

Martin Christopher, Professor of Marketing and Logistics at the UK's Cranfield School of Management, discusses the risks facing supply chains

Creating resilient supply chains



Professor Martin Christopher

Today's business world faces challenges and pressures on an unprecedented scale. Many of these obstacles have the potential to severely affect the continuity of a commercial enterprise, in particular, through disruption to the wider supply chain.

Indeed, it can be argued that supply chain risk is currently greater now than ever before.

A key source of risk is the increasingly turbulent business environment. Not only is demand more volatile, but as supply chains inevitably become more global, so their vulnerability also increases. The 'global village', enticing though it sounds, brings with it many potential threats, as recent events have demonstrated.



Impacts on the supply chain

A further reason for this increased risk has come, paradoxically, from the focus on efficiency and cost reduction which, for understandable reasons, has been the preliminary managerial tendency of recent years.

Examples of such strategies include the move to offshore sourcing and manufacturing in pursuit of lower labour costs; the widespread adoption of 'lean' practices, particularly through inventory and capacity reduction; and the continuing trend towards outsourcing and single sourcing.

All these strategies can lead to beneficial outcomes for the business – but equally, all can also radically change the risk profile of the supply chain.

Recent research at the Cranfield Centre for Logistics and Supply Chain Management supported by the UK Department for Transport, has highlighted the extent of the risk which is now embedded in the typical supply chain. It is apparent that today's supply chains are far more complex – and their interdependencies greater – than ever before.

Nevertheless, daunting though these risks might appear, they can be mitigated through a systematic approach to supply chain risk management. A number of basic principles underpin the creation of a more resilient supply chain.

Supply chain understanding

One fundamental prerequisite for improved supply chain resilience is an understanding of the network that connects the business to its suppliers and their suppliers, and to its downstream customers and their customers.

Mapping tools can help in the identification of 'pinch points' and 'critical paths'. Pinch points will often be characterised as bottlenecks where there is a limit of capacity and where alternative options might not be available, such as ports capable of taking large container

vessels or central distribution facilities which, if they were to become inoperable, would place a heavy strain on the rest of the system.

Supply base strategy

While there has been a move towards a reduction of the supplier base in many companies, there could be limits to what might be pursued. Single sourcing, where one supplier is responsible for the supply of a specific item or service might be advantageous from a cost and quality management perspective, but could be dangerous in terms of resilience.

While it may be desirable to have a lead supplier, wherever possible, alternative sources should be available.

Where a firm has multiple sites, it may be possible to have a single source for an item or service into each location, thus gaining some of the advantages of single sourcing without the downside risk. Similarly, if a manufacturing firm makes a range of products, it might be possible to single source by product, thus keeping an alternative source of supply available.

Supply chain collaboration

It will be apparent that since supply chain vulnerability is – by definition – a network-wide concept, management of risk has to be network-wide too. A high level of collaborative working across supply chains can help mitigate risk.

The challenge is to create conditions in which collaborative working becomes possible.

Traditionally, supply chains have been characterised by arms-length, even adversarial relationships between different players. There's often not been a history of sharing information, either with suppliers or customers.

More recently, however, there have been encouraging signs that a greater willingness to work in a spirit of partnership is emerging in many supply chains. For example, in the fast-



moving consumer goods (FMCG) industries there is now significant collaboration between manufacturers and retailers in the form of Collaborative Planning, Forecasting and Replenishment (CPFR) initiatives.

Agility

One of the most powerful ways of achieving resilience in the supply chain is to create networks which are capable of more rapid response to changed conditions. This is the idea of agility whereby the time required to respond to new circumstances is dramatically reduced. Time compression is at the heart of agile strategies, and those organisations which have put an emphasis on seeking out opportunities for eliminating non-value activities in their supply chains are usually better placed to respond to unexpected events.

Agility is founded on two key principles – velocity and visibility. Velocity requires shorter end-to-end pipelines which themselves are dependent on sourcing decisions as well as internal process improvement. Visibility impacts agility in a number of ways. First, it reduces uncertainty and enables the goal of a demand-driven supply chain to be achieved. Second, it reduces supply chain risk through shared information, both upstream and downstream of the firm's operations.

Creating a supply chain risk management culture

In the same way that many organisations recognised the only way to make Total Quality Management (TQM) a reality was to engender a culture which made quality the concern of everyone, so today there is a requirement to recognise that risk management should extend beyond current boundaries of business continuity management to become 'supply chain continuity management'.

As in every case of cultural change within organisations, nothing is possible without leadership.

However, not every company has supply chain management represented in its own right in the boardroom. It can also be argued that supply chain risk assessment should be a formal part of the decision-making process at every level.

Thus, when changes in business strategies are contemplated, such as a move to offshore sourcing, then the resulting supply chain risk profile should be assessed.

Conclusion

The increasing vulnerability of supply chains requires a new focus on managing and mitigating risk which extends beyond the four

walls of the single firm. It requires a much greater level of awareness of where the risk might lie and a much greater willingness to share information across corporate boundaries.

These are challenging times, but our research has demonstrated that there are ways in which companies can create more resilient supply chains.

While this is not an easy task, it is essential if business continuity is to be assured.

Professor Martin Christopher's work in the field of logistics and supply chain management has gained international attention. He is a regular contributor to conferences worldwide and is widely published. At Cranfield, Christopher chairs the Centre for Logistics and Supply Chain Management, the largest of its type in Europe.

A copy of the report *Creating Resilient Supply Chains: A Practical Guide* can be downloaded at www.cranfield.ac.uk/som/scr