

SUPPLY CHAIN MANAGEMENT

To be able to market their product, firms need a **distribution channel** – the set of business units and intermediaries that facilitate the movement of goods to consumers. Traditionally, firms used to have separate ‘purchasing’ and ‘sales’ units that would interact with suppliers and customers respectively, and intermediaries on either side. With changes in transportation, data processing and communication technologies, these two aspects of business operations have converged. The new challenge is thus how to manage the longer channel from suppliers (and contract manufacturers) all the way to consumers (see Figure 17.2). Consequently, a new term, supply chain, has been coined and now almost replaces the old-fashioned ‘distribution channel’. The sales and purchasing functions are

LEARNING OBJECTIVE

- 3 Articulate the three As in supply chain management (agility, adaptability and alignment)

distribution channel

The set of business units and intermediaries that facilitates the movement of goods to consumers.

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PART FIVE OPERATIONS IN THE GLOBAL MNE

inbound logistics

Purchasing and the coordination of intermediaries on the supply side.

outbound logistics

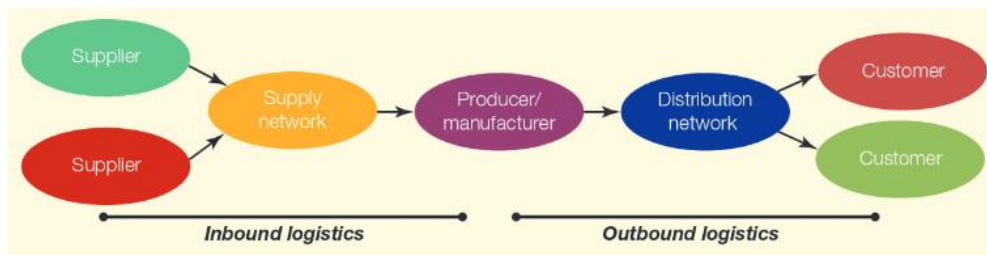
Sales and the coordination of intermediaries on the customer side.

intra-logistics

The effective movement of goods within a factory.

increasingly interdependent as the entire process is managed ‘on time’, and the purchase of a component may be triggered by a customer ordering a final product, as in the case of *Dell* computers. Strategy guru Michael Porter thus distinguishes **inbound logistics** (purchase) and **outbound logistics** (sales) to indicate that the two functions complement each other like opposite sides of the same coin.²⁸ In addition, **intra-logistics** concerns the effective movement of goods within a factory, from the receiving gate for components for the finished products, packaged and labelled ready for shipment (see Integrative Case *SSI Schaefer*). A supply chain thus covers all movements of goods at any stage of the value chain, encompassing both inbound and outbound logistics (see Chapter 4).

Figure 17.2 Supply chain management



Traditionally, business logistics was a low-prestige support function. However, if the supply chain covers the entire value chain, then supply chain management essentially handles the entire process of value creation. Consequently, supply chain management has now taken on new strategic importance and gained tremendous prestige. One indication of the more central role of supply chain management is the rapid growth of support companies, such as transportation service providers *UPS* and *DHL*. On any given day, 2% of the world’s GDP can be found in *UPS* trucks and planes. These companies not only transport packages from A to B but help businesses optimize their entire supply chain.²⁹ Similarly, the rise of e-commerce giants like *Amazon* in the USA, and *JD.com* and *Alibaba* in China is closely associated with their ability to manage the logistics from the producers of a product to the doorstep of the consumer (In Focus 17.3). Traditional logistics companies are facing competition from e-commerce and innovating their own systems to make more effective use of real-time sharing of data along the value chain.³⁰ Next, we discuss three ways to strengthen supply chains: (1) agility, (2) adaptability and (3) alignment.



IN FOCUS 17.3

Online shop #1

Internet shopping has become the new normal in urban China. Rather than heading for a local supermarket, many consumers in Shanghai turn to their mobile phone; click and pay – and a few hours later a motorcycle deliveryperson drops a box of food, household goods or the latest fashion at the doorstep. Why carry a crate of beer from the supermarket home

and then up to the 23rd floor? Let the deliveryperson do it for you! A revolution of retailing is under way!

A pioneer in this market was *Yihaodian* – literally translated ‘#1 Shop’. Founded in 2008, it has in only five years become the third-largest internet retailer in China – after *Alibaba* and *JD.com*. It was founded by Gang Yu, a Chinese-American returnee who was a professor of logistics and worked for a while with *Dell* and *Accenture*. His strategy focused on speed and creating an

Why is the ‘last mile’ cheaper to manage in China than in Europe?

entirely new supply practice based on the latest scholarly research.

Yihaodian started with food, beverages and household goods, and by 2009 had expanded into cosmetics and consumer electronics. Clothing is *Yihaodian*’s latest offering. The growth has been spectacular. In 2009, *Yihaodian* celebrated receiving 1000 orders an hour – by 2014 that number had increased to 300 000 and then to 400 000. *Yihaodian* is counting its customer base in tens of millions and employs 10 000 people, mainly in the ‘last mile’ delivery.

The strategy is supported by the latest technology and supply chain management practices. The company does all its technological development in-house, and controls its information systems, including supplier relationships, warehouse management and delivery stations. Thus 10% of employees are IT engineers. In the central control room, 16 screens allow the management to track online traffic in real time, including by region, by categories of products, etc. For example, one screen displays a word cloud with the keywords most frequently entered in the search engine on *Yihaodian*’s website in the last minute. Such tools enable ‘instant’ capturing of new consumer trends and targeting of consumers far more precisely than in traditional retail outlets. This includes customers on the move: with the spread of smartphones and tablets in China, the mobile

sector has become an important part of e-commerce in China, accounting for 10% of e-commerce in 2013 and predicted to reach 20% in 2016.

Walmart acquired 51% of the capital of *Yihaodian*, but the companies operate largely independently, apart from some cooperation in sourcing and supplier management. Both companies believe that they can learn a lot from each other. *Walmart* has long been famous for its capabilities in supply chain management, yet it has been less successful in translating that expertise to e-commerce. *Yihaodian* thus becomes a source of new ideas – and inspiration. At one meeting, *Walmart* shared their ambition to develop in the next two years a system that allows fulfilling every order within two days. *Yihaodian* executives laughed. Their ambition was to fulfil every order in Shanghai in three hours. In part, this capability is based on high urban concentration and relatively cheap ‘last mile delivery’ using deliverypeople on electric motorcycles. Yet it is enabled by groundbreaking new technologies that analyze huge amounts of data and coordinate many different players in a supply chain. In 2016, *Yihaodian* was acquired by market leader *JD.com*, while delivery speed in some parts of Shanghai came down to half an hour.

Sources: (1) Interviews and participant observation; (2) D. Jolly, 2013, Comment *Yihaodian* est devenu en cinq ans le troisième supermarché virtuel chinois; blog, *Les Echos*, March 3.

Agility

Agility refers to the ability to react quickly to unexpected shifts in supply and demand. In the fast fashion business, inventory is costly not only because it ties up working capital but the clothes in the warehouse may get out of fashion and become unsellable

agility

The ability to react quickly to unexpected shifts in supply and demand.

(or sellable only at a discount). For example, when *H&M* reported increases of inventories to €3.4 billion, its shareholder became worried and the share price dipped.³¹ Its competitor *Zara* had long made agility of the supply chain its hallmark and organized its entire operations with the aim of achieving agility. As soon as designers spot certain trends, they create sketches and go ahead with ordering fabrics without finalizing designs. This speeds things up, because fabric suppliers require a long lead time. Designs are finalized when reliable data from stores come. Production commences as soon as designs are complete. In addition, *Zara's* distribution centres are also highly efficient, allowing it to handle demand fluctuations without creating bottlenecks.³²

Agility is increasing in importance because global supply chains are more complex and therefore more sensitive to disruptions triggered by a wide range of different causes, including man-made disasters such as terrorist attacks, political unrests or strikes, and natural disasters such as flu epidemics, earthquakes, typhoons or volcanic eruptions. At the same time, access to real-time data on all products in the supply chain – including the location of every container on any ship on the ocean – creates new opportunities to react more flexibly to changing demand or to external disruptions.

Under external shocks, an agile supply chain can rise to the challenge while a static one can pull a firm down.³³ For example, *Nokia* and *Ericsson* reacted differently to a fire induced by a thunderstorm in 2000 at a New Mexico factory of their handset chip supplier, *Philips*. The damage was minor, and *Philips* expected to resume production within a week. However, *Nokia* took no chances, and it quickly carried out design changes so that two other suppliers, one in Japan and another in the USA, could manufacture similar chips for *Nokia*. *Nokia* then quickly placed orders with these two suppliers. In contrast, *Ericsson's* supply chain had no such agility: it was set up to function exclusively with chips from the damaged *Philips* plant – in other words, *Ericsson* had no contingency plan. Unfortunately, *Philips* later found out that the damage was greater than first reported and production would be delayed for months. By that time, *Ericsson* scrambled to contact the other two suppliers, only to find out that *Nokia* had locked up all of their output for the next few months. The upshot? *Ericsson* was driven out of the handset market as an independent player.³⁴ Similarly, many firms' supply chain agility was tested by the Icelandic volcano eruption in 2010 (In Focus 17.4).



IN FOCUS 17.4

A volcano focuses minds on supply chain agility

The eruption of the Icelandic volcano Eyjafjallajökull in 2010 made Europeans aware how dependent they have become on air travel and highlighted to businesses the value of supply chain agility. Businesses could respond in two ways: either tell customers that it was a *force majeure* (an unpredictable event) for which they have no legal obligations, or they can go beyond their call of duty and help the customer. Airline customers in particular experienced both sorts

of reactions: some travellers were left stranded at stopovers with nowhere to go and airlines providing little information and support. Other airlines couldn't get customers to their destination either but showed respect and offered at least moral support, accommodation and food for their customers. Guess whose customers came back after the crisis and who binned their frequent flyer cards? Crises are great opportunities for a company to show that care for customers is not just an advertising slogan.

Budget airlines work with minimum service and offer nothing more than exactly what was contracted – with



How can a company handle major supply chain disruptions caused by natural disasters such as a volcano eruption?

no intention of helping in case of minor disruptions. The trick of two single tickets instead of a return reduces their legal obligation to help stranded customers. Those flying frequently find that the real costs of budget airlines are just not worth the hassle. But mainstream airlines have also in recent years been 'cutting slack' to save costs. This may not have had direct effects on services, but it reduces their flexibility. Companies that have a bit of slack – and a motivated workforce – are much more able to react to crisis and 'go the extra mile' to keep customers satisfied. Others, like *British Airways*, have for years told their shareholders how much they care for them and focused on efficiency (read 'cut costs'). Consequently, their workforce was quite demotivated and even went on strike during those difficult weeks. Disgruntled customers were looking for alternatives. More generally, a highly motivated

workforce together with a moderate amount of slack helps companies handle unexpected disruptions.

The volcano crisis also suggests that the transport industry has become too dependent on the jet engine. Finding alternative modes of transport should be a major challenge for engineers around the world. The UK has been leading in Europe in the development of budget air travel; many believe this is due to early deregulation and hence greater competition in the airline industry. However, there is another reason: the infrastructure for surface transportation – rail and motorways – is weaker than in continental Europe. Without fast, affordable and reliable railways, flying seems a more attractive option. From a risk management perspective, it helps to have alternatives in case one mode of travel/transport is disrupted – whether you plan a holiday or want to ship products to a customer!

Adaptability

While agility focuses on flexibility that can overcome short-term fluctuations in the supply chain, **adaptability** refers to the ability to change supply chain configurations in response to long-term changes in the environment and technology. Enhancing adaptability often entails making a series of make-or-buy decisions. This requires firms to continuously monitor geopolitical, social and technological trends, make sense of them, and reconfigure the supply chain accordingly.³⁵ The damage for failing to do so may not be visible immediately, but across a number of years, firms failing to do so may be selected out of the market.

Consider US telecommunications equipment giant *Lucent*. In the mid-1990s, *Lucent* faced competitive pressures from rivals *Siemens* and *Alcatel* that benefited from low-cost, Asia-based production. *Lucent* responded by adapting its supply

adaptability

The ability to change supply chain configurations in response to long-term changes in the environment and technology.

chain by phasing out production in high-cost developed economies and setting up plants in Asia. However, *Lucent* owned its production in Asia, whereas rivals outsourced manufacturing to Asian suppliers that became more capable of taking on more complex work. In other words, *Lucent* used FDI to 'make', whereas rivals adopted outsourcing to 'buy'. Outsourcing to specialist manufacturers not only enables reduction of fixed costs but enables flexibility as firms are not burdened with excess capacity when changing production volumes. Ultimately, *Lucent* was stuck with its own relatively higher cost (although Asia-based) plants. By 2006, *Lucent* was acquired by its arch-rival *Alcatel*, which in turn merged with *Nokia* in 2014.

Alignment

alignment

The alignment of interests of various players.

Alignment refers to the alignment of interests of partners in a supply chain. In a broad sense, each supply chain is a strategic alliance involving a variety of players, each of which is a separate profit-maximizing firm.³⁶ As a result, conflicts are natural. However, a partnership in a supply chain must effectively coordinate to achieve mutually desirable outcomes.³⁷ Thus supply chains that are better at resolving conflicts of interest may be able to outperform other supply chains. For example, for *Boeing's* 787 Dreamliner, some 40% of the \$8 billion development cost is outsourced to suppliers: *Mitsubishi* makes the wings, *Messier-Dowty* provides the landing gear, and so forth.³⁸ Many suppliers are responsible for end-to-end design of whole subsections. *Boeing* treats its suppliers as partners and fosters long-term collaboration. Even so, the alignment did not meet expectations. Disruptions in the supply chain were chief reasons for the repeated delay of the launch of the Dreamliner.

Conceptually, there are two key elements to achieving alignment: power and trust. Not all players in a supply chain are equal, and more powerful players such as *Boeing* naturally exercise greater bargaining power.³⁹ Having a recognized leader exercising power facilitates the legitimacy and efficiency of the whole supply chain. Otherwise, time-consuming negotiation and bargaining between supply chain members of more or less equal standing may reduce the effectiveness of the entire chain.

Trust stems from perceived fairness and justice from all supply chain members.⁴⁰ Although supply chains have become ever more complex and extended, modern practices, such as low (or zero) inventory, frequent just-in-time (JIT) deliveries and more geographic dispersion of production, have made all parties more vulnerable if the *weakest* link breaks down. Therefore, it is in the best interests of all parties to invest in trust-building to foster collaboration.

For instance, *7-Eleven* Japan exercises a great deal of power by dictating that vendors resupply its 9000 stores at three specific times of the day. If a truck is late by more than 30 minutes, the vendor has to pay a penalty equal to the gross margin of the products carried to the store. This may seem harsh, but it is necessary. This is because *7-Eleven* Japan staff reconfigure store shelves three times a day to cater to different consumers at different hours, such as commuters in the morning and schoolchildren in the afternoon. Time literally means money. However, *7-Eleven* Japan softens the blow by trusting its vendors. It does not verify the contents of deliveries. This allows vendors to save time and money, because after delivery, truck drivers do not have to wait for verification and can immediately move on to their next stop. The alignment of interest of such a supply chain is legendary. Hours after the Kobe earthquake, when relief trucks moved at two miles an hour (if they moved at all) on the damaged roads, *7-Eleven* Japan's vendors went the extra mile by deploying seven helicopters and 125 motorcycles to deliver 64 000 rice balls to the starving city.

Sometimes, a neutral intermediary (middleman) – more specifically, **third-party logistics (3PL)** providers – may more effectively align the interests in the supply chain. In the case of outsourcing in Asia, buyers (importers) include large retail

third-party logistics (3PL)

A neutral intermediary in the supply chain that provides logistics and other support services.

businesses, while suppliers (exporters) are often smaller Asian manufacturers. Despite best intentions, both sides may still distrust each other due to extensive cultural and regulatory differences between the countries within the value chain. MNE buyers are not sure of the quality and timeliness of delivery. Further, MNE buyers are unable to control labour practices in supplier factories, some of which may be dubious (see Chapter 10). For example, *Apple's* reputation took a severe hit due to alleged questionable labour practices at its supplier factories. However, suppliers may also be suspicious. Since contracts are often written several months ahead, suppliers may not be confident about MNE buyers' abilities to correctly forecast demand. Suppliers thus worry that in case of lower than anticipated demand, buyers may reject shipments to reduce excess inventory by citing excuses such as labour practices or quality issues.⁴¹ One solution lies in the involvement of 3PL intermediaries, such as the Hong Kong-based *Li & Fung* (Closing Case) that may add value by aligning the interests of all parties and by providing related services such as quality control and trade financing.