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In a fiercely competitive market, retailers cannot afford any inefficiencies in their supply chain. Lindsay James takes a look at the solutions that are enabling a more productive workforce, happier suppliers and a better customer experience.

Out of stock. These words can cause panic to retailers, and frustration to customers. Yet, with more retailers cutting costs left, right and centre, they are words that are heard all too often.

The last time we had a serious downturn cutting costs was a reasonable solution, but today retailers' costs are very different from what they were. In the past decade retailers have become multi-channel; they have embraced global sourcing; many have expanded overseas; and the product assortment has dramatically expanded. The result has been increasingly complex supply chains, both to operate and to manage, and any inefficiency could be costing retailers hundreds of thousands of pounds.

"Supply chain strategy has come to the fore recently," says Colin Masson, Microsoft's worldwide director for CRM, ERP and Supply Chain. "For retailers the stakes are higher than ever. Many are on the cusp of going out of business, and any mistake in inventory can be devastating."

"In the current economic climate retailers must ensure that they can deliver what their customers need on time and, more importantly, at a price they can afford," says Mark Ryan, EMEA retail sales leader at [Honeywell Scanning and Mobility](#). "As a result, retailers are now under greater pressure to ensure that their respective supply chains are running as efficiently as possible. That goes hand-in-hand with ensuring that the right technologies are in place to enable clear stock delivery and 'just in time' delivery."

So, we know that having an efficient supply chain is the key to cutting costs and surviving these hard times. But how do you go about creating this when there are so many variables? There's customer service levels versus inventory levels, third-party logistics versus owned operations and facilities, domestic versus foreign sourcing, costs versus time to market, and so on.

"The optimal supply chain design is a delicate balancing act which involves understanding the relationship between availability, inventory and cost, while at the same time maintaining excellent levels of customer experience and reducing errors," says Anush Kumar, CTO at [S3edge](#). "Managing all of these things efficiently will result in supply chains that improve business performance and drive competitive advantage."

Microsoft and its partner ecosystem have together created solutions and applications that tackle retailers' supply chain problems successfully and cost-effectively. "In these times, it is so important to drive down costs, and this is where Microsoft technologies come into their own," says Masson. "Microsoft technologies such as [Dynamics AX](#), along with [SQL Server](#) and [SharePoint](#), offer a low total cost of ownership and enable a much leaner supply chain."

"Microsoft technologies give the retailer and their supply chain partners greater visibility into inventories, both in rest and in motion across the supply chain," says Jim Caudill, senior vice president, marketing and strategy at [Xterprise](#). "This information, along with the ability to collaborate more closely on product introductions, deliveries and replenishments, helps drive down inefficiencies, reduce inventories across the board and therefore reduce overall costs. The result is a lean, responsive and greener supply chain."

Supply chain technologies have come a long way in recent years, and the benefits can be seen at every touch point. For employees, These technologies can improve visibility and create a better working experience.

"Technologies can help workers by giving them a complete view of stock across all channels," says Russell Dorset, sales and marketing director at [Maginus](#). "This enables them to better manage the stock and supplier activities to ensure that the right products are always available to satisfy customer demand. With advanced merchandising technologies such as [Clever Selling from Maginus](#), retailers can deliver the advanced merchandising techniques they currently employ in store, over the Web."

"Time is the enemy of most workers in the supply chain," says David Hurley, managing director at [Anglia Business Solutions](#). "Well-targeted technologies can help by providing advanced notification of incoming orders, accuracy of information on customer requirements and avoidance of errors by sharing common data and analysis of key business trends as they happen. All of these facilitate improved planning, leading to better performance, reduced operating costs and increased job satisfaction."

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Productivity can also increase considerably through the use of innovative technologies such as radio frequency identification (RFID), and the new generation of this technology known as RFID 2.0. Retailers are looking at using the technology to automatically receive shipments, and have greater visibility into the merchandise in back rooms and on store shelves.

Wal-Mart and the US Department of Defense (DoD), along with some other major retailers, now require their suppliers to begin RFID-tagging pallets and cases that are shipped into their selected distribution centres and stores. These mandates are about to impact a large number of manufacturers and distributors around the world. While businesses are looking to use the technology in many scenarios across various industries, the retailer mandates are the main driving force behind the current interest in the technology.

"Hardware in the RFID space has matured consistently in terms of performance and capabilities, matched by a comparable drop in price over the year," says Kumar. Now, with the advent of the Microsoft RFID platform at the shelf edge and on-device, the opportunity is ripe for a set of processes (which we call Physical World Workflows or PWFs) to consume and act on real-time data from the physical world, and in turn provide the electronic system with actionable information in real time. The same framework lends itself very well to allow applications to consume not just RFID data, but pretty much any and all sensory or real-time input for the PWFs to act and execute on, ushering in a whole new genre of applications under what are aptly called the Sensor Enabled Supply Chains.

"S3Edge's unique service-oriented three-tier architecture uses the RFID capabilities in BizTalk Server to allow real-time decision making and analytics capabilities, in addition to providing data that can be used for further business intelligence. The former enable you to make real-time choices in your plant floor or assembly line, the latter enable holistic business process re-engineering over the long-term. Another business benefit of the solution is to enable product track-and-trace, and recall functionality, where the 'pedigree' or origination information regarding the item is made available for decision making at a later point. This can be extremely important in scenarios where you need to identify items that were also manufactured with a particular item, or items that were processed on a particular station."

These types of technology can significantly benefit not just the retailers, but also their suppliers. "With the right systems in place it is easier to track supplier deliveries and prevent the mishaps in the supply chain which can strain the retailer-supplier relationship," says Ryan. "In the best case scenario the retailer and supplier can work almost as one by sharing information efficiently across the length of the supply chain."

"Both retailers and their supply chain partners have a lot to gain from technology," says Allan Gleeson, partner account manager for Microsoft Dynamics AX at TXT e-solutions. "Everyone sees a dramatic improvement in supply chain visibility, communication and collaboration. As a result, forecasts being passed on up the line are now a lot more trustworthy. There's also increased profitability through having the right key performance indicators and performance management, lead times are reduced, and everyone is on the same page, which helps align strategic goals."

So we've seen how supply chain technologies are evolving to enable a much better retail organisation, but what impact does this have on the customer? They are, after all, at the heart of a retail operation.

"Every retailer is competing for the customer and the ultimate buying experience," says Gleeson. "This means always having the right stock on the shelves, and that the products being promoted are actually in store and easy to find. Supply chain management technology ensures these expectations are consistently met, and if not, retail staff can be made aware of when the next shipment is coming in, or how customers can get hold of the product they're looking for. Software can even be used to ensure a retailer's brand image is maintained and consistent, so as not to detract from a consumer's perception of a brand – which could happen with too much discounting, especially on high-end brands."

"Microsoft and its industry partners' technology solutions help retailers better understand customer needs and trends in the marketplace while simultaneously helping enable employees to improve customer interactions at every stage of a transaction," says Masson. "Ultimately, they enable retailers to deliver shopping experiences that delight customers, create loyalty and ensure repeat business."

As time moves on, supply chain technology will inevitably evolve, as will the demand from retailers. "Integration between channels will get tighter which will have implications for supply chain management," says Dorset. "To remain competitive, retailers will have to offer customers the capability to order online, pick up from the store, to return goods that have been ordered online back to stores, to allow customers to order in-store for home delivery and so on – a complete multi-channel offering. To achieve this, it is crucial that product details and stock availability details are accessible across channels."