
Abstract

This chapter discusses supply chain management, a major strategic approach for retailers. Efficient consumer response is discussed as a collaborative approach to supply chain management, with a focus on logistics activities. Information technology is a major enabler of supply chain activities. Therefore, the general principles of information management in retail companies, in a logistics context, are outlined.

19.1 The Supply Chain in the Consumer Goods Industry

Traditionally, manufacturers have always been the dominant force in the consumer goods supply chain. However, with the trend towards **retail consolidation** and the emergence of large retailers, power in the supply chain has shifted towards retailers (Fernie et al. 2015, p. 231). Where manufacturers previously designed, produced, promoted and distributed their products or brands and retailers depended on their leadership, retailers have been able to exert pressure back into the supply chain. They have forced manufacturers to change their supply chain strategies, for example by including tailored pallet packs, scheduled deliveries, continuous replenishment systems, etc. (Coyle et al. 2003, p. 6).

The **supply chain** in the consumer goods industry includes all parties directly or indirectly involved in receiving and fulfilling customer requests, namely manufacturers, suppliers, wholesalers, retailers, third-party service providers (transporters, warehouses) and customers (Chopra and Meindl 2013, p. 13). Supply chains are dynamic and involve the constant flow of products, information and finance between the different stages (see Fig. 19.1).

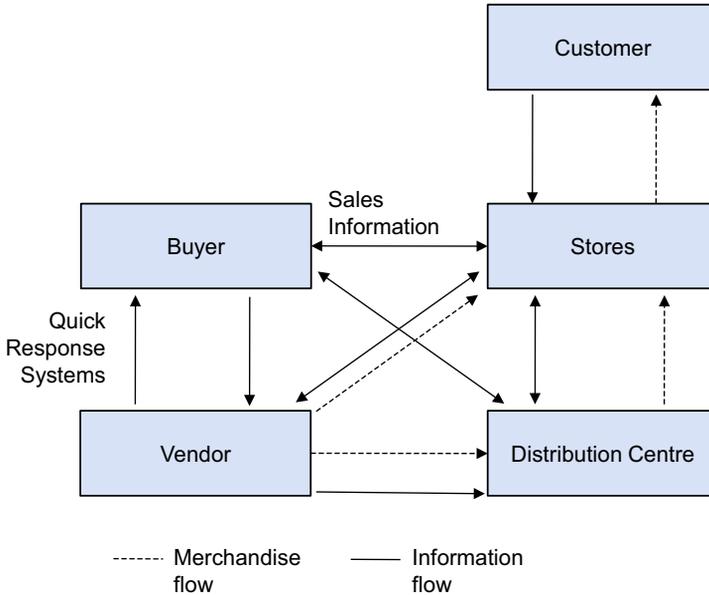


Fig. 19.1 Flows in the consumer goods industry supply chain. (Adapted from Levy et al. 2014, p. 271)

The first flow, the flow of **products and related services** from the manufacturer (and its suppliers) to the retailer and eventually the customer, is the core element in supply chain management. This has traditionally been the major focus in logistics, because customers expect their orders to be delivered on time, reliably and undamaged. **Information flows** comprise, for example, orders, inventory, demand or sales data. These flows are important for replenishment and (demand) forecasting at all stages of the supply chain. **Financial flows** include the transfer of funds or cash between supply chain partners (Coyle et al. 2013, p. 20).

19.2 Supply Chain Management

19.2.1 Overview

Supply chain management is defined as the planning and management of all business activities involved in fulfilling customer requests, such as sourcing, procurement, operations and logistics management. It not only focuses on processes or functions within one particular company, but also includes **coordination and collaboration** with other parties in the supply chain (Stank et al. 2005).

The primary function of supply chain management is to facilitate the **integration** of supply and demand management to improve the performance of individual companies and the supply chain as a whole. The overarching aim is to maximise overall value generated. Supply chain management therefore strongly focuses on **supply chain profitability** (Mentzer et al. 2001).

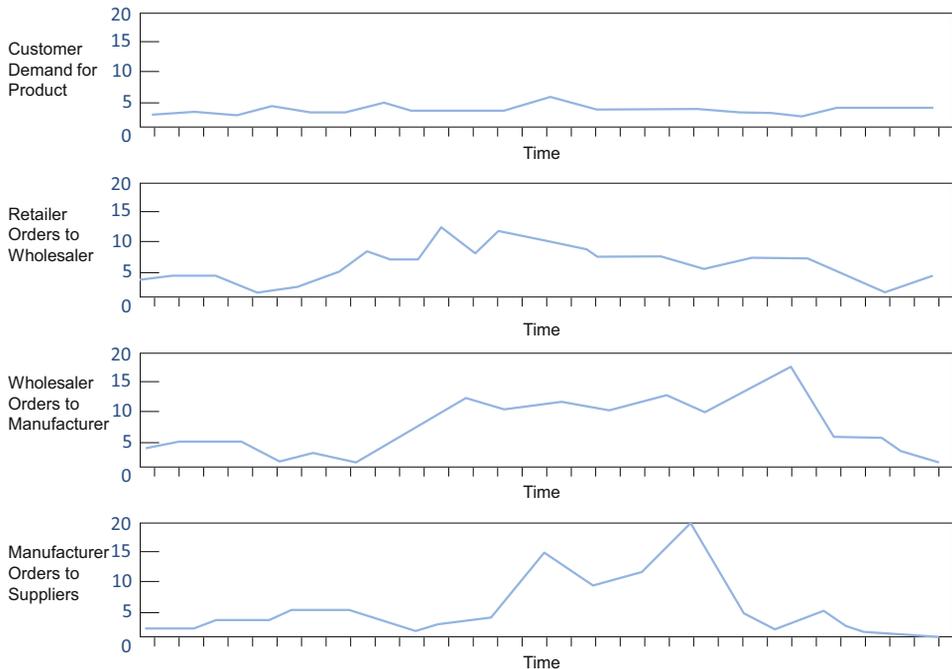


Fig. 19.2 The bullwhip effect. (Adapted from Lee et al. 1997b, p. 94)

19.2.2 The Bullwhip Effect

The fundamental idea behind supply chain management is that all involved parties should coordinate their activities and collaborate, thus improving the profitability of all supply chain partners. If each value-added partner optimises its own part of the supply chain in isolation, **inefficiencies** in the supply chain are likely to result, mainly because of isolated planning and forecasting of materials or order quantities along the value chain, a scenario known as the **bullwhip effect**. This occurs when sales or order quantity fluctuations swing upwards through the various value-added stages, with amplitudes increasing at each stage. The bullwhip effect results from the fact that customer demand is often unstable. Thus, each company in the supply chain must forecast demand. Because of incomplete information and uncertainties, forecasting errors are common and companies therefore usually carry safety stock in their inventories.

Moving up the supply chain from the consumer to suppliers, each participant observes higher fluctuations in demand and, therefore, has a greater need for safety buffers in its inventory. If demand increases, supply chain participants tend to increase stock and orders. However, if demand declines, companies tend to reduce inventory stocks. The bullwhip effect is characterised by variations amplifying the further one moves up the supply chain from the consumer to suppliers (Lee et al. 1997b; see Fig. 19.2).

The effect demonstrates how pervasive **inefficiencies** can arise from delays caused by **uncoordinated planning cycles** (e. g., because of order batching, price fluctuations or manufacturers rationing stock) or inconsistent and possibly out-of-date customer information or sales data (Lee et al. 1997a; 1997b; Disney and Towill 2003). This then affects planning and reduces the transparency of supply and material quantities beyond the specific value-added stage (Lee et al. 1997b).

The main approach to solving these difficulties is implementing comprehensive **inter-organisational information and planning systems** to develop an information flow in the supply chain that reduces inefficiency (Schramm-Klein and Morschett 2006).

In addition to information sharing, other sales and marketing practices in the supply chain are important, including the price schedule offered by manufacturers, the frequency and depth of price promotion, demand forecasting methods and allocation rules in case of shortages (Lee et al. 2004).

19.3 Efficient Consumer Response

The scale of the problems associated with isolated planning means that cooperation and collaboration among supply chain participants are at the core of industry efforts to eliminate the bullwhip phenomenon. The concept of **efficient consumer response** (ECR) is significant here. ECR comprises a number of collaborative strategies and operating practices between retailers and suppliers that focus on fulfilling consumer needs better, faster and at less cost (ECR Europe 1998).

The ECR concept implies a shift from the traditional **push-oriented** view of the supply chain that relied on “pushing” merchandise through the supply chain, initiated and performed in anticipation of customer orders, to a **pull-oriented supply chain**. Pull processes are triggered by consumer demand and executed in response to consumer needs. ECR is thus a demand-driven system related to the **just-in-time** concept (Kracklauer et al. 2004, p. 59).

ECR is central to developing concepts to exploit interorganisational potential through the structuring and control of value chains. It offers a range of supply management and demand management-oriented concepts based on **retailer-supplier collaboration** (see Fig. 19.3).

19.4 Supply Management Concepts in ECR

19.4.1 Overview

Whereas demand management-oriented concepts focus on cooperation in marketing, supply side-oriented concepts emphasise **logistical issues**. Following the pull-oriented view, they relate mainly to satisfying demand in terms of delivering the right products in the right conditions to the right destinations and the right customer at the right time and

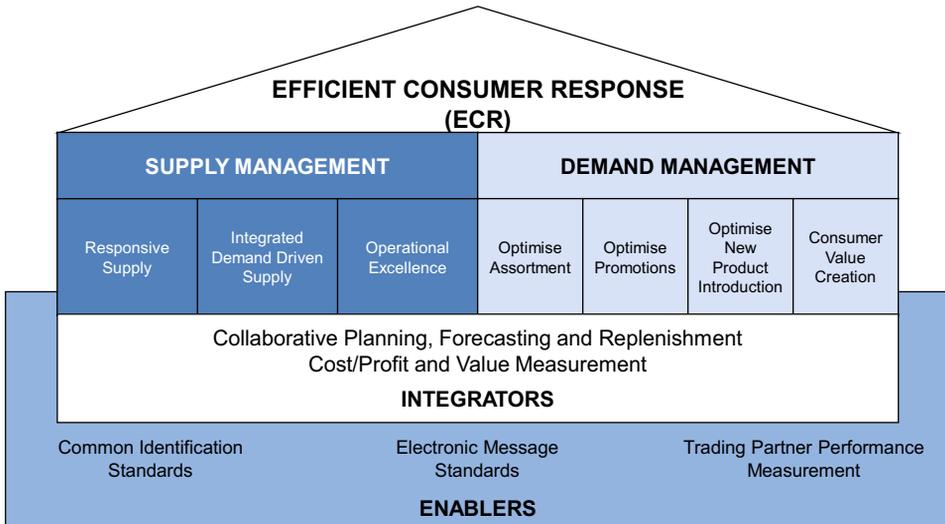


Fig. 19.3 Elements of efficient consumer response. (Adapted from Global Scorecard 2011)

in the right quantities throughout the supply chain at the right price, i. e., at lowest possible costs, thus guaranteeing the “seven r’s” of logistics. The emphasis is on **minimising logistics costs**, such as transport costs, particularly inventory costs and costs related to asset commitment.

The main areas of collaboration in supply management are (Global Scorecard 2015):

- **Responsive supply:** the main goal of responsive supply concepts is to synchronise manufacturer and supplier operations with retail sales in the context of a just-in-time pull-oriented supply chain driven by retail sales. Responsive supply, therefore, focuses on distribution methods that integrate product flow from the manufacturers’ production lines to consumer demand using actual consumer demand to drive replenishment. The aim is to generate very high service levels, which need to be balanced against cost and inventory levels.
- **Integrated demand-driven supply:** integrated demand-driven supply focuses on synchronising both production and purchased goods supply with demand. It thus comprises planning and control methods that align supply frequency and volumes with actual demand. The key objectives are minimum inventory levels and response flexibility and speed, which must be balanced against well-managed costs.
- **Operational excellence:** operational excellence aims to enhance efficiency by establishing industry-wide standards and management methods to increase the reliability of operations when it comes to problems such as stock shortages, late deliveries or administrative errors. Efficient administrative processes between the supply chain parties and **electronic data interchange (EDI)** and other technologies that enable, for example, process automation are crucial here.

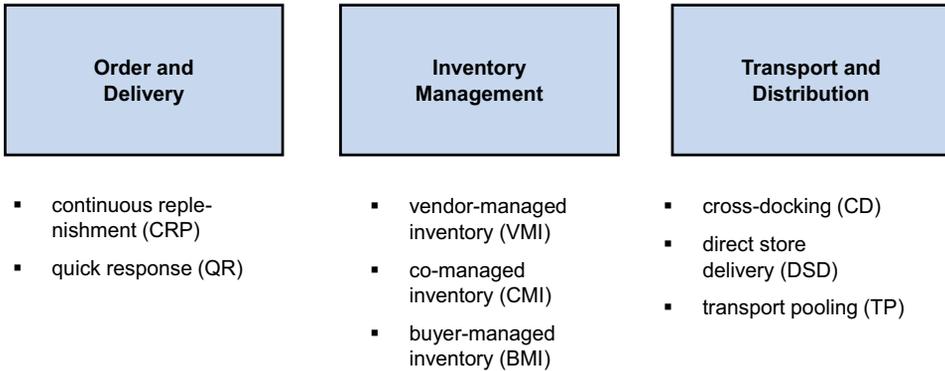


Fig. 19.4 Most important concepts in supply management. (Adapted from Gleißner 2000, p. 169)

In this context, various concepts have been established to increase efficiency and effectiveness in the supply chain. The most important concepts are presented in Fig. 19.4 and will be discussed in the following paragraphs.

19.4.2 Order and Delivery

The overarching concept in inventory management for ECR is **continuous replenishment (CRP)**, which aims to achieve a continuous flow of merchandise based on consumer demand (i. e., retail sales). The fundamental idea is to transfer the just-in-time concept to retail outlets and thus reduce overall inventory at all stages of the supply chain (see Fig. 19.5). Continuous replenishment systems require integrated information systems (e. g., EDIs) that enable close to **real-time transfer** of sales and inventory data between retailer and supplier. This information transfer lets suppliers and retailers **reduce lead times** in production and delivery.

Quick response (QR) is a specific type of CRP which has been developed to accelerate product flows in the supply chain. The concept was developed in the textiles industry to reduce replenishment lead times and it is especially well suited to markets with high demand volatility and rapidly changing assortments. The main objective is to decrease **overstocking** and **stock shortages** in the fashion industry, which is characterised by a high number of product variants and short fashion cycles with low demand predictability and a high share of impulse purchases (Christopher et al. 2004, p. 82). By allowing **multiple orders** to be placed in the selling season, quick response enables a better match between demand and supply.

A manufacturers' **postponement strategy** is closely linked to this concept, and refers to delaying product differentiation until closer (in time) to sale (Chopra and Meindl 2013, pp. 351–353).

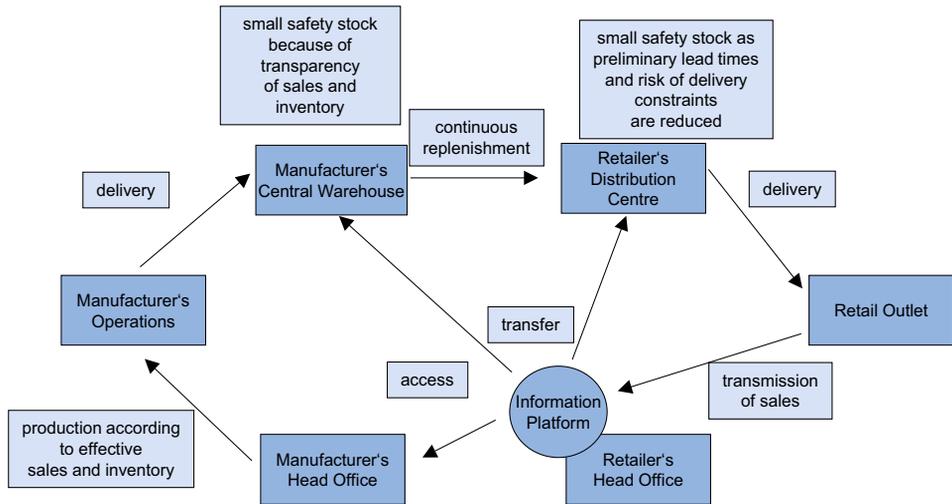


Fig. 19.5 Continuous replenishment. (Adapted from Swoboda and Janz 2002, p. 207)

19.4.3 Inventory Management Concepts

Inventory management strategies in efficient replenishment can be classified according to the party responsible for maintaining inventory levels: vendor-managed inventory (VMI), buyer-managed inventory (BMI) or co-managed or jointly managed inventory (CMI).

Vendor-managed inventory receives the most attention, and is characterised by the vendor being responsible for maintaining the retailer's inventory in the retailer's distribution centre or outlets (Lee et al. 1997b). The main objective is to reduce stock shortages in stores and inventory in the supply chain by centralising forecasting at the supplier and shortening the supply chain. Despite these advantages, VMI is sometimes associated with retailers relinquishing control of the supply chain. VMI requires a **continuous information transfer** of sales and inventory data between both parties, and the vendor generates the orders (i. e., reverse purchase orders). Under ideal conditions, inventories are replenished in quantities that meet the retailer's immediate demand, reducing stock shortages with minimal inventory levels (Levy et al. 2014, pp. 283–284).

Buyer-managed inventories require retailers to maintain suppliers' inventories. They are thus inversely related to VMI. **Jointly managed inventories** entail cooperation between vendor and retailer in inventory management.

19.4.4 Transport and Distribution

ERP applies several transport and distribution strategies, which serve mainly to guarantee continuous product flows in the supply chain (see Chap. 18). For example, **cross-docking** allows for stockless distribution processes and transport optimisation. **Direct store delivery**

(DSD) means that merchandise is shipped directly to the outlets, and **transport pooling** helps use transport capacities fully (Coyle et al. 2013, p. 254).

19.4.5 Collaborative Planning, Forecasting and Replenishment (CPFR)

Collaborative planning, forecasting and replenishment (CPFR) integrates supply-side and demand-side ECR concepts. It mainly focuses on **promotion processes** and thus is primarily related to HiLo pricing strategies that, in contrast to EDLP pricing strategies, are usually characterised by a high risk of stock shortages due to high demand uncertainty (see Chap. 13).

The main goal of CPFR is to increase **sales forecast** accuracy via joint sales planning by manufacturer and retailer, using all available data from both parties. Based on this forecast, production, delivery, warehousing and advertising are coordinated to achieve higher product availability and reduce inventory costs. Additionally, the simultaneous availability of customer behaviour information to all participants makes it possible to react to sudden, unanticipated changes in demand (Wisner et al. 2015, pp. 150–153). The CPFR process is depicted in Fig. 19.6.

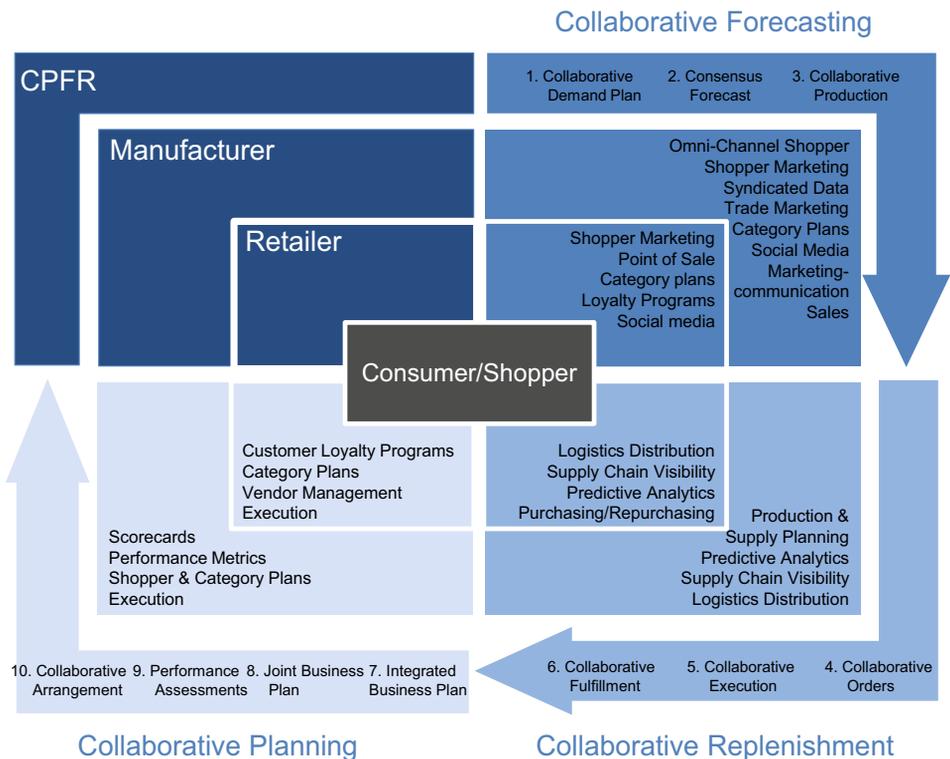


Fig. 19.6 CPFR 2.0. (Adapted from GSI 2015)

19.4.6 Enabling Technologies

Supply chain management requires efficient information-sharing processes between the parties at each stage of the value chain. Many technologies are available to facilitate such information flows.

Inter-organisational data exchange requires **EDIs** and communication networks that enable instantaneous, real-time information transfers such as the Internet, Intranet or Extranet (Chopra and Meindl 2013, p. 65). Standardisation and automation are vital to increasing the efficiency of such information processes. Other particularly important enablers of inter-organisational information exchange include (Hertel et al. 2011, pp. 67–85):

- **Automated identification systems:** The most important auto-id systems are barcodes, optical character recognition and RFID. These are based on coding systems such as the electronic product code (EPC) or the global trade item numbers (GTIN) that identify each SKU (item) in the supply chain, global location numbers (GLN) for identifying each participant in the supply chain or the serial shipping container code (SSCC) for identifying shipping units.
- **Communication standards:** Inter-organisational data transfer requires standardised message formats that can be processed by the IT systems of every party involved. Examples include UN/EDIFACT (United Nations Electronic Data Interchange for Administration, Commerce and Transport), EANCOM (a subset of UN/EDIFACT in the consumer goods industry) or GS1-XML, which is a more flexible message format.
- **Master data:** Master data are the basic data in information processing. They characterise each object in the supply chain, e. g., each customer or supplier. Customer and supplier master data are usually company-specific, whereas article master data are usually exchanged between parties. Thus, standardisation in this field is important.

19.5 Information Management

As the bullwhip effect demonstrates, **information availability** is extremely important in all stages of the supply chain. For example, suppliers need information from the retailer on sales, inventory turnover and feedback on competitors or at the level of customer returns. Information is also needed from consumers on attitudes towards products, brand loyalty and willingness to pay. Retailers need sales forecasts, information on product specifications, advance notice of new models, training materials for complex products and information from consumers on their shopping needs, where else they shop and their satisfaction levels with the retailer and the merchandise, to name just a few (Berman and Evans 2013, p. 228). Retailers play a crucial role in collecting information on consumers, because they have direct contact with customers at the **point-of-sale** and can collect information that goes beyond sales or scanning data. They can thus act as **gatekeepers** in the supply chain and control information flows.

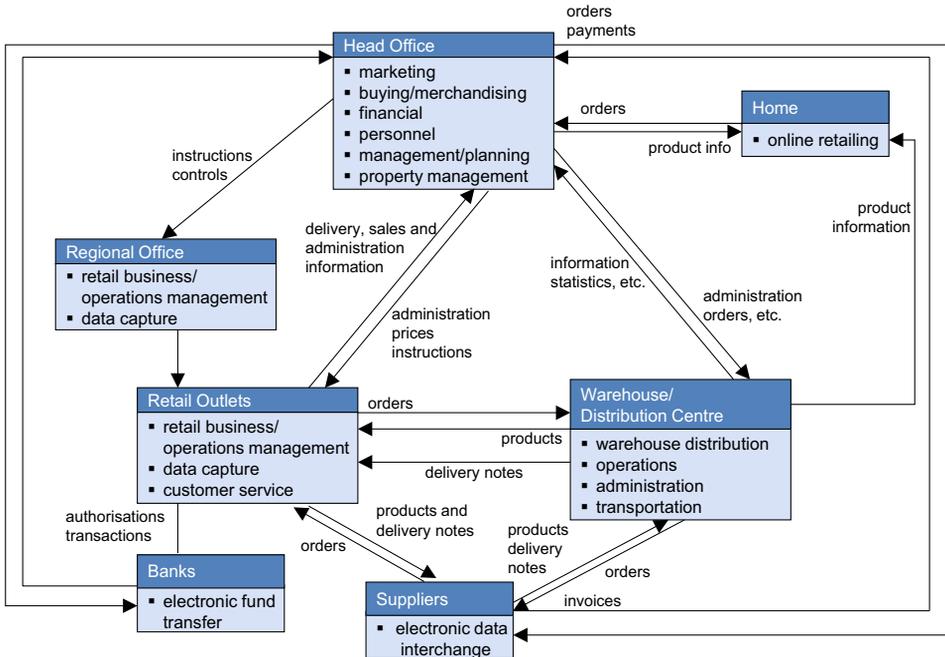


Fig. 19.7 Information flows in the supply chain. (Adapted from Dawson 1995)

The above examples demonstrate the need for **information flows** between a retailer's different departments (e. g., marketing and logistics) as well as at an inter-organisational level (Schramm-Klein and Morschett 2006). Fig. 19.7 shows the most important information flows for logistics. **Information technology (IT)** plays a vital role in guaranteeing efficient and timely information flows and reducing errors in information transmission.

In a pull-oriented supply chain, the starting point for information flows is the retail outlet. Thus, **store-based IT** is particularly important, especially point-of-sale systems that enable barcode scanning. These point-of-sale systems not only increase efficiency and productivity in stores (e. g., faster checkouts), they also provide logistical benefits by facilitating the immediate recording of sales and rapid flow of sales and inventory information. In addition, orders can be automatically recommended or triggered (**sales-based ordering** - SBO) (Varley 2014, pp. 162–173).

Enterprise software systems such as **enterprise resource planning systems (ERP)** or **merchandise information systems (MIS)** are also important. ERP systems integrate all of a retailer's data and processes into a single unified system. They usually consist of various components such as human resources or finance logistics. In retail companies, MIS, as an integral part of ERP systems, play a particularly central role. MIS such as *SAP for Retail* or *Oracle Retail* support all information processes related to product flows in the retail channel, e. g., merchandise planning, ordering and inventory processes.

As previously illustrated, data are important for **decision support** across all stages of the supply chain. The information (e. g., merchandise information, sales, customer data or

supplier information) is “stored” in huge databases known as **data warehouses**. This information can be accessed by different departments within a retail company (e. g., marketing, buying or logistics) and serves as an input for the various software systems such as ERP, MIS or **data mining** systems.

19.6 Conclusion and Outlook

In the past, suppliers and retailers were intent on minimising their own logistics costs. This optimisation at a single stage of the supply chain often led to additional costs at other stages, either for retailers or for suppliers. Recently, more integrative views of the supply chain have evolved, which has led to the development of supply chain management and the various concepts of ECR.

In addition to adopting a more strategic view of the supply chain in terms of focusing on total system efficiency, **efficient information processing** is crucial for collaborative supply chain management. In this context, new technological developments such as data warehousing, webEDI, RFID or Internet and mobile apps have added new dimensions to collaboration in the value chain and have facilitated the various new concepts in supply chain management.

Further Reading

- Bell and Cuthbertson (2004). Collaboration in the retail supply Chain. In J. Reynolds, & C. Cuthbertson (Eds.), *Retail Strategy* (pp. 52–77), Amsterdam et al.
- Corsten and Kumar (2005). Do suppliers benefit from collaborative relationships with large retailers? An empirical investigation of efficient consumer response adoption. *Journal of Marketing*, 69(3), 80–94.
- Ralston et al. (2015). A structure-conduct-performance perspective of how strategic supply chain integration affects firm performance. *Journal of Supply Chain Management*, 51(2), 47–64.

19.7 Case Study: Ahold

19.7.1 History, Profile and Status Quo

*Ahold*¹ is an international retailing group based in the Netherlands and active in the United States (*Ahold USA*) and Europe (*Ahold Europe*). The company operates different retail formats (e. g., supermarkets and hypermarkets) and brands (e. g., *albert heijn*, *albert*, *hypernova*, *Peapod*, *MARTIN'S*) in Europe and Northern America.

¹ In addition to the explicitly cited source, sources used for this case study include various annual reports, press releases and the website www.ahold.com.

Ahold (Albert Heijn Holding) was founded in 1887 by Albert Heijn and had become the largest grocery chain in the Netherlands by the 1970 s. Today, with a market share of about 33 %, *Ahold* is still the market leader in the Netherlands. *Ahold* is also one of the top retailers in the USA, ranked number 8 in the 2014 “*Top 75 North American Food Retailers*”, based on estimated sales of 19.557 billion EUR in 2014, which contributed 59.7 % to the company’s net sales. In 2014, the company operated more than 3200 stores, with about 227,000 employees worldwide. *Ahold* is also listed on *Euronext Amsterdam*, the *New York Stock Exchange* and the *Frankfurt Stock Exchange*. Overall, the company is built on a solid foundation with strong local consumer brands.

Ahold’s mission is “to make the ordinary affordable and the extraordinary attainable” for customers. This mission is based on the company’s vision: “Better choice. Better value. Better life. Every day.” This vision describes *Ahold’s* ambition to provide the right choices and great value that support a better life not only for its customers but also the company’s other stakeholders. Hence, the company wants every member of its supply chain to benefit from this vision.

In this context, *Ahold* has benefited greatly from implementing the concept of efficient consumer response (ECR) throughout the company’s supply chain management in addition to its expanding network of subsidiaries. ECR initiatives related to efficient replenishment, including cross-docking and continuous replenishment, are a particularly important part of *Ahold’s* supply chain strategy for maintaining the company’s relationships with key suppliers.

19.7.2 Main Strategic Areas

To achieve these objectives, the company hopes to revolutionise retail by introducing innovative products, services and store formats. It is also making considerable efforts to improve all parts of the supply chain, to efficiently respond to customer needs and demands, to build customer loyalty and especially to achieve sustainable profitable growth with competitive prices in all channels. Ultimately, *Ahold* is trying to revolutionise retail based on the concept of **efficient consumer response (ECR)** to fulfil consumer needs better, faster and at low cost. This strategy mainly focuses on efforts in five areas:

- **Portfolio:** *Ahold* operates food retail business concentrated in the European and North American markets. The company tries to operate its different retail formats in markets where it can identify clear prospects and achieve a top position in terms of market share as a basis for sustainable profitable growth.
- **Financial targets:** The company’s long-term financial targets are to achieve a sustainable net growth of 5 % with an identical level of sales growth and retail operating margin, while at the same time maintaining an investment grade credit rating.
- **Organisation:** Operating two continental platforms – *Ahold Europe* and *Ahold USA* – with different retail brands in different regions lets the company balance its local,

continental and global decision making. This organisational structure ensures a sharp focus on customers' preferences and needs, provides efficient and effective support functions in each country and offers a sound basis for business development. Furthermore, standardised processes and structures ensure easier integration of acquisitions.

- **Brand development:** To achieve its growth objectives, *Ahold* puts enormous effort into optimising all parts of the supply chain to establish powerful local retail brands by continuously improving the products and services it offers and providing a competitive price level and cost savings to efficiently respond to customer demand.
- **Corporate Social Responsibility (CSR):** CSR activities are an integrated part of *Ahold's* daily business and mainly centred on four issues: healthy living, sustainable trade, climate action and community support. Based on the “Triple-P” model (Dahlsrud 2008; see Chap. 10), the company aims to balance the interests of people, the planet and profit to create a profitable business.

Successfully managing all the operations that fall under this business strategy is a significant challenge for the company. At the same time, competition in food retailing is increasing, with the expansion and consolidation of discount formats in most of the company's market areas. In its different international markets, *Ahold* carries a wide variety and large volume of products and an ever-increasing assortment of perishable goods, resulting in a high degree of complexity and the challenge to efficiently and effectively coordinating the supply chains for the company's different retail brands. In this context, social responsibility and sustainability are vital for the overall business strategy and are incorporated into every part of the company's supply chain management.

19.7.3 Ahold's Supply Chain and Supply Chain Management

Ahold's supply chain management aims to support the health and well-being of customers, employees and communities. For example, product sourcing should always be conducted in a socially responsible and sustainable manner and should respect the environment. In doing so, the company aims to maximise the overall value and profit generated by its supply chain management activities by maximising the performance of individual companies and the supply chain as a whole. These activities include optimising all efforts related to an effective and efficient response to customer demands and requirements and include sourcing, procurement and logistics management. However, successfully responding to customer needs requires coordination and collaboration with third parties along the supply chain.

The company engages its employees and business partners in the supply chain to prioritise responsible retailing and efficiently respond to customer requests. This affects all parts of *Ahold's* supply chain (see Fig. 19.8), from production to the end customer.

For the company and its customers, it is important to understand where *Ahold's* products come from to ensure that their own-brand products are safe and produced with respect for people, animals and the environment. From the company's perspective, this is a very com-



Fig. 19.8 *Ahold's supply chain.* (Ahold 2014)

plex task that requires a high degree of coordination and considerable efforts in monitoring activities along the supply chain. Therefore, *Ahold* requires its suppliers to exchange all business documents in a specific electronic data interchange (EDI) format. The relevant data (e. g., purchase orders, invoices) is exchanged using the *Applicability Statement 2* (AS2) specification, which ensures secure and reliable data exchange over the Internet through the use of digital certificates and encryption.

Both *Ahold* and its suppliers benefit from this form of (automatic) data interchange as electronic transmission of core business documents is one of the most efficient ways to conduct business globally. This enables *Ahold* to improve customer service, lower its expenses and increase productivity through real time data exchange.

Production starts at the farms that provide the raw materials, before moving to the factories and/or other suppliers that take the products through the various stages of production. When the final products are assembled, packaged and ready for sale, they are moved to the company's distribution centres, where the products are received and stored before being transported to the more than 3200 stores. *Ahold* also operates online channels where the products can be purchased for home delivery or collected from a pick up point.

To succeed in its various markets, *Ahold* is increasingly strengthening its collaboration with suppliers and engaging with them in various ways in order to improve and foster **relationships**. The collaboration starts at the beginning of the supply chain and includes sourcing critical commodities, social compliance of suppliers and packaging improvements. The company organises supplier events to discuss a wide range of topics, including company strategy, supplier diversity and food safety. In addition to strong collaboration with suppliers and farmers, food quality is ensured by introducing and following strict food safety requirements in the company's distribution centres and stores. In addition, several of the company's environmental initiatives focus on its own operations, including reducing carbon emissions at distribution centres and stores and separating waste.

19.7.4 Supply Chain Innovation Award

As a result of all these efforts, in 2011 *Ahold USA* was awarded the Supply Chain Innovation Award. In collaboration with *Del Monte Foods* and *ES3*, the company implemented a **direct-to-store programme** that provides a shared, collaborative warehouse for manufacturers and retailers. The direct-to-store programme created a streamlined supply solution for the grocery industry that eliminated a distribution centre and leg of transportation. By leveraging *ES3's* scale, *Del Monte Foods* and *Ahold USA* combined their mixing centres and distribution centres into one large facility. Streamlining the supply chain involved leveraging scale, automation, information technology and collaboration, but has resulted in a synchronised, efficient, end-to-end supply chain solution that is faster, cheaper and greener than the current supply chain models. Combining mixing centres and retail distribution centres into a single facility has reduced supply chain costs by more than 30 % for both *Del Monte Foods* and *Ahold*. In addition, *Ahold's* store labour costs have been considerably decreased by better organising certain pallets to align with store layouts and achieving more accurate picking through automation. In addition to reducing costs, the collaboration reduced carbon usage, improved speed to shelf and increased on-shelf visibility.

In 2012, *Ahold* started a programme in the Dutch market to gradually mechanise handling of non-perishable goods in its regional distribution centres. The ultimate aim is fully automatic processing of almost the entire regional non-perishables assortment from arrival to loading. This automation will lead to more products being processed in the same space, which should enable *Ahold* to better accommodate customer demand and reduce the number of deliveries, as products will be stacked optimally. Another advantage is that products from the same product groups will be delivered together, making it easier for store employees to fill the shelves. The company further aims to simplify its **fresh food chain** by implementing national category centres, meaning that suppliers will deliver their products to a single, central location. As a result, suppliers will no longer have to keep stocks, and *Ahold* stores will take delivery of all products from the same category at once. This should mean fresher products for customers. These innovations are aimed at improving the company's cost structure, meeting customers' requirements and preferences and supporting future growth.

Ultimately, the collaboration within *Ahold's* supply chain management is not only related to supply chain efficiency but also strongly related to responsive supply, integrated demand-driven supply and operational excellence. The company's goal is to synchronise its own and supplier operations with the actual demand at its retail stores to optimise inventory costs and efficiently respond to customer demand.

In 2014, the company was included in the *Dow Jones Sustainability World Indices* (DJSI) for the sixth consecutive year. The DJSI track the performance of the world's leading companies against economic, environmental and social criteria, including an evaluation of the performance of several parts of the supply chain (e. g., ethical sourcing). *Ahold's* DJSI ranking recognises the progress the company has made in recent years in its supply chain management. *Ahold* scored an average of 75 (out of 100) in

the “Food and Staples Retailing” sector in 2014 – improving on the previous year’s 74, and compared to an industry average of 48, with the sector leader scoring 76. The company scored particularly high in a number of areas, especially in its overall supply chain management practices, carbon emissions and waste reduction programmes, and its active contribution to the health and safety of associates by offering multiple health and well-being programs.

19.7.5 Important Parts of Ahold’s Supply Chain Management

Today, the sustainability of its products and the supply chain is an integrated part of *Ahold’s* business strategy. The company makes considerable efforts in managing every part of their supply chain to take advantage of opportunities to create a competitive advantage by relying on the concept of **efficient consumer response** to effectively serve its customers. In this context, the company’s various activities in several areas of supply chain management should be measurable, realistic, defensible and customer-focused.

Food Safety

Ahold is currently focusing on a strategy to improve consumer health. This strategy is based on the company’s strength of being both a full service and health-conscious retailer, which supports future growth in different markets thanks to increased customer loyalty and the fulfilment of social responsibilities. As one of the world’s leading food retailers, *Ahold’s* main focus is to offer customers safe, high quality food at affordable prices. This is a response to changing customer requirements and preferences, which are reflected in an increased demand for healthy food and products that are produced and sourced in a responsible way.

Consumer health is predicted to be a major issue that will dominate the global food industry over the coming years, as it is a growing concern among customers and governments, most prominently in *Ahold’s* US and northwest European markets. *Ahold’s* definition of quality includes food safety, consumer health and production with care for the environment, animals and human beings. While *Ahold* aims to be proactive and forward-looking on every product quality issue, this strategy mainly focuses on the company’s own-brand products. Many of these own-brand products are offered under the company’s brand name and thus customer perceptions of product safety, quality and healthiness are closely related to the brand and its reputation in the market. From the company’s perspective, the supply chain of growing, packaging and transporting food from producers to retailers and finally to customers has become increasingly complex. To satisfy customer needs, *Ahold* now provides a wider variety of fresh produce, which requires coordinating sourcing from different suppliers worldwide. Food safety is managed locally at *Ahold*; however, the global consensus on food safety has led to a shared approach, shared objectives and a great deal of cooperation and synergy between the company’s different retail brands and operations.

Hazard Analysis and Critical Control Points

Ahold's food safety policy aims to ensure food safety throughout the entire supply chain, from farm and production level to the company's own operations, up to the moment when the customers take the products home. In this context, the HACCP (Hazard Analysis and Critical Control Points) principles form the basis of *Ahold's* food safety policy throughout the supply chain. HACCP lets the company identify where potential food contamination can occur (critical control points) and manages these points to ensure the safest possible products. This process is designed to prevent rather than discover potential hazards.

Food safety starts where the products are made. From *Ahold's* perspective, this is the most complex and hardest part of the supply chain to control and coordinate, as it is generally in the hands of the suppliers. Hence, the company aims to work closely with its private label brand suppliers to ensure the safest possible products. Suppliers are required to follow proper food safety practices. Suppliers of fresh fruits and vegetables must be certified to production or farm level standards. For example, *Ahold* and *ICA* were actively involved in developing the standard for good agricultural practices known as EUREPGAP. This standard is designed to ensure high product safety, reduced agrochemical use, environmental protection and labour safety. EUREPGAP integrates various systems currently used by European retailers. For example, farmers for all produce sold at *Albert Heijn* and all centrally bought produce at *ICA* must be EUREPGAP certified. To ensure that all products intended for the Dutch market produced by its global suppliers comply with the current Dutch MRL legislation (Maximum Residue Level), *Albert Heijn* has issued a manual for suppliers. This precise and strict guidance is important from the company's perspective, because farmers, wherever they are located, have to operate according to Dutch regulations and not only the regulations of their own countries.

Ahold's US retail operations have endorsed the SQF (Safe Quality Food) standard, which is similar to EUREPGAP and has become its US counterpart. For example, since 1991 *Stop & Shop* gives preference to suppliers who adopt integrated farming strategies like "NutriClean®". This is a commercial initiative to minimise pesticide residues through integrated pest management strategies and other methods.

Social and Environmental Issues

The company also has to deal with the social and environmental demands of their customers and stakeholders for supply chains in the US and European retail markets. In this context, *Ahold's* main challenge is to adapt to the specific requirements of each markets to optimise the performance of each part of the various supply chains to meet divergent demands in each market. Although organic products are increasingly popular in all of *Ahold's* retail markets, concerns over environmental issues in the agricultural supply chain are more widespread in northwest Europe. Similarly, animal welfare concerns are more prevalent in the northwest European markets, and the company is actively addressing this issue. It is less of a priority in the US; however, *Ahold's* US retail brands are pioneers in this field by the standards of their markets. The company's US operations focus on supplier diversity, while labour issues in the supply chain are a more predominant concern in the European market.

In general, the company has to deal with the impact of agriculture on the environment and biodiversity in its various markets as well as with sustainable fisheries, and the impact of production on human beings, communities and animal welfare. For example, through the efforts of the *Albert Heijn Foundation* in Africa, the company has been able to improve both the quality of its products and the livelihoods of the company's African fruit and vegetable suppliers, which in turn supports their families and communities and positively affects long-term relationships.

Common Issues, Local Approach

Several local factors impact the management of all aspects of the supply chain, including different legal requirements, market requirements, the local infrastructure available to support distribution and waste management. For example, *Ahold's* US stores are generally bigger than those in northwest Europe and sell larger volumes of fresh and frozen products. Consequently, they need different in-store equipment (coolers, freezers, etc.), which impacts energy requirements.

Preserving and offering safe and fresh high quality food and creating an attractive shopping environment are part of meeting basic customer needs. This translates into energy use, which is one of the company's most important areas of direct environmental impact. Supermarkets consume significant amounts of energy, because of the equipment needed to safely preserve (e. g., refrigeration) and efficiently prepare food (e. g., baking ovens). *Ahold's* retail brands are expected to reduce energy use and related carbon emissions in their operations wherever possible. In this context, the company tries to improve the performance of this part of the supply chain by tracking and benchmarking energy consumption and refrigerants used, investing in energy-efficient equipment, developing innovative solutions with vendors, exchanging best practices among its different retail brands in different markets and training staff in energy saving practices.

Ahold tracks and benchmarks energy consumption and refrigerants used with the aim of improving energy efficiency and lessening the impact on the environment. This also increases the company's overall performance. In the US market, *Ahold* has identified stores with unusually high energy consumption and has performed detailed energy analyses to take corrective measures to optimise energy consumption. For example, in 2004, *ICA* equipped 275 of its stores with the *CoolICA* Intranet system, which makes it possible to monitor and analyse the energy consumption of each store from head office. The system monitors the ventilation systems, heating cables and fans, cooled product displays and cold room temperatures. So far, energy consumption has been reduced by nine to eleven per cent in stores equipped with this system.

19.7.6 Summary and Outlook

This case study investigated *Ahold's* supply chain and the company's efforts to effectively and efficiently manage every part of it to efficiently respond to customer demands. These activities often focus on sustainability and social responsibility and include consumer health and production which respects the environment, animals and humans.

From *Ahold's* perspective, efficiently responding to customer demands is the best and most sustainable strategy. This strategy affects the management of all activities within the supply chain, especially for the company's own-brand products. Hence, *Ahold's* priorities in supply chain management are all generally related to providing customers safe, healthy, high-quality food at affordable prices. This should help the company gain a competitive advantage and form the cornerstone for future growth in the different markets, as it should positively influence customer loyalty and the fulfilment of social responsibilities. The combination of *Ahold's* efforts in sustainable and social responsible corporate behaviour and the introduction of innovations to make shopping easier and meet local customers' specific needs has helped it become one of the top retail companies worldwide.

In 2015, *Ahold* and the Belgium retailer *Delhaize* announced that both companies will merge, thus forming one of the biggest retailers of the world. If this merger also involves coordinating the two companies' supply chains, this will lead to new challenges for enhancing supply chain efficiency.

Questions

1. Explain the concept of efficient consumer response (ECR) and how it is implemented at *Ahold*. Discuss further approaches which should positively influence supply chain performance.
2. Discuss the advantages and disadvantages of *Ahold's* approach to supply chain management from both a customer and company perspective.
3. Do suppliers benefit from collaborative relationships with retailers? Discuss.

- ▶ See, e. g., Kotzab (1999).
- ▶ See, e. g., Corsten and Kumar (2005).

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