IT Update

Automotive aftermarket service specialist Lex Auto Logistics' new warehouse management system (WMS) installed at its 50,000sq m distribution centre in Chorley, Lancashire, has enabled it to improve the service provided to nearly 3,000 UK and export customers. The WMS, supplied by Manhattan Associates, has provided Lex with the operational capability to effectively manage 300,000-plus product lines, and handle an annual throughput of nearly 13 million piece part movements. In second week of live operation, the distribution centre was able to pick, pack and ship more orders in one day than it had ever previously been able to do.

Software house ncSoft has launched a reverse auction facility – ncAuction – which enables companies to "make dramatic savings" by running their own online reverse auctions. Initial results indicate that ncAuctions can achieve savings of up to 25% on purchasing costs. Online bidding enables companies to obtain the best market price from pre-qualified, pre-selected suppliers. The lowest bid is used as the opening price for suppliers to compete in an open auction, online and in real-time, to ensure that project costs are driven down quickly and cost-effectively. ncSoft's fees are based on savings achieved, so there are no upfront costs or fees.

Lyreco, which distributes office supplies, is improving the quality of its customer relations by digitising delivery slips in 18 countries using the ITESOFT.FreeMind solution. The primary objective of this project is to achieve an improvement in the quality and turnaround time of responses to customers, using the ability to instantly access an image of the signed delivery slip. The first stage in the setting up of the project involved four European sites – France, the UK, Germany and Spain – the processing of more than six million delivery slips. In the second phase, the roll-out will continue with other countries where the group has a presence.

Resilience – surviving the unthinkable

WHERE were you on September 11, 2001? It was one of the defining moments of our age and everyone remembers exactly what they were doing when they heard the news. I had just finished a phone call to the Emergency Planning College in Yorkshire, where a helpful librarian had informed me that his collection contained no references whatsoever to supply chains. They had plenty of material on terrorist attacks on the national infrastructure, but that wasn't what I was looking for at all. At the time I was desperately trying to get some momentum behind the first leg of a research project we were conducting at Cranfield, into a deeply unfashionable subject – Supply Chain Vulnerability.

Here in the UK we already knew that businesses and whole economies were vulnerable to supply chain disruptions. Fuel protesters and an outbreak of foot and mouth disease had just proved it. As a result three UK government departments had thrown their support behind a preliminary study into the vulnerability of commercial supply chains. The research was not going well – industry didn't want to discuss what seemed to be the corporate equivalent of planning your own funeral. The events of 9/11 changed that overnight. They put Supply Chain Vulnerability on the corporate agenda. The political shock waves that followed continue to keep it there.

Of course supply chain vulnerability is not a new issue, 9/11 simply legitimised a debate that had been simmering away for several years. It is now widely acknowledged that it was the closure of US borders and North American airspace, rather than the attacks themselves that caused such massive disruption to supply chains around the world. Nevertheless it took the lid off suggestions that contemporary supply chains were becoming longer, leaner and more brittle.

Only a couple of years earlier the threat of Y2K had focussed minds on how dependent organisations had become on their information systems. The widespread disruptions it was expected to bring did not materialise. However a survey of supply chain professionals conducted as part of the second phase of our research programme indicated that it was not quite the non-event that it appeared to be.

Risk management

The survey was part of a much larger Department for Transport-funded programme of research which looked deeper than ever before into the causes and drivers of supply chain disruptions. It did so by examining supply chain risk in its broadest sense, across a range of industries including healthcare, grocery (retail and manufacture), transport and distribution, automotive, petrochemicals, packaging and defence.

Several common themes emerged from the study. First and foremost was the perennial problem of visibility. The substitution of information for inventory has become a mantra for supply chain management and few would argue that improving supply chain visibility remains the overriding priority for operational level supply chain risk management. Without it managers have little chance of realising the efficiency gains their organisations demand from better forecasting, inventory management and resource planning.

Rapidly emerging RFID technology promises better event management, security and control of inventory and better asset tracking, presumably leading to even leaner, more finely tuned and responsive supply chains. They improve visibility – undoubtedly a good thing – but look again, they also increase our dependency on reliable information systems, and with it a still greater dependence on efficient and reliable transport and communication infrastructures, here and abroad.

Technological advances change the risk profile for the supply chain and the network of businesses involved, sometimes subtly, sometimes dramatically. The same is true of almost any other measure we care to implement, whether it is the consolidation of manufacturing and distribution networks, globalisation of sourcing and supply or the outsourcing of 'non-core' activities. Each offers opportunities for cost reductions and in combination a recipe for the 'Better, Faster, Cheaper' operations…or do they?

Companies continually strive to have the most efficient, cost-effective and visible supply chains, but just how many have supply chain risk strategies in place? After all, disasters can have a major impact on a supply chain, and they don't always happen on a company's doorstep. Dr. Helen Peck, senior research fellow at Cranfield Centre for Logistics and Supply Chain Management, takes a look at just how vulnerable the supply chain can be.

In a stable, predictable and benign environment that might well be so, but we live in uncertain times. For many organisations their trading environment spans continents, cultures, and a multitude of political, economic and regulatory unknowns; and that is before the forces of nature – geological, meteorological and pathological – are thrown into the equation.

Our research shows that those who make the highest level strategic decisions often have an inadequate grasp of the impact their decisions will have on supply chain operations and the risk profiles of their business. In reality, the lack of awareness is partly due to poor representation, few companies have supply chain specialists on their main boards. However it is also down to the fact that supply chain risk is an evolving area, one that the professional risk management and academic communities are only beginning to come to terms with.

Risk management has a long history with well-developed actuarial techniques for assessing the direct risks to property (e.g. fire or flood). These are based on the traditional approach of calculating risk as the likelihood (probability) of an event – usually based on broad historical data – combined with the impact of an event. The consolidation of a manufacturing or distribution network effectively puts more eggs in fewer baskets. It increases the impact of an event though not necessarily the likelihood.

Resilient chains

The insurance industry has become all too aware of the escalating scale of the impacts of accidental events such as the fire, caused by the explosion of single aerosol can, which destroyed a distribution centre belonging to retailer Boots in October 1997. The incident reportedly resulted in payment of a £15M insurance claim, but around £30M in lost sales during the retailer's busy pre-Christmas period. That figure pales into insignificance when compared to the estimated $400M in lost sales suffered by Swedish telecommunications manufacturer Ericsson in 2000. The root cause was a lightening strike on power cables, which in turn caused a fire in a factory in New Mexico owned by the Dutch-owned components manufacturer, Phillips. Those who are familiar with this Scandinavian saga will know that there were mitigation measures that Ericsson could have taken to reduce the impact.

They were admirably demonstrated by the Finnish rival Nokia, which was supplied from the same Phillips facility but came through the same event without damage to its reputation, share price or market share. It did so for three reasons, first because its supply chain was inherently more resilient than Ericsson's; second because its risk identification, control and mitigation procedures were much better; third because its operations were agile enough to respond to the unexpected.

Ericsson had some time earlier decided to optimise the efficiency of its supply chain by reducing its number of first tier suppliers. It effectively single sourced. Nokia, in contrast, had retained dual sourcing, taking a path which though 'suboptimal' in terms of cost, nevertheless retained more 'just-in-case' options. Added to this was Nokia's careful monitoring of material flows, plus a risk management culture which encouraged the early disclosure and resolution of problems.

Following the fire, Nokia's reaction to deviations in delivery schedules was an immediate increase in monitoring and the dispatch of personnel to New Mexico to investigate. Having been initially refused access to the supplier's premises, the investigators from Nokia implemented crisis management measures. These included securing all currently available stock from its other suppliers and any available additional capacity. Nokia also reconfigured some of its products to take substitute components.

Where Nokia's response was swift and proactive, Ericsson's was slow and reactive. Its supply chain managers were at first reluctant to trouble others with the news of a possible problem. Its supplier had, after all, assured it that the fire was small and that serious disruptions to supply were unlikely. When it did react it was too little, too late. An insurance claim would later offset some of Ericsson's losses, but it would never bring back the lost market share. Ericsson no longer makes mobile phones.

The fires at the Boots warehouse and the Phillips plant where the result of accidents or 'Acts of God', however engineered events – whether through legitimate blockades or acts of acts of war – can quickly replicate losses on a similar or even greater scale. This was a point well demonstrated when a small number of farmers and haulage companies blockaded fuel refineries in the UK in 2000, almost bringing the nation to a halt. Striking dock workers in the US West Coast ports did similar damage to the US economy two years later. The leanness of supply chains and just-in-time (JIT) demands of best practice business, together with the greater distances travelled by goods today, made these two blockades of key nodes in their respective networks particularly damaging to national and international transport systems.

The blockades themselves were beyond the control of those affected, but these events did not happen without warning. Indeed scanning of local and international news services would have revealed indications of unrest, alerting the vigilant to the potential threat, allowing mitigating action to be taken.

Single sourcing

It is the scale of the consequential losses incurred as a result of interruptions of these kinds to businesses that is now exercising the minds of insurers, prudent business strategists and national governments. Consider for example the cost of business interruption that might follow the loss of a single source supplier to a volume car maker. With common components and platforms becoming the norm, a disruption may take out more than just one product line.

Consider again the size of the potential sums involved when you realise that at least two other volume car makers are dependent upon the same supplier. This last example is not fictitious it is real. Moreover it may not be just a case of financial losses.

In the spring of 2003, as the world prepared for the US-led invasion of Iraq, one of the largest global pharmaceuticals companies was ramping up production to meet a surge in demand for vaccines. ▶

Resilience – surviving the unthinkable

Production was constrained, not by the shortage of the product itself, but by a shortage of packaging. There was a problem at the plant of the supplier of high quality glass needed for vials, resulting in a severe shortage. The healthcare company was a valued customer, but not in the same league as the large brewers that were supplied from the same source.

The heart of the matter is that although we like to think of supply chains in terms of simple linear processes, of goods and information flows passing swiftly though an efficient 'logistics pipeline', this is rarely the reality.

Furthermore, for practical purposes, we prefer to concentrate only on that part of the pipeline that is directly controlled by our company or at best our customers and immediate suppliers. Supply chains are in fact messy complex interacting networks that link organisations, industries and economies. Only when we recognise them for what they are, can we really begin to understand the nature and magnitude of the risks.

Over the past two decades, corporate strategists in the developed world have focussed on cultivating core competences and outsourced all manner of activities that might once have been performed in house. In some instances the outsourcing is purely cost-driven, in others it seeks to tap into capabilities that cannot be developed or maintained in-house. Importantly, it may also be employed as a risk mitigation measure, e.g. the outsourcing of some transport and distribution activities to reduce a firm's vulnerability to in-house industrial action.

Knowable unknowns

Outsourcing, possibly more than any of the other major business trends mentioned here has added to the complexity and interconnectivity of supply chains networks. Therefore managers should be aware that in adopting outsourcing to deal with a known risk, the likelihood is that they are trading it for a host of previously unknown ones. Not least the short-term dislocation caused by the changes in staff, working practices, and the integration or upgrading of IT systems. Consequential risks of this kind are what complex systems theorists (and latterly US Defence Secretary Donald Rumsfelt) would call 'knowable unknowns'. They are 'knowable' in the sense that they are uncoverable if time is taken to follow through the likely consequences of planned moves carefully enough, hopefully allowing contingency planning to be implemented in advance.

Corporate risk assessment tends to focus on risk management from a single firm rather than a network perspective, as such it has largely failed to keep pace with the reality of networked global supply chains. Leading insurers are actively seeking better ways to assess these risks, even so insurance is unlikely ever to cover the full costs of supply chain failures. It is incumbent upon supply chain managers and corporate risk specialists to take action to identify, prioritise and manage those risks as effectively as possible.

The task is complex, but not hopeless. The recently published report by Cranfield entitled Creating Resilient Supply Chain: A Practical Guide* provides some basic guidelines, in the form of a high level risk identification methodology and an operational-level tool-kit. The checklist-based Supply Chain Risk: A Self-assessment Workbook*, originally designed to meet the needs of small and medium sized enterprises (SMEs) is also providing a useful starter for businesses of all sizes.

There will, of course, always be 'unknowable unknowns', events such as 9/11 which are so far outside our experience or field of reference that no amount of foresight will ever predict them before they occur. Nevertheless the steps outlined in our research will take you at least part of the way towards dealing with the unthinkable if and when it occurs.

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** Creating Resilient Supply Chains: A Practical Guide and Understanding Supply Chain Risk: A Self –assessment Workbook are available free of charge, courtesy of the UK Department for Transport, at www.som.cranfield.ac.uk/som/scr*

IT Update

eBECS, a Microsoft Business Solutions (MBS) partner, has developed a series of Lean Manufacturing modules to complement and enhance the functionality of MBS' Axapta toolset. Lean Manufacturing is the ability to establish manufacturing cells where downstream triggers kanbans through the supply chain. eBECS' Lean Enterprise Solution includes Lean Manufacturing using pull techniques such as Lean Supply Replenishment, Flow Scheduling, Lean Ordering and Vendor Managed Inventory. There is also a Sales and Procurement Schedule solution which, says eBECS, many companies need to balance and level flow as their interaction up and down the supply chain takes place through schedules as opposed to discreet customer orders.

Rubicon Retail has outsourced its IT systems support and development services to Retail Assist as part of a five-year contract. Retail Assist is providing IT support and development services for Rubicon Retail's head office, distribution and store locations. As well as providing a team at head office for desktop, applications and administrative support, Retail Assist will make available its full range of Help Desk, Data Centre, Technical Support, and Project services. The contract with Retail Assist follows Rubicon Retail's agreement with new outsourcing partners covering IT, payroll, warehousing and distribution.

chain execution solutions supplier Catalyst International is working with Cadbury Adams Manufacturing (CAM) to implement its SAPConsole to leverage CAM's SAP investment and optimise the efficiency of its supply chain. CAM installed SAPConsole, which provides real-time connectivity to SAP functionality without the need for additional middleware, supports all major warehouse processes provided by SAP LES. The confectionery manufacturer expects SAPConsole to improve productivity, reduce operating costs and provide more accurate and timely data throughout its supply chain.