Outsourcing
- financial stress on bonds and relations

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Abstract

Top management financially driven strategies are of great importance for the understanding of the development since the financial crisis 1990-93. The automotive industry has increased production efficiency during the 1990s. But the financial performance of the industry is still weak. The pressure from financial markets is even higher in the business trough that started in the beginning of 2000.

The suppliers' role in the outsourcing process, the impact of E-Purchasing and the expected development in the Sales and Distribution (S&D) system is the major issues in this article.

Financially driven outsourcing is leading to changes in supplier-buyer relations. In the short term there are opportunities for cost advantages for all parts, in the long term there are obvious risks. Many new models have been late due to complications in the supplier network. Another risk is for generic end products like what has happened with the PCs. Is this in harmony with the idea of core competence and sustainable competitive advantages? The outsourcing of major components is a high-risk procedure.

E-purchasing has both positive and negative effects for the parties involved. Even if it is too early to evaluate the effects, E-procurement will be further developed. In the extreme case it opens for the perfect market with full information for all buyers and sellers. Is that what the actors want?

A rethinking of the division of functions between the parties in the S&D channel is necessary for further improvements. The direct contact-based knowledge about customers changing preferences is the source of dynamic capabilities. This knowledge has to be shared through ICT networks giving all parties a sense of the dynamic and complex nature of their customers' preferences.

Our general conclusion from the analysis of outsourcing and related structural changes in the automotive industry is that intended economic/financial rationality can explain the behaviour to a much greater degree than ten years ago. This implies that more intended rational decision making is giving fewer openings for more sen-

timental arguments like nationalistic and personal/social preferences. Higher education and better training of managers, top management teams with members from several nations, more pressure from financial markets, and most of all, the globalisation of markets are factors behind this development.

1. A new competitive landscape

An extraordinary reorganisation of the whole automotive industry structure is going on (Sako and Helper, 1999; de Banville and Chanaron, 1999; Volpato and Stocchetti, 2001). This development can be traced from efforts by OEMs to develop new relationships with end customers. First, there is a shift from make-to-stock to a make-to-order approach, and second OEMs are trying to capture parts of relations traditionally handled by dealers (Brandes and Brehmer, 2001). The implementation of these strategies is creating challenges for the internal organisation in both the OEMs, and the component supply chain. A verification of the increasing power of the OEMs is that EU will deregulate the Sales and Distribution (S&D), including parts, repairs and services from October 2002.

Until recently, the focus has mainly been related to first, internal firm organisation and work methods at the OEMs and their direct (first tier) suppliers, and second to the dyad relationship between these two actors. Now the focus has moved to strategic supply chain considerations of how the firms interact in the more and more complex supply chain. This transformation can be seen as a move from "production" rationalisation of the component supply chain to a "strategic" integration[2].

The most important drivers for change in the automotive industry are overproduction and increasing consumer pressure for quality and more value for money. During the last decade the mantra of lean production (Womack, Jones and Roos, 1990, and Womack and Jones, 1996) has led to major changes in the supplier and the OEM internal organisation. These achievements labelled Just-in-Time, Quality Assurance,

[2] Volpato and Stocchetti (2001) makes the distinction between production rationalisation meaning a rationalisation based upon innovations applied on component manufacturing processes. On the other hand, by strategic integration they mean a much wider process which involves the component structure of automobile firms, and especially their way of interacting: from the design of a whole vehicle to manufacturing and distribution of the final product to the car drivers.

Concurrent 3D-engineering, Outsourcing and Partnership programmes have resulted in a remarkable increase in productivity during the 1990s.

These activities were cost- and efficiency-focused from the beginning. In the middle of the 90s the financial pressure increased emanating from the 'shareholder value'-movement. Top management had to find quick measures for shrinking the balance sheet. Strategies were imposed top-down for more outsourcing which required more modularization. Mergers and acquisitions are the most dramatic components in a growth strategy for synergies that should give more value to the shareholders. Globalisation is another top management imposed strategy for growth and creating more value for the shareholders. OEMs, followed by their direct suppliers, have implemented global strategies for purchasing, design, manufacturing, selling, in most cases by mergers and acquisitions. The automotive industry, especially the big OEMs are still underperforming in the financial markets. One of the major reasons is that a clear majority of mergers and acquisitions have failed, e.g. BMW's acquisition of Rover and the merger between Daimler Benz and Chrysler.

The best financial performers in the whole supply chain during the last ten years are some of the strongest suppliers to OEMs. These suppliers have created their own brand names and should therefore be called 'OEM Suppliers'. Therefore, the whole supply chain has to be taken into account for further improvements of the automotive industry.

In summary, top management financial strategies are of great importance for the understanding of the development since the business trough 1990-93. Even if many mergers and acquisitions have failed, the automotive industry has increased production efficiency. But the financial performance of the industry is still weak. The pressure from financial markets is even higher in the business trough that started in the beginning of 2000 when a new recession started.

In this article we will discuss the suppliers' role in the outsourcing process, the impact of E-Purchasing and the expected development in the Sales and Distribution (S&D) system.

2. Theoretical background

There are two research organisations that have specialised on studies of the automotive industry, namely the International Motor Vehicle Program (IMVP) at MIT, Boston, US and GERPISA based at Université d´Évry, Val d'Essonne, France. Their publications are more empirical than theoretical. Therefore we have built our theoretical framework on more theoretical literature. Empirical evidence is taken from IMVP and GERPISA as well as our own studies in the industry, covering suppliers, manufacturers, and dealers.

Temporary competitive advantages

According to a recent discussion of the development of strategic management theories (Rugman and Verbeke, 2002) the most promising theoretical framework after the positioning school that culminated in Porter's (1980) competitive strategy framework, is the resource-based view of strategic management (Wernerfelt, 1984), the concept of core competence (Prahalad and Hamel, 1990) and dynamic capabilities (Teece, 1998).

Even if the resource-based view is criticised for lacking maturity in key concepts, it has been accepted as complimentary to the strategic positioning school. The resource-based view is the theoretical foundation for the analysis of the strengths and weaknesses of the firm where the demand side is taken for given. On the other hand, the positioning school is taking the firm's unique resources and capabilities for given in the analysis of opportunities and threats. Taken together, these theoretical models and concepts offer the foundations for the understanding of the creation of heterogeneity and competitive advantages of both the individual firms and the supply chains.

Resources are defined as those tangible, or intangible, assets that can explain the competitiveness of the firm. Examples of such resources are brand names; in-house knowledge of technology; skilled personnel; trade contracts; efficient procedures and processes (Wernerfelt, 1984) or on an aggregated level; financial, physical, human and organisational resources (Barney, 1995). Superior operations effectiveness not only serves to strengthen a firm's existing competitive position. When it is based on capabilities that are embedded in the company's people and operating processes, they are difficult to imitate.

In the beginning, the resource-based view had no explicit distinction between resources and capabilities. According to Teece et al. (1997) resources are assets that ei-

ther are owned or controlled by the firm, whereas capabilities refer to its ability to exploit and combine resources, through organisational routines in order to accomplish its targets. This includes all processes participating in the transfer of inputs to output whether the unit of analysis is a firm or a supply chain.

The resource-based view has been developed to the dynamics in the markets (Teece et al., 1997). The rationale is that the resource based view has not adequately explained how and why certain firms have competitive advantages in situations of rapid and unpredictable change. Dynamic capabilities are the firm's ability to achieve new and innovative forms of competitive advantage. Managers "integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" in the search for sustained competitive advantage (Teece et al., 1997). Organisational and structural aspects are in the focus of the analysis and understanding of the dynamic capabilities.

Fine (1999), with references to the IMVP findings in the automotive industry, argues that competitive advantages are always temporary. This is easy to accept for technology, components and design, but strong brand names have a long life probably because the best people, their skills and knowledge do not move very quickly.

The ability to concentrate competencies over space and time

During the 90s a major shift or new paradigm occurred regarding the sources of sustainable competitive advantages. Most strategic management research treats firms as either autonomous entities (Gulati, Nohria, & Zaheer 2000) or as functioning within networks of only two or three firms (Lamming et al. 2000).

In the literature on supply chain management the 'helicopter perspective' for optimising the logistics is the original idea. This literature has expanded to product development, marketing and other functions of the firm. The focus was not only on the individual company but also on the networks, or supply chains.

Recent research into strategic management and supply chain management indicate that in the future, the competition will not be between firms but between strategic networks. For example, studies by Gulati, Nohria, and Zaheer (2000) and Kogut (2000) suggest that in the process of handling future development of products and

services, the networks within which companies function will be the source of competitive advantage. This change means that the strategic capabilities for a specific firm lie in the relationships it has with other firms. In the literature on clusters (Saxenian, 1994)) the basic idea is that firms located close to customers, suppliers, competitors, universities, and other sources of knowledge, are more innovative and cost efficient. In the automotive industry there are typical and successful clusters e.g. in Southern Germany (BMW and Mercedes) and Western Sweden (Saab and Volvo). The OEMs have also taken the initiative to the development of nearby industrial parks for suppliers.

Grönroos (1993), Gummesson (1994) have identified buyer-supplier relationship (dyads) as the source of competitive advantage. Turnbull et al (1996) argue that the coordination and mobilisation of the company's portfolio of relationships and the use and enhancement of the two companies' resources through interaction is the basis of enhancing a company's network position and hence its competitive advantage. These references have another perspective than the positioning school, e.g. Porter (1980). Which explanation isthe best? Studies of autonomous units, dyadic relationships or networks for the understanding of future competition. The problem is to differentiate between the network effects and other effects (from the individual firm).

If relations and networks should be the basis for the development of competitive advantages, this does not mean higher stability in the most important (first tier) relations, but that changes are more frequent now than ten years ago. It is in this context where outsourcing has become an important strategy. In most cases, outsourcing is financially driven. OEMs want their major suppliers to take a larger part of the capital employed both in the product development and the production processes. The major suppliers can distribute fixed costs over higher volumes by selling components to several competing OEMs. If theyhave unique resources for product development, they can also create their own brand names. Cost efficiency, financial risk and core competencies are the three key concepts in the analysis of outsourcing. Financially driven outsourcing is overemphasising the financial aspects, i.e. the balance sheet reduction.

3. Outsourcing and the suppliers' role

The automotive industry is neither the first nor the only one to apply the principles of outsourcing in their supply chain management. Both the electronic and computer

industries have increased their outsourcing of production and services since the 1980s. But the automotive industry is probably the most advanced or spectacular one when it comes to changing the basic models of the supply chain and the customer-supplier relations. About 60 per cent of the total cost of the components and systems to a prestige car are purchased items. This is a significantly higher figure in 2000 than in 1990. Most of this is due to outsourcing and the reduction of the number of direct (first-tier) suppliers.

In the development of outsourcing, many old relationships have been broken and new ones have been established, often in low-cost countries. Former direct suppliers have been moved downstairs in the hierarchical supply structures. Also, in the automotive industry there are important differences between Europe, North America and Japan. This is why we have studied the automotive industry.

The original 'lean production' model is Japanese and a more precise label is 'The Toyotan Model' (Boyer and Freyssenet, 2000). In the 1990s it has been adopted and modified in both the US and in Europe. After more than a decade of dramatic re-structuring and globalisation there are as many 'lean' models as there are major brand owners (OEMs) in the car industry.

One interesting consequence of this 'around the world'-travelling is that, for the first time, the European/Renault model is meeting the original 'Toyotan model' in open competition in Japan. The Renault model of buyer-supplier relations is introduced in Nissan's supplier relationships since Renault has taken control over Nissan. The Toyotan model is building on a more trust-oriented, long-term collaborative relationship while the Renault model is more market oriented. Inter-firm learning is expected to be the major advantage of the trust-based relations and efficiency improvements should be better in a rationality-based model. Comparative studies are going on within the IMVP program.

Modular design for complex subassemblies is a prerequisite for outsourcing. When extensive modular design is combined with extensive outsourcing, the outcome can be a dramatic reshaping of the value chain. Early interest in modularization in the auto industry focused on the potential for cost savings. The reality is that technical and control challenges may not be offset by a clear cost advantage. Furthermore, the term modularity is defined ambiguously in the automotive context. Thus there is a

need for a conceptual framework within which this approach to vehicle subsystem design can be evaluated, assessed or developed.

Financially driven outsourcing is leading to a sequence of changes in the supply chain. Few platforms for many models and modularising the product open for scale economics, concurrent engineering and parallel processes in the product development. The positive effect is shorter time to market. The negative side for the OEMs is an increasing dependence of independent suppliers. The most powerful suppliers have several competing customers for similar modules or systems e.g. safety systems.

In the short term there are opportunities for cost advantages for all parts, in the long term there are obvious risks. Many new models have been late due to complications in the supplier network. E.g. Swatch's modularization with only 22 suppliers has not been successful. Many new models have been late due to complications in the supplier network. Another risk is for generic end products like what has happened with the PCs. Is this in harmony with the idea of sustainable competitive advantages? The outsourcing of major components is a high-risk procedure.

4. Electronic Purchasing

In the 90s the development of new business information systems led to solutions that enabled electronic purchasing (E-purchasing). From the beginning the goal was to reduce transaction costs. But E-purchasing has influenced relationships, trust, and quality and order sizes. In several studies, these aspects have been identified as key evaluating factors (Hammarkvist et al, 1982; Rehme, 2001). Systems manufacturers claim that their systems can reduce the total procurement costs by up to 20 per cent (Oracle, 2001).

Covisint (www.covisint.com), the car manufacturer procurement portal, is an example of this strive for cost reduction. Competing manufactures have joined forces in a common procurement approach, phrased co-optition (co-operation and competition), utilising *e.g.* a common infrastructure and standards to achieve economies of scale.

Electronic purchasing has implications on the process which strengthen as well as weakens important aspects of the purchasing and supply (Emiliani, 2000). Through the use of electronic purchasing a centralised purchasing organisation controls the

purchasing of all company units, while at the same time operational contacts are handled at all levels in the companies. Thanks to better information and the opportunity to eliminate some of the administrative work, companies can reduce their purchasing costs and the strategic purchasing becomes easier.

Another consequence is that E-purchasing is enhancing an ongoing concentration to fewer suppliers (Barratt and Rosdahl, 2002). Even if many advantages can be achieved by E-purchasing, companies also have to take into account the amount of time and money spent on the solution itself. According to our interviews, the software houses are big winners in the US. But they have not been able to deliver what they promised.

The auto industry has initiated an industry-wide exchange (Covisint) as its predominant approach to organising a procurement hub. From our interviews we have learnt that the Internet and its impact on supply chains and procurement hubs has not always been successful, e.g. Covisint. Standardising and aggregation of volumes have been forbidden by the government agency. Each big OEM is developing their own E-purchasing portal in co-operation with their major suppliers. All GM North America suppliers are online with the production plans, quality assurance and payments.

The Internet is a disruptive technology that could hasten the progress of the strategic initiatives critical to modularization and outsourcing. Furthermore, a move towards modularization would pose intriguing problems of procurement in an era of sites like Covisint. Complex modules that are not standardised across the industry are certainly not going to be procured through auctions. Intensive interaction among OEMs and suppliers will remain the norm here. Even if certain modules are standardised, auctions may still not prove feasible because the number of suppliers of such modules may be small. The more the automakers move towards modular design, the more they will need Internet-facilitated collaboration around a complex set of co-ordination and design tasks. E-commerce reduces costs of both auctions and collaboration. Therefore, B2B will probably reinforce rather than transform customer-supplier modes of exchange; however, disruptive influences in conjunction with B2B might lead to big changes.

In summary, E-purchasing has both positive and negative effects for the parties involved. Even if it is too early to evaluate the effects, E-procurement will be further

developed. In its extreme application it opens for the perfect market with full information for all buyers and sellers. Is that what the actors want?

5. Sales and distribution

Since the T-Ford, the automobile industry has adopted a push strategy. Scale economies and long series are the major drivers for more efficient production. The dealers and the consumers have had to accept the push strategy in order to get more value for money. Compared to earlier links in the supply chain, e.g. close interaction between purchasing and product development, (cross-functional integration, outsourcing and partnership), (S&D) have changed very little during the last decade. Therefore the S&D part of the supply chain now is in focus for restructuring and cost cutting. In Europe, EG has deregulated the car distribution from October 2002 in order to increasing competition in the S&D. These issues are not only about operational efficiency, but also strategic, i.e. an opening for creating new competitive advantages.

Among consumer durables and investment goods, the most radical change with the new Internet-based business models has taken place in the personal computer industry, "The Dell Model". Why is this innovation so successful for PCs and not for other investment goods? One reason is that a prestige car is assembled from 30 000 – 40 000 components and a PC has only about 5 000 components. Even when these differences are taken into consideration, the automotive industry has to create a more customer driven supply chain. The challenge is to decrease the transaction costs at the same time as the creation of customer value is focused. Shifting focus towards an alternative to the push strategy is not only a matter of customer satisfaction. Relocation, increased delivery frequency with small batches and inventory reduction are other possible improvements. S&D is an integrated part of the supply chain.

The analysis of the S&D function is complicated. The complexity is in the interplay between an OEM and its independent intermediates in the S&D system. The OEM must change its own organisation, that often include other OEMs' S&D, when the environment is changing, e.g. after mergers and acquisitions. In the prestige car segment there are many independent dealers and very strong relationships, many of them 50 years old and more in the established system.

New IT-based middlemen, that should share the same or a decreasing margin, has been seen as common threat to OEMs and traditional dealers. But more than 70 per cent of the car buyers are loyal to the brand name. There is also a high loyalty to the dealer. The only chance for the new actors is to deliver a higher value to the final customer. The challenge for all actors is to think beyond the product by taking the customer view. Actors that can increase the value for money to the final customer without increasing the cost for S&D will be the winners.

Obviously the transaction costs must become lower in a more efficient S&D system. But we do not expect a straightforward lean distribution approach after a lean production process in the automotive industry. OEM-controlled Internet communication and direct logistics from OEM to final consumer should imply a lean distribution system with significantly lower transaction costs. Why is it not already implemented to a much greater extent if it is a real option?

The reason is that transaction cost efficiency is not the only criterion on efficient S&D from the OEM's point of view. Personal contacts are necessary for the efficient communication with the prospective buyers and the final customers in the creation of "value for money". This business is local and there are considerable emotional arguments to consider. The strategic issue is how to create competitive advantages by combining the best functions in the traditional S&D and the challenges offered by new IT-supported business models.

About 70 per cent of US households have used the Internet at some point in the car buying process. But less than 10 per cent are finished over the Internet and the number has not shifted since 1999. This is an indication of the importance of IT for the car buyer. How can the traditional S&D function develop Internet-based marketing in order to reduce costs and at the same time increase the perceived customer value? Obviously the answer to this strategic question must include the dealers' bricks and mortar facilities and their bundling of their six major businesses (new cars, used cars, finance, work shop, parts, and finance).

In our study, the emphasis is on the total relationship between the actors in the S&D system rather than on each transaction. This approach directs the interest to the interaction between the partners. Interorganisational exchange processes are dynamic and cannot easily be evaluated. Business models will change.

According to our earlier studies (Brandes and Brehmer, 2001), a hybrid channel structure is preferable for private owners (except for the fleet owners that already have direct relations with the OEMs). A multi-customer approach strategy for serving different customers based on their preferences requires changes in the roles of the upstream actors. However, the aim is also to exploring the potential cost reduction and service improvement in the S&D.

In a more customer-oriented system, shorter delivery for the final buyer is important. How much are shorter delivery worth for the buyer and the seller? How many customers are prepared to change to another brand or another dealer just to get quicker delivery? How many would pay more in order to get earlier delivery?

Consumer preferences are not very well known or at least the answers to these questions have not been published. What is known is that 'The 3 Day Car' is more expensive:

> *"One of the biggest hurdles on the critical path is the paint shop, which is traditionally an expensive bottleneck in the car factory. Changing from one colour to the next involves significant change-over costs; therefore, auto manufacturers tend to run big batches of vehicles in one colour at a time. A work-around would be to adopt coloured outer panels that allow customers to select their preferred colour after purchase, similar to the system Mercedes is using for their Smart cars.*
> *The trend is unquestionably toward greater and speedier consumer gratification. But our research suggests that not all consumers want their cars within three days, even if that were feasible. The way to smooth demand, therefore, is to use price discrimination to level demand. Rather than offering heavy discounts to move inventory (push strategy), incentives could be used to bring in orders for different waiting times." (IMVP Annual Report, 2001)*

A rethinking of the division of functions between the parties in the S&D channel is necessary for further improvements. The direct contact-based knowledge about customers changing preferences is the source of dynamic capabilities. This knowledge has to be shared through ICT networks giving all parties a sense of the dynamic and complex nature of their customers' preferences.

6 *Supply chain design*

From the OEMs' point of view, Internet has broken the geographical boundaries and their ability to handle each market separately. Transparent prices, competitors that uses generic modules from similar suppliers, and the lack of sensing of the customers changing attitudes and demands are restrictions on OEMs ability to customer adaptation which also has consequences for the suppliers ability to adjust and support dynamic requirements. One of OEMs' core capabilities has been to unbundle the physical and information flows upstream through ICT networks. In this process the efficiency of the logistic systems has been increased.

From the preceding sections, we can identify two issues of major importance for the supply chain design. First, customers, dealers, OEMs and suppliers have different goals that have to be combined to build a sustainable and competitive supply chain. The relationship between the firms in a supply network is considered crucial by several researchers (Turnbull et al, 1996, Lambert et al, 1998. Lamming et al (2000) argues that supply chain management concerns the management of relationships across a complex network of companies. The interdependency influence the patterns of change and reflects a necessity of designing a supply chain that can handle the dynamics facing the automotive industry.

In order to increase the supply chain efficiency, OEMs have focused on lean production that means cost cutting and reduction of the balance sheet, increasing the quality and reducing the time of the assembly process. These programmes have led to important effects upstream in the supplier relationship. The development of information and communication networks (ICT networks) has been one of the main enablers for OEMs' achievements.

The cost efficiency criterion in the supply chain transactions is based on the minimisation of the transaction cost of an individual player, in this case the OEM. This is not enough for developing a more efficient supply chain. If the value of the expected future exchanges and relations is the common goal, also the final customers and the interdependence between the exchange partners (dealers, OEM, first tier and second tier suppliers) have to be taken into account. Efficiency and effectiveness together with a strong brand management are key elements in the supply chain value crea-

tion.Defining value is more complex the further away you are from the end users - but as Murman et al (2002) state, this is where the leverage is also greatest. The identification of future customer value is as crucial and important as finding the internal or external sources of value. An enterprise transition towards a strategic integration requires closer linkages with other organisations. A change from transaction costs to value creating relations also directs our interest to the interaction process between the partners (Zajac and Olsen, 1993). By looking at the process from different actors' perspective new, more competitive models can be identified.

The second aspect, which has implications on the supply chain design, is that knowledge-sharing routines have to build on the relation-specific assets in the supplier - OEM relation, the OEM – dealer relation and the dealer – customer relations. On the basis of our empirical studies changes in the supply chain will take place stepwise or evolutionary rather than revolutionary. This conclusion does not exclude rapid and rather dramatic changes for individual actors. There will be important differences between countries and regions (urban, rural etc). Internationally, the US is leading the process of change so far and the deregulation of the EU markets from October 2002 is one catalyst for similar developments in Europe. Japan also has high costs for S&D, which is why we expect changes there as well. In the fastest growing markets for new cars, e.g. China and South America we can expect new business models of the whole supply chain or parts like S&D to be tested.

There will remain considerable differences between very established, strong OEMs that sell many cars per year in a market and those that are selling relatively few new cars. The latter group will be more inclined to use Internet-based middlemen as well as involve suppliers in a majority of the development projects because there are less sunk costs and financial risks involved. These actors might be the leaders of the change process to a new and more efficient supply chain design. We have proposed (Brandes and Brehmer, 2001) a new concept, namely 'core relations' for the long-term, knowledge-based relations between the OEM and the dealers as well as the OEM and their first tier suppliers.

The fact that each automotive supply chain consists of firms that are interdependent and act in parallel is common knowledge to the field. For example, Lambert et al (1998) state that:

"because each firm is a member of the other's supply chain, it is important for management of each firm to understand their interrelated roles and perspectives. The reason for this is that the integration and management of business processes across company boundaries will be successful only if it makes sense from each company's perspective."

Knowledge sharing must create a strategic relationship among the supply chain members that in the long term must lead to a mutually beneficial situation. Not only processes and strategic choice, but people effectuate the value that the supply chain design will deliver.

7. Summary and Implications

Our general conclusion from the analysis of outsourcing and related structural changes in the automotive industry is that intended economic/financial rationality can explain the behaviour to a much greater degree than ten years ago. This implies that more intended rational decision making is giving fewer openings for more sentimental arguments like nationalistic and personal/social preferences. Higher education and better training of managers, top management teams with members from several nations, more pressure from financial markets, and most of all, the globalisation of markets are factors behind this development.

As a foundation for the formulation of testable hypotheses we summarise our arguments in the following paragraphs:

1. Outsourcing is a part of a major restructuring of the automotive, electronics and computer industry. The restructuring, mainly retrenchment and downsizing, is the implementation of top management strategies.
2. The restructuring is financially driven, i.e. aiming at cost reduction and the realisation of synergies. Financial rationality is based on facts and figures. The 'shareholder value' ideology of the 1990s is stressing top management to short-term actions for better financial key figures that could lead to higher values in the financial markets.
3. Costs for production, logistics, purchasing, and transactions can be measured quantitatively. Therefore these figures are presented as the financially rational motivations for restructuring.

4. Qualitative factors like dynamic capabilities, innovativeness, corporate cultures, clusters, social and personal relations are of minor importance in the financial logic. Clusters like suppliers' industrial parks close to the major OEMs final assembly factories are a specific type of clusters that are based on efficient logistics. These investments have an impact on the relations between the OEMs and each supplier and also between co-operating suppliers that together deliver complete modules.
5. Top management's financially driven strategies and decisions are often leading to the breaking of old buyer-supplier relations and networks and establishment of new ones, e.g. after mergers and acquisitions, closing of factories, reduction of the number of direct suppliers, relocation of production facilities, and outsourcing.
6. Mergers and acquisitions have been frequent in the automotive industry. A clear majority are failures, not only in the automotive industry but in general, in the sense that top managers have not delivered what they have promised.
7. E-purchasing is a technology that facilitates global sourcing. Theoretically, it can give both buyers and sellers full information about standardised products, i.e. a textbook model of free competition, like auctions and other bidding procedures. Or it might create oligopolies and cartels that are not in the interest of the final consumers. It is obvious that this is not enhancing personal and social relations and bonds, but it could rather break old relations.
8. In total, the network approach must consider the impact of financially driven strategies for the dynamics of relationships and competition.

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