives participated, although we treat the respondents from each company as one interviewee, so our total interview count is nine. All were high-ranking executives, with OEM respondents drawn from purchasing, most supplier respondents from marketing, and one chief executive officer.

Interviews such as these present a major analytic difficulty because the respondents are high level executives, and will share their thoughts when and as they wish, rather than meekly following our interview guide and addressing each topic within the framework we have set. We try to report both types of responses, but it is possible that some material simply never is associated with the proper topic, or even, although rarely, misinterpreted because of when it was volunteered.

In any case, we review and discuss the information in the general outline provided by the interview guide, attached as Appendix I.

Models

We first turn to examine the extent to which the models of supplier relations exist and are changing.

Relationship Evolution

We asked our interviewees to list some of the most substantial changes in the manufacturer-supplier relationship that have occurred over the past ten years. Nearly all of them mentioned a general increase in the number of responsibilities that have transferred from the OEMs to the supply base. They most often cited the increased reliance upon suppliers for design and engineering services. Whereas many assignments given to suppliers a decade ago were heavily controlled, often build-to-print jobs, manufacturers now tend to give their suppliers more up-front and “turnkey” responsibility for the development and manufacture of components and systems.

Along with increased autonomy and responsibility, suppliers have also assumed some of the value chain management burdens typically associated with the OEMs. The majority of supplier interviewees mentioned the increased complexity of asset coordination. As one supplier noted, tier one purchasing practices are five years behind

those of the OEMs, but the OEMs expect them to be on a similar level. Both OEM and supplier interviewees mentioned the need for the large suppliers to manage their relationships with lower tier suppliers more effectively as a key challenge. Moreover, they expect it to be a key competitive success factor in the coming years.

Another commonly mentioned issue, one that resonated particularly strongly with supplier interviewees, was the relentless cost reduction pressure exerted upon the supply base by the OEMs. The most frequently cited drivers of this focus on cost were OEM globalization and consolidation, increased competition from new entrants, and the emergence of a consumer base that expects high performance and superb quality at affordable prices.

A number of the interviewees pointed out the seemingly inherent contradiction between the drive for cost reductions in the supply base and the OEMs' increasing reliance on those same suppliers to provide engineering and design leadership. While suppliers stated this opinion most strongly, some OEM respondents did express the belief that unreasonable or unrealistic cost reductions are counterproductive to both parties over time. The majority of interviewees expressed the general opinion that the degree to which OEMs and suppliers can establish long-term, cooperative partnerships determines the success with which these competing forces can be reconciled. Interviewees more often identified Japanese OEMs as having a better comprehension of their suppliers' total cost structure. This has enabled them to continue to press for cost and price reductions with less financial damage to the supply base.

Relationship Success Factors

We asked our interviewees to discuss the success factors that are critical for a successful OEM-supplier relationship. There was some agreement among manufacturers and suppliers, as well as between the two groups (Table 1).

**Table 1:
Critical Factors for Successful OEM-Supplier Relationships**

Number of Responses	OEM (25)	Supplier (17)	Total (42)
Trust, Credibility	3	2	5
Alignment of Values/Good Relations	2	4	6
Performance	2	2	4
Miscellaneous Responses*	18	9	27

*The miscellaneous responses were unique answers.

The overwhelming majority of responses in this table are unique mentions. This suggests that there is little agreement or consistency in our respondents' views of critical success factors in relationships, and certainly questions whether any common model exists or is emerging. Indeed, we would expect to find clusters of factors shared among some but not all respondents if different relationship models exist, and the evidence of

that is at best extremely weak. So extreme caution must be exercised in the following discussion.

The most mentioned critical success factor by manufacturers is trustworthiness, credibility, and integrity in their supplier partners. If the manufacturers are going to increase the amount of responsibility given to their suppliers, they need to be able to trust the suppliers to have on time delivery of a quality product.

Two suppliers also mention trust as one of the critical success factors. Our supplier respondents discussed both how to develop trust with their customers and how to demonstrate that they could be trusted. They need to be able to trust their customers and feel confident that the OEMs will behave ethically, and not share supplier blueprints or technology. Suppliers mentioned that they are reluctant to share new technology with manufacturers that have very close ties with competing suppliers. For example, Ford and General Motors continue to have close ties with Visteon and Delphi respectively.

Suppliers mentioned the unethical purchasing behavior associated with the Lopez era in their discussions of trust in relationships. Suppliers also mentioned that it is important for them to be able to develop trust in a relationship with their customers. By demonstrating that they are able to develop and employ technology and deliver on their promises to existing customers, they believe they are able to develop trust in a relationship with a new customer. Tier one suppliers are more capable of delivering on their promises than they have been in the past due to the stronger management teams that exist in these suppliers today. Neither OEMs nor suppliers appreciate surprises. Good management and a trusting relationship can help to eliminate unwanted surprises.

The most mentioned critical success factor among suppliers is the development of strong, positive relationships or partnerships with their customers. However, good relations are eroding today for a number of reasons, according to the supplier respondents. They feel that top-level executives at manufacturers no longer embrace the OEM-supplier relationship. Top OEM executives should be willing to meet with their supplier counterparts as they have in the past. Not all manufacturers have a defined supplier relations strategy, a strategy that acts as a guide to improved relations. Strong, successful relationships are important as both groups are responsive to Wall Street's opinion. Also, collaboration in the relationship is something that suppliers desire with their customers.

Some manufacturers tend to rank items directly related to the relationship as important, although the manufacturers' perspective on relationships is different from that of the suppliers. These manufacturers noted that alignment of company values and philosophy are important for a successful relationship. They also noted that it is important to have long-term partnerships, compatibility of goals, an attitude of continuous improvement, and a sense of balance. Chrysler's "extended enterprise" philosophy, built on interdependence, is similar to this relationship philosophy, but several respondents remarked that Chrysler has altered this philosophy since becoming part of DaimlerChrysler.

A third success factor mentioned by both manufacturers and suppliers is performance. Manufacturers refer to this as supplier capability and include such attributes as quality, product, and technology. Other attributes include cost, scheduling, competency of supplier design staff, speed and flexibility, potential for growth or volume to absorb added costs of design and project coordination, global presence, capability to build modules, and management ability by tier one suppliers.

Suppliers include quality, technology, price, financial strength, service, and size of the supplier in their success factors. They include volume of their customers as important as well; for example, it is better to have an Explorer contract than a Cougar contract.

The respondents also expressed contradictory opinions as to which performance attributes were most important. One OEM noted that technological advances are sustainable only in the short-term, perhaps only for one or two years. Other OEMs and suppliers emphasized the importance of technology, even arguing that technology is potentially the most important factor. The same disagreement holds true for quality: some respondents view quality as a given or qualifying-to-bid attribute, while others argue that it cannot be taken for granted and remains a critical, differentiating success factor.

Suppliers mentioned maintaining a clear definition of roles and responsibilities of each participant along the supply chain as another critical success factor. Suppliers are seeking empowerment and responsibility to demonstrate their expertise. Supplier expertise in a specific area is often greater than that of the OEM, according to some respondents, and the OEM should be willing to recognize and respect this expertise.

A final mention by suppliers is that OEM purchasing and engineering functions should ideally have common management. If common management does not exist between these two functions, they must at least have good communication or a serious disconnect is likely to develop.

Embodiment of Critical Success Factors

We asked the interviewees which manufacturers they thought best embody the critical success factors that they described. There seems to be considerable amount of agreement among all of the interviewees when identifying a few manufacturers, but slightly less agreement on placement of the other manufacturers.

Nearly all of the respondents placed Chrysler, Toyota, and Honda in a cluster as best embodying the respondent's own view of the attributes of successful OEM-supplier relations. These three manufacturers tend to share a philosophy of supplier relations that value partnerships, trust, culture, and alignment.

Interviewees especially see Toyota and Honda as value driven—they do not simply consider price, but rather look at the total life cycle costs of the component. Toyota is identified as strong in technical competency, quality, and their focus on the relationship aspect of supply chain management. However, Toyota's relationship with suppliers

may be changing slightly as it becomes more concerned about cost, although it still demonstrates a loyalty to its key suppliers by working to help them achieve new economies of scale.²⁸ Honda is described as being similar to Toyota and Chrysler, although smaller and quite strong in engineering. One respondent described Toyota and GM at opposite extremes and Honda in between with the perfect balance.

Most respondents agree that Chrysler had quite successful relations with its supplier group. One supplier explained that Chrysler became a desired customer in the view of suppliers because its project managers were engineers and, therefore, knowledgeable about product. Due to such project management, Chrysler typically allowed suppliers more independence and responsibility than did their domestic competition. Our respondents also recognize that Toyota permits the same independence to suppliers. Chrysler is also seen as quite strong in marketing.

Most respondents commented that Chrysler's approach to supplier relations has changed since it became part of DaimlerChrysler. DaimlerChrysler seems to be de-emphasizing partnering relationships with suppliers, changing the Chrysler extended enterprise approach, and emphasizing cost reduction over trust and partnership. Our supplier respondents report that many suppliers that were willing to share new technology with Chrysler are reluctant to do so with DaimlerChrysler. Many respondents are uncertain about whether DaimlerChrysler will shift to a more price-based orientation in supplier relations.

Respondents report that GM and Ford embody more of a market-based philosophy of supplier relationships, an approach that many of our respondents find lacking. Some respondents feel that Ford does not always follow through with its rhetoric on long-term relationships. One respondent noted that GM has struggled in its efforts to manage its supply chain, while another suggested that some of the Lopez-era changes were necessary. Nevertheless, GM is seen as important because of its sheer size, while Ford is described as strong in financial resources, brand image, luxury vehicle portfolio, and as a past leader in global presence.

Some suppliers today are reluctant to share new technology with Ford due to its connection with Visteon. Our interviewees feel that the GM and Delphi relationship is less problematic because the split was better planned and executed.

In the prior section, when the focus is on the critical success factors for a successful relationship between a manufacturer and a supplier, there is little consistency across responses. (See Table 1, page 20.) This lack of agreement on key relationship success factors is certainly not strong evidence of consistency or a shared model for relationships, and is equally weak as evidence of convergence.

However, when we ignore the specific factors mentioned in these discussions, and simply ask which manufacturer best embodies the attributes each respondent sees as critical to a successful relationship, some consistency does emerge. First—and not

²⁸ Willenson, Kim. "Toyota Will Coach Suppliers to Seek 30% Cost Cut, Offer Modules to Others, Join Covisint." *The Japan Automotive Digest*. Vol. VI, No. 48, December 25, 2000: 1, 10.

surprisingly—each OEM generally believes that it does best embody the critical attributes, or is at least quite close to whichever OEM does. This is not surprising because each probably sees its own model as the best. Second, among suppliers, Toyota and Honda are viewed as best embodying the attributes that lead to a successful relationship. Third—and rather interestingly—three suppliers and two OEMs commented that Chrysler had or nearly had best embodied the critical success factors, but has seen its relationship with suppliers adversely affected since becoming DaimlerChrysler.

In any case, if our respondents show little agreement on what constitutes a successful relationship, they are substantially in agreement as to which manufacturers best embody such a relationship's attributes. Perhaps the safest interpretation of these views is that they suggest to treat them as suggesting that the respondents by and large agree on the manufacturers with the best relationship strategies, even if for quite different reasons.

Convergence or Divergence?

To a certain extent, any differences in the supplier relationships across the three industries seem plausibly rooted in their distinct regional automotive experiences and histories. But it makes sense to ask whether these differences will persist. After all, the industry is becoming more global and the automakers and their suppliers increasingly face a shared business environment as they pursue each other's traditional markets and seek the same new markets. Not only are the competitive environments becoming more similar, but the business relationship choices are as well, as automakers from each region begin to source on a more global, and therefore more common, basis.

In a sense, this is the question of convergence: Will awareness of these multiple relationship models, combined with increasingly similar, if not completely identical, environments inevitably lead to the emergence of one basic model common to all manufacturers, regardless of their initial national base? And will any such dominant model substantially reflect one of the extant ones, or will it be some hybrid of these, or might it even be a relatively new form? Or will the competitive experiences of companies based in the three regions remain sufficiently different, and reflective of distinct regional situations, so that little, if any convergence occurs?

A number of our questions elicited comments and observations relevant to the issue of converging models of supplier relationships. Some of this material is rather indirect, offered in discussions centered on other issues, but some is in direct response to queries about any developing changes in supplier relationships.

We asked our respondents to identify the largest changes in their relationships over the past decade, and there are some clear suggestions of convergence in this material. Two of the non-Japanese manufacturers discuss moving to a more cooperative relationship model, while both Japanese assemblers emphasize a strengthening focus on cost control. These comments suggest that both may be converging on some middle ground. However, only one supplier identified any specific manufacturers in responding to this question, so it is difficult to ascertain how reliable these self-observations may be.

We asked our respondents to identify any differences they might see in how the Japanese, European, and U.S. manufacturers have historically approached their relationship with their suppliers. Here, the respondents had little difficulty distinguishing the three national industries, and even reflected some degree of agreement in their views.

The respondents retain a clear, sharp, and distinguishing image of the Japanese industry, and eight of the nine described Japanese manufacturers as emphasizing a more enduring relationship, sometimes described as close and continuing. Four of the respondents made reference to the *keiretsu* relationship in discussing the historical context and development of this approach.

The European industry has a somewhat less clear image, although five respondents commented on its fragmented supplier base, reflected in a tradition of national preferences in supplier selection. Three respondents commented that they see the European supplier relationship as falling somewhere between the U.S. and the Japanese models. However, it bears mention that one OEM reported that the European tradition of annual contracts differed from the longer-term orientation growing in the U.S. industry, while another OEM commented that the U.S. tradition of annual bidding contrasted with the longer-term contract tradition in Europe!

The traditional U.S. supplier relationship had a strong emphasis on price-based competition among suppliers, and seven of our nine respondents commented on some aspect of this attribute. However, a number of respondents did comment that the relationship has been moving more in the direction of a longer-term and more stable relationship, although a few suppliers mentioned apprehensions that this trend might be weakening.

One of our respondents described the differences in the three models in terms of the basic attitude of the manufacturer and supplier in the relationship toward each other. In Japan they view each other as family, while in Europe they see each other as friends, but in the United States, they view each other as foes. This seems to exaggerate the differences, but would not be far off if one substituted friend, neighbor, and stranger. However, it does seem that, as one of our respondents observed, these differences are also changing because they are now differences between companies more than between national industries.

We directly asked our respondents to comment on whether the differences in the three approaches have increased, or if they have converged over time.²⁹ Six of the nine respondents clearly report seeing some degree of convergence, while the other three report "maybe," "not yet," and "no." However, all nine describe some degree of change with at least one industry moving in the direction of another. So, all nine describe some convergence, six seeing it as fairly strong, and three viewing it as weaker.

²⁹ Six respondents anticipated this question, and made relevant comments in their discussions of the historic differences among the OEMs. We have included those comments in our analysis of this question.

Their views, displayed in Table 2 below, are interesting. Six of the respondents describe the U.S. manufacturers continuing to move in the direction of the more relational-based Japanese model. This is consistent with the general expectations of analysts and industry participants over the past decade. The argument here is that the increased reliance on suppliers for research, engineering, and management of lower-tier suppliers all demand a relationship that is more reliable and stable than in the past. As one respondent put it, the Big Three companies are too reliant on their suppliers to risk not having close, continuing relationships with them.

**Table 2:
Are Supplier Models Converging?**

Number of Responses	Strongly	Weakly
Converging?	6	3
Converging to Japanese Model?	6	
Converging to U.S. Model?	4	

However, four respondents, including two of the three Japanese companies, noted a strong move among Japanese companies in the direction of the more cost-competitive model associated with the U.S. manufacturers. Four commented as well that the European model seems to be moving in the direction of the traditional U.S. model of cost-emphasis in supplier selection and development. The argument here is that globalization and consolidation are driving all manufacturers to levels of competition that demand careful attention to supplier costs.

It seems clear that our respondents see some lessening in the differences that may have characterized the national models in the past. However, they do not appear to see this as the emergence of one of the traditional models as dominant, with the other two industries adopting and adapting it. This may have once been the expectation of many, typically assuming that the U.S. and European industry would gradually become more like the Japanese industry in regard to supplier relations.

Moreover, our respondents do not see this blurring of differences coming about through the movement of all to some center position. Some who see the European industry as a mix of Japanese and U.S. attributes might have expected the U.S. and Japanese industries to converge on it, although there clearly are multiple "European" models.

Rather, our respondents focus more on two key distinguishing elements in the U.S. and Japanese models, and feel that this will be the grounds of any shift. And, indeed, both industries will likely adapt their traditional model, as some U.S. companies continue to develop a strategy calling for longer-term and more stable relationships, while some Japanese companies adopt more conscious cost criteria in selecting and working with their supply base.

Press reports suggest that Chrysler has been the traditional U.S. company that is most consciously pursuing a relational strategy, although a few of our respondents

commented that this has been less clear since the formation of DaimlerChrysler. On the other hand, press reports make it equally clear that Renault is making the introduction of a cost-emphasis at Nissan a major priority.

Supplier Selection Criteria

We asked the interviewees to list the most important criteria for selecting suppliers, taken from the list displayed in Appendix II. Then we asked if today's criteria differ from those of ten years ago and if they are likely to change in the future. Note that the respondents are more in agreement on the selection factors (Table 3) than they are in what characterizes the successful relationship, as discussed below. Perhaps it is easier to recognize than describe such relationship attributes.

Table 3:
Important Criteria for Selecting Suppliers

Number of Responses	OEM (25)	Supplier (25)	Total (50)
Design, Development, Engineering, R&D	4	4	8
Quality	4	1	5
Global Presence	3	3	6
Delivery Reliability	3	0	3
Miscellaneous Responses*	11	17	28

*The miscellaneous responses were primarily unique answers.

The manufacturers' most often mentioned selection criteria are quality and design, development, and engineering services. The OEM comments about quality are varied. Quality is mentioned by one OEM as a given, by another as of the same importance as ten years ago, and by two other OEMs as definitely not a given and more important today than in the past. Several of the suppliers commented that quality is a given today, and thus did not include it in their selection criteria list. One of the Japanese OEMs commented that design and engineering is more important today than it was ten years ago for the Japanese manufacturers because vehicles for the North American market are now being designed and engineered locally rather than in Japan. Another OEM mentioned that development capabilities are more important now than they were ten years ago due to the increasing importance of technology.

Suppliers also mention most often design, development, and engineering capability, including R&D and technology. One supplier commented that ten years ago OEMs were even suspicious of suppliers that had advanced design and engineering capabilities. The OEMs were hiring build-to-print jobs then, but today they want suppliers to take more responsibility with the design and development phase of the component or system.

The manufacturers' second most mentioned selection criteria are delivery reliability and global presence. Delivery reliability is critical. If a supplier is good at everything but delivery, that supplier will eventually be replaced. Another OEM agrees that the ability to bring products quickly and reliably to the market is one way to determine the

winners and losers. However, another OEM considers delivery as minimal requirement standard versus ten years ago when it was still important to evaluate.

Global presence also received the second most mentions from suppliers. Suppliers explain that as the OEM platforms become global, they must follow their customers to these new markets. On the other hand, suppliers did not mention delivery reliability as being an important selection criteria. In fact, one supplier also commented on reliable delivery as being a standard for entry.

The remaining OEM selection criteria answers were mentions unique to a particular OEM. Several criteria were mentioned by two suppliers, including systems integration, supplier financial strength, agility, and flexibility. All these criteria were mentioned by just one OEM as well. Two suppliers, but no OEMs, listed access to proprietary technology and shared warranty responsibility. Other common criteria mentions between OEMs and suppliers include importance of cost, supplier management, and a prior relationship between the OEM and supplier.

The respondents commented that some of the criteria have shifted in the last ten years. Two manufacturers mentioned that an established relationship has the same or less importance than it did ten years ago. One supplier noted that the partnering concept has emerged, but has not yet been executed properly. Partnering can now be seen as a competitive advantage and a strategic supply chain issue. Many manufacturers and suppliers agreed that, while important in the past, price is a given today, though one supplier still believes that price is one of the most important differentiators. Another supplier commented that service, insignificant ten years ago, is now an important selection criterion.

We asked if the selection criteria are likely to change in the future. Many manufacturers agreed that change would be necessary in order to develop a five-day car. Some of those changes include speed, flexibility, and agility; delivery; North American design and development; system integration; global presence; financial strength; warranty responsibility; and technology. One U.S. manufacturer commented that perhaps North American manufacturers would develop relationship-based connections to suppliers, similar to the Japanese. They may also design in quality, like the Japanese manufacturers, instead of buying it as they do today. Suppliers also mentioned that agility, technology, and the sharing of warranty responsibility would change with the addition of e-business. Suppliers, but no manufacturers, mentioned management of inventory and of the supply base.

Both OEMs and suppliers agreed that there are attributes that some companies emphasize more than others. OEMs stated that GM and Nissan are focused on cost reduction, Volkswagen on financial strength, Toyota on quality, DaimlerChrysler and GM on global sourcing, Toyota on regional sourcing, Daimler on technology, and Chrysler, Honda, and Toyota on supplier relationships. OEMs and suppliers were less clear as to Ford's emphasis. Suppliers commented that GM wants the best for free, DaimlerChrysler treasures what the supply chain can offer in technology, Ford is still piece-price oriented, and Toyota is the best in total acquisition costs. Some of the

manufacturers have not let go of their own engineering and continue to micromanage suppliers.

The greatest divergence among OEMs is between those that are focused on the cost of components versus those that focus on the total systems cost. A few respondents reported that Toyota understands the total systems cost, but GM does not, and Fiat even less so than GM. However, as one supplier pointed out, there are nuances within every OEM. Suppliers must function as a customer-driven organization to tailor their product to the culture of GM Truck rather than to other divisions of GM.

In summary, the primary disagreements among the respondents are about the minimal standards needed to compete in the industry, versus the important and differentiating selection criteria. There is little evidence here of rigid, distinct models, demonstrated by the large number of miscellaneous or unique responses, but rather of a core set of important criteria that differ more in emphasis across OEMs than between nation-based industries.

Industry Consolidation and Power Shifts

We asked the interviewees if the recent consolidation in the supply base and among the OEMs has affected the nature of the OEM-supplier relationship. The answer from our respondents was unanimous—industry consolidation certainly is affecting the OEM-supplier relationship.

Consolidation across the supply chain has implications for both groups. As each group consolidates, the other group becomes more dependent and therefore pressured to cooperate and accommodate. However, the rapid consolidation in the supplier industry has probably increased suppliers' relative power.

Consolidation has created larger and more capable suppliers that take more responsibility for functions such as design, manufacturing of parts, and understanding customer needs. These changes allow suppliers to provide a different product—modules and systems instead of parts. Indeed, mergers and acquisitions have created a number of “megasuppliers” capable of producing complete vehicle systems in addition to individual components. These larger suppliers are in stronger bargaining positions, with more leverage in decision making.

These developments, combined with the general trend of OEMs outsourcing design and engineering services to their suppliers, raise an important issue of whether the traditional power balance between manufacturers and suppliers has shifted. Interestingly, half of the respondents believe it has and the other half think it has not; both manufacturers and suppliers are divided in their views.

None of the interviewees went so far as to say that the balance of power has shifted completely to the suppliers, but a number do say that it has become more equal over the past ten years. One pointed out that suppliers are now in a position to resist the OEMs, contrasting supplier compliance with OEM directives about EDI (electronic data

interchange) ten to fifteen years ago with resistance to OEM directives about Internet exchanges today.

An OEM respondent, while noting that supplier consolidation has been positive in terms of sharing R&D responsibility and investment risk, stated that in many cases his company now has only one or two suppliers for several parts, resulting in diminished flexibility in terms of switching sources. This interviewee feels that this will actually help the process of developing a long-term partnership since increased switching costs put more pressure on OEMs and suppliers to work together. Another OEM respondent echoed this sentiment, saying that he had not noticed a huge shift in power balances, but was no longer in a position to bully suppliers since the context is now one of a partnership. Indeed, one OEM noted that it is now being forced by circumstance to deal with the larger suppliers as partners.

Both manufacturers and suppliers are struggling with how to continue to develop strategic advantage in their relationships. OEMs seek a low price but they also want healthy suppliers. One interviewee suggested that since there are fewer companies to select from, it is now even possible that if a relationship problem exists, the responsible individual at the OEM will be replaced instead of the OEM changing suppliers.

Some suppliers believe that some manufacturers feel threatened by suppliers gaining power, preferring to believe that OEMs have not lost any power. However, a few OEMs do express concerns about suppliers gaining power because of their size and sole sourcing potential. OEMs are also concerned that supplier brands will become recognizable or important to the consumer, which would restrict the OEM's ability to switch suppliers. One respondent feels the Cummings engine on the Dodge Ram pickup came close to that situation. The Intel microprocessor is an example from another industry of a dominant supplier with as much as or more consumer brand-recognition than the computer manufacturer itself.

Other OEM respondents did not perceive any fundamental change in the manufacturer-supplier power balance, although for quite disparate reasons. Some assert that since OEMs are the ones buying the components, the balance of power will never change because whoever has the money will exercise the power. Still others thought that the global OEM consolidation would mitigate the effects of the supplier consolidation—first, by making it harder for suppliers to have a diversified customer base; and second, by disrupting traditional sourcing arrangements through OEM consolidation. A number of respondents mentioned the Renault-Nissan and DaimlerChrysler combinations as instances of a dominant partner favoring its own suppliers and procurement processes over those of its less dominant partner.

Some manufacturers with a partnership philosophy insist that they already share power with suppliers and will continue to do so. These OEMs think that the shift in power, if it is occurring, is not having much of an effect on them because they already tend to be involved in partnerships and sharing responsibility with their suppliers. However, these manufactures think that some of their competitors with different philosophies will be more concerned about power shifting to suppliers.

On the other hand, some suppliers think that power is shifting to a more equal balance and that the large suppliers will be the likely winners. Tier one suppliers are able to think about a request from an OEM and then decide whether they are comfortable implementing the request. This is often a new decision for suppliers, as is their opportunity to share in investment risk with R&D, design, and manufacturing.

If it is unclear whether consolidation has altered the actual power balance between manufacturers and suppliers, it is clear that it has influenced the nature of their relationships. Most of the examples our interviewees provide suggest that manufacturers are more constrained in their actions now than in the past, and that large suppliers have somewhat more control over their own situations. This suggests that the balance of power in the relationship has indeed changed, even though it clearly has not completely reversed.

Industry Consolidation: Other Issues

Supplier consolidation is a direct outgrowth of manufacturer consolidation, according to our respondents. OEMs hope to reap the benefits of synergy from mergers and takeovers. Limiting the number of suppliers that the consolidated OEM uses is one method of accomplishing this. The response from suppliers is to grow and add capabilities so that they have more leveraging power to resist OEM cost-cutting tactics. Size is now believed to be important for supplier survival.

Large suppliers are better able to pick their customers, a reversal from the current one-way situation of OEMs selecting their suppliers. This makes the formation of the manufacturer-supplier relationship more a matter of mutual choice, and this might lead to more stable relationships. However, consolidation of the OEMs limits the number of available customers, a fact that generated many mentions from both manufacturers and suppliers. For example, it is becoming more difficult for suppliers to avoid doing business with certain OEMs, such as Ford, General Motors, Toyota, and DaimlerChrysler, as these manufacturers control so much of the world's production through their own or their affiliated companies.

Increased supplier size has created opportunities, both negative and positive. OEMs mentioned many positive opportunities resulting from supply base consolidation. Some supplier mergers create synergies that increase their product offering and technical capabilities; for example, the acquisition of Prince by Johnson Controls. There is the potential for personal relations to improve with a merger as well.

On the other hand, consolidation of the supply base means that many good suppliers have disappeared and that OEMs are forced to locate and qualify new suppliers to fill their place. It also means that if a competitor has been swallowed up or merged, an OEM may be left sourcing a component or system to a single supplier. One manufacturer indicated that too much consolidation of the supply base was dangerous for this reason.

Moreover, increased size seems to have slowed some suppliers' ability to act or react and has made some of the large tier one suppliers more cumbersome. One OEM

cautions suppliers about focusing on growth for the sake of growth. Suppliers should be focusing on and funding the development of their core competencies, rather than buying or merging with another company and failing to create synergies.

If new business opportunities and partnerships can be created with consolidation, current opportunities can also be lost. Some suppliers noted that they gained new opportunities with Renault but lost current business with the restructuring of Nissan at the consolidation of Renault-Nissan. U.S. suppliers also feel threatened as the Daimler culture predominates at DaimlerChrysler. Many suppliers seem apprehensive that the purchasing executives at DaimlerChrysler will be less likely to sponsor suppliers than they would have at Chrysler.

Our respondents expect any slowdown or downturn in the U.S. economy to accelerate supplier consolidation, as it thins out suppliers who are unaware of their costs, bought business at any cost, or paid huge premiums for acquisitions and now cannot reap synergies. One of our interviewees mentioned a company that fits this mold. Moreover, the precariously thin margins of some suppliers have become evident with some recent production cutbacks at Ford, DaimlerChrysler, and General Motors due to slowing sales and building inventory. Much publicity has focused on Visteon, Delphi, and other large suppliers, perhaps because of their size.³⁰

So consolidation among OEMs and among suppliers is having diffuse effects throughout the industry, and is a major correlate of restructuring. An economic slowdown is expected to accelerate this sorting out of the weak and the strong suppliers. We turn now to consider another major driver of industry restructuring and consolidation, e-commerce.

³⁰ At the time these interviews were conducted (summer 2000), few analysts or industry participants expected to see such an imminent or sharp downturn.

Internet Parts Exchanges

The automotive industry dwarfs most other industries in terms of its total sales and share of the nation's economic output, so efforts to put the industry's purchasing activity online have captured wide attention. The Big Three purchase billions of dollars worth of on-board and MRO (maintenance, repair, and operation) parts each year. So their plans to shift a substantial portion of this purchasing to the Internet and Internet-based trading exchanges constitutes a major and massive shift in the industry's activity, and potentially in its very structure.

This new and exploding world of e-commerce could well have numerous and major implications for automotive manufacturer-supplier relationships. Manufacturers and suppliers are establishing business-to-business (B2B) portals for e-commerce that will include online parts exchanges with their suppliers. These exchanges will make other activities possible, through the use of tool sets, although these are currently less well defined. This new model has the potential to revolutionize the supply chain structure, as well as the functions of communication, product development and design, purchasing, and supply chain management.

Industry proponents of exchanges in general and of Covisint³¹ in particular expect great improvements in efficiency as well as cost reductions. They argue that this Internet parts exchange should increase the flexibility, reliability, and speed at which business is conducted in the industry, although they offer few details and only general explanations of how these goals might be achieved. The exchange promises to save money by reducing the cost of the actual transaction itself. It will also reduce the total transaction time, covering the span from receipt of order to delivery of product, even allowing a shift from a system of build-to-stock to build-to-order, with potential inventory savings in the billions of dollars. Moreover, proponents argue, all industry participants can potentially capture some of the promised benefits and savings of e-commerce, and it provides increased connections to customers and other suppliers that will improve performance and customer satisfaction.³²

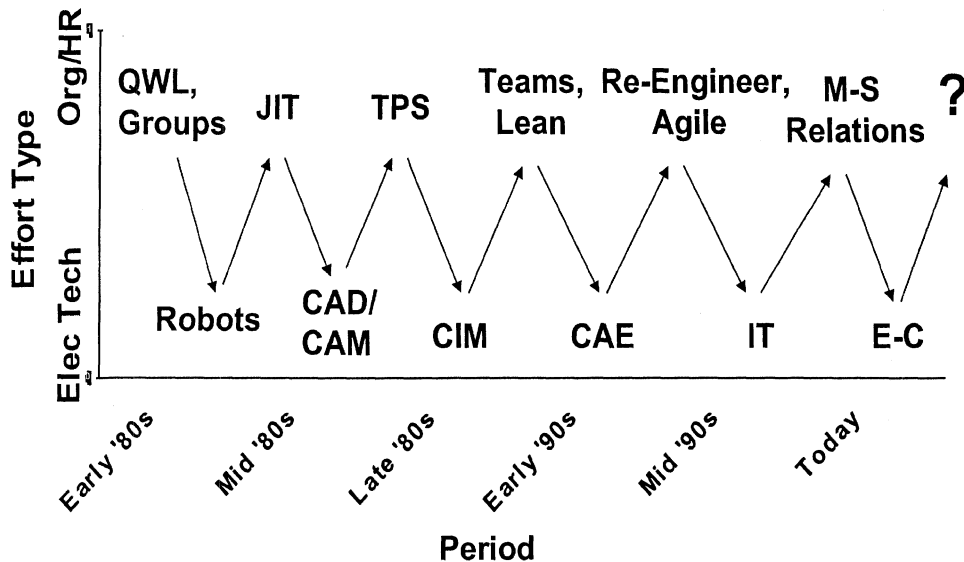
However, many of the past attempts to align electronic communications and data exchange between automotive manufacturers and their suppliers have been neither especially rapid nor particularly successful. Indeed, acrimony and suspicions about the motives and capability of each party by the other often accompanied these efforts.

Such efforts have taken place in the context of the industry's general tendency to implement solutions to problems, but then abandon them if the efforts fail to yield immediate and major improvements, and moving on to the next "quick fix." To complicate the situation even further, the industry appears to follow a pattern of alternating its emphasis on improvement programs between those that are more

³¹ Covisint is a trade exchange originally established by the Big Three, but now including Renault and Nissan.

³²Ernst & Young. "Connected Suppliers: When your supply chain becomes a 'value web'." 2000. www.ey.com.

grounded in technology and those that are more anchored in organizational efforts. This pattern is suggested in Figure 4 below.



Source: OSAT

Figure 4: Industry Enthusiasms Alternate Emphasis

Of course, each of these solution efforts influences and shapes the improvement programs that follow it, just as these subsequent efforts alter and change the continuing activities associated with those earlier efforts. This is especially the case if the efforts are targeted to the same underlying problem or challenge. This situation of mutual influences, combined with the pattern of alternating emphasis among different improvement efforts, makes the question of how the growing enthusiasm for the Internet and e-commerce might influence the structure of the manufacturer-supplier relationship extremely important. In some sense, it would probably be surprising if the rapid deployment of the Internet and the recent creation of trading exchanges in the automotive industry did not alter the structure of these key relationships.

It remains to be seen whether e-commerce will become more than just another quick fix for the industry, an enthusiasm deeply, but briefly embraced. We suspect that e-commerce will endure, eventually forcing fundamental changes in the industry's business processes and the supporting structure of its manufacturer-supplier relationships, as well as the increasingly important relationships among suppliers located in different tiers. Nevertheless, we recognize that it is extremely uncertain how long this process will take.

Relationship Implications

We questioned the interviewees about the implications of e-commerce and especially online parts exchanges for manufacturer-supplier relationships. These discussions

revealed some interesting differences in views, although in many instances the differences were not so much between the manufacturers and suppliers as they were variations across all the companies, regardless of their industry role. Our interviewees discussed a number of exchanges, both horizontal and vertical, but Covisint dominated most of their comments. There were arguments made both for and against the success of Covisint in particular, and some of these points probably apply to other exchanges as well.

In one sense, there does seem to be an already emerging consensus that Covisint is unlikely to force basic changes in the manufacturer-supplier relationship. Overall, seven of nine respondents said that Covisint and other exchanges would not herald a fundamental shift in manufacturer-supplier relationships. On the other hand, one supplier thought the trade exchanges do presage major change because they will force suppliers to understand their cost structures more thoroughly and to act so much more quickly. An OEM also commented that it is simply too early to tell whether exchanges would force sufficient change to remake the fundamental relationship.³³

However, this broad consensus obscures the fact that respondents hold widely varying views on what Covisint's promise may be, what it should accomplish, and the concerns they express about it. Their responses suggest they see clear, if varied, implications for manufacturer-supplier relations as the industry moves to Covisint and other Internet exchanges. We turn now to consider these issues.

First, what does Covisint promise, in the sense of the advantages the industry expects it to confer on its users? Table 4 below displays the views of our respondents on the various advantages of trading exchanges like Covisint. To be sure, they mentioned other advantages in response to other questions, but these are their most directly expressed views. Thus nearly all respondents suggested at some point in the interview that exchanges should save both time and money through the tools that they will, or should soon, offer.

Table 4
Advantages of Covisint and Other Trading Exchanges

Number of Responses	OEMs	Suppliers	Total
Cost Reductions	2	3	5
Standardization	3	1	4
Tool Sets	3	1	4
Speed	2	2	4
Openness	1	1	2
Ownership Value	1	0	1

³³ However, when discussing the extent to which Covisint fits with their current purchasing philosophy, interviewees' remarks certainly suggest that there will be major change, if Covisint indeed becomes an industry-wide utility, as its founders envision. See the discussion below on page 39.

Cost reductions received the most interviewee mentions of exchange advantages, followed closely by speed, standardization, and the various tool sets the exchange might support. It merits comment that two of these advantages, standardization and the provision of tool sets, probably require great change in the industry. The more conventional advantages of cost reduction and speed may or may not require very much change. The issue of standardization is a knotty one because suppliers see it as a solution to multiple and conflicting demands by the OEMs, demands that the suppliers see as wasteful, but the OEMs often believe reflect and implement their own competitive advantages.

The respondents offer quite varied estimates of the speed advantages of the exchange, probably reflecting differing views of what portion of purchasing can be accomplished on it. But in general they expect the bid time to shorten dramatically—perhaps from two weeks to about one hour in the view of one supplier. In the old quote system, it could take more than a year to go through the negotiations required for a complex part or system with as many as 400 part numbers and 30 suppliers. With the new system and the use of the Internet, one respondent estimates that it is possible for the data collection portion of the bid to be reduced from nine months to just minutes.

Respondents also suggested some interesting potential benefits to the exchanges, especially for small, lower-tier suppliers. Exchanges might offer these suppliers the possibility of aggregating purchases, obtaining scale discounts for goods and services. The exchange might also provide smaller suppliers some visibility to the OEM customer.

Some OEM respondents directly reject the conventional criticism that the exchanges are merely auctions that will fundamentally change the current purchasing process. These manufacturers believe that the exchange emphasis will be on the speed of transactions, a variety of tools, and standardization. Whatever their views on the overall benefits and costs of the exchange, the OEMs suggest that there is too much “hype” surrounding the exchanges and too much attention focused on the reverse auctions in particular. Perhaps the exchanges—and the industry—would benefit from a bit of “benign neglect.”

Interviewees made some interesting connections among potential exchange advantages. For instance, some thought that the increased speed and transparency on the exchanges will translate into increased openness in the OEM-supplier relationship. Quite simply, exchanges provide less opportunity for either party to obscure or distort its actual position. Similarly, another respondent suggested that faster transaction times might release supplier sales staffs to devote more time to developing and improving customer relations.

Second, our respondents made a number of trenchant observations on what they feel Covisint and other trading exchanges should accomplish, without regard to what they are actually likely to accomplish. Some of these views highlight the use of the exchanges and the Internet as communications tools, thereby expanding the business that can be transacted through them. They also commented extensively on the tools that should be offered on the exchanges and the power of these tools, although they mentioned few specifics. In their view, e-commerce exchanges should certainly be used

to transfer drawings and warranty information, enable collaborative product development, and manage the supply chain. Some of our respondents thought that trade exchanges would have little effect on manufacturer-supplier relationships unless they provided the right tools and lots of those tools.

Perhaps the tools interviewees anticipate most are those that allow participants to manage their supply chains. However, one manufacturer noted that these tools must provide the facility for each manufacturer to create its own business style within the exchange framework, rather than forcing a "one model fits all" approach. Such supply chain management tools could save large sums of money and serve large volumes. Respondents also noted other, less strategic benefits that Covisint might offer, including the ability to aggregate volume for certain commodities and the equity value that Covisint will offer its key manufacturer owners.

It is interesting to note that some respondents occasionally directly challenged the rather conventional listing of exchange advantages in Table 4. One supplier said that the ownership of Covisint by the OEMs actually was a negative because it would color the business relationship and the perceived fairness of the transaction. One OEM referred to the dollar values often attached to Covisint ownership as extreme hyperbole in any case. Another OEM commented that the cost reductions associated with the transactions would be small, mainly rooted in a more efficient means of processing transactions, and that major cost reductions would have to come from other efforts. Another interviewee suggested that the large volumes generated by the exchanges do not necessarily guarantee the best price. This is because commodity manufacturers will not sell to the exchanges at lower prices than they quote for other current contracts, since such undercutting of their current contracts would threaten their pricing structure.

Third, the introduction of the Internet exchange and online parts auction do indeed raise many supplier fears and concerns. Most respondent discussions focused on the reverse auctions of Covisint and their perceived benefits or threats. The auctions seem to be the point of greatest concern about the exchange for suppliers.

Other supplier concerns include the assessment of fees or imposition of costs to participate in the exchange, the confidentiality of the Internet site, and the strain that companies may experience because of human resource and staffing requirements for e-business. They also worry that Covisint may not achieve interoperability of electronic portals and exchanges, and want to know what tools Covisint will provide for product development, purchasing, and supply chain management.

For many suppliers, the appropriate business and investment models for e-business are unclear and they fear that the cost transparency of the exchange will make it impossible to make a profit. Some suppliers are afraid that only top tier suppliers will benefit from the exchanges, or that lower tier suppliers may not participate, effectively denying much of the benefit of the exchange to all participants. Suppliers also fear that participation in Covisint exclusively will be required, keeping them from participating in other exchanges. One of the most serious supplier fears is that their products will come to be viewed as commodities on the exchanges.

As OEMs continue to compete against one another to reduce costs, they will continue to place heavy cost pressures on suppliers. Both our manufacturer and supplier respondents agreed that all manufacturers expect continuous improvement on cost measures from suppliers each year. Several of our manufacturer respondents noted that there exists tremendous opportunities for improvement in the cost area that suppliers have not yet explored.

Several of the respondents voiced some level of skepticism about exchanges in general. A few interviewees expressed outright skepticism about the potential success of Covisint, seeing the initial announcements of Covisint as a means to cut costs, rather than for wider communication, as a fatal flaw in the model. They also suggested that failure to share equity equally among the manufacturers and at all with suppliers would be a major barrier to the promise of Covisint. They feel that key issues such as security and ownership of data have still not been resolved. The skeptical interviewees tended to report that for Covisint to be successful it should be used for communication purposes first, then procurement, and finally product development. For these interviewees, it is still unclear how Covisint will create value.

Suppliers raise most, but by no means all, of the concerns about the exchanges. Many manufacturers eagerly anticipate the great savings that they expect from these auctions. Yet one manufacturer suggested that if an overemphasis on exchanges develops into the foundation of the OEM-supplier relationship, with every relationship based on auctions and market competition, then it becomes difficult for suppliers to display their technology, quality, and logistics to their customers. Another OEM expressed concern that suppliers would begin to abuse the power they could gain from the consolidation the exchange will likely foster.

We also asked our respondents two specific questions about the exchange. The first focuses on an extremely critical issue facing the industry: How will lower tier suppliers function in the exchanges? This issue revealed important differences among our interviewees. First, eight respondents said that lower tier suppliers should be involved in Covisint, stressing the importance of this for the industry to reap the full benefits of the exchange approach. The ninth respondent was not yet sure. Nevertheless, the issue of lower-tier involvement itself raises some other important issues, especially identifying whose responsibility it is to involve them, and what barriers this might encounter.

Most respondents expect first tier suppliers to manage the lower tiers and the OEMs to drive the technology. On the other hand, a few respondents thought that each tier should be responsible for themselves, arguing that the technical requirements are neither difficult nor expensive. However, one supplier noted that the human resource requirements of the exchanges could place a strain on the financial resources of lower tier suppliers. In particular, suppliers will require workers trained to make quick decisions based on complex information, and they will not come cheap.

Some respondents feel the exchange auctions will likely speed up the demise of weak suppliers, either through the difficulty they will experience in adopting the technology or through the fierce price competition that auctions will encourage. This suggests that

e-commerce will indeed foster further consolidation of suppliers. This is an interesting possibility, because as suppliers consolidate and there are fewer available to participate, the value of the auction diminishes.

Second, we also asked whether usage of an electronic exchange fit with the company's historical purchasing strategy or philosophy. Four of our respondents, two OEMs and two suppliers, reported that the exchange either fits with their historical purchasing strategy, or at least is not in conflict with it. However, one of the suppliers stressed an expectation that the exchange would be used in fairly targeted ways, and would not replace the traditional purchasing relationship.

Four reported that exchanges did not fit their traditional strategy, and one was not yet sure. The Japan-based manufacturers agreed that their historical purchasing strategies are, to some extent, inconsistent with the exchanges as typically described. This suggests that these respondents may opt not to join the exchange, or, if they do, might face major change efforts to reconcile or coordinate their current thinking and approaches with such participation.

It is clear that the bidding process at the heart of exchange auctions does not fit the purchasing model, or even cost-reduction strategies, of all the manufacturers. For example, one manufacturer said that utilizing the auctions would be tantamount to admitting that it needed them to achieve cost control. Instead, they prefer to work with target costs and cost control efforts with suppliers that are aimed at progressively lowering the targets. This manufacturer does not feel the exchange approach will fit with its basic philosophy of purchasing relationships.

These initial views about Internet exchanges and Covisint highlight some real differences among our respondents. There are certainly differences in their views of the value of these exchanges, whether from the perspectives of cost, speed, standards, or tools. Indeed, they vary in their views as to whether the exchange itself is more a tool or more a matrix for other functional tools.

They do see important challenges of implementation, including a bit of a dilemma of less expensive technology versus more expensive human resources. There are somewhat differing opinions about whether the exchanges will drive more consolidation among suppliers and possibly OEMs. Moreover, much of the value of the exchange is expected to appear only when suppliers at all levels of the value chain are participating.

All of our respondents reported that their companies will make use of the Internet and trading exchanges, although they will use them for differing purposes, exchange different content, and have clearly different expectations of their role and value. We turn now to consider some of these issues in more detail.

Potential Cost Savings

The current conventional wisdom holds that the centralized online marketplace should bring considerable efficiencies and cost reduction. However, recent estimates of the

scale of these savings vary widely. For example, one analysis suggests the savings could be as high as \$3,600 per vehicle in the United States.³⁴ Cost savings on this order may be exaggerated, according to another analysis, which estimates U.S. savings at just below \$1,200, with roughly three-quarters of the savings passed on to consumers.³⁵ This study also notes that consumer prices will be only modestly affected due to the added cost of increased electronic technology and services that will be offered in the vehicles.³⁶ Industry-wide use of electronic commerce technologies that improve communication throughout the entire value chain could save roughly \$1 billion annually, according to AIAG's Manufacturing Assembly Pilot project.³⁷

Our respondents also report a wide range of estimates for any potential cost savings. However, nearly all evidenced skepticism about the larger published numbers, and there was a consensus that the cost savings will be lower than the expectations generally supported by analyst reports. Two respondents refrained from providing specific estimates. The others either provided estimates or sufficient data for us to calculate their implicit estimates. Two respondents were clearly skeptical about the estimates they offered, although they do represent some level of company expectations.

Most estimates of the per-unit savings fall in the hundreds of dollars, with two low estimates at about \$120 and the highest at \$1,250. Two manufacturers estimated that the saving would be \$1,000 or slightly more, although they were unsure of where those savings would be generated, and one was frankly skeptical that much of any savings would actually be achieved. One respondent remarked that surely manufacturers would realize varied cost savings, depending on how efficient their current system already is. Another manufacturer cautioned that these savings would not be realized immediately, but rather would come years down the road as efficiencies from the system were developed. Finally, another manufacturer stated that the consumer would see none of these cost reductions in the form of price reductions because they would be used to offset the additional safety and telematics features that will soon become standard in vehicles.

Our respondents expect to see cost savings from the exchanges to come primarily from reduced administrative cost and through increased Internet communication, inventory control, and coordinated production. There is no short cut to cost reduction, one Japanese manufacturer remarked; it must be achieved through increased process efficiencies. Indeed, many respondents argued that if the exchange fails to include inventory management and design collaboration, then the promised savings cannot be realized.

³⁴ Lapidus, Gary. "Gentlemen, Start Your Engines!" Goldman Sachs & Co. January, 2000.

³⁵ Deutsche Bank and Roland Berger Strategy Consultants. *Automotive e-Commerce: A (Virtual) Reality Check*, June, 2000. The study also concludes that manufacturers in Europe and Japan are already managing their inventories and other aspects of the business better than manufacturers in the United States, and consequently will have lower savings, perhaps on the order of \$639 in Europe and \$540 in Japan.

³⁶ Gardner, Greg. "On-line purchasing will save Automakers \$1,200 per car, study predicts." *Detroit Free Press*. May 24, 2000; Lapidus, Gary; "Online." *The Guardian*. April 13, 2000, p. 2.

³⁷ Ernst & Young.

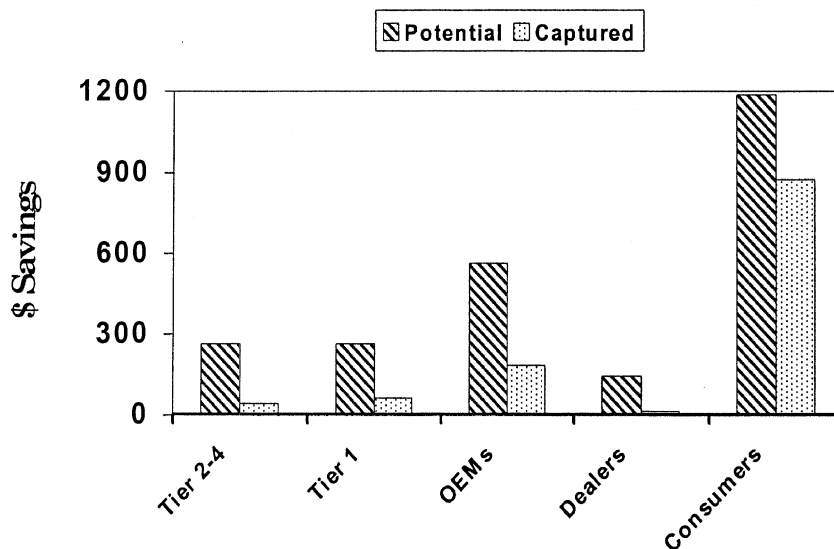
The cost savings will be amplified by other expected benefits, including speed and efficiency. However, one OEM respondent remarked that even though the exchange will allow them to be faster and more efficient, their competition will be too, suggesting that it may not become a competitive advantage, but simply raise the competitive standard. Another, more long-term benefit includes information from consumers that will eventually be included in Covisint, informing purchasing decisions and reducing errors and therefore enabling cost reductions. This final comment also points to reductions in the order-to-delivery time that the manufacturers hope to achieve.

A continuing point of tension in the industry is how to allocate savings across the value chain when the efforts of all contribute to the savings. We asked four of our respondents how these exchange savings will be allocated. Two suppliers agreed that OEMs would take all of the savings or as much as they possibly could. One of these suppliers also speculated that perhaps his company could garner half of that level of savings from its own suppliers.³⁸ The other two respondents, one OEM and one supplier, concurred that the savings should be shared throughout the supply chain, although the basis of sharing is not yet clear. The OEM commented that it is important that suppliers maintain their margins.

The Deutsche Bank and Roland Berger analysis discussed below provides estimates of how the savings will be allocated across the entire automotive value chain.³⁹ These are displayed in Figure 5. These analysts expect that consumers will capture the lion's share of the savings, somewhere between 70 and 80 percent of the total. Whether these savings will be realized as price reductions or as coverage for the cost of extra non-optional equipment is an open question, as one of our respondents noted.

³⁸ This comment serves to remind us again that suppliers do not always apply the lessons they learn in dealing with their OEM customers to their dealings with their own suppliers!

³⁹ Deutsche Bank and Roland Berger Strategy Consultants, p. 59.



Source: Deutsche Bank and Roland Berger Strategy Consultants, *Automotive e-Commerce: A (Virtual) Reality Check*

Figure 5: Potential and Retained E-Commerce Savings Across the Supply Chain

The report estimates that OEMs will be able to retain 15 percent of the savings in their activity domain, while first tier suppliers should capture about 10 percent, the same level as dealers, but second tier suppliers will retain only 5 percent of relevant savings. The bad news for suppliers is that these authors estimate that third tier suppliers will retain nothing, and fourth (or commodity) suppliers will actually lose money, as their investment costs exceed the miniscule profits available in the exchange-based auctions. These estimates support a general point frequently reflected in our interviews: Both the cost and benefits of the exchanges will be unevenly distributed.

We turn now to explore the question of what components and parts will be traded on these exchanges.

What Will Be Exchanged?

Much industry discussion has centered on how many and which components will be traded over the Internet exchange. Ford publicly suggests that 35 percent of purchasing could be handled through online transactions, while the exchange's contribution to limiting paperwork would reduce the cost of other transactions. Others argue that only about 20 percent of the products, those that are true commodities, will be appropriate for the Internet auctions.⁴⁰

⁴⁰ Bradsher, Keith. "Exchange This: Making Sure a Tire is More Than a Tire." *New York Times*. June 7, 2000.

Our interviewees again provided highly variable estimates, and again their estimates tend to differ from those provided in the public sources. Moreover, many of the respondents made their estimates contingent upon the different kinds of exchange activity and the nature of the exchange format. This makes their responses less directly comparable, but still reveals the variety of ways that the industry is thinking about this new technology and its potential.

The manufacturers expect more activity on the exchange than do the suppliers, and, not surprisingly, Covisint participants are more optimistic about its role and share of activity than are non-participants. Still, what may be most striking is that manufacturers and suppliers each reveal an amazing range of estimates for what will be on the exchange.

One manufacturer respondent reported that his company can eventually source the entire vehicle through the Internet exchange, while another believes that a large portion of the vehicle can be procured in time. Three manufacturers made considerably smaller estimates of the actual purchases they might make on the exchange. One manufacturer suggested that less than 5 percent of sourcing decisions are on commodity parts, the only parts that this company would buy on the exchanges. Another estimated even less utility, about 1 percent of the company's total purchases. The third simply estimated that company use of the exchange would be quite limited.

However, these smaller estimates must be qualified a bit. One of these manufacturers reported that the exchange could be involved in all purchasing if it is focused on communications rather than on auctions. The other two manufacturers with low estimates agreed that virtually all purchase orders could be transmitted through an exchange. On the other hand, these OEMs both stressed that if the exchange becomes merely a system to compare products, then its utility would be restricted as true commodity parts are quite limited in number.

Suppliers also varied in their reports of how much of the car can be sourced via the exchange, ranging from virtually anything, through commodities at 25 percent of the vehicle, to just a small percent. One supplier also stressed that the role of the exchange would be much larger if it became primarily a communications tool, rather than just a purchasing auction. In this instance, then, suppliers' responses were quite similar to the manufacturers', but both groups showed an extremely wide range.

Suppliers are quickly moving to add engineering value to their products, turning them into more complex systems that will not be so easily traded over an exchange, even though there is already much disagreement over which products will qualify for the exchange. Suppliers are trying to prevent their products from being treated as commodities through three major strategies: developing highly engineered, innovative products and integrated systems; seeking market consolidation of certain parts or systems; and supporting federal regulations and safety specifications. However, one OEM suggests that the widespread concerns among suppliers that the exchange will foster a more commodity-like approach are probably groundless. In this view, there are simply few commodities in the automotive value chain. Still, a supplier indicated that, in any case, the exchanges are not necessarily limited to commodity parts. With

competition, a well-specified bid, and discipline, even highly engineered components or systems could be auctioned, although this would not be favorable to the supplier.

These respondents also hold quite varied views of how much activity will be based on the exchange, and it is clear that a key issue underlying this debate is the definition of a commodity. Commodity parts are primarily those that are not unique in their specification or tied to limited, sometimes sole sources. Our respondents described a number of additional dimensions that distinguish commodities from differentiated or engineered parts. These include the barriers to entry, part capacity in the industry, number of value-added steps, importance of leading technology, and the proprietary nature of the part for either the supplier or the OEM.

There are also aspects of the part and its performance that are more difficult to measure, like pedal "feel" on a brake system, or ride and handling, that can distinguish a commodity from an engineered part. Increased engineering and complexity of parts, sometimes through mergers and acquisitions, can also prevent products from being viewed as commodities.

However, it is the application of such definitions to specific parts that creates disagreements between manufacturers and suppliers. Indeed, there seems to be serious disagreement over which parts are commodities and which parts are more customized, even among the manufacturers. For example, GM and VW believe that many parts could be standardized without hurting competitiveness, while Toyota believes far fewer parts can be. "Toyota doesn't want to put competitive components on an open market because it would go against its philosophy of treating its suppliers as 'partners.' We help suppliers cut costs through a guarantee of a long-term contract. Putting those parts on the open market pits us against suppliers in an adversary relationship," said Tadaaki Jagawa, a Toyota executive vice president, in an interview with the *Wall Street Journal*.⁴¹ It seems likely that Toyota and Honda will use Internet exchanges for purchasing certain raw materials and commonly used parts, where the relationship to the supplier may be less critical.

Our interviewees often mentioned office supplies, repair and maintenance parts, operating materials such as safety glasses for the factories, pulleys, and stamping presses as commodity parts appropriate for the exchange. But they also disagreed, as some manufacturers rejected the notion that batteries, glass, fasteners, paint, steel, and even raw materials to some degree are commodities. One manufacturer does not consider steel to be a commodity because of the tight and differentiated specifications that are required by each manufacturer.

The tire manufacturers argue that if they can be traded on Internet exchanges it will only be for the short term because their brand value in the aftermarket will be eroded if tires are traded like commodities on the exchanges.⁴² However, Ford and GM have each used tires publicly as examples of commodities suitable for the exchange, while

⁴¹ Shirouzu, Norihiko. "Toyota May Join Ford's Online System." *The Wall Street Journal*. January 25, 2000, p. A13.

⁴² Bradsher, Keith.

DaimlerChrysler and Toyota do not consider them commodities. DaimlerChrysler sees them as a more complex part of the brake and suspension design of the vehicle.⁴³ For Toyota, tires are the final part that can be used to improve fuel economy, handling, and stability. In fact, Toyota recently announced plans to produce and market own-brand tires, demonstrating the importance of the component to Toyota.⁴⁴

Interestingly, two of our manufacturer respondents specifically used tires as examples of items inappropriate for the exchange because of their importance in vehicle engineering and functioning for both safety and performance, as recently highlighted in the media coverage of the Firestone-Ford tire recall.

According to one supplier interviewee, the manufacturers consider everything to be a commodity, while suppliers consider nothing to be a commodity. Indeed, all our supplier interviewees believe that their output should be considered products and differentiated services, not commodities.⁴⁵ One of the OEMs stressed the need to develop more elaborate strategies for its relationships with suppliers, particularly emphasizing the need to recognize that there are parts that should be competitively bid, but there are also parts that should be jointly developed with a particular supplier.

There has always been tension in the industry as manufacturers and suppliers try to develop an advantage by labeling parts as commodities or as differentiated products. Our interviews suggest that this tension has been exacerbated by the potential implications of the role of the exchange in a part's procurement. We suspect this heightened tension will continue for some time, before abating as the exchange's role is broadened and becomes more familiar.

Modular Assembly and System Integration

The emergence of system integration and modular assembly is a major development with implications for product development, manufacturing, and the supply chain structure itself. Most of our respondents believe that we will see further development of this approach, although OEMs appear to be more certain of this than are suppliers. However, several are still uncertain how much more modular activity we will see. The respondents see union resistance, cost factors, and supplier willingness to accept responsibility as the major barriers to the further expansion of this approach. However, the OEMs reveal two different approaches to the cost problem, one stressing the relocation of labor to less-expensive supplier facilities, the other the redesign of modules to improve productivity.

Again, most respondents believe that the Internet exchanges will enable collaborative engineering and supplier coordination, both of which should facilitate system integration and modular assembly. However, two of our respondents believe that the

⁴³ Ibid.

⁴⁴ Fisher, Paul. "Toyota Moves Towards Own-Brand Tires." *AutoAsia E-newsletter*, August 17, 2000.

⁴⁵ Since all our supplier respondents are in fact from large, highly competent, technically sophisticated suppliers, this is not surprising.

Internet will not particularly accelerate the growth of modular assembly, despite the expanded communication capabilities it may offer.

One supplier commented that half of the battle of doing modules is having the information and connectivity among the players, and the Internet will facilitate a network of the necessary communications and relationships. A manufacturer also stressed the network potential of the exchange, replacing the serial activities necessitated by current supply structures. Another OEM attributed the success of recent modular projects to the tools now available through the Internet and information technology. Covisint will likely offer a product development tool that would facilitate modularization as it comes to incorporate suppliers across all tiers.

One supplier believes that such a tool may help them manage their own, and thus second tier suppliers. The reality is that Covisint may support a supplier network rather than the serial chain model so familiar today. If that happens, the OEMs may seek to regain some control over their indirect supply base, taking back a responsibility that has been gradually transferring to system integrators, or first tier suppliers. However, these interviews suggest that some manufacturers see Covisint as an asset for their direct suppliers to manage the indirect or lower tier suppliers, rather than as a means of recapturing that control.

Many of the changes in the industry suggest that there may be further consolidation. Reconfiguring the supply chain, the financial and/or human resources investment demands of new technologies, and a more competitive climate all suggest that the supply base may be in for another round of consolidation. Financial demands for new products, basic R&D, and cost pressures all could force further consolidation among the OEMs. We discuss this issue next.

Supply Base Size and Structure

We previously discussed how consolidation could potentially lead to power shifts (pages 29-31). When related to e-commerce, our respondents indicated additional ways in which consolidation could affect the industry structure.

There is a clear consensus of our interviewees on the size of the supply base: Eight of nine respondents said that the supply base will consolidate further. Three of the eight said that they hoped to see their own supply base consolidate, while the other five said that the supply base in general would consolidate. One manufacturer suggested that because the first tier suppliers will make more modules, there will be less need for the manufacturer to have direct contact with second and third tier suppliers, reducing their direct supply base. Continued mergers and acquisitions will consolidate the supply base, but this activity should decrease as the U.S. economy slows down.

The ninth respondent, an OEM, said that there would be no net change as some suppliers fail, but other companies enter the automotive supply business. This respondent feels some suppliers will be lost through competitive sourcing, strategic partnering, consolidation, or the gradual move to modules, eliminating a number of end-item parts and therefore suppliers. On the other hand, new suppliers will be

attracted to the automotive industry, as its demand for new technologies and electronic content grows. Fuel cells and telematics are examples of new technologies that may require suppliers from outside the current automotive supply base.

The Japanese manufacturers also suggested that there will be restructuring beyond simple consolidation, as some suppliers leave the first tier ranks and move to the second tier. Some suppliers will choose not to meet mounting demands for product development capability and speed, and will move to a lower tier. Other interviewees also identified some first tier suppliers they believe are at risk because they have not gained efficiencies from their merger and acquisition activity, and still others that may simply not be able to meet the challenges of being first tier.

Suppliers see consolidation among their ranks driven by the need for scale and leverage. One respondent mentioned the threat of takeovers fostering consolidation, particularly for key suppliers with low market valuations. Several of the interviewees stressed the importance of suppliers knowing their cost sheet. The manufacturers generally agree that first tier suppliers will not be able to manage a great number of second and lower tier suppliers. The consensus is that suppliers will be bigger, but fewer in number.

Our respondents were in general agreement that there will also be consolidation in the lower tiers, especially if a downturn in the U.S. economy eliminates weaker players. Several of the suppliers noted that they want to reduce their own number of suppliers. One thought the number would be reduced due to raw material purchasing on a global basis. Others suggested consolidation will occur in the lower tiers due to the same pressures that caused consolidation among the first tiers and the manufacturers.

Interestingly, all four suppliers added that consolidation would also occur among their customers, the manufacturers. Suppliers will then be able to pick and choose their customers more carefully.

Threats to Manufacturer-Supplier Relationship

We asked our respondents to identify the three biggest threats to future stability in the manufacturer-supplier relationship. Table 5 displays the major concerns, by manufacturer and supplier. The major categories are the ability of suppliers to manage their cost and customers, various economic threats, continued consolidation, and changes in technology.

The broad categories again conceal important variations in the thinking of these interviewees: While their concerns may be generically the same, they often differ in the way they are specifically manifested.

Table 5:
Threats To Manufacturer-Supplier Relationship Stability

Number of Responses	OEMs	Suppliers	Total
Supplier Management of Cost and Customer	3	3	6
Economic Threats	2	2	4
Consolidation	1	3	4
Technology	2	1	3
Global Issues	1	1	2
Single Mentions	3	1	4
Total	12	11	23

The discussions of suppliers' ability to manage costs and customers included questions about their ability to coordinate their increasing responsibilities while continuing to reduce costs year after year. Some respondents worried that the financial stability of the supply base may be too tenuous to absorb continued cost pushdowns from the manufacturers. There were some interesting contrasts in the views of our manufacturer and supplier interviewees on these challenges to the suppliers.

As the industry moves towards a system approach, the size and significance of each contract may well stretch a supplier's capability, and could create serious problems. One supplier noted that contracts are becoming so large, and the efforts of the OEMs to reduce their supply base so strenuous, that one contract can make or break a supplier. Suppliers will surely need to make huge adjustments if they lose such a contract, but they may also be strained if they win one, as they will have to develop the ability to manage these larger contracts. An OEM agreed, noting that suppliers must avoid becoming too reliant on just one customer, although offering a very different reason for the concern. This respondent suggested that OEMs today watch the relationship of suppliers to the OEM's competitors, and will move business away from a supplier they believe is too dependent on a competitor.

In another instance, the OEM and the supplier each criticized their own peers, rather than the other party. Thus one supplier noted that the aggressive pricing of some suppliers could create problems, as these suppliers bid for work at prices they cannot sustain, but set unrealistic expectations at the OEMs. One manufacturer essentially agreed, although he emphasized the role of the OEM in pushing suppliers to reduce their prices beyond the sustainability point. He commented that a low-cost, but bankrupt supplier is worthless.

Four interviewees mentioned economic and market developments that could threaten the relationship. One supplier expressed particular concern that the market is driving the OEMs to develop more and more niche vehicles, and this makes for a level of complexity beyond the industry's comfort zone. This almost surely would damage the relationship. A manufacturer also focused on market developments, but he highlighted

the development of a much more competitive U.S. retail market, one characterized by some as "hyper-competitive." And this, he notes, is developing in parallel with another important economic factor: National and regional economies around the world can now damage all the leading automakers. In his view, today's automakers, wherever they may be based, are no longer insulated from Brazil's economic troubles, the slow progress in reforming Japan's economy, or financial problems in South Korea. And this can stress their relationships with their suppliers.

One manufacturer commented on his concerns that an economic downturn would certainly damage, if not destroy, the many suppliers that are heavily leveraged. A supplier shared this worry, but more directly by saying that the financial stability of many of the rapidly growing suppliers puts them at great risk in a downturn.

Consolidation will influence the relationship in a number of ways. First, an OEM expressed concern that as power shifts to the suppliers with consolidation, they may find it tempting to use it for their short-term advantage. In his view, this would be destructive for the OEM, the supplier itself in the long run, and the relationship. A supplier also commented on the changing balance in the relationship, suggesting that its basic terms are shifting as both OEMs and suppliers adopt new bargaining postures. A supplier noted that both OEMs and suppliers are having trouble integrating their newly acquired and merged entities, and this adversely affects the relationship.

Finally, one supplier commented that the consolidation at the OEM level certainly suggests there will be winners and losers among them. Which OEMs win and which lose is of critical importance to suppliers because OEM purchasing cultures and relationships differ so markedly. That could have a major influence on the suppliers' own success or failure.

Changes in technology will lead to changes in the composition of the supply base. One supplier noted that suppliers have to keep up technically, but many have not developed a sustainable technology base and have not invested enough in technology or research and development. A few suppliers feel that most OEMs are also falling short of proper levels of investment in technology and scientific research. Both Japanese OEMs stressed the importance of keeping up technologically. The possibility of new suppliers being attracted to the automotive business makes these concerns especially relevant to suppliers, as discussed above.

Two interviewees commented on the effect of globalization on future relationships between the OEMs and their suppliers. A supplier said that emerging markets may be promising, but they are very different, as are the vehicles they demand. The challenge is that the OEMs require their key suppliers to follow them all over the globe as the OEMs implement global procurement practices and overall global strategies. A manufacturer commented that the regulatory and legislative climate worldwide is changing the nature of the product and the industry. For example, fuel economy concerns now drive material substitution, rather than the more traditional performance issues.

A number of relationship threats were mentioned only once, but some of them are particularly interesting and merit consideration. A manufacturer reported concern that an overemphasis on the exchanges as the foundation of OEM-supplier relationships will limit those relationships. OEMs will not seek strategic partnerships, and suppliers will be less open in their negotiations with the OEMs. Another manufacturer said that continued pressure on suppliers' human resources, both production and technical workers, could strain the relationship. The third OEM reiterated a concern that the demands of fast-paced product development will lead to some suppliers changing tiers, and thus necessitating developing different relationships. Finally, a supplier noted that how suppliers recover their increased costs for the additional service and value they provide is not yet clear.

This last section suggests that the relationships between the vehicle assemblers and their suppliers are far from static today, and will likely experience further changes in the future. Much of the focus today is on how the development of trading exchanges like Covisint will affect relationships. But even after the Covisint issues recede, there will be others that will continue to drive adjustments, alterations, and adaptations in this basic and critical set of relationships.

Conclusions

While our interviews provide useful information targeting some of our questions, they leave unanswered or even raise a set of different, but equally important, questions.

First, convergence of the supplier relationship models seems likely, although it will be partial rather than complete, leaving room for regional and individual adaptations and philosophies among the manufacturers. Moreover, the rough model that emerges will contain elements from both Japanese and U.S. models. It is entirely possible that more European participants in our study would have revealed ways that the common model might include European elements as well.

Second, a number of developments suggest that the future will find differences among the manufacturers' approaches to supplier relationships more a matter of individual company strategies within a rough model, rather than of distinctly national models. The industry is becoming more global and the automakers and their suppliers increasingly face a shared competitive environment as they pursue each other's traditional markets and seek the same new markets. Their business relationship choices are more similar as well, as automakers from each region begin to source on a more global, and therefore more common, basis.

Third, our respondents are convinced that consolidation of both manufacturers and suppliers will continue, although there is less consensus as to whether this will lead to a shift in the industry's power relationships, or how such a shift might affect the OEM-supplier relationship.

Fourth, our respondents report that the development of trading exchanges like Covisint will probably be a critical stage in the industry's evolution, but there is little agreement as to how critical, or exactly how it will influence the OEM-supplier relationship.

Fifth, respondents were often critical of the conventional wisdom, both about OEM-supplier relationships and purchasing strategies, and about the influence of trading exchanges. It is difficult to say whether they are unusually insightful, or so focused on the day-to-day realities that they are simply unaware of the industry's general situation and overall developments. We believe that in the main they are insightful, and their remarks and cautions merit careful consideration.

Nevertheless, there are critical questions left unanswered. These include:

- As both manufacturer and supplier companies devise and employ their Internet strategies, will e-commerce become more than just an industry quick fix for more complex issues?
- Will the speed and rapidity of e-commerce force the industry to seek purchasing and marketing people with scarcer and more expensive decision-making skills, more akin to brokers and agents?
- Will the trading exchange make transactions so open and transparent that they will enhance trust and cooperation between manufacturers and suppliers?
- How much cost will e-commerce and the exchanges remove from the system?
- How will these cost savings be distributed along the supply chain?
- What types of products will actually be traded over the exchanges?

**Appendix I:
Interview Guide**

OEM Parts Purchasing: Shifting Strategies

A Project of The Office for the Study of Automotive Transportation (OSAT) University of Michigan Transportation Research Institute (Interview Guide)

We are researching the evolution of the relationship between various OEM purchasing organizations and the supplier community. Our purpose is to gain a better understanding of how procurement strategies have converged or diverged over the years. In addition, we wish to examine the impact of recent industry trends such as OEM and supplier consolidation and the emergence of Internet purchasing exchanges on the manufacturer-supplier relationship to date and how they will continue to affect it going forward. Our goal is to document different approaches to a common issue, not to make qualitative comparisons across companies.

As is always the case with our research efforts, the individual interview responses will be treated confidentially, and no identifiable responses will be published without the consent of the interviewee. We hope that the respondent report we prepare, based on the interviews and our other data collection efforts, will assist respondents in evaluating and benchmarking their company's own decision processes and outcomes, and thus contribute to their improvement.

1. In thinking about the evolution of the relationship between your company and its [supply/customer] base, what, if any, have been the most substantial changes that have occurred over the past ten years? What have been the key drivers of these changes?
2. What do you consider to be the three to five critical success factors for a successful OEM-supplier relationship? Which manufacturer best embodies these attributes today? How have they have achieved this?
3. Do you see any general differences between the ways U.S., Japanese, and European manufacturers have historically approached the manufacturer-supplier relationship? Have any such differences increased, or have their approaches converged over time?
4. What are the most important criteria for selecting suppliers? Do today's criteria differ from those of ten years ago? Are they likely to change in the future? (See Appendix II)
5. Has the recent consolidation both in the supply base and amongst the OEMs affected the nature of the manufacturer-supplier relationship? Has the power balance between manufacturers and suppliers shifted as a result?

6. To what extent will Covisint or other purchasing exchanges affect the manufacturer-supplier relationship? Do the exchanges herald a fundamental shift in the relationship model? If so, in what ways?
7. What do you expect the cost savings (if any) as a result of the purchasing exchanges to be on a per-vehicle basis? How will these savings be allocated across OEMs, suppliers, dealers, and vehicle purchasers?
8. What percentage of a vehicle's total part value do you see being procured via an exchange? Will exchanges be limited to commodity parts only?
9. Thinking ahead ten years, how do you think the size of your supply base will change, if at all?
10. What do you consider to be the three biggest threats to the future stability of the manufacturer-supplier relationship?

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Appendix II:
Selection Criteria for Suppliers
(Interview Handout)

Selection Criteria for Suppliers

Supplier Offers Capabilities

- Design/Engineering Services
- Global Presence
- JIT (Just-In-Time)
- Manufacturing
- R & D
- System Integration

Supplier Offers Specific Opportunities

- Access to proprietary technology
- Price reduction commitment
- R & D
- Short-term price

Supplier Offers Competitive Assets

- Agility
- Delivery reliability
- Financial strength
- Flexibility
- Management of human resources
- Management of own supply base
- Proximity to customer plants
- Quality

Relationship Offers Advantages

- Shared warranty responsibility
- Balance of risks across supplier portfolio
- Long-term commitment
- Prior relationship with supplier
- Responsiveness to special circumstances
- Sharing of mutual gains
- Status as exclusive customer
- Status as sole supplier

Other

- Please specify: _____

Bibliography

Bibliography

- "Automotive Suppliers: Customer Relationships, Technology and Competition." *Report of the Supplier Change Project*. Industrial Technology Institute. June, 1986.
- Bradsher, Keith. "Exchange This: Making Sure a Tire is More Than a Tire." *New York Times*. June 7, 2000.
- Child, Charles. "Chrysler, Suppliers Teamwork Today: Automaker Tears Down Walls to Build Its Own Version of Keiretsus." *Automotive News*. July 18, 1994.
- Cole, Robert E. and T. Yakshiji (eds.). *The American and Japanese Auto Industries in Transition*. 1984: 114.
- Couretas, John. "Toyota's Parts Makers Learn Lean Production." *Automotive News*. May 26, 1997.
- Deutsche Bank and Roland Berger Strategy Consultants. *Automotive e-Commerce: A (Virtual) Reality Check*. June, 2000.
- Dyer, J.H. and W.G. Ouchi. "Japanese-style Partnerships: Giving Companies a Competitive Edge?" *Sloan Management Review*. Fall, 1993: 52.
- Ernst & Young. "Connected Suppliers: When your supply chain becomes a 'value web'." 2000. www.ey.com.
- Fisher, Paul. "Toyota Moves Towards Own-Brand Tires." *AutoAsia E-newsletter*. August 17, 2000.
- Fleming, Al. "Wagoner Initiates Peace Plan: Five GM Low Bidders Are Replaced." *Automotive News*. October 18, 1993.
- Flynn, Michael S., et al. *The 21st Century Supply Chain: The Changing Roles, Responsibilities and Relationships in the Automotive Industry*. Office for the Study of Automotive Transportation, The University of Michigan Transportation Research Institute and A.T. Kearney, Inc. 1996.
- Flynn, Michael S. and Robert E. Cole. "Automotive Suppliers: Customer Relationships, Technology and Competition." *Report of the Supplier Change Project*. Industrial Technology Institute. June, 1986.
- "Ford Setting the Agenda in Vehicle Manufacturer/Supplier Relationships." *Automotive Components Analysis*. December, 1995.

- "Four Years Ago, Volkswagen Woke Up." *Business Week International Edition*. March 17, 1997.
- Frey, Sherwood, *et al.* "ABB and Ford: Creating Value Through Cooperation." *Sloan Management Review*. Fall, 1993.
- Gardner, Greg. "On-line purchasing will save Automakers \$1,200 per car, study predicts." *Detroit Free Press*. May 24, 2000.
- "GM Doesn't Seek 'Mr. Nice Guy' Label." *Automotive News*. March 27, 1995.
- Helper, Susan. "Supplier Relations in Japan and the United States: Are they Converging?" *Sloan Management Review*. Spring, 1995: 77.
- "How Honda Cuts Costs, Satisfies Suppliers." *Automotive News*. November 9, 1998.
- Kim, J.B. and Paul Michell. "Relationship Marketing in Japan: The Buyer-supplier Relationships of Four Automakers." *Journal of Business and Industrial Marketing*. Vol. 14, No. 2, 1999:119.
- Lapidus, Gary. "Gentlemen, Start Your Engines!" Goldman Sachs & Co. January, 2000.
- Minahan, Tim. "Is Partnering a Sham?" *Purchasing*. Vol.124, February 12, 1998: 63.
- "Online." *The Guardian*. April 13, 2000: 2.
- Sedgwick, David. "U.S. Suppliers Land More Contracts from Transplants: Companies Thrive Despite 'Keiretsu'." *Automotive News*. April 27, 1998.
- Shirouzu, Norihiko. "Toyota May Join Ford's Online System." *The Wall Street Journal*. January 25, 2000: A13.
- "The \$100 Billion Buyers." *Automotive News*. May 27, 1996.
- Willenson, Kim. "Toyota Will Coach Suppliers to Seek 30% Cost Cut, Offer Modules to Others, Join Covisint." *The Japan Automotive Digest*. Vol. VI, No. 48, December 25, 2000: 1, 10.

