Chambre Separee in Prime-Supplier Relations
Building Sustainable Competitive Advantage

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Abstract

In our studies of supply chain management, we have found that the dramatic changes in prime-supplier relationship during the last decade, including increased outsourcing and partnership relationships, is a challenge for new concepts and models that could open for a better understanding of the behaviour. The issue of building sustainable competitive advantage is not only about in-house development of core competence, but also about the dynamic processes in the cross-section between the prime and the supplier. We suggest the concept of 'chambre separée' for such creative meetings between buyer and seller when they forget about the world outside and focus on the outcome of the partnership, a new product, a new system or the solution of a common problem. One interesting success case that we have studied longitudinally is Volvo Car Corporation (VCC) and Autoliv. Together, they have established a position as the leading producer of safety systems in private cars.

Introduction

Globalisation with increased financial and competitive pressure is the main factor behind the current wave of outsourcing, mergers and acquisitions. In industries like the automotive, computer and electronics, changes have been increasing since the economic crisis in the beginning of the 1990s. The new crisis emanating from Asia in 1997 has put even more pressure on restructuring. New structures have changed the conditions for the buyer-supplier co-operation in supply chains (Fine, 1998).

One crucial strategic issue in this process of restructuring is how the outsourcing part, the systems integrator/prime, should protect and develop its core competence (Prahalad and Hamel, 1990) and brand name and at the same time develop competitive advantage in close co-operation with strategic suppliers (partnership relations). Close cooperation could be advantageous in combining specialisation and adaptation (high asset specificity) and low transaction costs (Dyer, 1997).

Industrial restructuring in the supply chain

The following model (Figure 1) could explain the industrial restructuring. A number of driving forces like overcapacity, increasing competition, and higher or more

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sophisticated demands from the end consumers are putting higher pressure on the whole supply chain in a sequence where the prime is taking the first shock but successively distributing the pressure to the first tiers etc (Womack et al. 1990). In the automotive industry this process is accelerating and the rate of change is increasing. Concurrent, 3-dimensional engineering (design of supply chains: products, processes and supplier base) is one of the most powerful instruments for accelerating the development and delivery system (Fine, 1998). Cross-Functional Teams (CFT) that can integrate design, purchasing and market competence are better prepared to develop more comprehensive modules or systems. Tightly integrated pre-assemblers located close to the final assembly line can develop efficient logistics.

![Diagram](image)

**Figure 1. The upstream reactions in the automotive supply chain**

**Important issues in the Prime - Supplier Co-operation**

The purpose of this article is to analyse the co-operation between the prime systems integrator with branded products and their direct suppliers that take part from the very beginning of the development of new products and systems. We are focusing on four important issues:

First, the optimal balance in the division of work between the systems integrator/prime and its suppliers is a continuous search for the most efficient solution (Hines, 1994; Lamming, 1993). Performance criteria and benchmarking data are frequently used for continuous improvement. This balance is also affecting the relative margin and financial performance of each firm in the supply chain (Fine, 1998).

Second, the protection and development of core competence is as important in the long term as the financial performance is in the short term. Most authors (e.g. Cox, 1996; Reve, 1990) argue that core competence should be kept in-house and complementary resources brought in via partnership relations. The development of close partnership relations is indicating that even core competencies are developing in partnership.

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relations. Are these developments leading to the degeneration of unique advantages and brand images due to the suppliers’ relations with competitors?

Third, the final goal for each supply chain is to produce the most competitive end product (Lamming, 1993; Nishiguchi, 1994). This goal has become more complicated to reach since the number of key component and systems suppliers has been reduced, partly due to mergers and acquisitions and partly due to the primes module strategies. As a consequence, the suppliers are involved in several, competing supply chains.

Fourth, the R&D and marketing costs are increasing when the new models are coming more frequently and therefore the economies of scale is putting more pressure on the low volume producers (Porter, 1990, Womack et al., 1990). Alliances, mergers and acquisitions are not always a solution to this problem but sometimes the only chance for survival.

Previous research

There is an interesting imbalance between different theoretical aspects of this field and also between theories and best practice. More general research approaches of interest here are to be found in the fields of industrial organisation, e.g. Porter (1980; 1985; 1990) and transaction cost economics (TCE). Porter’s five forces of competition are implicitly assuming arms’ length relation to suppliers and do not consider the mutual advantages of partnership relations on e.g. time to market and balance sheet reduction. Monteverde & Teece (1982) have studied the automobile industry with a TCE approach. They reported statistically tested support for the hypothesis that the more specialised the component industry is with regard to the specific customer, the higher the probability for vertical integration, e.g. internal sourcing.

The resource-based theory of strategic management (Wernerfelt, 1984; 1995) and the concept of core competence (Prahalad and Hamel, 1990) offer a framework for analysing and understanding of the relations between the main actors in the supply chain. Rumelt (1994) has found four key components in the concept of core competence, one of these is competitive locus.

"Competition is shifted from an inter-product level to an inter-firm level concerned with the acquisition of skills".

Teece et al (1997) have made a very interesting contribution by suggesting the concept of ‘dynamic capabilities’ to catch the ability to change successfully. Their point of departure is that "the fundamental question in the field of strategic management is how firms achieve and sustain competitive advantage" (p. 509). From this point they are integrating management of technology and other competence developing management areas that has been viewed outside the traditional boundaries of strategy.

Dynamic capabilities according to this reference is defined in terms of distinctive, difficult to imitate, competencies, e.g. what other researchers have called core competence but with a higher ambition to define the dynamics in terms of learning processes and the development of specific assets. This reference opens for a deeper
analysis of the recent development in e.g. the automotive industry with partnership relations that leads to relations as if the buying and selling firms are creating a partial and virtual reality merger without any ownership relations.

The major advantage for the prime is a higher speed in the product development process. In the automotive industry more frequent models on the same platform and higher R&D costs for new platforms is increasing competition. Fine (1998) shows that the technology shifts differ dramatically between industries. Fine states that industries are living according to specific clock-speed, e.g. pharmaceutical and aerospace have low clock-speed while computer and telecom industries have high clock-speed.

Network and interaction approaches (Håkansson et al., 1982; Ford (ed), 1990; Anderson et al, 1994) are conceptual models for other relations than the traditional consumer marketing model, where the sellers of branded goods are few and strong compared to the consumers that are many and weak. The network approach is promising for the understanding of how long term relations and networks are built up, but limited when it comes to breaking relations. E.g. when new models/products are planned. Long-term relations are sometimes disrupted, often after benchmark studies. In most cases the economic performance is the main reason (Lilliecreutz, 1998). In the network approach social factors and non-economic variable are in focus, but economic performance is not an integrated part of the approach:

“In the network approach the benchmark models of markets and organizations are not used” (Johanson and Mattson, 1987, p 12).

To summarise, these approaches and theories are not consistent in the sense that they can be combined in one framework for the planning and analysis of empirical studies. In some cases they are even contradictory. Transaction cost theory, according to Williamson, is too cost focused and missing the dynamic capabilities (Teece, 1997) of strategic partnerships in developing competitive advantage. Extended transaction cost arguments regarding asset specificity and the firm as a nexus of contracts posed by Reve (1990) and Cox (1996) are promising but should be complemented by a broader view on the development of joint (or extended) core competencies in strategic partnerships. Network theory (IMP-group) do not emphasise economic performance criteria and it is too generic to open for the understanding of changes in the division of work in supply chains, e.g. the break-up of old relations.

There are two major theoretical problems to be solved. First, theoretical approaches that are realistic in terms of considering opportunism as a risk and a dynamic force in the development of new products and processes in industrial networks (that also are based on trust and cooperation, Foss and Koch, 1996). This means that there must be performance criteria for the understanding of the efficiency and key financial measures. Second, theories that can explain the dynamics of the whole value chain i.e. why the dramatic changes in the division of work and boundaries of the firms are leading to changes in the competitive situation in terms of market shares and financial performance (Cox, 1996).
Strategic issues and empirical setting

Our aim is to contribute to a deeper understanding of the ongoing process of change. In doing so we return to our key questions and discuss the empirical aspects.

First, the wave of outsourcing component production from assembly plants to independent suppliers has not been accompanied by the building of adequate partnership relations neither in North America (Mudambi and Helper, 1995) nor in Europe, compared to what has been found in Japan. Is it possible to develop relations for "stream of value"-strategies for competitive networks of formally independent combinations of suppliers and customers without creating conglomerates or other changes in the governance (like the Japan Inc)?

Second, if the prime’s strategy is aiming at an extended organisation or enterprise this is leading to more developed forms of collaboration, e.g., partnership relations. These relations are developed between organisations that share mutual interests, risks, benefits etc. The exchange is often arranged in complex systems were respective organisation both shares, protect and expand their core competence in terms of system competence. Is it possible to expect the necessary openness and transfer of technology from the buyer to the suppliers in order to achieve the 'stream of value' efficiency goals? There is a higher degree of interaction and dependence between the design, production and purchasing functions of the prime and its partnership suppliers. How far can the outsourcing strategy be driven without severe risks for losing the brand name identity?

From a methodological perspective, our approach is started with empirical studies of a few assemblers and their suppliers within the automotive industry. Later, we will expand the studies both in the number of firms and also internationally. At this later stage of the research we will use survey methods in order to collect enough data for a broader study. Here we focus on our longitudinal, in-depth case of the emerging partnership between Volvo and Autoliv on car safety.

Emerging partnership relations  The case of Volvo and Autoliv

Volvo Car Corporation

After the divorce from Renault in 1993, the new Volvo board of directors initiated a new strategy (the dramatic shift that led to selling off Volvo Car Corporation to Ford in the beginning of 1999 is not covered in this article):
- Stand-alone, continue to be an independent vehicle manufacturer
- Focus on the core business (vehicles) and sell off other businesses
- Maintain the strong position in the trucks and buses businesses and strengthen the position of the car business by broadening the customer base and developing cooperation and partnership relations.

Volvo at that time had relatively few car models and each one with a long lifetime. The trend in the automotive industry, driven by the success of Japanese companies, was towards more frequent changes of models. Several car models will be developed on the same platform in order to economise with R&D costs. By dividing the car into a number
of modules (17 in the case of S70) and clearly specify the interfaces, the development work can be speeded up, whether it is performed in-house at Volvo or by suppliers. To take advantage of the suppliers competence and capacity Volvo is trying to develop partnership relations with the major direct suppliers (about 20). When describing the core competence of Volvo managers and purchasers are continuously coming back to three core values: safety, environment and quality. The new role Volvo needs to take is to develop the total car concept and to co-ordinate the supply chain. That will require a competence different from that Volvo has today.

"Today we have a narrow and deep competence to construct and produce a few car models. In the future we will need a broad and superficial competence to deal with more car models and place demands on our suppliers instead of doing things ourselves."

Purchaser Volvo

If a large system will be bought from one single supplier in a partnership relation the system should have the following characteristics according to Volvo:

- Strategically important, giving Volvo a unique profile and having an important affection on Volvo business
- Part of the module strategy and the platform strategy
- Heavy in logistics and development
- Fast technical changes

**Autoliv**

Autoliv (Värgårda Sweden) was founded in 1953 and was very early in the seat belt business. In 1956 the first seat belts were delivered to Volvo. Today Autoliv Sweden is part of a world-wide enterprise developing, manufacturing and marketing car safety products. The total sales volume for 1996 was 1.7 MUSD or 8.5 billion Swedish kronor (before the merger with American Motion in October 1996). After the merger the sales almost doubled to 3.2 MUSD in 1997. Autoliv’s business mission is to develop and sell systems related to the safety of the car. Autoliv is one of the world’s leading airbag producers and has most of the world’s car manufacturers as their customers. It has been an explicit strategy to be located close to the customers. In the Värgårda assembly plant Autoliv also is manufacturing some plastic components. Purchased materials account for 70 per cent of the product value. Autoliv has experienced great advantages being early on the market with new technology. The strategy is clearly to be a technological leader and Autoliv was first on the market with e.g. the SIPS system to be a technological leader in the delivery of car safety systems close co-operation with the primes is necessary.

"Our ambition with a partnership with Volvo is to get a partner with which we can try new products. When you are in the safety systems business you can not develop new products on your own, you need a car manufacturer to work with. Together we can create new products. That is a common interest for us and Volvo and their customers and that is what makes this successful. Both of us feel that we can take advantages of a co-operation and we develop new products for our future survival. Our company is growing and Volvo helps us to bringing new products to the market. Safety is one of their most important areas." Marketing manager, Autoliv

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Volvo and Autoliv have a long tradition of working together in the development of new products and the relations is still growing. Autoliv is taking more and more responsibility for the development and Volvo is defining performance criteria and measurement including benchmarking against other suppliers. Volvo is not one of Autoliv’s biggest customers, but it is the most important in terms of product development. Both Volvo and Autoliv have high ambitions to be leading in car safety, which makes it necessary for them to work in close co-operation. When listening to the managers interviewed, car safety for them can be interpreted as a common religion.

**Systems thinking as a basis for learning and core competence**

The definition of the safety system and the interfaces between the airbag system and its environment (safety belt, dashboard, other physical systems in the car and the occupants in the car) is the starting point for the system competence. The involved Volvo and Autoliv engineers and managers are well aware of their respective competence profile even if there are differences between the profiles they have identified in their own organisations. One way of preserving and protecting competence is the use of patents. Patents are often written as common in contracts between Volvo and Autoliv, and they have rarely problems in finding a solution to the patent sharing. Ethics is an important element in the preservation of knowledge in the companies. One aspect of ethics is not to rob employees who are very competent from other companies.

To utilise the knowledge created in projects with several customers but still develop unique products is an organisational problem that Autoliv seem to have solved in a satisfactory way. Autoliv have other partners than Volvo. What seems to be important is to create a clear boundary between the people working with Volvo and the people working with for instance Saab Automobile. It is not the same people working with different customers except for executives not taking part in the daily operations. In the development of new safety systems and products there are high standards of discipline in terms of gates and efficiency that are not always met. If some designers do not meet the deadlines but develop a "fix-it-later mentality" there will be worse problems later on. These comments are put forward on questions about the balance of R&D competence at Volvo’s project team when more and more responsibility is given to the supplier. The use of suppliers that are partners is increasing Volvo’s system competence. The reason is that a supplier like Autoliv has customers on a worldwide basis and develops 3-5 projects at the same time. This pace is much higher than Volvo could perform. Furthermore, the different demands from car manufacturers put additional requirements on the supplier in terms of innovation, quality and performance. Processes and routines are also frequently discussed in the building of competence and increasing efficiency both at Autoliv and Volvo. The persons in the Volvo projects can take advantage of the general experience from other customers’ projects with Autoliv.

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A recent reorganisation inside Autoliv has led to the gathering of the project leaders at one place, which has increased the system competence. By sitting together, the 18 project leaders learn the requirements of other systems. Before this re-organisation there was no optimisation of the knowledge on how the systems interact together. Also the external sources of knowledge and expansion of system competence are stressed by the interviewees e.g. the knowledge on car collision comes both from National Health and Traffic Safety Agency (NHTSA, USA) and from Volvo to Autoliv. The merger of Autoliv and Merton has opened new sources of system competence for the two firms and their partners. Figure 3 is a summary of critical values of system (core) competence as part of an extended organisation.

Figure 2. Parallel "Chambre Separees" for New Product Development.

Figure 3. The extended organisation: values on how to expand system competence

Analysis

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The leading car manufacturers have now come to a point where they focus on their role as systems integrators. They are concentrating their design and production resources on core competence and areas of strategic importance for the consumers' recognition of the brand image and identity of the product.

This has been brought forward due to increasing competition in the development of new products (shorter time to market), more efficient manufacturing systems (lean production), and more sophisticated better-informed consumers. These demands are not new, but they are now accelerating due to the cars being more complicated and also because of increasing competition.

**Modularization is changing the Rules of the Game**

A car design is broken down into technical subsystems or modules (e.g. Volvo S 70 in 17 modules). Several or even most of them are designed and produced by subcontractors e.g. exhaust systems and seatings. Ideally such sub-systems have both technically and functionally, well defined interfaces and boundaries for the efficient final assembly. These technical and functional modules are also from a technical point of view relatively standardised as regards different brands and car manufacturers. Therefore, the external supplier can have several competing customers, e.g. Volvo, Mercedes and Audi.

This development will probably lead to a more complicated relation between the car manufacturer and the direct or first tier suppliers. Some of them will develop partnership relations with several competing manufacturers. This is at the same time an increasing risk for opportunistic behaviour and the only way so far to cope with this risk by making both buyer and seller so dependent of each other that they must develop a high level of trust.

In the most developed stage of partnership relations the supplier will be expected to act as if it was a subsidiary or division of the buying firm, i.e. almost back to vertical integration or hierarchies again after a wave of outsourcing. Why are the car manufacturers not interested in incorporating the major suppliers? First, the answer is that some of them have grown and become so powerful that it would lead to an imbalance in the structure of the car manufacturer. Second, the major suppliers are efficient because they can deliver to several competing car manufacturers. Third, the car industry has been downsizing and restructuring in order to reduce the balance sheet and they have no ambitions to expand their investments by acquisition of suppliers. They are developing new organisational patterns in order to reach the same or more efficient structures than incorporating the most important suppliers.

**Inter-organisational project management**

Some striking observations from our interviews at Autoliv and Volvo:

Each party has its own project organisation, both are composed as cross-functional teams. However, individuals can sit together at each other's locations for both long and short periods. Also, there is a transfer of engineers between Volvo and Autoliv, in both directions and with sanctions from both managements.
Rules of conduct and ethics have been established and routines for e.g. classified information are formalised. Not robbing key personnel from each other or other business contacts is one ethical rule. Keeping secrets from being distributed to other Autoliv customers that compete with Volvo is another one. Volvo and Autoliv have several shared patents, which they consider important for establishing standards or dominant designs. The close cooperation is not free from problems, but the critical comments on the other party are indulgent. Taken together, these rules and routines are building trust and common values.

The day-to-day communication between the two project groups is not very spectacular. After the reading of the outprints from the interview tapes, the first question was how this almost trivial content could be reflecting a process leading to world class safety systems in a very competitive environment.

There are intensive interaction and communications between the two project groups. Especially Volvo is very active to take initiatives to contacts with Autoliv. Autoliv project members have noticed that questions that could have been discussed by telephone, are often a reason for the Volvo group to ask for a meeting at the Volvo plant in Vårgårda, one hours' drive from Volvo.

Volvo is an "old" automobile industry with strong traditions and many senior managers that created an image of conservatism and self-complacency until the financial crisis in 1989-91 and the dramatic divorce from Renault in 1994. A new management is fundamentally changing Volvos strategy. Autoliv is a young company that has expanded rapidly in the 90s, both organically and by acquisitions. Project leaders are very young. This mix of company cultures seems to be productive for both parties and their joint development.

A New Concept for a New Type of Relation

In order to catch this process, we propose the metaphor 'chambre séparée'. A 'chambre séparée' is "a room for undisturbed acquaintance or communications". Our interpretation of the empirical data is formulated around this metaphor. Key words are trust, secrecy, creativity, excitement and awareness of the risk that the partner might look for another supplier if the expectations are not reached. Compared to the North American experience (Mudambi and Helper, 1998) formal commitment is accompanied by the development of mutual trust. In the Volvo-Autoliv case the relationship has reached the partnership position by adding more formal and deliberate cooperation to a historically based mutual trust.

In the daily operative cooperation, Volvo and Autoliv project members are meeting as if they were working in the same firm. They are focusing their mission and trying to get as much as possible out of their relation. Their contacts are very open and very close at the same time as they compete for a leading position both together and individually on different markets.

Discussion

Having proposed a new concept, a metaphor, we would like to discuss the critical aspects and the consequences of this proposition.
Are the ‘chambre separee’ relations really representing something new as phenomenon and as a concept? We think yes. The evidence is that in several industries, e.g., the automotive, the whole supply chain model is changing.

From a high degree of vertical integration to disintegration via outsourcing and back to a ‘quasi-integration’ e.g., partnership relations that include both close cooperation and fierce competition on technology. From many direct suppliers to each prime/brand owner to dramatically fewer suppliers controlling a hierarchy of second-tiers, third-tiers etc. From local and regional supply markets to global sourcing. From many primes/brand owners to the dominance of a few (The Big Six etc.) ones with complete products lines created by mergers and acquisitions. From relatively low frequency of new models with a long life to a ‘star wars’ competition model with highly frequent new models on relatively few platforms.

To get access to more core competence, economies of scale and parallel product development processes for a shorter time to market, the ‘chambre separee’ is a new type of relations and a new way to compete.

However, meeting with several competing partners/buyers for the delivery of almost the same functions, is a delicate process for a supplier leading to questions about opportunism or suspect infidelity. How can the buyer prime be confident that the supplier does not transfer exclusive technology to the competitors? From a broader perspective, are the ‘chambre separee’ relations leading to sustainable competitive supply chains?

There are obvious risks for opportunistic behaviour in the parallel ‘chambre separee’ relations. In the short term one party, primarily the supplier, could profit from transferring technology from the original new system development team to one of the parallel teams with another prime. However, that information would spread very quickly to all other buyers. The supplier might loose confidence and even customers. The suppliers in parallel ‘chambre separees’ should rather work proactively on creating confidence by separating the teams working with product development for different, competing primes.

Are the ‘chambre separee’ relations leading to more efficient supply chains? It depends on how much and how long term product development is built in the relation. If there are a rapid changes of technology and short product life cycles it is obvious that each prime can get access to more resources or an extended organisation with a supplier acting in parallel ‘chambre separees’

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