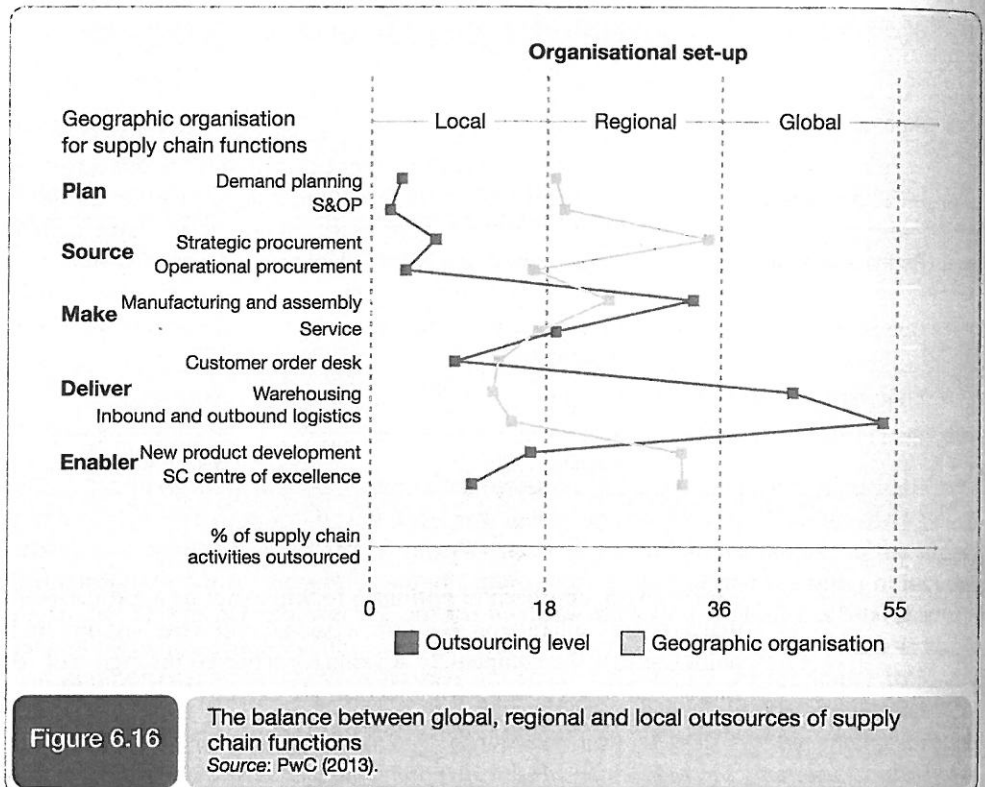


described as 'Efficient, Fast and Tailored, with speed and adaptability necessary to drive success'. However, only 45% of the participants agreed that supply chain is seen as a strategic asset in their company. The survey is useful since it reviews, for different industries, the geographical organisation for different supply chain functions. For example, in retail and consumer goods the pattern of global and local management of the supply chain is shown in Figure 6.16. In this sector, companies outsource about 7% of their planning, sourcing and enabling activities; only 30% of their manufacturing activities; and 10–55% of their delivery activities. This industry has the highest number of inventory turns (18.2) amongst 'leaders' and a better delivery performance than companies in any other industry. 'Laggards' in this industry have an average number of industry turns of 3.3.



Case Study 6.3

RFID: keeping track starts its move to a faster track

Over the years many techniques and technologies have been developed to make supply chains more efficient, but they often fail for the simple reason that it is notoriously difficult to get sufficient accurate information to be useful.

Radio frequency identification (RFID) technology tackles this problem using small radio tags to keep track of goods as they move through the supply chain.

Demand for these tags, which cost around 40 cents each, has soared because of mandates from US and European retailers – Wal-Mart is the best known – and

the US Department of Defense which require large suppliers to put tags on pallets and cases as of 2005.

A clear sign that RFID is coming of age is that Nokia recently unveiled a kit to transform one of its phones into a mobile RFID reader. Despite the current hype, RFID is not a new technology. It was first used to identify aircraft in the Second World War and has been employed to tag cattle, collect road tolls and open doors for many years.

What is new is the application of RFID to supply chains.

The combination of RFID hardware with a unique number, called the electronic product code (EPC), enables businesses to associate a wealth of information with each tagged object. Not only is the information more detailed than a barcode, it can be read and updated using radio readers.

Early RFID technologies often delivered disappointing performance, but today's tags can be read reliably as packing cases are on a conveyor belt or even if the case is hidden behind others.

'RFID is a barcode on steroids,' says Lyle Ginsburg, RFID specialist at Accenture, the management consultancy. 'It promises tremendous productivity gains because you do not have the human intervention and line-of-sight issues that you get with barcodes.'

Many experts believe the combination of RFID and EPC has the potential to transform supply chains: no more inventory counts, no more lost or misdirected shipments, and no more guessing how much is in the supply chain or on the store shelves.

'Just by knowing what is in the store and what is still in the back room, you can get much greater visibility on inventory,' says Peter Regen, vice president of global visible commerce at Unisys, the US IT company.

Visibility is sorely lacking from real-world supply chains, which is why companies hold buffer stocks and build warehouses. This lessens the chance of running out, but the annual cost of holding all this inventory – in warehousing, opportunity cost and obsolescence – adds up to \$300bn, just in the US.

AMR Research estimates around \$3 trillion of inventory is locked in US and European supply chains, which suffer order error rates of 20%. 'There is just too much waste in the supply chain,' says Michael Witty, an analyst with Manufacturing Insights, part of the IDC research group.

Even if RFID only manages to reduce inventory levels or error rates by a few percentage points, the benefits to the economy in terms of extra working capital are substantial. In the case of an emerging economy such as China, RFID's potential is even greater.

China's supply chains have not kept pace with the country's rapid rise as a manufacturing nation and bottlenecks now threaten its export-led growth. The Chinese government is keeping a close eye on RFID and officials recently attended a big RFID trade fair in the US.

'In China, there is a lot of interest in RFID, which has really surprised us,' says Amar Singh, VP of global RFID initiatives at SAP, the German software giant. In part, this interest is driven by Chinese manufacturers' need to

fall into line with the RFID mandates of western customers, most notably Wal-Mart, which accounts for more than 10% of all US imports from China.

But the Chinese government also sees RFID as a strategic technology that will bring the country's supply chains up to the standards of developed nations. Several projects are under way to test the use of RFID in Chinese port and logistics operations.

In the past three years, ports have become more conscious about security. Shipping companies know they face delays and may be refused entry if they are carrying suspect containers. 'Before 9/11, there was not much concern about what was inside the container,' says Scott Brown, general manager for cargo security at GE, the US engineering giant.

GE has developed a 'smart box' that uses RFID to track the movements of maritime containers when they enter ports and sensors to detect if the containers have been opened. The smart box technology has been tested in GE's domestic appliance business, which imports most of its products from China.

'The impetus for doing this was security, but there are also potential supply chain benefits,' says Mr Brown. However, he admits that it is difficult to make a case for using RFID on these benefits alone.

This problem affects most RFID initiatives, according to Accenture's Mr Lyle. Unless forced to comply with an RFID mandate, many potential users prefer to wait. Standards are still evolving and the cost of the technology is still too high for many applications. Data security is another big issue.

Burt Kaliski, chief scientist at RSA Laboratories, a US security software firm, fears thieves could quickly discover how to destroy or change the information on RFID tags, while hackers could launch 'denial-of-service' attacks with the potential to create chaos in RFID-equipped supply chains.

But the main reason not to jump in yet is that, mandates aside, there are too many hurdles that need to be overcome before RFID can show a clear return on investment.

'The business case for RFID is very challenging,' admits Mr Lyle.

Source: Geoffrey Nairn, Keeping track starts its move to a faster track, The Financial Times, 20 April 2005. Reprinted with permission.

Question

Select a manufacturing sector and then evaluate the benefits and risks of applying RFID in this sector.