Some time ago, an international beer brewery started a supply chain project. The reason for this was the increasing pressure the brewery experienced from its larger customers. Major supermarket chains drastically increased their demands concerning the logistics performance of their food product manufacturers. While a delivery time of several days used to be the norm, now perfect deliveries are expected within six to eight hours for restocking. The idea behind the supply chain project was “Let’s do to our suppliers, what our customers are doing to us”. Major suppliers were asked to submit proposals for improvement to the beer brewer, aiming to improve the goods logistics and lower costs.

An international manufacturer of system packaging (six-packs and trays) was also involved in the project considering its volume of supply and its reputable status as an international technology leader. Customers not only use its packaging machines, but also its packaging materials (cardboard and foils). The packagings are unique to the machine requirements as they are only compatible with the machines of the manufacturer in question. The packaging manufacturer is the only supplier from whom these system packagings can be obtained. The brewery has to turn to the system-packaging manufacturer for the maintenance of the packaging machines and spare parts as well. Unauthorised work on machines by third parties would forfeit the guarantee of continuous uninterrupted production.

This international system packaging company was also invited to make suggestions for improvements. The invitation was willingly accepted. In contrast with the other suppliers, however, the brewer received no proposal from the system packaging supplier. Inquiries always resulted in answers like “it is still a subject of study”, “we are busy with the problem” and “we expect to get back to you pretty soon”. After three months the packaging firm’s CEO proposed to have a meeting with the brewer’s CEO in order to get to know each other and to exchange ideas on how to grow the business in the future.

It was explicitly mentioned that the chairman of the board of the system packaging company was a busy man, but that it probably would be possible to arrange a meeting within the next two months.

What accounts for the numerous frictions in supply chain projects despite the major savings that could be achieved? Why are suppliers less than enthusiastic when they are asked to cooperate? Companies that want to engage in corporate wide supply chain initiatives should create a dominant position in the relationship with their suppliers. Supply resource management can help companies obtain such a position. Mobilising the often superior supplier resources contributes to achieving the company’s goals and strategies.

Companies will arise that own nothing and nevertheless control everything. They will have superior logistics and financial information systems and will work with a great deal of discipline. They will have broad supplier networks at their disposal. But what is essential is to create the position of chain director—a position that has to be carefully developed and strengthened.

**Supply Resource Management**

*Mobilising external capabilities*

Companies will arise that own nothing and nevertheless control everything. They will have superior logistics and financial information systems and will work with a great deal of discipline. They will have broad supplier networks at their disposal. But what is essential is to create the position of chain director—a position that has to be carefully developed and strengthened.

**Supply Resource Management**

*Mobilising external capabilities*
These experiences are not unique. Other enterprises have discovered that introducing supply chain projects is far from simple. Often suppliers are quite reluctant to co-operate in such projects. This is despite the fact that there are clear improvements for goods flow control, which would lead to advantages for all parties as well as obvious savings.

First, we shall focus on a number of trends and developments in the field of B2B relations. Next, we shall look at the development of logistical thinking, which is evolving towards Supply Chain Management (SCM). In this context, we shall also consider the phenomenon of Supply Resource Management (SRM). SRM forms the necessary context for supply chain management and should therefore be clearly distinguished from this.

**Trends and development in supply chain management**

Efficiency in the demand-driven supply chain nowadays dictates that after sales, suppliers are expected to restock within a certain, previously agreed time (often limited to some hours). Efficient Consumer Response (ECR) comprises direct store deliveries (fresh products) or efficiently cross docking of both perishables and groceries via the retailer’s distribution centre. In the view of Ahold’s Dutch subsidiary Albert Heijn, ECR is a situation in which the manufacturer/supplier is no longer paid for the products delivered. Payment is based on products that are actually sold within a given period. In essence, the manufacturer/supplier becomes the financier of the goods logistics of the retailer. The supplier does most of the logistic tasks. As a result, the retail purchaser (now often referred to as the category manager) is free to focus on the store concept and category management. The traditional retail purchaser in fact evolves into a sophisticated retail entrepreneur.

Using intricate logistics systems, the goods logistics can be tracked and traced. As a result, the shop staff can check on the status of orders and deliveries independently. Order processing and payment take place electronically using EDI or some other electronic purchasing solution. Advanced shelf allocation systems (e.g. SpaceMan) allow for detailed yield analyses per article, per article group, or per supplier. If yields do not meet targets, the suppliers involved are invited to demonstrate to the category manager in question how yields can improve for a specific category by means of a business case. The retailer’s category team discusses these improvements. The customer support team or account team of the supplier takes part in these meetings and has to come up with a clear and practical proposal for improvements, or the retailer will find an alternative manufacturer that can. A number of important developments and trends in B2B relations can be identified on the basis of the above. These are summarised in Box 1 below.

Though we believe retail is leading these developments, it is not alone. The principles described here are applied in numerous other
industries. Here are some examples:

- In a number of factories, Xerox controls its suppliers using the principle of pay for consumption. Suppliers are paid the moment their components are actually used. Via an online computer link, each supplier can see what Xerox has produced and what number of components was used in the process. Payment takes place electronically, in which the time of payment depends on the delivery reliability of the supplier involved. Invoices no longer need to be posted.
- Hewlett Packard sends its customer orders for PCs and printers to its logistics service companies, where they are assembled within a specified throughput time using the main components that the supplier has to keep in stock. Deliveries are made within 48 hours.
- Chairs for the Volvo V40 and S40 are supplied to Volvo’s Dutch plant Nedcar in the same sequence by the chair supplier to the assembly plant as the sequence of cars produced and already sold. Chair production occurs several hours before the cars are assembled. Nedcar is now working on a business park, where major suppliers have been invited to establish a production plant next to the assembly factory. Manufacturers like Ford, Volkswagen and General Motors pursue similar supply strategies and increasingly allow the assembly of components to be done by their suppliers.

The development of this kind of integrated supply chain requires a number of conditions. In the first place, the customer must have a strong position in the chain, so that requirements pertaining to the performance of suppliers can be enforced. In other words, the balance of power must be to the advantage of the customer, retailer or manufacturer. Besides that, it is necessary to have fine-tuned, advanced logistics costs and control systems (also known as ERP systems) for the customer, which make on-line tracing and tracking and detailed costs and yield analyses possible. This information allows for effective order fulfilment by suppliers. The suppliers involved all need to be connected to these systems. This requires major investments and continuous improvements in the field of information technology on both sides. For this reason, the computerisation level is an increasingly important facet in the qualification of a supplier. Finally, sufficient schooled employees are needed who are familiar with modern supply concepts and know-how to make creative use of the information technology concerned.

What conditions need to be met if a company wants to achieve proper cooperation with its suppliers? Obviously investing in information technology only is not enough. Several issues will be discussed using the resource-based view of the firm, an approach that is becoming increasingly important within management science.

The resource-based view of the firm

Proponents of the Resource-Based View of the Firm (RBV) state that the difference in performance and business success between enterprises mainly lies in the way in which they make use of their resources. The term is used to indicate the sum of all resources that an enterprise can make use of. More specifically, it is the way in which organisations use the available knowledge, capital, machines, technology and especially their human capital.

What is striking about the views of the RBV strategists is their particular focus on the way in which organisations implement or should implement their internal resources, i.e. resources they own and have at their disposal. From earlier research we know that the cost structure is largely determined by external costs as a result of the strategic reorientation that took place in many branches of industry. (See Fig. 1)

Figure 1 shows that the resources enterprises have at their disposal (all the available knowledge, capital, machines, technology, and people) are predominantly situated with the supplier networks, i.e. supplier organisations. In most cases, the external resources that may be used by an enterprise, are larger than their available internal resources. This idea has been captured in the extended enterprise concept, which was originally cornered by Chrysler in the US (Dyer, 2000). During the early nineties, this large automotive manufacturer acknowledged that the majority of costs of its cars was related to outside suppliers. The extended enterprise concept encompasses the idea that outside suppliers are managed as if...
they were part of the own organisation. The point is to mobilise the often superior supplier resources to support the product/market and new product development strategies and programmes of the enterprise. Against the background of this concept, supply resource management aims at managing the external resources of the enterprise (i.e. the combination of all supplier resources) in such a way that these contribute to the realisation of the enterprise’s objectives and product/market strategies.7

If we accept this view, the role and position of the purchaser or suppliers is placed in an entirely different light. SRM is more interested in creating the best value in the relationship with suppliers rather than the lowest price. It is more important to mobilise the available resources of the supplier organisation, i.e. its knowledge, capital, technology, and people. The points of departure are the active involvement of suppliers in supply chain improvement initiatives and product innovation, the development of a joint vision regarding promotion and advertising of products and product ranges, stimulating joint research into user needs in end markets, etc. On the part of the suppliers, emphasis is placed on delivering products without errors, and contributing to new market initiatives and product ideas.

The impact and significance of SRM can be illustrated by means of the development of Li & Fung from Hong Kong.9 As a result of a drastic reorientation in recent years, this company has expanded enormously.

Li & Fung started in 1906 as a traditional purchasing agent. Simple household and consumer goods were purchased on the basis of provisions by order of western commissioners. Production orders were passed on to suppliers from the Chinese mainland on the basis of competitive tenders. Now the company has 62 purchasing offices in over 35 countries of which most are situated in Southeast Asia. Using the specifications of the western customer (predominantly American and European department stores),
Clothing is developed under a private label. After approval of the design by the customer, the most suitably equipped manufacturer for the production order is sought within the network of manufacturers in SE Asia. Li & Fung works with a large number of carefully selected manufacturers. It always makes sure to have about 50 per cent of the turnover of a specific supplier in order to make sure that Li & Fung is always treated as a preferred customer. A quality inspector is on site to supervise the production order and to ensure that the products meet the agreed specifications. The purchasing offices of Li & Fung supply all necessary raw and other materials (textiles, yarn, buttons, and zips). Due to its scale, Li & Fung can stipulate far better conditions and qualities than the individual manufacturers can. After production, Li & Fung takes care of the shipment, which can extend as far as actual outlets. The advantage lies in the consolidation of deliveries, so that transport costs for the customer are as low as possible. Here, too, the company profits from its expertise and scale. Li & Fung makes no secret of its network. If required, the customer can visit the production facilities and orient himself/herself. Li & Fung’s integrated way of working allows the company to work at 40 per cent lower costs, compared to those of warehouses. For this reason, the enterprise produces double growth figures annually.

Li & Fung is an example of a new generation of logistics business integrators, such as we expect to see many more of in the coming years. These business integrators will turn the traditional supply chains upside down. Companies will arise that own nothing and nevertheless control everything. They will not be very capital intensive and have few assets. They will have superior logistics and financial information systems, and will work with a great deal of discipline. They will have broad supplier networks at their disposal with which they maintain long-lasting relations that they continue to develop. What is essential to their business model is to create the position of chain director - a position that has to be carefully developed and strengthened.

This example also demonstrates the key factors to success for effective and successful supply chain management: a strong position in the customer-supplier network, supported by advanced information technology and creative entrepreneurship. The key element is not the price that Li & Fung offers its customers, but rather the integrated value proposition for the design, purchasing, and logistics for a complete production line. It is an example of an enterprise that is capable of successfully linking customer networks directly to its supplier networks.

Is SRM equally relevant for all entrepreneurs? Does SRM have the same content in all cases? The

---

**Different resource profiles require different emphases**

<table>
<thead>
<tr>
<th>Internal Resource Based Firm</th>
<th>Mixed Resource Based Firm</th>
<th>External Resource Based Firm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal costs</strong></td>
<td><strong>Type 1</strong></td>
<td><strong>Type 2</strong></td>
</tr>
<tr>
<td><strong>External costs</strong></td>
<td><strong>Type 3</strong></td>
<td>Increasing Role of Supplier Resource Management</td>
</tr>
</tbody>
</table>

**Fig. 2**
resource profile of the enterprise in question determines how we answer these questions. Exhibit 2 shows that there are three types of resource profiles: Internal Resource Based Firm, Mixed Resource Based Firm and finally External Resource Based Firm, each defined on the basis of the ratio between internal and external costs. The larger the share of external costs is, the more relevant SRM is for relations with suppliers.

**Purchasing, supply chain management and supply resource management**

Purchasing is an inseparable part of the production chain. The traditional view of purchasing is that the function should ensure that agreements are made with suppliers in such a way that the right products are delivered at the right time in the right quantities at the right price and in the right location for the end user. Due to the impact of the developments described in B2B relations, traditional views are being challenged here. In most enterprises and businesses a paradigm shift has already taken place: purchasing is viewed as a strategic business function, which moves from a staff activity towards the line organisation while focusing on the management of supplier relations. Here, we would focus on the relationship between purchasing and supply chain management. What will be, if any, purchasing’s role within the concept of supply chain management?

Supply chain management aims at the optimisation of the goods flow from the customer to the original producer. SCM aspires to have an overview of the various links in the supply chain to ensure optimal tuning between these links. The question is whether SCM realises this in practice. Various studies on this subject have found that considerable savings can be realised through cooperation within the chain. Salmon (1993) estimated 10.8 per cent savings on the consumer price through studies on the relation between Wal-Mart and Procter and Gamble. Coca-Cola published a report in the mid-nineties with an estimate of 2.3 to 3.4 per cent of the consumer price. Coopers & Lybrand (1996) used a benchmark study among fifteen European retailers and found a savings potential of approximately 5.7 per cent. Based on the low margins in the retail sector (often less than one per cent), these are impressive numbers. Why then do the companies involved not work together to realise this potential?

The case at the beginning of this article shows that the co-operation between customer and supplier is no simple matter. Supply chain management, i.e. effective cooperation between partners in a chain presupposes that certain conditions are satisfied. Let us discuss some of the most important assumptions underlying supply chain management.

- Partners in the chain will focus on the interest of the end consumer. The idea is that all links in the chain focus on the consumer so that all benefits from the chain are eventually passed on to the consumer. From our observations, this is highly questionable. Rather, we posit that each link in the production chain will first focus on its own interests. People are not willing to simply pass on all chain advantages realised to the next link in the chain.
- Companies in the chain are willing to enter into far-reaching collaboration or partnerships. This assumption can already be discarded on the basis of scientific research. It is only in some few cases that B2B relations can develop into relations that are felt to be a partnership on both the part of the purchaser and the suppliers. The development of partnership relations proves to be an unmanageable process, which is one reason a large number of contractors no longer wish to use this term in their purchasing policies.
- The chain approach is a good representation of the processes that occur in trade and industrial practice. This assumption is very suspect. Anticipating the demands of large retailers and contractors is most problematic for the suppliers involved, if we are to believe the stream of complaints coming from category managers and purchasers concerning the delivery performance of the suppliers. In cases where the suppliers have a dominant market position, purchasers have a great deal of trouble getting them to implement improvement initiatives. The case at the beginning of the article is quite illustrative of this.
- Information necessary to make rational decisions concerning the design of the goods flow is available and entrepreneurs behave
rationally in the decision-making processes. SCM assumes the availability and sharing of information at all times for all links in the production chain. The poor introduction of ERP systems within organisations demonstrates that this will remain a utopia for many companies. In practice, open book negotiations appear to be troublesome and are avoided by most business partners.

To address supply chain initiatives, managers are well advised to verify the assumptions that underlie this term. Is the position they hold as a customer strong enough regarding their suppliers? Are they capable of supervising and controlling the goods flow properly? Do they have sufficient insight into the logistics costs and sound knowledge of possible measures for improvement? Are they willing to openly share this information? Do suppliers sufficiently match the enterprise’s work culture to jointly support improvement measures? These are examples of some questions that need to be asked beforehand. Once these questions have been asked, practice shows that only a very limited number of cases actually meet the necessary conditions for successful implementation (see Box). Supply resource management aims to create the conditions necessary for effective supply chain management. That is why we focus on this subject in the following section.

The strategic significance of supply resource management
SRM aims to create a position in the value chain, i.e. the chain (we prefer the term network) of activities between customer organisations and supplier organisations (see Exhibit 3), such that it is possible to motivate suppliers to actively contribute to the realisation of product/market strategies of the enterprise. As a result, SRM is related to a great many activities. In other words, the curriculum of SRM has a wide reach and goes beyond purchasing, supplier management and supply chain management. Some of the elements are the strategic positioning vis-à-vis major customers and suppliers, organising information and knowledge networks (within and outside one’s own organisation, for instance with research institutes and universities), developing competencies and a culture aimed at continuous improvement, and mobilising suppliers and supplier networks. SRM assumes that internal resources are consistently being challenged against market conditions. As soon as a party is found with better resources than the organisation’s, activities are transferred to this party. Applying SRM has considerable consequences for the design of processes, organisations, and relationships between organisations.

What does all of this mean for the design of the purchasing function? Does it change with the introduction of SRM? Or is the traditional purchasing function to disappear completely? Exhibit 3 shows that the latter cannot be the case.

The brewery and the supplier of system packaging
Naturally, the case described at the beginning of this article was followed up. The brewery decided to take action. An analysis of the position of both companies showed that the brewery was more dependent on the system packaging company than the other way around. Alternatives for this supplier were non-existent or very scarce within Europe. Research on the supply base of a number of large American competitors showed that they were doing business with a major American system packaging company. After contacting the American company, it was established that this supplier had plans to expand into Europe. So the company was looking for its first launching customer. The deal was quickly made. The brewery and the US-based packaging company quickly agreed on investments in new packaging lines and deliveries of packaging materials, for which the American supplier would open a subsidiary in Europe. The response of the European supplier was amazing: suddenly they were willing to initiate talks with the brewery, came up with several suggestions, and even the prices of the packaging were suddenly negotiable.
The effects on purchasing and supplier management are the following in our estimation. As far as purchasing is concerned, SRM focuses on how to create a power position in the supplier network that allows for the successful introduction of SCM. The purchasing curriculum, supporting SRM, is focused on developing make-or-buy options, developing purchasing synergy, leveraging supply base management, and early supplier involvement in order to benefit from supplier expertise in new product development.

This intersects with the purchasing function in that SRM represents and incorporates the strategic dimension of purchasing.

The tactical dimension or activities of the purchasing function are integrated within SCM. These aim at the actual involvement of suppliers in operational process improvement activities, product development, and customer activities (e.g. joint promotion programmes). Examples of activities are efforts aimed at optimising product designs and features, reduction of the time to market of new products, joint promotions, quick response logistics, continuous replenishment, electronic data interchange, electronic funds transfer etc.

The operational dimension of purchasing aims at executing the purchasing process, i.e. carrying out supply market research, selecting suppliers, negotiating with suppliers, and processing requisitions and orders, expediting and supplier performance monitoring.

Table 1 provides an overview of these three dimensions related to the role of purchasing in organisations.

It is no easy task to shape SRM within an organisation. It is not possible to accomplish this using traditional views about organisation, information, and leadership. We expect that the introduction of SRM will lead to a concentration of strategic purchasing activities at the top level of the enterprise (i.e. the corporate level). This explains why over the past years, so many large corporations have leveraged their purchasing and supply strategies at the corporate level (see for example Rozemeijer (2000)). This is also the case for SCM. However, the level of concentration will be lower (i.e. the divisional level). The operational purchasing function will remain within the subsidiaries involved. However, the flood of electronic solutions made available for these kinds of activities will profoundly alter both the nature of the activities and the way in which these are organised.

**Conclusions**

The intention of this article was to demonstrate that the purchasing and logistics landscape in retail and manufacturing is changing dramatically and will change in the coming years, as a result of rapidly changing market conditions.
developing information technology. Although the retail and manufacturing industry are different in many aspects, there are striking similarities in how leading-edge companies in both sectors are managing their supply networks. Forced by international competition, these companies continuously strive for cost reduction, operational and transaction efficiency and reduction of time to market. For this reason, these large customers increasingly delegate their logistics activities to their suppliers. Suppliers are integrated in and connected to their business processes by intricate, proprietary and advanced information systems allowing for the implementation of quick response logistics, vendor managed inventory, pay for consumption and electronic funds transfer. Through these information systems, these large customers are able to trace and track any transaction and delivery and hence keep control of the supply chain.

As companies, due to outsourcing, have become much more dependent on their supply networks, supply resource management becomes of prime concern. The resource-based view has been used here to illustrate the importance of this new business concept. Essentially, the RBV attributes business success to the way in which a company is able to use the combination of the resources it
can dispose of. As we have seen the majority of the resources, that a company may use to create its market and competitive position, nowadays reside outside the company i.e. reside in its supply networks. Supply resource management therefore focuses on mobilising and challenging the supplier resources to actively support and improve the customer’s value proposition to its end user markets. Putting this in practice is a far from simple thing as the experiences of some major companies with supply chain management have demonstrated. Supply chain management assumes that partners across the supply chain are willing and able to collaborate together. We have challenged the assumptions underlying supply chain management. As we have seen, such collaboration assumes a strong position in the supply chain in order to be taken seriously by the suppliers. Apart from that, it takes intricate, proprietary information technology that is used to connect complex customer networks directly to the international supplier network and consistent but creative leadership.

Though the theory of resource management offers starting points for practice, we argue for the broadening of SRM towards purchasing and supplier management. Integration of these activities within the strategic, tactical, and operational processes of the organisation is an equally necessary condition for the successful implementation of supply chain projects. Research shows that considerable savings can be realised through more effective collaboration throughout the supply chain. Our analysis shows that the potential savings are not that easy to realise. In other words, much work still needs to be done. Truly enterprising manufacturers must be willing to implement drastic changes in their processes, systems, and organisations and those of their suppliers.

<table>
<thead>
<tr>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coca Cola Retailing Research Group (1994), Supplier-Retailer collaborations, London</td>
</tr>
<tr>
<td>ECR Europe/Coopers &amp; Lybrand (1996), European Value Chain Analysis, Geneva</td>
</tr>
<tr>
<td>Hendrick, Th. en Ellram, L. (1993), Strategic Supplier Partnering: an international study, Center for Advanced Purchasing Studies, Phoenix, Arizona.</td>
</tr>
<tr>
<td>Moody, P.E. (1993), Breakthrough Partnering, Creating a Collective Enterprise Advatange, Oliver Wight Publications, Vermont, Canada</td>
</tr>
<tr>
<td>University of Technology, Eindhoven (PhD-dissertation)</td>
</tr>
<tr>
<td>Van Goor, A.R. (1998), Partnership door Ketenlogistiek, Samsom, Alphen a/d Rijn (Dutch text)</td>
</tr>
</tbody>
</table>
NOTES

1. Examples: Wal-Mart's 'Every Day Low Prices' philosophy and 'Today for Tomorrow' project by Ahold.
3. This practice is, as Volkswagen's truck factory in Brasil has shown, not without risk!
4. In 1996 already, American Honda demanded from all its component suppliers that all transaction communication should be conducted electronically. Albert Heijn, the leading retailer, imposed similar requirements on its suppliers from 1 January 2000.
5. For an excellent overview see Olavarrieta en Ellinger (1997).
6. External costs: all costs related to activities invoiced by (external) suppliers. May be referred to in this text as 'supplier related costs' or purchasing related costs.
10. Whereby he/she assured that basic rules of conduct regarding guarding the environment and labour integrity are being followed.
11. For an excellent discussion and overview see Van Goor (1998).
13. For a detailed discussion, see the PhD-research that was published by Rozemeijer (2000).