

Using information systems to restructure the supply chain

e-commerce to enable its customers to specify the mixture of chemical compounds and additives used to formulate their plastics and refer to a history of previous formulations.

Benefit: Better customer responsiveness.

An alternative perspective is to look at the benefits that technology can deliver to customers at the end of the supply chain. For The B2B Company these could include:

- Increased convenience through 24 hours a day, 7 days a week, 365 days a year ordering.
- Increased choice of supplier leading to lower costs.
- Faster lead times and lower costs through reduced inventory holding.
- The facility to tailor products more readily.
- Increased information about products and transactions such as technical data sheets and order histories.

There are two alternative, contradictory implications of supply chains becoming electronically mediated networks. Malone *et al.* (1987) and Steinfield *et al.* (1996) suggest that networks may foster electronic marketplaces that are characterized by more *ephemeral* relationships. In other words, since it is easier to form an electronically mediated relationship, it is also easier for the customer to break it and choose another supplier. Counter to this is the suggestion that electronic networks may *lock in* customers to a particular supplier because of the overhead or risk in changing to another supplier. Here networks are used to strengthen partnerships. An example of this is when the use of an EDI solution is stipulated by a dominant customer.

The popular conception of the introduction of the Internet into a channel is that it will tend to lead to more ephemeral relationships. This may yet prove to be the case as more intermediaries evolve and this becomes an accepted way of buying. However, the review by Steinfield *et al.* (1996) seems to suggest that EDI and the Internet tend to cement existing relationships. Furthermore, research indicates that the use of networks for buying may actually reduce outcomes such as quality, efficiency and satisfaction with suppliers. If the findings of Steinfield *et al.* (1996) are confirmed in practice, then this calls into doubt the future of many B2B marketplaces (*Chapter 7, p. 304*). Personal relationships between the members of the buying unit and the supplier still seem to be important. It will be interesting to see which type of arrangement predominates in the future, or it may well be that there is a role for both according to the nature of the product purchased.

IS-supported upstream supply chain management

The key activities of upstream supply chain management are procurement and upstream logistics. The way in which information systems can be used to support procurement in the e-business is of such importance that a whole chapter is devoted to this (*Chapter 7*). However, in the current chapter we look at some examples of how technologies are used to improve upstream supply chain management.

Many grocery retailers have been at the forefront of using technology to manage their upstream supply chain. The major example we will review here is the system created by Tesco, but other UK retailers have developed such as systems 'Sainsbury Information Direct' and 'Safeway Supplier Information Service'. *Case Study 6.1* illustrates the use of technology to manage the upstream supply chain from the retailer's perspective, but also highlights the benefits for their suppliers. The Tesco Information Exchange (TIE) was developed in conjunction with GE Information

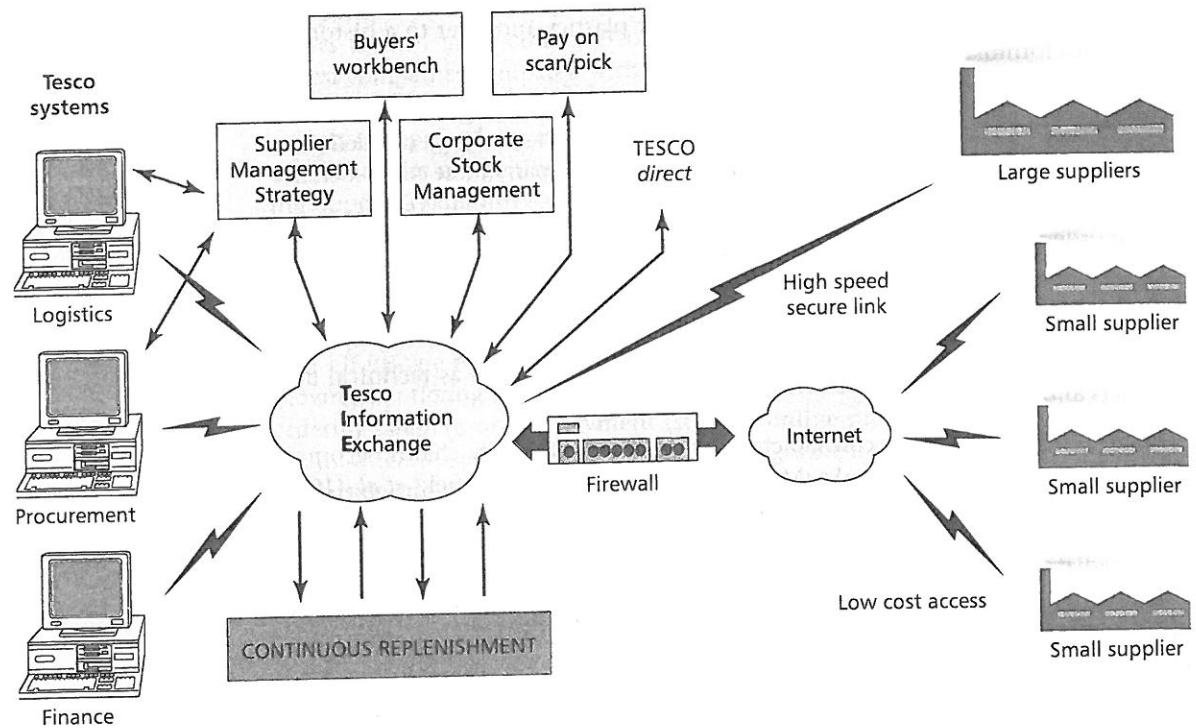


Figure 6.10 Infrastructure for Tesco Information Exchange (TIE)

Source: Tesco web site

Services (GEIS), and is an extranet solution that allows Tesco and its suppliers to collaboratively exchange trading information. *Figure 6.10* shows how TIE is linked to Tesco's key systems to give suppliers access to relevant and up-to-date information such as electronic point of sale (EPOS) data, to track sales and the internal telephone/mail directory, so that suppliers can quickly find the right person to talk to.

CASE STUDY 6.1

Tescos develop buy-side e-commerce system for supply chain management

The case summarizes the history of Tesco supermarkets' efforts to encourage electronic trading with their suppliers from EDI to Internet-based purchasing. The benefits and problems of implementing such electronic partnerships are explored.

Retailers have long sought greater collaboration in their supply chains, but few have managed to achieve it. One that has is Tesco, the UK's largest grocery retailer, which has built a reputation as one of Europe's most innovative retailers in its use of information technology.

As with many retailers, Tesco has long used electronic data interchange (EDI) to order goods from suppliers and the network links 1300 of Tesco's 2000 suppliers, representing around 96 per cent by volume of goods sold in Tesco stores.

► CASE STUDY continued

The EDI system started operating in the 1980s and its use was initially limited to streamlining store replenishment. In 1989, Tesco took its first steps on the road to collaboration and began using its EDI network to help its suppliers better forecast demand.

About 350 suppliers receive EDI messages with details of actual store demand, depot stockholdings and Tesco's weekly sales forecasts.

According to Barry Knichel, Tesco's supply chain director, this forecasting project has been successful as average lead times have fallen from seven to three days. 'Nevertheless, the information flow is strictly one way', he says. 'We still do not know the true value of this sales data because we never get any feedback.'

In 1997, Tesco thus started its Tesco Information Exchange (Tie) project in an attempt to achieve much more sophisticated two-way collaboration in its supply chain.

'This really was a big development for us', he says. 'The guiding principle was to combine our retailing knowledge with the product knowledge of our suppliers.'

A large Tesco store may carry 50,000 products while a supplier will have at most 200. An important aim of the Tie project was thus to shift responsibility for managing products down to the relevant supplier.

'Suppliers clearly have a better understanding of their specific product lines, so if you can engage the supplier to manage the supply chain you are going to get much better product availability and reduce your inventory', says Jorge Castillo, head of retail business for GE Information Services, which developed the extranet technology behind Tie.

Suppliers pay from £100 to £100,000 to join Tie, depending on their size. This then allows them to access the Tie web site and view daily electronic point-of-sale (Pos) data from Tesco stores.

According to Mr Castillo, Tie lets suppliers monitor changes in demand almost in real time and so gives them more time to react. 'Before, Tesco's suppliers would not have seen a problem until Tesco got on the phone to them', he says. 'Now, it is the suppliers who get on the phone to Tesco and they can see much earlier on if a product is not selling well.'

The data can be analysed in a number of ways to allow suppliers to see how sales perform by distribu-

tion centre, by individual store or even by TV region – important for promotions.

The management of promotions is a complex process requiring close cooperation between supplier and retailer. However, it has traditionally been difficult to do well because of the lack of shared data to support collaborative decisions.

'Promotions can be a nightmare', says Mr Knichel. Tesco and GEIS added a promotions management module to the service in 1999. It allows retailers and suppliers to collaborate in all stages of the promotion: initial commercial planning, supply chain planning, execution and final evaluation.

According to St Ivel, one of Tesco's bigger food suppliers, Tie has saved 30 per cent of its annual promotional costs.

More than 600 suppliers, representing 70 per cent of Tesco's business, are using Tie today and Tesco aims to have all its suppliers onboard by the end of 2000. Around 40 suppliers are participating in the most recent addition to the Tie system, a collaborative data module.

This aims to allow 'seamless' planning in which the planning data on the screen is jointly filled in by both retailer and supplier. Mr Knichel sees this as radical change for the retail industry as suppliers and retailers have traditionally worked to separate agendas.

He feels Tie has much potential to streamline Tesco's supply chain and to help suppliers improve their service levels and promotions. But retailing is a traditional industry and many suppliers are set in their ways.

'Only two suppliers have fundamentally changed the way they work as a result of Tie. Nevertheless, they can bring products to market much faster than any of their competitors', he says.

Source: Geoffrey Nairn, *Financial Times*, 3 May 2000

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Questions

1. What benefits does Tesco's information exchange offer to the retailer and its suppliers?
2. What differences have the use of TIE added over the original EDI system?
3. Discuss reasons why only two of Tesco's suppliers have fundamentally altered the way they work as a result of TIE.