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SAVING THE PLANET AND ITS PEOPLE

The evolution of the pharmaceutical supply chain

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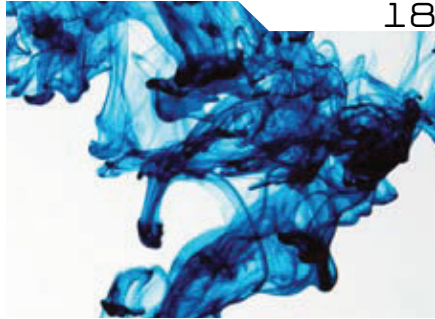
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Supply Chain Europe gives its readers in-depth news and views on the ideas and solutions that are helping European businesses improve their supply chains
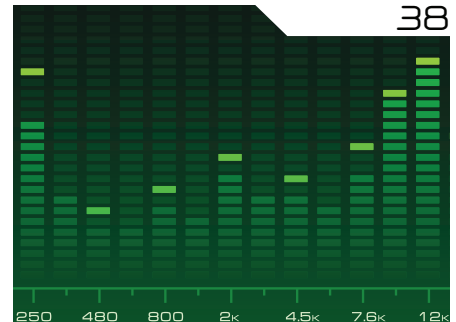
Supply Chain
E U R O P E

ACHIEVING SUPPLY CHAIN EXCELLENCE

Today's supply chains are complex networks of interdependent elements. And, whilst each element must be optimized, nothing contributes more to supply chain excellence than good communication between all parties. Everything must work in concert, requiring not only harmonization of technology and process but a common culture supported by the best communications infrastructure.

Retailers can put distance between themselves and their peers in an increasingly competitive market by good supply chain management. This can optimize product sourcing, manufacture, storage and distribution, thereby reducing operating costs and contributing to customer satisfaction. Although good supply chain management can deliver efficiencies and cost-effectiveness, it also ranks amongst a retailer's greatest challenges. This is because of constant change and the complexity of the elements that need to be managed and integrated. It is, therefore, best to regard supply chain excellence as a journey, not a destination.

Communication

One of the greatest contributions to supply chain excellence comes from improving communication with supply partners. That means extending internal collaboration to include manufacturers, involving all those upon whom the supply chain depends, and ensuring visibility of all activities. Today's communications are developing fast, with broadband connections to stores now commonplace. For the first time, technology can be actively used to support collaboration for new supply chain efficiencies. Extranets or video-conferences over IT links between retailer and supplier enhance the processes of ordering and tracking stock. In the case of international supply, say from the Far East, real margin can be gained by improving and speeding up the communication process.

With ADSL links from head office into their stores, retailers are always connected and can push or pull data that directly helps the business and the consumer experience. Within stores, there is also scope for improvement. A broadband connection can give a real-time view of stock held in the warehouse or in networked stores. In short, with the tools now available, much more is possible than is being done today and few retailers are optimizing their communication potential.

Alan Morris
Managing Director
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Processes, People and Products

The supply chain is often only seen in terms of physical elements and stock flow, but it's also about information flow. Far from being the strong, integral structure from which it takes its name, a supply chain is more commonly a loose amalgam of processes, people and products whose interaction constantly evolves and demands improvement. Too often, one part of the chain is focused upon to the detriment of others.

Planning: Many recent supply chain improvements have been in planning, enhancing systems and the means by which data is passed to the buyers. There is much to be gained from including supplier management within the planning workflow, taking it from sourcing to storefront, although much of this activity is still paper-based and far from interactive.

Warehouse Management: The supply chain is too often thought of as warehousing and undue attention is focused here. With new technologies such as RFID for scanning and tracking, and robotics for picking, sortation and despatch, warehouse management can be automated, producing operational efficiencies, cost savings and increased throughput.

Distribution and Logistics: Slick warehousing notwithstanding, when it comes to transportation of goods from supplier to warehouse and from warehouse to the point-of-sale — or directly to the customer — there is little more to be done to overcome the physical limitations of transport logistics.

Stock Control: Today's retailer has to have the right stock in the right place (or available on very short cycle times) to protect profit margins and to please customers. Whilst most retailers can do more to reduce inventory levels and improve replenishment timing and accuracy, forecasting and matching of supply to demand is a constant challenge.

Multichannel Impact

Multichannel retailing adds its own complexities to the supply chain. The strong trading performance reported by many retailers during the recent Christmas period was largely a result of record numbers of online purchases, proving that multichannels can increase choice and reinforce brand loyalty. However, the need to support customer self-service puts an additional strain on the supply chain. Many retailers embarked upon online trading without getting the logistics right and without forecasting return rates. Some bought stock specifically for the online channel, often outsourcing its management, which added to their problems. Lessons have now been learnt and many retailers are bringing processes back in-house, holding and managing a single stock source themselves and making it available to service a multichannel supply chain.

Each part of the supply chain should be optimized but there are certain elements that offer little scope for further improvement. Where significant gains can come from is a more savvy use of communications technology. One final thought. There is no better starting point than putting the customer at the heart of the supply chain, so perhaps the term 'supply chain excellence' should be replaced with 'sales fulfilment excellence'? ●

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RETAIL SOLUTIONS 2008

Leading names in retailing provide insight into supply chain strategies

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RETAIL SOLUTIONS 2008

June 2008 sees the relaunch of the popular Retail Solutions exhibition, with a brand new conference programme run by Retail Week Conferences and a move to the London Excel centre. The Retail Week conference programme, which will run alongside the exhibition, will feature high quality content delivered by prominent UK and international retailers who will offer insights and discussion on key strategic issues facing retailers. The conference will be divided into six discussion streams covering Supply Chain, Multichannel Retail, Business Intelligence, Merchandising Planning, Loss Prevention and the Retail Technology Forum. Also planned are a series of practical workshops concerning Epos, PCI–DSS and RFID.

The Supply Chain conference features speakers from Argos, Woolworths, Mosaic Fashions, John Lewis and Borders. For instance, Duncan Kendal, General Manager — Supply, Argos Direct, will talk about achieving an optimal collaborative retailing relationship with your supplier. Kendal will show you how to build a relationship with your supplier to keep costs low and productivity high. Phil Streatfield, Commercial Supply Chain and IT Director, Woolworths, will discuss linking information across the supply chain to improve efficiency and how to build a demand driven supply chain management system from shelf to manufacturer. David Roberts, Group Distribution Director, Mosaic Fashions, looks at overcoming obstacles that impact the speed and costs at which your products are delivered.

The Future is Green

Retail Solutions is moving to London — after more than 15 years at the NEC Birmingham — to provide retailers with greater access to the fast growing retail technology market. Exhibitors include Aldata, K3, Manhattan Associates and Red Prairie. Following on from the success of last year's "Store of the Future," which attracted attention from the world's media, Retail Solutions will this year host a Green feature sponsored by BT Expedite, the retail solutions division of BT. Retailers are looking for ways to respond to their

customers' interest in greener products and stores … and this feature will demonstrate how technology can help.

And the Winner is

The European Retail Solutions Awards will take place on the evening of Wednesday 25 June. In 2007, the awards were attended by more than 800 retail IT executives and vendors from the retail, leisure and food services from across Europe. The awards celebrate retailers and suppliers that have successfully used technology to drive their businesses forward and recognize some of Europe's most progressive companies. There are 16 categories to be awarded, including the European Retail Solution of the year award and new categories including Best Green IT Initiative and Best Multichannel Integration. For entry submission visit www.europeanretailsolutionsawards.com.

Sustainable Retailing

Aldata — one of the global leaders in supply chain software for retail, wholesale and logistics companies — will be demonstrating at Retail Solutions how retailers can meet the growing challenge of sustainable retailing. With increasing customer awareness of the environment and the need for fair trade, ever more government legislation and compliance demands, and within the context of a highly competitive trading environment now heightened by fears regarding the "credit crunch," Aldata will offer insights on how retailers can respond to this challenge whilst remaining profitable and successful. Come and meet Aldata on Stand D20.

Call-Systems Technology

Effective communications enhance customer service whilst increasing retailers' profits. Call-Systems Technology (CST) will demonstrate its award-winning range of communications for retailers. From simple products, such as two-way radios and the CustomerCall pager system, to sophisticated software packages such as Retail Genesis, which integrates all communications devices including staff mobile phones, into one seamless system, CST has developed a huge variety of effective retail solutions. Other highlights include POSpage and StoreCall, which allow staff to page directly from the checkout, and AlarmCall, which helps to prevent false fire alarms and unnecessary evacuations. Expert personnel will be on hand to discuss the latest retail communications technologies.

ILID Supply Chain Europe

ILID, recently named as a finalist in the biennial DuPont Innovation Awards Australasia 2007/2008 for its patented Visible Light Technology (VLT), will be showcasing the latest in Electronic Shelf Labelling technology on Stand A13. The UK's leader in ESL solutions, ILID currently holds a majority market share of the ESL market in Australia and the UK. Using VLT, data such as pricing and promotional updates are sent to the shelf-edge via a store's lighting, enabling real-time wireless updating of shelf-edge information, marketing and pricing strategy — making ILID imperative to streamlined retail operations.

About Retail Solutions 2008

Now in its 28th year, Retail Solutions is the leading exhibition for the UK's retail technology market where representatives from the top 500 retailers come to learn about the latest technology, source suppliers and compare vendors. In addition to more than 250 of the biggest and most innovative solutions providers, Retail Week Conferences at Retail Solutions will provide delegates with a paid for conference with high quality content from UK and international retailers, who will address technology issues from a business perspective. Also, the European Retail Solutions Awards showcases the best and most innovative retail technology applications.

For more details on Retail Solutions, visit www.retailsolutions2008.com. For further information on Retail Week Conferences at Retail Solutions, visit www.retailsolutions2008.com/conferences and/or www.retailsolutions2008.com/supplychain, or call +44 845 056 5899.

Workforce Optimization

At this year's Retail Solutions, InVision will demonstrate for retailers of all formats and sizes how to optimize the processes of managing their workforce. Its software solution, InVision Enterprise WFM, has a modular architecture and supports the whole demand-oriented workforce management process, all the way from budgeting and forecasting to optimized scheduling, time and attendance management, as well as monitoring and integration with existing systems.

Joined Up Thinking from K3

K3, the UK's largest provider of Microsoft Dynamics, will be demonstrating its multichannel solutions for retailers as part of its joined up thinking programme. K3's Microsoft Dynamics software enables retailers to create a unique and connected shopping experience for customers using an integrated multichannel solution. The solution presents a unified shopping experience whether the customer chooses to browse or shop in store, online or through a call centre. Each element of the solution is built around a common technology platform simplifying the solution architecture to speed up implementation and deliver a single view of their customers — no matter which retail channel they shop through. K3 are on Stand G26.

Supply Chain Solutions

Manhattan Associates will be exhibiting on Stand C9 at Retail Solutions 2008. The leading supply chain optimization provider will be promoting and demonstrating Manhattan SCOPE, its recently launched portfolio of solutions and technology that leverages a common Supply Chain Process Platform to optimize supply chains holistically.

Leading the Way with Innovation

Metrologic Instruments GmbH has announced that it will demonstrate the MS7580 Genesis and MS7820 Solaris — two of its newest and most innovative products — for the first time at a UK trade show when it exhibits at Retail Solutions 2008. Metrologic (Stand D5) will demonstrate its complete line of products designed to increase productivity and profitability in retail applications, including single-line, omnidirectional and bioptic laser scanners, area imagers, mobile computers and scan engines for original equipment manufacturers.

PLM Solutions

MICROS Retail & Manufacturing Ltd is a wholly owned subsidiary of MICROS Systems Inc., the world's leading provider of enterprise-wide solutions to the retail and hospitality markets. We have more than 30 years of experience in providing IT solutions that help retailers and manufacturers to develop their products, manage their supply chain, protect themselves against internal fraud and improve their marketing and selling. Our portfolio of products includes the award-winning product lifecycle and supply chain management solution, Creations, plus a range of sophisticated solutions for materials order processing, loss prevention, store analytics, point of sale and merchandising. Creations is the most widely recognized lifecycle and supply chain management solution available within the retail market today. It is currently used by the UK's top four grocery retailers, as well as in the development and protection of more than 30,000 consumer goods annually through a collaborative environment of 17,000 users across 2500 suppliers and partners. Come and see MICROS on Stand F14.

Transactional Kiosks

This year, Protouch, the leading supplier of touchscreens and touchscreen kiosks in Europe, is eager to announce its exciting product showcase for Retail Solutions. Protouch's show stand will feature its new, competitive EPOS range and its transactional kiosks that include several solutions for retail clients, such as Kiddicare, as well as many other leading brands. Protouch will be presenting its transactional Xen X5 kiosk for Kiddicare, the UK's number one online supplier of baby products and accessories, in conjunction with K3. Protouch is on Stand H8. ●

SUPPLY CHAIN MANAGEMENT: WHAT'S IN STORE?

Technology. Innovation. Solutions. We know what's in store.

Retail Solutions has relocated and for the first time brings together a vibrant exhibition and multiple established Retail Week conferences.

The Supply Chain Conference focuses on maximising productivity within your organisation's supply chain. Our impressive line up of speakers includes:

- Duncan Kendal, General Manager - Supply, Argos Direct
- Geoff O'Neil, Head of Supply Chain, Borders UK
- Phil Streatfield, Commercial Supply Chain and IT Director, Woolworths PLC.

Providing an exciting arena for retailers to: hear about future supply chain developments; interact with innovative products; and to meet key suppliers, Retail Solutions drives business forward.

RETAIL SOLUTIONS 2008

Key supply chain exhibitors signed up for 2008 already includes:

itim   Manhattan Associates   RedPrairie   Aldata

Go to www.retailsolutions2008.com to register for entry

RETAIL SOLUTIONS: EUROPE'S PREMIER RETAIL TECHNOLOGY EXHIBITION AND CONFERENCE

Agent Provocateur Uncovers Business Benefits

Agent Provocateur, the exclusive UK luxury lingerie retailer has selected K3 (www.k3btg.com), the UK's largest provider of Microsoft Dynamics, to supply a new IT system to improve its product lifecycle management, from planning, product design, manufacture and shipping, through to merchandising, allocation and replenishment. The solution also provides critical path management, product data management and performance reporting along with supplier and franchise web portals to enable increased collaboration on orders and stock. Andy Waters, Head of Commercial Operations, Agent Provocateur, said: "We chose K3 to provide and implement the Microsoft Dynamics solution as we need a system that can support a complex, multichannel, multisite, growing business. We have ambitious expansion plans and need a scalable, multichannel platform that will drive growth. K3 has the capability to provide international support and they are the right business partners to manage global franchises."

The K3 solution includes electronic point-of-sale (EPOS), merchandising, planning, warehouse, and business intelligence tools and the new system will help the retailer manage its sales and marketing divisions, and monitor finances. The K3 solution will integrate into the existing e-commerce solution. Currently, Agent Provocateur is running the business using manual processes and Excel spreadsheets, which will not be able to support the company's expansion plans. Paul Makin, Sales Director, K3, said: "We are offering an overall package that will support Agent Provocateur across their business. They required a scalable solution and we are delighted that they have recognized K3's ability to provide this."

Masternaut Signs Deal with Microsoft Virtual Earth

Masternaut Three X, the UK's leading provider of web-based vehicle tracking and mobile workforce solutions, has signed a new 3-year contract with Microsoft EMEA. The contract covers the use of Microsoft's innovative online mapping platform Virtual Earth, within Masternaut Three X's Internet-based telematics service, and is an extension to an ongoing relationship between the two organizations. "This is a milestone for both Masternaut Three X and, more importantly, our growing customer base, which will expand to more than 100,000 subscribers within the next 3 years," said Martin Port, MD of Masternaut Three X. "Virtual Earth provides a new dimension to our mapping and provides access to a wide spectrum of rich location information. By continually improving our offering, in this case with the provision of state-of-the-art mapping and visualization tools, our users will always benefit from the latest innovations in the market."

The latest release of the Microsoft Virtual Earth platform incorporates up-to-date traditional street mapping with aerial photography enhanced with bird's-eye view images and three-dimensional, photorealistic views of buildings and landscapes. The platform also offers advanced location-based services including optimized driving directions, proximity queries and customizable map windows. Masternaut enhances the platform with real-time traffic data, congestion and low emissions zone alerts, access to low bridge and narrow roads information, as well as many more features that provide business benefits. "We are delighted that Masternaut Three X, a true European innovator, is continuing to count on Virtual Earth for its solution, which is at the forefront of fleet and customer relationship management convergence," said Jennifer Forsythe, Microsoft Virtual Earth Marketing and Partnership Manager, EMEA and Asia-Pacific (www.masternaut.co.uk).

New Midlands Depot for Redhead International

Redhead International (www.redhead-int.com), one of the UK's leading logistics companies based in Low Moor, Bradford, has further expanded its operation with the recent opening of a new depot in Burton-on-Trent. The new depot will meet increased demand for Redhead's international freight services from customers in the Midlands area, giving companies quicker and easier access to both mainland Europe and Ireland. The facility has a 3000 pallet capacity and also 1500 square metres of warehouse space. Redhead's sales and marketing director Rob Thacker said: "The opening of our new depot in Burton-on-Trent forms part of an ongoing expansion programme and directly reflects the continued growth and success of Redhead International. The new facility will provide customers from the Midlands with access to one of the most respected freight management companies in the industry — one that can handle virtually any request from single pallet to full trailers."

Redhead has appointed Tim Harris to head up the new operation. Tim has nearly 20 years' experience working in the freight industry and is an Associate of The Chartered Institute of Freight Forwarders. Commenting on his new appointment, Tim Harris said: "I am delighted to have joined such a renowned company as Redhead International. These are exciting times for Redhead and I look forward to making a significant contribution to the company's success in the Midlands."

Continued European Expansion for Palletways

The Palletways Group, Europe's largest, most advanced and fastest growing pallet freight network provider, which is backed by Phoenix Equity Partners, has announced a 19% increase in annual turnover for the 12 month period to 31 May 2007, with consolidated operating profit before amortization of goodwill at £2.9 million, compared with £2.8 million the previous year. Commenting on the results, Susan Hundleby, Palletways Group Finance Director, said: "The results reflect the continued expansion of the Palletways network and the planned investment to support this expansion to achieve its vision of being a truly European business."

"The reporting period saw the successful transfer of the Palletways business model into the Spanish market. Key investments included rolling out a new central hub facility in Alcala de Henares, near Madrid, and enhancing interconnectivity between the domestic European networks. This year also saw the beneficial acquisition and integration of Palletways Italia SpA into the Group's network. Palletways continues to develop its fully integrated and wholly controlled networks to provide domestic and European pallet distribution services. This provides our members with a unique and profitable opportunity to extend their services to customers." Palletways currently has about 250 locations across Europe and handles around 80,000 pallets a week via nine hub facilities (www.palletways.com).

Maersk to Open Inland Terminal in Neuss

During an official signing ceremony in February, Maersk Line signed a long-term contract with Neuss Düsseldorfer Häfen for the development of a trimodal inland container terminal, for which Maersk Line will be the 100% shareholder. The terminal will act as a hub within — and provide a green pipeline to — the Ruhr region. The trimodal terminal offers an interchange between the three inland modalities: truck, rail and barge. To increase the percentage amount of cargo moving into the hinterland by barge and rail (Maersk has already achieved an impressive modal shift in its Carrier Haulage flows), securing this inland terminal capacity is the cornerstone of Maersk's hinterland strategy. The 2.8 hectare Neuss Terminal will be operational in 2009 and, to safeguard capacity, expansions are planned until 2032.

Container shipping is the most environmentally friendly way of moving cargo over long distances. Yet, adequate hinterland terminal capacity for rail and barges is a prerequisite to maintain a reliable, sustainable cargo flow across the oceans. Innovative solutions and full co-operation between market parties and governments are needed to achieve this … and to keep the roads from clogging up. The Neuss Terminal offers Maersk the possibility to expand its push-pull strategy, whereby containers are 'pushed' into and 'pulled' out of inland terminals, instead of storing them on overloaded seaport yards to await collection. The push-pull method also has a positive effect on the increased utilization of barge and rail capacity. Neuss is a small city on the opposite side of the River Rhein from Düsseldorf and was formerly known for its heavy industry. Considering its strategic location and the short distance from the North Sea Ports, the regional focus is more and more on logistics and distribution (www.maersk.com).

Bernard Matthews Cuts Data Processing Costs with Inovis

Bernard Matthews, the largest farmer of British turkeys and one of the UK's top grocery brands, has implemented Inovisworks from Inovis to provide a unified electronic trading platform with real-time visibility into all EDI transactions, including taking orders from customers, processing delivery notes and matching invoices. With more than 1500 orders received each week — 90% of which are shipped on the same day of receipt — Bernard Matthews will rely on Inovis to streamline business processes and increase order accuracy for an expected reduction in processing costs of 20–25% per annum. "More than 80% of our orders, which account for 90–95% of our business, are taken via EDI 7 days a week; therefore, it is critical that orders are accurate and our systems are available at all times to serve our customers efficiently," said Edwin Pearson, Information Systems Director for Bernard Matthews. "By simplifying our EDI environment and providing visibility into all of the components within our supply chain, Inovis ensures that we can accurately and efficiently process orders, which keeps our customers happy and bolsters our business."

Inovisworks enables Bernard Matthews to process all customer and supplier data, including AS2 communications with ASDA and Wal-Mart, using a single system. Previously, Bernard Matthews required two sets of processes for dealing with traditional EDI and AS2, introducing another layer of complexity in the supply chain. Now, with Inovisworks, Bernard Matthews has a solution that processes multiple communication protocols so the company only deals with one data standard, simplifying the management of data and reducing the time taken per transaction. Pearson was also impressed by the cost-effectiveness of implementing Inovisworks. "It was very easy to justify switching over to Inovisworks, as Inovis' unique pricing structure is based on flat-rate subscription rather than volume of traffic. Therefore, we can guarantee return on investment within 6–9 months, with minimal disruption required in the migration process from our old EDI system. In fact, the time required to oversee the implementation of Inovisworks was exceptionally minimal," said Pearson (www.inovis.com).

Omega Strengthens Recruitment Team

In a move that further bolsters their reputation for providing specialist recruitment solutions within the professional technical sector, Omega Selection Services has announced the appointment of new Technical Recruiter in Logistics, Will Foster. Foster joins Omega's Supply Chain, Procurement and Logistics team and will be specializing in delivering top tier recruitment services to UK clients both large and small throughout the logistics sector. With the UK logistics sector worth approximately £74.45 billion to the economy, the industry employs some 2.3 million people spanning some 196,000 companies. Recruiting skilled people is therefore critical and as Technical Recruiter, Foster will be filling white-collar positions for Omega's clients, including directors, first line managers, shift managers, operations managers and general managers.

According to Omega Selection Services Recruitment Director, Lucy Dowie, Foster's background in transport and warehousing ensures that he is perfectly positioned to deliver expert solutions that fit client requirements. "Will brings with him more than 15 years of first-hand experience managing operations for the likes of Safeway and Christian Salvesen amongst others. His understanding of the industry makes him an invaluable asset to Omega Selection Services," comments Dowie. "His expert knowledge of the industry enables him to effectively identify skill sets within applicants and place them in niche areas of the market, and clients benefit from having an industry insider sourcing employees with the skill sets that they require." Omega Selection Services prides itself on its flexible and responsive approach to resourcing and offers specialist professional technical recruitment solutions for organizations throughout the UK (www.omegaresource.co.uk).

Egemin Develops AGV Downender System

Egemin Automation has recently developed a new rotation system for the Roll Lifting Vehicles (RLVs) in its E'gv suite (Egemin Guided Vehicle). Thanks to the downender system, RLVs equipped with large hydraulic clamps are able to pick up large paper reels vertically, rotate them during transport and deliver them horizontally to the printing presses or sheet cutters. The new development will be mainly deployed in the paper and printing industries to bring reels directly from vertical reel storage warehouses to the printing presses and the sheet cutters. Because of this innovation, companies no longer need to invest in an individual downender installation on a conveyor system to lay down the reels. For companies that are active in the paper and printing business, this means serious savings in production time, space and, consequently, costs. Egemin Automation currently has several projects under way with similar systems. For further information, visit www.egemin.com.

Institute of Couriers Recognizes DHL's Stephen Deverson

DHL is delighted to announce that The Institute of Couriers (IOC) has recognized Stephen Deverson, Director of Sales for DHL Same Day, as a Fellow. The Fellowships recognize individuals at the top of their industry. Stephen was personally chosen and invited to support the Institute for the Same Day Delivery Profession at the inauguration of the Institute of Couriers. Stephen was awarded his fellowship in recognition of his exceptional professional skills, knowledge and contribution to the Same Day Delivery Industry. Stephen received his fellowship and was gowned by the President of the Institute of Couriers, Viscount Falkland, in a ceremony at the House of Lords in London in March. Stephen said: "It's a real honour to be recognized by the industry in this way and the fellowship reflects DHL's high commitments to industry standards, particularly in its Same Day service."

With nationwide pick-up and delivery by dedicated DHL couriers, DHL's Same Day service delivers the most time-sensitive shipments and is one of DHL's most popular services. Delivery by appointment can be arranged and there is online tracking and 24x7 booking. The IOC, which is open to all in the industry, aims to establish itself as the national standard for those who work in the industry. The Institute aims to highlight 'professional and safe practises' in serving the industry and its customers, as well as promoting awareness of best practices for individuals to improve their skills and qualifications. Stephen Norris, VP of the IOC as well as the former Minister of State for Transport said: "We are very proud of Stephen Deverson because he is one of the brood of logistics professionals who are raising standards in the industry."

THE PATH TO HIGH PERFORMANCE IN THE CHEMICAL INDUSTRY

Accenture's Neil McTiffin draws lessons from the chemical industry's experience of supply chain planning tools.

Recently, supply chain planning tools have become increasingly powerful, presenting sizeable appeal for chemical companies. With the right tools, companies can more effectively set inventory targets to minimize inventory cost while maximizing customer service. They can accurately model future networks and capacity to minimize total supply chain costs, and can make informed distribution decisions based on sales forecasts, customer segmentation, sales orders and actual production.

Sophisticated planning capabilities are key to overall supply chain effectiveness and efficiency. Improvements in planning can have an impact on numerous supply chain activities, reducing costs, improving service and increasing production. Such improvements are especially important to chemical companies: in the Accenture 2007 Global Chemical Industry Supply Chain Best Practices Study and Assessment, more than 75% of respondents said they consider the supply chain to be a driver of operational excellence or a significant source of competitive advantage. Accenture's cross-industry research

supports that view, indicating that effective supply chain management can be important to business performance. Researchers from Accenture, Stanford and INSEAD found the average market capitalization of companies that employ supply chain best practices increased by up to 26% more than the industry average during a 3-year period.

Today's supply chain planning technology holds promise, but many chemical companies discover that the tools fall short. In spite of industry investments in planning systems, most chemical companies are unsatisfied with their supply chain management technology, regardless of what they implemented, according to a 2005 Accenture study. When asked to rate their use of demand planning, 57% of respondents graded their internal results as less than favourable, and only 7% rated them as excellent (Figure 1).

Typically, the problem is not the technology, but the way that companies introduce and manage the technology. Often, supply chain planning implementations are perceived as technical projects when, in fact, they are business transformation initiatives. Supply chain planning tools require new processes, skills and approaches to operations. Previously successful tactics might not work in the new environment. To optimize these systems, companies must prepare and manage the

context in which the systems are used, and transform the business to take advantage of the technology. Otherwise, the tools will be poorly understood, underutilized and ineffective. Failed transformation projects create additional financial costs for the company, and large opportunity costs as competitors adopt new implementations.

Yet, business transformation does not happen overnight. It requires a conscious effort and methodical approach. Through its work on supply chain planning initiatives with numerous chemical companies — as well as its High Performance Business research and chemical industry studies — Accenture has identified six phases that are fundamental to managing supply chain planning initiatives as business transformation efforts. By understanding and working through these phases, chemical companies can position themselves to take advantage of today's planning technologies, and use them to support business performance.

Phase 1: Create a Value-Led Business Vision and a Business Case

Today's supply chain planning tools offer a range of functionality that, while important, can be a hindrance. Facing an array of new capabilities, companies can get side-tracked and implement practices that in reality will provide little business value. The effort

should be more focused from the beginning. Thus, an effective supply chain planning transformation starts with a vision: how will the new approach help the company to achieve high performance? This vision must be translated into an action plan, and quantified with a business case. Companies must document their current performance and evaluate the costs and benefits of adopting new supply planning technology, identifying their specific supply chain pain points and the capabilities that will address those points.

Through this, companies develop an understanding of the business value and cost of implementing each capability. The business case should capture the expected benefits and performance metrics that will be used to track implementation progress — all of which will provide a business-oriented platform for planning and focusing on solid results.

Phase 2: Ensure Organizational Transformation/Business Readiness

Accenture research indicates that many chemical companies fail to see the full benefit of supply chain planning initiatives because they don't understand the importance of organizational change. New supply chain planning tools often require closer collaboration and communication, and higher levels of process and

information integration. Most importantly, companies must prepare their employees for the new tools, assess whether they have the right people with the right capabilities in place, and consider training and recruitment. Accenture experience has shown that it is also important to inform stakeholders in the early stages of a project, and educate them about the change, how it will affect them and why it is important. Executives should be involved, so they understand the need for change and can see it through.

Phase 3: The Planning Process: Keep it Simple for Now

Companies often look at the possibilities presented by today's supply chain planning tools, and decide to immediately employ the most sophisticated and complex aspects of the software. However, many chemical companies have found that it is better to employ a gradual approach. When chemical companies try to create complex planning processes, it is often too large an undertaking — given their existing, rudimentary planning tools. Demand planning, for example, is
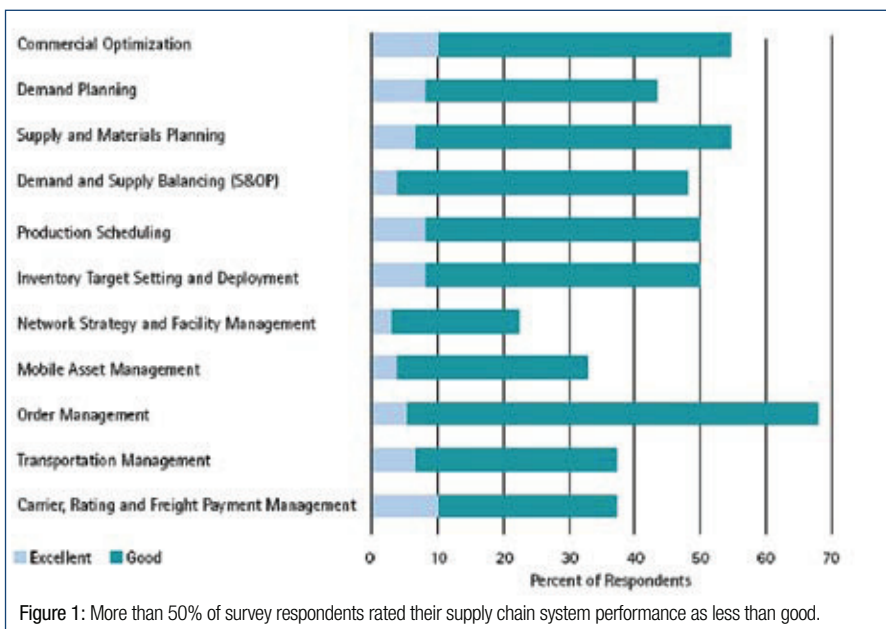
Figure 1: More than 50% of survey respondents rated their supply chain system performance as less than good.

Too often, companies implement planning tools at the front-line level, but fail to integrate them with the S&OP process.

frequently performed as a spreadsheet exercise. In the Accenture 2007 Global Chemical Industry Supply Chain Best Practices Study, 46% of the participants said they manage demand planning using tools such as Microsoft Access. To move ahead, companies can start with simple planning models using integrated information. As people become comfortable with the tools, additional functionality can be introduced, creating a step-by-step journey to the desired end state — and avoiding the disruption of introducing complex approaches too quickly. Once introduced, simple, integrated new tools typically bring significant improvements, given the lack of sophistication of traditional planning approaches. People can quickly access better information, and the organization can use "one set of numbers" to support better decision making, allowing the process and employees to improve with time.

In taking this approach, it is important that business strategy drives supply chain strategy and, ultimately, the supply chain planning process model. Chemical companies with high supply chain performance often establish a business-rule framework to ensure this business–supply chain link is in place. For example, if a company's strategy is based on customer centricity, the business-rule framework would provide guidance for decision making in supply chain activities such as customer segmentation, service-level differentiation and forecasting

strategies. Thus, the framework provides rules that help to keep supply chain execution in line with business strategy, so the company is not relying on the judgment of individual employees.

Phase 4: Consider Sales and Operations Planning Management

Accenture research identifies an often overlooked correlation between the benefit derived from supply chain management technology and the health and efficiency of the organization's Sales and Operations Planning (S&OP) process. S&OP is a management process that helps to ensure that the longer-term business plans of the company are achieved. Accenture research has identified several S&OP leading practices used by successful chemical companies, which include that the S&OP

- operates under the "one set of numbers" principle.
- process is a common, company-wide standard process with common calendar, terminology and tools.
- process is holistic, including all business activities, from customer and market interface to idea generation, innovation, product stewardship, manufacturing, supply chain management, finance and marketing and sales.
- process drives high performance by identifying gaps between existing and target performance, and by implementing corrective actions for P&L/balance sheet relevant items.

Effective S&OP relies on supply chain management's demand and supply balancing capabilities. S&OP's primary focus is to maximize profit by balancing sales, asset utilization, inventory and customer service. Supply chain planning technology plays a key role in this process because it enables companies to create future projections of each of these four key profit drivers. Too often, companies implement planning tools at the front-line level, but fail to integrate them with the S&OP process. By linking the two, companies can alert business management to future plans while enabling planners to make everyday decisions reflecting overall strategic goals.

Phase 5: Establish Post Go-Live Governance

Many chemical companies have underestimated the governance required to manage their supply chain planning solutions after the go-live date, which can unfortunately result in the organization failing to make use of the system. When a new planning system goes live, there is typically considerable enthusiasm about putting it to work. However, employees often revert to old protocols for doing things, which undermines the new solution. If planning tools are not embraced, no business benefits are achieved — and executives question the value of the solution.

To avoid that, companies must establish effective post go-live governance processes, which should focus on stabilizing the new approach and ensuring that it is adopted by the organization. Companies can maintain a "health check" scorecard to monitor tool uptake and usage, and identify problems that might indicate a need for intervention. This phase can also act as a "clean-up period" because the health check will often uncover issues that weren't properly addressed in the first four phases.

Involving the right people in post go-live governance is key. As the Accenture 2006 Achieving High-Performance Transformation in Chemicals study found, business process owners — a team of senior executives who operate part-time, outside of their normal jobs — must drive the sustained business transformation effort to achieve excellence for a given functional area. This team should be supported by a group of business process and supply chain planning technology experts that focuses on stabilization and process improvement. Accenture research shows that companies that were most successful at supply chain planning transformations employed a full-time process expert.

Phase 6: Maintain a Focus on Value Realization

Often, companies believe that once employees are using supply chain planning tools, the effort is complete and the business benefits will automatically follow. This is generally untrue. In spite of careful planning, real-world conditions and ongoing change often necessitate adjustments in planning processes, requiring ongoing management. In Accenture's experience, the companies that realize the most value from IT-related investments manage value realization as a separate post go-live project. Key to that effort is the effective, proactive management of business key performance indicators (KPIs) and operational indicators, which should be based on the expected value identified in the business case and should allow companies to track progress toward meeting those business goals. Companies can then see where the effort is falling short and correct matters.

Measurements should reflect the basic value levers underlying expected business goals. To reduce operating costs, underlying value levers such as optimized physical network and scheduling, lower staffing levels and the use of alternate distribution channels should be measured. They might then be tied back to the relevant supply chain activities. This provides a detailed understanding that is used to target improvements, and helps to keep processes on track, delivering expected value by tying key financial figures to tangible activities at the shop-floor level.

Conclusion

Supply chain planning tools can offer significant business benefits, but the achievement of those benefits relies on the way the technology is implemented and managed. These tools often require new ways of working, and a business-oriented approach to implementation that takes into account the people, processes and strategies involved, as well as the technology itself. This kind of business transformation is not easy, and requires a disciplined, systematic approach, but can be worthwhile. The six phases of business transformation provide a framework for approaching these efforts effectively. Accenture's experience has shown that by applying these phases, companies can get more out of their sophisticated supply planning tools, and use them to achieve sustainable results and high performance. ●

NEW MODELS FOR NEW MEDICINE

Mario Johnson, Commercial Manager, Alloga, looks at the changing face of healthcare logistics.

As with any service-orientated business, our operations revolve around the needs of our customers. In the healthcare logistics arena, that means that any pressures, issues or, conversely, opportunities faced by our pharmaceutical and biotechnology customers become part of our ongoing service evolution. The ubiquitous rising costs and competitive pressures, or the counterfeiting threat, all become integrated into our design solution. In addition to the economic and political factors impacting our customers, medical science has been advancing, making way for new entrants into the market. Our customer mix has been shifting, with the rise of the biotechnology company. We find that, increasingly, we are faced with high-value, specialist products that have specific requirements — resulting in us adapting our role in the supply chain and expanding the breadth of our services.

It is no surprise that there is a tendency towards regional expansion and globalization, driven by the larger pharmaceutical companies themselves. Our customers are looking to find economies of scale by consolidating their operations management but preserving local market knowledge. Governments will also come under pressure from international pharmaceutical companies to align their regulations supporting this regionalization. Two broad trends, chain simplification and delivery specialization, may seem like unconnected developments, but they are in fact united by high levels of monitoring, control and information access.

Chain Simplification

In March 2007, Pfizer introduced its new "direct to pharmacy" model. This new distribution arrangement allows Pfizer to take full responsibility for its medicines from its manufacturing centres until the point where they are sold to the pharmacists and doctors who dispense them. The improved visibility achieved by the new system also means that Pfizer can be more responsive to stock shortage situations and better able to trace and recall its medicines if required. This was the first move of its kind by a pharmaceutical manufacturer in the UK.

For the pre-wholesale logistics provider Alloga, through its partnership with UDG in the UK, it means delivering to one single company and fewer warehouses. The whole chain has been simplified, not only in terms of geography but also in terms of IT systems and processes; product monitoring can be more holistic, information management systems standardized and the margin for error significantly reduced.

Overall, reducing error and product tracking has always been high on the industry's agenda. In the future, identification by individual box should be possible. RFID has been presented as a possible solution, but the technology is yet to find its place in the pharmaceutical supply chain. The costs are high but the major issue is the apportioning of the cost; who should be the party to shoulder the cost burden? At some point it may become a regulatory requirement but is not as yet. Mass serialization, by contrast, is a viable alternative. Reimbursement issues have already pushed this practice through in Europe, with a tendency

Mario Johnson
Commercial Manager
Alloga

For chronic conditions, it is suggested that many products will be delivered directly to the patient, making the logistics providers the main interface and brand representative to the end–consumer.
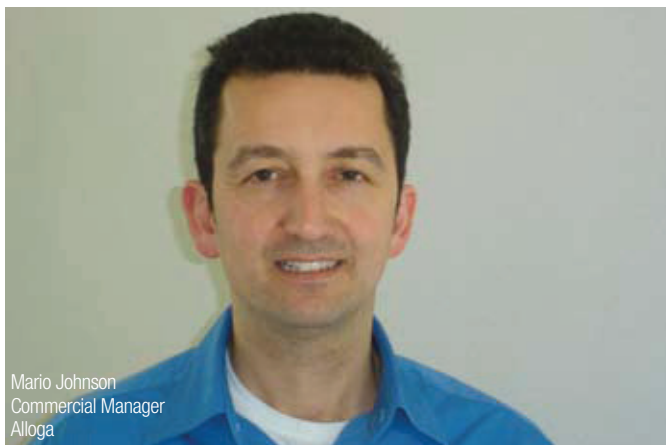
toward 2D barcoding at batch level. Ultimately, interorganizational collaboration and the blurring of boundaries will help the industry to overcome its tracking limitations.

Delivery Specialization

The second trend, delivery specialization, has seen healthcare logistics become more sophisticated, high tech and precise in its operation. Biotechnology products being developed by pharmaceutical companies and specialized biotech firms are high-value and low volume but, most importantly, high maintenance. Delivery requirements are more demanding. It's not simply about getting a product from point A to point B, temperature levels have to be regulated and, in cases of some chronic conditions, delivered to the patient's home and followed by a homecare visit. Our systems can now not only monitor our fleet's progress and status, tracking every batch and reporting in real-time the completion of the delivery, but the all-important temperature levels of the cold chain can be monitored centrally, alerting head office to any potentially damaging changes. Although cold chain capabilities are not new to the market, the prevalence of the offer amongst healthcare logistics providers is certainly on the increase.

Ultimately, the manufacturing company at the source of the supply chain will be able to view a complete history of the product in transit from manufacturer to end-consumer. Track and trace, 2D barcoding and, potentially, RFID will contribute to this service, in conjunction with best in class back-office management software that will be able to interface with customers' systems. One of the most valuable products resulting from the increasing IT sophistication and supply chain control is information. Previously diluted by the various layers involved in delivery of the product from source to consumer, logistics providers are now in a prime position to offer customers access to elusive sales and usage information. Product sales volumes and timings to customers, often pharmacies, hospitals or dispensing doctors, have historically been distorted by wholesalers' isolated stock management systems and a lack of transparency. Logistics

providers such as Alloga will find that as our monitoring and management systems advance in technical sophistication and integration, our role as information managers will come to the fore.

On the Horizon

Personalized medicine has been a topic much discussed in the past but is yet to materialize. This involves the development of new treatments that take into account the patient's genetic make up to reduce the emergence of side-effects. Each treatment therefore would be specific to that patient. The current delivery specialization model would transform into a more customized model, created for each treatment and each patient. For chronic conditions, it is suggested that many products will be delivered directly to the patient, making the logistics providers the main interface and brand representative to the end-consumer. It is also feasible that they could take on the responsibility for homecare and support, checking compliance and treatment efficacy.

For those treatments wherein DNA sampling is initially required in the development process, the logistics team would be best placed to provide this service, collecting the sample and returning it to the biotech company in the required condition. The skills required to perform this process would be of the highest level and the service completely customized. In an industry where training uptake is claimed to be the lowest in the UK, the future of its healthcare sector could see qualified nurses in the driver's seat. As the healthcare industry evolves, so will its logistics counterparts in an effort to offer the best solution to meet their needs and the needs of their patients. ●

PHYSICIAN, HEAL THYSELF

Rachel Williams looks at how pharmaceutical logistics could help the planet, not just its people.

The whole concept of 'responsibility' is inextricably linked to the day-to-day running of a pharmaceuticals business. There are few sectors that can have so positive an impact on society as pharmaceuticals; but, at the same time, global climate change, depletion of resources and population growth are changing the definition of responsibility. Major pharmaceutical manufacturers are therefore introducing initiatives designed to minimize the impact of their activities on the environment by participating in emission trading schemes, using energy from renewable sources, improving material efficiency and reducing waste.

Another area in which this is being achieved is in the re-engineering of their supply chains. Pharmaceutical manufacturers are increasingly outsourcing the management of these supply chains to strategic partners with the expertise and resources to deliver these improvements. In some cases, however, the means by which these efficiencies can be achieved — whilst well proven in other sectors — represent a major leap of faith by pharmaceutical manufacturers. Linking the supply chain

at a physical level, emissions from transport have an impact on climate change, acidification and photochemical smog. For example, one NYK customer's products travelled a total of 227 million kilometres in 2006 — 81% by airfreight, resulting in 87 million kg of CO_2, whereas ocean and road transport accounted for an additional 11 million kg of CO_2.

Working with logistics service providers (LSPs) such as NYK, pharmaceutical manufacturers are exploring and exploiting a variety of ways to reduce CO_2 emissions from their transport operations, and many pharmaceutical manufacturers already include environmental criteria in selecting transport providers; at AstraZeneca, for example, priority is given to companies who have formal EHS policies, modern vehicles with efficient engines and drivers trained in eco- and safety driving. In addition to vehicle emissions, the pharmaceutical supply chain places an additional burden on the environment through the extensive use of refrigeration equipment to maintain product integrity in transit. Companies such as NYK also take this into consideration and are committed to the introduction of new fridge engines that run on liquid CO_2 instead of diesel, eliminating all harmful refrigerant emissions and making 95% less noise than traditional units. The use of dual temperature trailers is also enabling products with different temperature ranges to be combined on the same vehicle, thereby improving load fill factors.

Going Beyond Green

Whereas green technologies are contributing to improved environmental performance, more impressive improvements relate to initiatives designed to reduce the number of miles and vehicle movements involved in getting product from A to B, and delivering the flexibility and reliability required to enable the most environmentally friendly modes of transport to be used.

Despite all supplying the same European distribution network, manufacturers' individual plants have historically been responsible for making their own transport arrangements. This has typically meant relatively small loads from individual

factories being delivered to market warehouses — and vehicles returning empty to their place of origin. In many cases, because of the small volumes involved, this has also meant suboptimal delivery frequencies, with each plant delivering only once a fortnight or even once a month into smaller market warehouses. Ironically, the result of this is the excessive use of air freight to meet the needs of smaller or emerging markets.

Working with logistics service providers such as NYK, however, manufacturers are increasingly adopting more centralized management and planning systems to enable synergies to be identified at a pan-

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European level, and using strategically located hubs to enable outbound volumes from multiple locations to be consolidated prior to onward distribution. This approach, with a "central control tower" combined with a dedicated contract team gives the customer the benefits of a single point of contact, a consistent approach and good communication. From an operational perspective, vehicle utilization, cost and environmental benefits can be optimized. The manufacturing sites provide advanced notice of orders using standard planning templates to achieve visibility. Information from sites can be provided well in advance, allowing the planning team to

The logical next step in this process is in the consolidation of inbound volumes from suppliers of packaging, components and raw materials.

- analyse traffic flows and shipment volumes
- optimize and consolidate loads (both on collection and delivery) on the basis of route geography
- generate round trips
- build milk runs
- measure preplan against actual performance
- produce consolidated management reports.

Increased volumes facilitate additional benefits; although, in some cases, the ability to take advantage of these relies on changes in how product is packaged or presented. For example, NYK has worked closely with its customers to achieve reduced pallet heights to allow the use of double-decker trailers and to introduce protective packaging to enable pallets to be double-stacked — both measures effectively allowing two vehicle movements to be replaced by one.

In addition to substantially improved vehicle utilization, another major benefit of consolidating product is in enabling delivery frequency to be increased, service levels to be improved and the use of costly (and environmentally unfriendly) air freight to be significantly reduced. But now for that leap of faith, the sector is witnessing competing manufacturers beginning to talk to each other about opportunities to co-load their products on an identical basis, delivering exactly the same benefits but on a much larger scale. With synergies in the locations of their manufacturing sites and market warehouses, the benefits of sharing are compelling; however, whereas the principles and benefits of pan-European multi-user networks are well-established in sectors such as automotive, the heavily regulated and highly competitive pharmaceutical sector has resisted such collaboration for fear of compromising either product

integrity or competitive advantage. But with an established pharmaceutical network, specialist expertise in the handling and tracking of pharmaceutical products and a track record of managing complex multi-user operations on a pan-European basis, NYK is breaking new ground in this area, offering existing and prospective customers in the pharmaceutical sector massive economies of scale and associated environmental benefits.

The logical next step in this process is in the consolidation of inbound volumes from suppliers of packaging, components and raw materials. In addition to the movement of bulk loads into and out of their manufacturing plants to market warehouses, manufacturers are also targeting improvements in the 'final 50 yards' of the supply chain. For example, in NYK Logistics' healthcare home delivery operation, the replacement of 7.5 tonne vehicles with 6.5 tonne vans has resulted

in fuel savings of 306,000 litres (21%) per annum and an 820,080 kg reduction in carbon dioxide emissions. But, again, given the synergies in their secondary distribution profiles, migrating to shared solutions to serve their end customer will net the manufacturers the biggest prize. Whilst this level of collaboration between competing manufacturers is still in its infancy, manufacturers are already seeing the benefits of treating their LSP as a partner and not just a supplier. ●

Manufacturer Case Study

Working closely with NYK, a major pharmaceutical manufacturer embarked on a project with the objective of taking significant cost out of its European supply chain, whilst delivering improved service and environmental benefits. The scope of the project was the manufacturer's Central and Eastern European (CEE) and Nordic distribution network. Within CEE, the distribution network was highly complex, with little consolidation of freight, and there was a similar issue in the Nordic regions.

In addition, the monthly road shipment patterns between many sites and markets meant little flexibility of supply. This had led to a disproportionate amount of costly air freight to deliver product to markets and very poor vehicle utilization. With the manufacturer's sales in CEE continuing to grow at more than 10% per annum, freight expenditure would have continued to grow if no change were made to the supply chain. At the outset of the project, the CEE markets were receiving 10–15 shipments per month from the various manufacturing sites.

At this time, the sites were supplying individual markets with no consolidation of goods and no communication between supply sites. There was little co-ordination of distribution, leading to multiple vehicle movements when only partially full. There was no flexibility for distributing product, owing to monthly interval shipments. There was also significant expenditure on air freight — both as a day-to-day solution to small volumes and also because of emergency shipments caused by the inflexibility of the monthly road shipments.

The supply chain re-engineering project focused on enabling significant consolidation by transporting product to CEE and Nordic markets via a new cross-docking facility. The benefits of the project exceeded expectations, with the following results:

Road Freight
Miles: 738,000 km less handled by road in Year 1 (19.1% reduction).
Emissions: Reduction of 690 tonnes of CO_2 emissions in Year 1.

Air Freight
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MARKET BARRIERS AND SUPPLY CHAIN MANAGEMENT

Dr Jan Hofmeyr looks at the extent to which market barriers interfere with what people want to use or buy, and how barriers can be measured in a way that helps to improve supply chain management.

A market barrier is anything that prevents a person from using the product, service or brand that they want. Put another way, market barriers are non-psychological factors that shift purchasing away from desired products/services/brands towards default options. If 'what people want' in a market defines the natural demand for an offer, then market barriers are factors that distort natural demand.

The most common type of barrier is lack of access. As examples, consider poor in-store management, which makes a brand hard to find, poor supply chain management, which means that it's poorly distributed, or retailers delisting it. But problems of access apply equally to other product categories; for example, in retailing or banking, poor branch networks create problems of access, as does the failure to use channels such as the Internet.

Our research has identified seven main kinds of barrier, of which the three most important are accessibility, affordability and wrong product mix. Others include

- contracts: that is, a person cannot use what they want because they're locked into something else by a contract
- purchaser: that is, someone else — whether in B2B or B2C — is in charge of the purchasing decision
- legacy systems: that is, what gets bought or used is determined by what's already being used … and so on.

So what are the impacts of market barriers? How much share is the typical product, service or brand losing? And can supply chain managers use this kind of information to achieve a better match between what gets offered and what end-users want? For the past 18 months, Synovate has been systematically collecting information on customers' perceptions of market barriers in multiple countries and product categories. Our database is based on more than 4,000,000 observations. Let's see what we're finding.

Across some 50 countries and product categories, the three most reported barrier effects are accessibility — responsible for 36% of all deflected market share; affordability — responsible for another 20%; and product mix — responsible for 13%. These three account for 69% of all deflected share (or 'market distortions,' if you will). 'Promotional activity by competitors' accounts for a further 6%; and contractual situations, 3%. This may not be exactly what's happening in the markets, but it's what people perceive to be happening.

When it comes to accessibility, the nature of the problem depends on the product category. So, for instance, quick service restaurants, retailers and financial institutions mainly face problems of location; that is, 'doesn't have a branch/store near me,' and also limited channel capacity — for example, not enough ATM machines. With frequently bought goods, what people report is mostly one of two things: 'It's not stocked where I shop,' or 'I often have difficulty finding it in store.'

Affordability As a Barrier

'Product mix' refers to any situation when people have a preference for a product, service or brand, but don't believe that it's

Dr Jan Hofmeyr

offered in the particular form they need. So, for example, in packaged goods people will say: "It doesn't come in the variants I need," or "It isn't available in the right pack sizes or type." etc. Mismanaging the product mix applies to services as well.

Finally, a word about 'promotions.' What I mean by 'promotion' is a situation whereby someone says that they're deflected from their preferred brands by the fact that other brands are on promotion. When I began this research, I didn't think of promotional activity as a proper barrier. But people kept mentioning it as something they encounter — in the same breath as other more obvious

barriers. In other words, people seem to think of promotional activity as a kind of coercive situation. And in that sense, it's similar to the way that other market barriers deflect spending away from preferred brands.

Categories and Brand Shares

Two factors above all play a role in determining the nature of the impact of market barriers. The first is product category — different barriers impact differently in different product categories; and the second is market share — the net effect of market barriers on smaller market share products/services/brands is almost

If your brand has a market share of less than about 16%, then you can expect to be losing potential market share because of barriers.

always negative, whereas it can be positive once a product/service/brand reaches sufficient market share. The reason for this is that the bigger a brand's market share, the more likely it is that it will serve as the default for smaller preferred brands.

Across Categories

Let's look first at variations across product categories: for retailers, 56% of lost sales are due to problems of access and 18% are due to the failure to match the product mix with what people want. Price only accounts for 12% of lost sales. This is in line with what we'd expect — except that no one's been able to put numbers to it until now.

When it comes to financial institutions, access counts for less lost share than in retailing, only 40%. What counts for more are pricing/promotions (20%); and the product mix (19%). Although small, contract issues (such as "I have a contract with X and that's why I can't switch") are twice the problem in financial services — 6% — as in other categories.

Finally, packaged goods: this category suffers less than average from problems of access (35%); and more than average from product mix issues (20%). Both are key indicators of marketing health. The first is a measure of how effective the manufacturing and retailing sector is at getting the right

brands into the right channels. The second is a measure of the ability of both retailers and manufacturers to match the SKUs that consumer want, with what's offered. Our database shows that these two measures are among the best differentiators of really good marketing from bad. The better the marketer, the lower the barrier. The worse — the higher. They are also good indicators of lost opportunity — when they show how a brand may be losing market share that could be gained if it got the marketing mix right.

Market Share

One of the most important results to emerge from our database is the relationship between brand market share and the net effect of barriers. Small brands almost always lose market share as a result of barriers, whereas big brands can actually gain — because, in the case of big brands, they become the default choice when people can't buy the small brand they want. Of course, it is possible for small brand marketers to buck the trend through really superior marketing; that is, by understanding how to optimize their brand offers through each channel. But broadly speaking, small brands are hurt and big brands gain.

Given the size of our database, we're now able to identify how big a brand needs to be before it will experience net benefits from

market barriers. The number turns out to be about 16%. In other words, if your brand has a market share of less than about 16%, then you can expect to be losing potential market share due to barriers. By contrast, once you get your share to about 16%, you start to pick up default business from people who would prefer to buy another brand, but can't. What this also means is that most brands with market shares above 16% or so have net hostages as customers.

What About Europe?

In what ways is Europe the same as or different from the rest of the world? Let's look specifically at retailing.

Across the world, the top three barriers in retailing — in other words, the three types of barrier that have the biggest effect on getting people to shop at their non-preferred outlets — are accessibility (mostly location) (55%); product mix (not matching stock to consumer wants) — 18%; and pricing (mostly affordability) — 12%. Our figures for Europe are significantly different. Lack of access accounts for only 38% of all deflected share. By contrast, issues with the product mix (perceived stock mismatches) account for 22% — quite a bit higher than the global average of 18%. Briefly, people have fewer problems getting to the stores they want to in Europe, but more problems finding exactly the brands they want in store.

The more familiar we become with how barriers work in markets, the more we recognize that 'barriers' in marketing are a bit like friction in physics — they're a fact of life. One must therefore use these data carefully when evaluating their potential to improve marketing strategy. Having said that, however, our database provides supply chain managers and their clients with a unique starting point for evaluating the efficiency with which the supply chain is delivering on consumer or customer wants. ●

THE VOICE OF EFFICIENCY

Per Nordling looks at the opportunities for voice control in the retail supply chain, and examines how Albert Heijn has implemented a CDC voice technology and automated warehousing system from Egemin-WDS.

Technology for the retail distribution market continues to grow and develop, often faster than many companies can keep up with. However, to take advantage of new technology that offers fast and clear benefits requires a solid, reliable and powerful foundation of supply chain management solutions.

Retail consumers have more power than ever as they exercise their ability to choose between retailers who stock exactly what they want, when they want it, at the price and service level they demand. Retail distribution companies therefore need Supply Chain Execution, WMS and logistics software with the functionality to handle product and profile demand, quickly adapt to market requirements, support promotions, churns and seasons with planned and dynamic sourcing and distribution responses, across the entire supply chain network.

In grocery environments this relates to floor-ready packs, store-friendly picking, sequence loading, packing for easy store, aisle, gondola or shelf replenishment by category, product families or store departments, thereby ensuring products are on display, not held up at the back door awaiting staff who should be helping customers or in a stock room awaiting unpacking or checking. On-shelf availability is a key retail performance factor, so any potential delay between in-store and on-shelf has to be addressed in the DC processes and operations. This focus on the better understanding of consumer demand, product availability, and replenishment enables a customer-driven ethos towards automated real-time store and customer ordering, fair and prioritized allocations and multiple picking and consolidation options for more frequent, smaller deliveries of a larger range of items.

This concept is also valid for specialty retailing including pharmaceutical, general merchandise, specialty vendors and fashion operations. However, not all shoe ranges or HDTV sets can or should be in every showroom. Multiple sales channels therefore need to be available and supported at the same sites by the same software. The DC can therefore be simultaneously handling predistributed flows for store season setups, promotional campaign allocations, replenishment orders for standard assortments and POS demand triggered re-ordering as well as direct customer orders via store or e-tailing orders for direct deliveries to end customers.

The goals for retailers' investment in logistics software is to support the business as a whole by improving on-shelf availability, increasing service fulfilment levels without recourse to increasing inventory levels, flawless single complete delivery execution of orders to both store and direct to customer and to achieve this at the lowest cost to serve. This will also involve the co-ordination of multiple supply sourcing and distribution channels, from suppliers, networks, integrated couriers, yard operations and transport planning. The execution engine must cope with higher transaction volumes, faster order to dispatch processing and ever-increasing requirements on post-picking services, reliability and stability to just run, run and run.

Retail distribution systems also need to cope simultaneously with multiple sites of different sizes, running different processes with specific roles within the distribution strategy, including National/Central Distribution Centres, Regional Distribution Centres, Stockless Cross Docking Sites, Import Yards and even some direct supply functions. Network visibility, KPI monitoring and alerting tools all need to be provided to facilitate the interdependent operations of these networks.

At site level, solutions should incorporate inbound, internal and outbound synchronization (Appointment Diaries), optimized activity performance (LMS), best use of space and product positioning (slotting) and support for suppliers and transport contractors via web-based collaborative information and services (Remote ASN/label generation).

The core WMS extends to have the best practice capabilities for receiving, cross-docking, support multiple picking processes, task management and inter-leaving,

Automated Picking

Beyond what CDC is doing at Albert Heijn, one of the regional DCs — that at Pijnacker — has been selected for complete picking automation. Albert Heijn "wants to be the best every day," according to Ronald McMurray, facilities manager at the regional Distribution Centre in Pijnacker. "Our aim is to see whether we can get to every possible customer, from the lowest level right up to the biggest spenders."

McMurray says: "From around 2003 we were aware that we wanted in particular to increase the flexibility of our order size. We needed to be able to deal with ten cases today, and a hundred tomorrow. If we could find a system that did this, we would be better placed for future growth. Additionally, we would be less dependent on the tight labour market; we could, at the same time, improve working conditions for our staff (which itself helps the labour market problem), we could improve the quality and performance of our order picking." Reducing costs would be nice but, McMurray says, it was not the major driver.

From the start of the project, Albert Heijn was convinced that a mechanized and automated environment was the future, and the project team started from there. "Four or five potential suppliers were involved in creating the installation as it is now, exploring whether they could create the sort of installation we needed. Some parts of what we wanted were already on the market, but other aspects, we realized, would have to be newly developed by a supplier. Albert Heijn acted as system integrator, and we with our contactor would have to 'glue' these pieces together. Additionally, although we fortunately had some spare space, we would need to keep the DC operating while we were putting the new system in." The favoured contractor emerged as Egemin Automation, a renowned Belgian WDS systems supplier.

The automation was required to receive full pallets from suppliers, depalletize, store and offer picking/collection and transport to packing stations. That sounds straightforward, even standard, but as every good vendor knows, every site and operation has its own quirks and challenges. As it turns out, says McMurray, the installation took around 6 months and there were, inevitably, teething problems. (Interestingly, more on the hardware than the software side, and NOT, he emphasizes, on the scale of Heathrow Terminal 5!)

So what did Albert Heijn get for its investment? They got a state-of-the-art order picking system that Egemin calls the 'Triple O' (Dutch for Ordergrootte Onanfhankelijke Orderpicker, or 'Ordersize Independent Order Picker' in English). The warehouse control system has been developed together with Egemin to cope with both the growing distribution net and the increasing number of line items in the net, and especially to handle the order picking of fast moving goods. At the DC at Pijnacker, the system is handling over 30% of Albert Heijn's dry grocery total flow, with a service level of 99.7%, which Egemin justly claims to be exceptionally high.

Physically, the solution includes a number of 'modules,' reflecting the differing characteristics of products handled. There is an Automatic Pallet Warehouse module for the bulk storage of products; an Automatic Depalletizer module, to unload pallet layers to buffer and pick locations; an Automatic Order Release module that serves a seven-deck product buffer store, each of which can release product via conveyors at individual package level in a given sequence; an Automatic Sorting module that identifies these individual packages and forwards them in the correct sequence to one of eight destination conveyors; and a Roller Cage module that allows loading bay operators to stack the sorted and sequenced packages onto roller cages or pallets.

"This was a big challenge for us; it was the first time that Albert Heijn had really got into advanced technology, but the combined effort of the vendors and our internal project team always found solutions."

As to benefits, Albert Heijn is reluctant to quantify the figures, but the productivity of the DC is certainly much higher, as is the flexibility and the ability to cope with dramatically fluctuating volumes. Egemin claims that conventional order picking in the retail industry is around 150 packages per hour, and the new system gives Albert Heijn an average output of 2600 per hour. Overall, productivity should increase by 150–-2050%.

Of course, the physical aspects are backed by Egemin's Warehouse Management System, which takes total control of stock operations, replenishment requirements and priorities, based on real available stock in the specific flow rack lanes, all judged against order quantities, transport and depalletizing timescales … and other constraints.

There is, McMurray suggests, a return on investment in cost terms, but that wasn't the main driver for the investment, and the company is still learning how to use the system to maximize profitability. For the moment, the Pijnacker installation is a one-off, but further automation is, as Albert Heijn sees it, very definitely the future, and the overall strategic plan for the company anticipates similar schemes being deployed in the rest of the distribution chain.

order, tote and delivery consolidation, synchronized load building, shipping and transportation planning, data capture, dashboard reporting, housekeeping and documentation production, as well as being "system ready" to incorporate

Per Nordling

relevant new technologies and painless interfacing with hosts, legacy or third party applications. One such example which is already proving its worth is Pick-to-Voice.

Pick-to-Voice

Although traditional order picking solutions such as label picking, RF scanning and pick-to-light/pick to belt have been successful in relevant facilities, voice-directed technology has already illustrated its ability to improve most types of operation and to reduce supply chain costs, not only in terms of productivity and accelerating processes but by improvements in picking accuracy and reducing the time needed to train and get new recruits or temporary resources up to speed.

Pick-to-Voice solutions can provide direct, two-way communication with a facility's management system. This enables real-time hands free communication (and eyes free to enable users to concentrate on what they are picking/where they are going), regardless of native language, background noise or cold temperatures. •

Pleasurable Shopping

Albert Heijn in the Netherlands is a major food retailer with over 750 stores in several store formats. Albert Heijn strives to offer a shopping experience by providing quality, choice, value and inspiration. The company has a tradition of being a customer-centric organization and always prioritizes its service to customers. This means Albert Heijn strives to make the shopping experience pleasurable, simple and one in which customer wishes are always met as completely as possible.

The cost of providing customers with such an experience each and every time they shop at any of the Albert Heijn stores is considerable and difficult to achieve. Albert Heijn's analysis of consumer habits has shown that there is always an unpredictable element in customers' buying actions. Although planning provides for the replenishment of stocks in bulk, the problem of timely shelf replenishment still persists. Only responding to actual demand can provide 100% correct store replenishment. However, the company seeks not only to automate processes but to also make them intelligent.

Streamlined Logistics

To minimize costs as much as possible, Albert Heijn has launched a major initiative to streamline the logistics behind their retail stores. The old IT infrastructure simply couldn't fulfil these demands. It was batch-oriented, needed too much paper, was only 100% functional for the standard store format and was insufficiently modular in architecture to support new logistics variations and routes. To meet its requirements, Albert Heijn needed a real-time, flow-oriented, flexible system.

In the Netherlands, the company's six distribution centres annually handle 400 million order lines that lead to the delivery of 500 million cases. Every minute, a truck leaves one of the six centres to provide products to the different store formats of Albert Heijn. These formats include stores in big cities, where clients show very impulsive buying behaviour that depends on a number of conditions, such as the weather. There are also standard stores that sell a range of goods, such as fresh products with very short lifecycles; cheese has high stock volumes and a high turnover whereas CDs have a low but unpredictable turnover.

To support the core philosophy of a supply chain based on quick response and speed, Albert Heijn has implemented the Extended Warehouse Management solution from CDC Supply Chain. This solution delivers the capabilities needed to manage multichannel order fulfilment and an execution engine that has enabled Albert Heijn to manifest and improve its market leading efficiency and high-quality production, and flexibility to support the introductions of new store formats and product assortments.

The warehouse management system has demonstrated the positive effects of a full paperless logistic operation in Albert Heijn's high volume order environment. The system has helped to improve productivity within the warehouse by 2–3% from a market leading position in daily grocery logistics. In addition, the system has delivered the flexibility to deal effectively and consistently with all orders — from the very small to the very large. As a result of the improved speed, Albert Heijn can divide extremely fresh and fast moving products, such as sushi, in their distribution centres. The average stock holding for fresh goods is now less than two days with a delivery rate in excess of 99%.

The successful implementation of the CDC Supply Chain software has generated a fourfold increase of packages moved per week from 100,000 to 400,000. Further benefits include greater consistency with fewer stock outages, minimal back-office stocking, 10% extra selling space, much greater efficiency in the system and much reduced time and effort when negotiating with suppliers.

Albert Heijn's distribution network has two national distribution centres in Geldermalsen and Nieuwegein that supply four regional distribution centres. These regional sites replenish Albert Heijn's 750 stores at least twice a day and follow a fixed delivery schedule. Also, with the real-time control of the operation the CDC Supply Chain solution provides, the time between ordering and delivery is not more than 18 hours at most.

Albert Heijn is forging a platform for an intelligent Common European Logistics Solution (CELS) to deliver cost efficiencies and increased product availability at the store shelf. The partnership between Albert Heijn and CDC Supply Chain initially includes the implementation of CDC Supply Chain's Extended Warehouse Management in the six warehouses.

Pick-to-Voice in All Warehouses

After the CDC Supply Chain solution was implemented, Albert Heijn also implemented voice picking in all its regional warehouses and is in the process of implementing it in the national warehouses. The voice recognition software and headsets have come from Voxware, with terminals from Motorola connected to the standard version of the warehouse management system.

By implementing pick-to-voice, further improvements in the warehouses were achieved. Employees are excited about the new way of working, because it allows both hands to be available for order picking, which leads to more efficiency, faster picking and greater safety in the warehouse. As well as Dutch, Polish dialogue is also available and the employee chooses his or her own language to work with. All messages from the WMS are translated into Polish and Dutch so that whenever they are offered to the speech-module, it is translated into the language the employee understands. This helps to resolve any problems much more quickly and efficiently. In a period of three months, Albert Heijn has trained more than 5000 employees to switch from RF-pick to pick-by-voice, making it one of Europe's largest pick-to-voice solutions. This is only possible thanks to the solid foundations provided by the supply chain execution software solution from CDC Supply Chain.

AUTO ID PARADIGM SHIFTS FROM INTERNET OF THINGS TO THE UNIQUE IDENTIFICATION OF INDIVIDUAL DECISIONS IN SYSTEM OF SYSTEMS

Return on investment from radio frequency based tools of identification may increase with the diffusion of ultrawideband (UWB) and software-defined radio (SDR) as RFID readers. But the improvement of decision support demands the unique identification of information between system of systems to benefit from systems interoperability.

Nature's gift of the radio spectrum has been subjected by humans in government and industry to dissection and control, which has resulted in a globally fractured state of communication when using such frequencies. Redundant investments are necessary to move between "restricted" frequencies and the process has turned into a sham, with spectrum auctions being pioneered by several affluent nations for commercial purposes. Regulating the use of the radio spectrum has distinct advantages (defence, emergency, medicine) but the current commercial quagmire may overshadow the benefits.

During WWII, the discovery of RADAR unleashed the potential to use radio frequencies to identify objects. Almost half a century later, in 1987, Norway pioneered the first public use of radio frequency identification (RFID) in the form of RFID tags attached to automobiles that drove through toll collection points fitted with readers. The event triggered automated toll collection through a pre-agreed financial transaction. The RFID tag operated at a fixed frequency and the frequency used was (and is) irrelevant to the function of the static ID system. But, globalization has stimulated the movement of objects across diverse geographies. It is now imperative that we focus special attention on determining the "state of supply and demand" of goods. Calls for the global visibility of goods movement require automatic identification of the vast number (trillions) of objects moving around the globe. This necessity may be answered in part by harnessing the Internet to catalyse the rebirth of the use of RFID. Thus, Internet-based object identification was reborn at the hands of the Auto ID Center at MIT in 1999.

Opportunity: Potential to Eliminate Frequency Heterogeneity

The surge in the popularity of RFID ignored the limiting fact that most RFID tags operate at a fixed frequency and readers must also operate at the same fixed frequencies. Add to this mix the different spectrum usage specific to geographies — plus preferences for standards for data capture such as EPC (electronic product code) — and what emerges is an interoperability nightmare from a multitude of tags, readers, investment in multiple infrastructures and the conflicting complexity of multiple "standards" in a plethora of proprietary systems.

The problems with automatic identification should not suggest that it has lost its appeal.

Auto ID and the concomitant location of objects are important data elements, whose value is growing exponentially in business supply chains, and are even more critical for the security of global trade — in multinational logistics operations when goods are transported between Asia and Europe on the Trans-Siberian Railroad, for example. In such systems, fixed frequency RFID tools may be a hindrance to operations and are liable to create gaps in (data) transparency owing to a lack of systems interoperability. This article highlights technologies that may eliminate frequency heterogeneity for some applications. However, this is not a panacea that calls for discontinuing the use of fixed frequency standards.

Frequency Agnostic Technologies: Ultrawideband (UWB) and Software Defined Radio (SDR)

In use since 1962, UWB is essentially RFID but it can communicate over a broad (hence, ultrawide) spectrum (band) rather than the fixed ranges that are common in typical RFID.[1] The physics of transmission is different and enables UWB to use short (picosecond) bursts of frequency across the broad spectrum (making it difficult to decode). This is a frequency agnostic tag that is currently used in several operations

30 60 90 120 150

as an active tag (battery) but holds the potential to be transformed into a passive format.

Invented in 1991, SDR is essentially a radio that can operate (receive and transmit) over a broad spectrum (think, car radio).[2] Hence, it can interrogate tags and receive signals from UWB tags. The incoming frequency is selected using the software embedded in these devices (hence, software defined radio), thus it is immune to frequency heterogeneity and functions in a manner that is frequency agnostic. The combination of frequency agnostic UWB tags and SDR readers may increase the diffusion of auto ID tools and enhance systemic implementation, globally.

Standards are Not a Standard Solution

Based on the current thinking that track and trace technologies must identify objects, it is necessary to capture the ID of objects in some alphanumeric format. Thus, current tools are drowning in a multiplicity of so-called standards. Problems encountered because of globalization result from the unlimited movement of objects (inanimate and animate things such as humans) in domains wherein the standards are not useful, practiced, accepted, adopted, implemented or enforced. Often, systems cannot communicate because of a lack of interoperability. Thus, we have an embarrassment of riches regarding data, but exist in a state of abject poverty concerning information, owing to a lack of interoperability in this systems age. The latter has, erroneously, promoted even more calls for standards … and even larger consortiums are being formed to muscle in global adoption (acceptance). The success of this approach is open to question, judging by the failure of

Wal*Mart-esque efforts to usher in the global visibility that auto ID was touted to deliver.

The lesson learnt from the introduction of the electric dynamo is being ignored by the current drive to pursue quick fixes, including the pursuit of one elusive standard.[3] Gobal leverage should be used to promote interoperability between select, partially adopted standards in a way that systems can interface seamlessly through translational mechanisms (drawing obvious analogies from human language). This approach is standards agnostic but could remain multistandard compliant. Sensors and RF technologies are enabling tools that detect, monitor or identify — but may not add real value unless the process or system generates decisionable information.

Ultrawideband (UWB)

Most RFID types (125 KHz, 13.56 MHz, 433 MHz, 868–915 MHz) possess a spatial capacity of 1 kbpspm^2 (kilobits per second per metre squared).[4] Spatial capacity focuses not only on bit rates for data transfer but also on the bit rates available in confined spaces (grocery stores) defined by short transmission ranges. Measured in bits per second per square metre, spatial capacity is a gauge of "data intensity" that is analogous to lumens per square metre (that determines the illumination intensity of a light source). The growing demand for greater wireless data capacity and the crowding of regulated radio frequencies (approved ISM spectra) will increasingly favour systems (spectra) that offer appreciable bit rates and will function despite noise, multipath interference and corruption when concentrated into smaller physical areas (stores, warehouses). Will spatial capacity limitations clog the 'interrogation' system when item level tagging becomes a

reality? Some are exploring BlueTooth — with a spatial capacity of 30 kbpspm^2 — while asset management may use 802.11a protocol (5.15–5.35 GHz) with a spatial capacity of 55 kbpspm^2 (for example, spare metal parts in airline repair shops, such as Lufthansa Technik).

Quite a few companies have been exploring ultrawideband since its appearance on the scene in 1962. UWB spans several gigahertz of spectrum at very low power levels, below the noise floor of existing signalling environments. The spatial capacity of UWB is 1000 kbpspm^2 or 1000-fold more than 802.11b (WiFi). Conventional narrowband technology (802.11b, BlueTooth, 802.11a) relies on a base "carrier" wave that is modulated to embody a coded bit stream. Carrier waves are modified to incorporate digital data through amplitude, frequency or phase modulation. These mechanisms are, therefore, susceptible to interference and the coded bit stream (for example, electronic product code or EPC) could be decoded or intercepted, posing data security issues. UWB wireless technology uses no underlying carrier wave but modulates individual pulses either as bipolar or amplitude or pulse-position modulation (sends identical pulses but alters the transmission timing). UWB offers a pulse time of 300 picoseconds and covers a broad bandwidth, extending to several gigahertz.

UWB operates in picosecond bursts; hence, its power requirements are drastically lower (200 mW) when compared with 802.11b (500 mW) or 802.11a (2000 mW). The data rate for UWB (0.1–1.0 gbps^2) is staggering when compared with 802.11b (0.006 gbps^2). Sony and Intel, among others, are leading the research into the wireless transmission of data, video, networked games, toys and appliances.

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Today, we have robotic vacuum cleaners that clean the living room without ever touching the sofa and lawn mowers that tend the manicured garden without ever grazing the rose bush. The universal appeal of UWB is latent in its capability to offer a global standard. Without FCC-like country specific restrictions, an old technology like UWB still remains virgin for many possible applications and may be the only global wireless communication medium that may claim, someday, to be a truly global standard.

After 9/11, UWB transmitters (like RFID readers) were mounted on robots and used in search missions at the World Trade Center — because UWB is less hindered by metal (Coke cans or turbine spare parts) or concrete (buildings and warehouses). On 14 February 2002, the FCC gave qualified approval to use UWB in the range >960 MHz, 3.1–10.6 GHz and 22–29 GHz.[5] Limiting power also limits UWB efficacy and spectrum.

UWB-RFID active transponders are not cost-prohibitive, whereas transmitters are cheaper than 802.11b RFID readers because they do not need many analog components to fix, send and receive specific frequencies. The combination of UWB and narrowband technology to produce a passive UWB transponder may be a reality by combining UWB communication with a narrowband RFID tag.[6] Combining a narrowband receiver and a wideband transmitter in the tag optimizes the collection of RF energy on the receive channel, combined with the ultra-low power on the transmit channel. At the MAC layer, optimized conflict resolution algorithms allow multiple tags to communicate efficiently and effectively with the reader. Because of this algorithm, the channel is used efficiently by taking advantage of the principle of orthogonal frequency division multiplexing (OFDM). This results in an increased effective bandwidth that allows more tags to communicate with the reader. The similar use of OFDM to enhance fixed frequency RFID readers may be useful, too. Thus, utilization of narrowband downlink and wideband uplink communication enables wholly (passive) or partially battery-less tag designs to be manufactured at low cost.

Owing to the very broad frequency content of the transmitted UWB impulse, it is extremely resilient to path fading and enables readers to
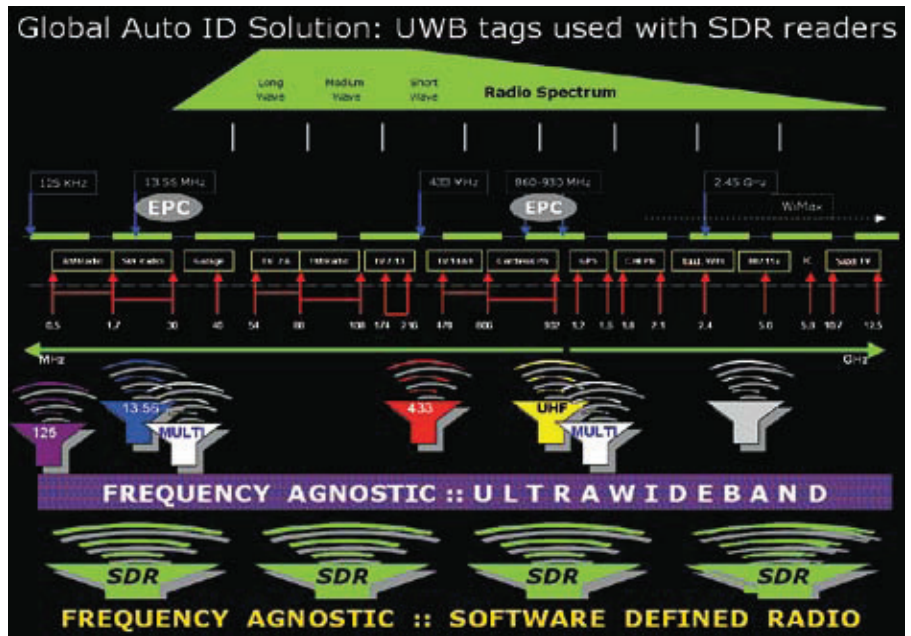
Global Auto ID Solution: UWB tags used with SDR readers

"We have an embarrassment of riches regarding data, but exist in a state of abject poverty concerning information, owing to a lack of interoperability in this systems age."

determine the location of tags. Thus, not only can UWB tags identify, they can also locate (for example, the movement of objects in a warehouse as well as the storage organization). Unlike traditional passive RFID tags, passive UWB tags use their accumulated power to transmit UWB impulses to the reader. Tags are rewriteable and can be programmed to have 64, 96 or 128 bits.[7]

Despite the clear advantages of passive UWB RFID tags, in general, the dispute in the field stems from claims that UWB transmissions may interfere with the spectrum used by

cell phones and air traffic controllers. FCC is investigating, but it is poised to open up even more of the spectrum for commercial UWB applications. Without the burden of license fees for spectrum usage, the commercial floodgates for UWB usage may be unstoppable, much to the chagrin of the telecom industry. MSSI is charting new territories and PulseLink has shown that SDR readers work with UWB chips.

Software Defined Radio (SDR)

The current thinking about using "readers" that are specific to one or more RF modes may not be a sustainable approach for the infrastructure necessary for object identification to become pervasive. Heterodyne readers that can read MHF (13.56 MHz) and UHF (902–956 MHz) tags cost about $5000. Now, consider the commonly used frequencies, RFID versus UWB, passive versus active, multiple standards (EPC, GTAG) and regional regulations (RF spectrum, emitted radiated power); taken in combination, it spawns several types of transponders and, to read the tags, a variety of readers is necessary. Multifrequency tags and readers may not adequately address the problem or reduce infrastructure cost. According to the current model, businesses dealing with objects from global partners must possess an infrastructure (several types of readers) that is capable of reading a plethora of tags. Readers or tag interrogators, in
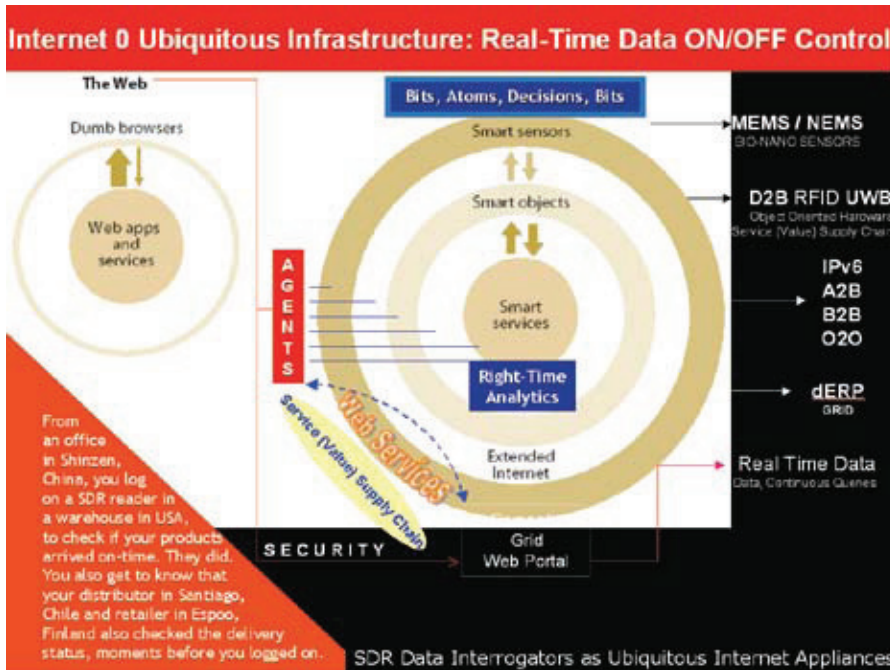
Figure 1: A ubiquitous systemic software infrastructure.

the future, must be as ubiquitous as a civil engineering infrastructure similar to electrical outlets, evolving to form the Internet of Devices (Interdev), with software as a part of the infrastructure that enables pervasive data acquisition as well as dissemination (transmission). Data and information sharing may be a reality if security enabled open source software is deployed as an infrastructure that responds to global interoperability. Control, security, updates and hardware improvements may be delivered via this ubiquitous systemic software infrastructure. It is this scenario that is outlined in Figure 1 where the reader in a warehouse is always 'on' but the ability to read certain objects (or not) is controlled through the software layer by the authorized user, and the authorizations allowed by the principal user. The 'views' of the contents of the warehouse is limited to objects that the user can 'read' by virtue of the preamble that must be exchanged and validated between the reader and tag (similar to the architecture embedded in EPC).

SDR is an at-hand solution that can deliver part of this ubiquitous infrastructure in a manner that will remain transponder hardware agnostic, with all modulations effected through the SDR operating systems (OS). This view, that of using SDR hardware (in some form) as ubiquitous RFID interrogators (in a refrigerator or in a warehouse), is the proposal based on the current understanding of software radio (SWR).[8] In 1991, the term "software defined radio" was coined to describe radio devices implemented in software and running on generic hardware. Because SDR is linked to global mobile telephony, an area of convergence between SWR infrastructure for real-time data and the delivery of real-time data as a service may evolve as a robust business for telecom providers.[9] A potential modus operandi using Internet protocol version six (IPv6) and a plausible revenue model is discussed in an earlier paper.[7]

Paradigm Shift: Identification of Information

The tools and technologies discussed above add significant costs to any operation. The justification for the investment necessary to connect bits to atoms has taken on a special significance in recent years, but it has been growing since the demise of the Cold War and continues to increase with the robust economic growth of the BRIC nations (Brazil, Russia, India, China). The Internet has facilitated the connectivity of the bits (data) that enables the creation of virtual maps of atoms (things). This 20th Century perspective of mapping the Physical World evolved in parallel with the ascent of the Information Age. The generation of raw data accelerated exponentially, partly because of the plethora of tools. Yet, productivity gains remain incremental. The necessity to identify objects began with the barcode in 1975 but soon created a surfeit of numbering systems, including the "e-barcode" or EPC (electronic product code).

As its name implies, EPC and other alphanumeric identification systems are associated with products; that is, finite objects or actual things. In the real world, raw data about an object or group of objects, in isolation, may not qualify as decisionable information or be less helpful for decision support systems or decision making processes aided by humans. Data about atoms (things) also include chemically synthesized moieties, such as small molecules designed by organic chemists for drug assays in pharmaceutical companies. However, standards such as EPC focus on products or objects — as the context of the barcode and EPC originates from the retail industry supply chain. Object data (atoms and products) must be combined with process (intangible in terms of atoms but bit-friendly) and logic must be applied to extract information, which may be subjected to further analysis.[10] Thus, data is not information. The Information Age, as appropriate as it may have been in the last century, may no longer be a useful description of the present era. Information, per se, is increasingly toothless.

For information to be of value, it must help the decision-making process, either through decision support systems or human-aided chaos. Useful or decisionable information may help transactions in business, healthcare or in a variety of other systems. Decisionable information in one domain, such as purchasing, may not be an end in itself. It may be necessary to couple that with other, equally valuable decisionable information, such as

manufacturing. Thus, if the systems are interoperable, when information is taken from both the purchasing and manufacturing systems, it may offer guidance for buyers to initiate a requisition for raw materials in the ordering system. It is evident that systems must be connected for valuable information to be useful in the transactional space of interoperable decision systems. This spells the end of the Information Age.

The Systems Age aptly describes the growing necessity to connect information from a variety of sub-systems that may be related by the function being executed to deliver value. The appreciation of the significance of related information and the system of systems [SOS] interoperability approach is a theme that is central to future innovation in identification from the perspective of creating intelligent decision systems.[11] The broad spectrum of applicability of this fundamental principle may be appreciated through the vision of relativistic information that is important to business operations, information services, healthcare, biomedical sciences and research, including the core disciplines that drive industrial growth.[7] Globalization has catapulted the Systems Age to where the monolithic enterprise resource planning (ERP) systems and silo approaches must adapt or die.

The identification of objects in any global operation or within a system of systems framework (for example, healthcare) offers limited functionality. Identification must rise to a higher plane to address the identity of information that includes identification, which may be similar. The information flows of tangible and intangible elements are equally crucial to aid decision support in hierarchies of synergistic systems. For example, two individuals who are both named Mary Smith may have identical blood glucose levels (120 mg/dL). The identification of Mary Smith may be uniquely achieved through a social security number (SSN), but how do you number 120, which is identical in both instances? The combination of SSN with 120 creates a unique identity that includes

identification about an object (human being) but also provides a higher plane of information when taken together with a non-physical or intangible piece of raw data.

The volume of data and the nature and volume of related data and information is vast. High volume data has distinct advantages but the resulting decisions may be distributed over several systems.[12] Interoperability between systems and success in local, as well as global, decision making, demands the management of information that is identifiable, yet remains platform agnostic and multistandards compliant.[13] The identification of information must address the need for the unique identification of decisions that may involve hierarchical layers of data, information and decision, each with its unique identification, in a local or geographically dispersed system of systems.

This paradigm shift offers the potential to create new products and services to drive future economic growth. The convergence of tools, technologies, concepts and disciplines necessary to transform this vision into reality demands the cross-pollination of global institutions to stimulate collective innovation, in addition to worldwide academic-industry partnerships and core research programmes with a critical mass of faculty and students capable of addressing the challenges that are known and the known unknowns, not to mention the unknown unknowns.

Temporary Conclusion

Globalization demands innovation in standards agnostic information identification because the identification of physical objects is insufficient for decision support. The myopic view of auto ID and numbering of objects is justifiable for an IT company if it must focus on the delivery of dividends for shareholders in the next quarter. But, the haste to reap the mythical mirage of "low hanging fruit" may be detrimental to the informed vision of sustainable future economic growth. Guiding the latter is the responsibility of academic foresight and academia as the purveyors of civilization. ●

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CALL THAT A PHONE?

Larry Klimczyk looks at trends in mobile communications for the supply chain.

Do you remember the time when all you did with a phone was call someone? It seems so passé. Even the most technophobic of us are texting our colleagues and families. Kids are playing games while listening to music. Tourists are taking pictures with their phones and immediately sharing their experiences with others. But it is not only in our personal lives that these technologies are becoming commonplace. With the advent of data access, while mobile, combined with current advances in hardware technology, we are experiencing an accelerated use of solutions in the world of supply chain management.

We have seen barcode scanners in retail outlets and warehouses for years. We all know that courier companies have been using mobile data technology for over a decade to create job manifests and capture data. Apart from simply

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capturing the time of an activity on an asset, though, how can mobile data solutions impact supply chains today … and what are the trends for the future? There are differing types of mobile data solutions in the supply chain — the first are vehicle asset based, the second being job and activity based.

Telematics solutions acquire data about the movements and activities associated with a vehicle. The data are gathered from an "on board black box" linked to the vehicle that transmits data back to a central location. It collects information about location, speed, fuel consumption, idle time, acceleration, braking, temperature control, etc. By gathering these data, the enterprise identifies opportunities for future improvements, such as reduction in fuel costs, reduced excessive wear on the vehicle and the identification of regular times when the vehicle is not used. These solutions are widely used in the supply chain to primarily reduce the cost of transport.

Job and activity based mobile data solutions are where the market is only in its infancy. When looking at the wider scope of "what are the activities that are being managed," instead of simply the vehicle, the convergence of technologies combined with advanced mobile data software delivers many opportunities to reduce costs, improve service and offer new solutions in supply chains. Today, a mobile data solution can despatch complete job information in real-time across an entire network. The flexibility of sending, receiving, changing and monitoring all collections/despatches across the network gives an advantage to controlling costs at a new level.

Communication

Traditional voice calls and paper data transfer were the key to most supply chain communication. Today, with the robustness of databases and the flexibility of a mobile data solution, there is rarely a true need for paper-based information. Everything should be in a database; hence, with a modern mobile data solution, information can be communicated to anyone, in real-time. This should annihilate the need for paper. No more paper manifests. Remove paper airway bills and consignments. Remove the need for continual data input and the mistakes that are inevitable when reading handwriting. A move from a paper-based solution to a mobile data solution in a typical logistics operation can remove £20 per job in administration costs. In addition, if communication is in writing — through your mobile data solution — instead of voice, costs continue to fall. Not simply the costs of communication, but the number of mistakes and misinterpretations also decline. Whereas there are a number of benefits of moving from voice to data, a modern mobile data solution takes advantage of the most recent technology that will integrate voice functionality into the solution. Thus, the need for an additional phone is eliminated, allowing the organization to manage only one asset, continuing to control costs.

Location

With our ever-increasing fuel costs and demand for immediate information, real-time location tracking is vital. Using GPS technology, there are benefits for the driver delivering goods,

the supply chain management company and the end recipient of the goods. By having in-vehicle GPS and mapping services, the driver can be assisted in gaining the most effective route for delivery. Several studies have shown that varying a delivery route using a satellite navigation system can reduce a journey time by 4%, saving time and money. The supply chain company obviously benefits by knowing where their drivers and vehicles are at all times through an enterprise mapping system. This allows them to effectively despatch or allocate jobs to the most appropriate person. Finally, the end customer can benefit by having a better understanding of when their goods will arrive. Today's mobile data solutions are automating messaging systems to the customer to pre-alert them with an estimated delivery time. These pre-alert messages can be set at certain trigger events, such as "send a message to the customer when their shipment is the next to be delivered," or at a time interval such as 30 minutes before delivery. This automated pre-alert, often an e-mail or text message, allows the customer to prepare their dock or receiving area for the inbound goods. Having real-time location solutions can reduce costs, improve service and enhance productivity.

Dynamic Deliveries

The days of paper manifests should only be found in history books. At the point of delivery, there should be the flexibility to immediately account for any variances to an order and, when stock is on the vehicle, immediately change the order. As an example, the receiver identifies that one carton is missing. The handheld mobile data solution allows for a delivery person to instantly remove the item from the confirmation list and have the data sent for processing. This allows for immediate, accurate invoicing (avoiding additional administration costs and speeding up payment). The fact that one carton is missing is also sent to the despatching area so the customer can receive the item on the next agreed delivery.

In a situation when there is stock on the vehicle, at the time of delivery, the customer might want to receive additional items. This is often the case with perishable and food deliveries; for example: "Add another carton of dairy products to my order." With an accurate, completely up-to-date manifest of what is on the vehicle, the delivery person can instantly identify whether they have the product and

then allocate it to the customer. Once again, this information is updated for invoicing and inventory control across the company, leading to more sales, lower administration costs and better inventory management.

Frequently, customers have the need to return items. The flexibility of a mobile data solution can handle this process. They can scan the item to ensure it is compatible with their stock. If the item appears to be damaged or modified, an image or picture of the item can be taken with the mobile device and stored with the job data, thus avoiding any uncertainty of the condition of the return in the future. Finally, as with all of these processes, the information can be instantly transmitted and incorporated with existing financial and inventory systems, thus keeping the organization up to date. The ability to handle returns efficiently at the same time as making deliveries reduces costs and improves customer satisfaction.

Packing and Containers

With costs being squeezed in every area and continually increasing legislative and environmental concerns, supply chain management is moving beyond tracking the goods to managing the packaging. To ensure that goods are delivered in perfect condition, but also to reduce packaging costs, many organizations are exploring investments in reusable totes, crates and cages. This minimizes the costs and environmental impact of disposable or recyclable packaging but, if not managed properly, can significantly increase costs. Mobile data solutions clearly assist in tracking the location of the reusable containers. When a container is delivered to a customer

they are not only signing for the goods, but also the container. If it is not collected or returned, an invoice for the cost of the container is generated, or as a minimum this is a cost associated with servicing this customer. Some of the world's largest supply chain postal carriers delivering mail and packages have saved £100,000s per year by tracking their reusable containers. Managing the location of containers in supply chains can reduce costs and provide efficiencies for the business.

With the lowering costs of rugged PDAs (Motorola and Intermec), improvements in wireless networks (Vodafone, T-Mobile, O$_2$) and the maturity of supply chain focused mobility software vendors (Blackbay), supply chains are continually lowering their costs, enhancing their efficiencies and offering new services. Once the investment is made, a mobile data platform provides a foundation that enables more accurate and timely information for continued business improvements. The day will come when instead of seeing manifests, clipboards of dockets, maps and other paper littered on the seats of a delivery vehicle, we will simply see a PDA on the dashboard … and yes, maybe an empty sandwich container or two. •
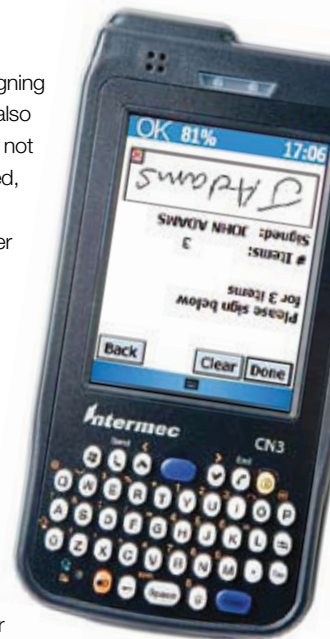
ON THE BRINK OF A MOBILE REVOLUTION

Supply Chain Europe sought the opinion of Julie Purves, Managing Director of B2M Solutions, about her thoughts on the increasing use of mobile technologies in the supply chain and the evolution of the mobile market in general.

Enterprise IT systems can deliver major benefits in terms of cost savings and customer satisfaction. "However, if an organization can extend its IT systems out to the whole mobile workforce to the point where they touch the customer, the potential benefits are phenomenal. These are set to outstrip those that have been achieved already in the IT revolution during the past 25 years," such is the assertion of Julie Purves, MD of B2M Solutions. So far, the expansion of mobile technology within the enterprise has been largely limited to traditional knowledge workers and the use of notebook computers and mobile phones. The mobile revolution that is poised to take off will meet the needs of a very different type of worker and extends beyond the traditional four walls to that of the Intra-Organization. The needs of these new users who work directly with the end customer — such as service engineers, delivery people and healthcare workers — vary dramatically to the white collar worker. If equipped with either paper-based or inadequate IT systems, these users can deliver substandard service levels and, therefore, unwittingly cause the organization to suffer from the costs of poor customer service.

The use of rugged mobile technology amongst these line-of-business workers is still at a relatively early phase of adoption. However, it is at this early phase in the market when the opportunities to get the most value from a mobile solution, that is designed to scale up to meet future requirements, are at their highest.

How Far Have We Come?

The market is moving fast. Organizations are adopting mobile initiatives in their fight to grow their customer base or even to retain existing customers. Those using mobile technology effectively have an opportunity to deliver differentiated and improved service levels, keeping them ahead of their rivals in highly competitive market conditions. Mobility allows companies to move their services out to where they meet their customers. And where technology meets customer can be on the front doorstep! The parcel carrier market has been at the vanguard of mobile adoption. In fact, B2M Solutions was set up originally in 2002 to provide the mobile management systems for this sector because the business need was so clear. To be competitive, parcel carriers needed proof of delivery. A signature had to be accessible via the central IT system within 5 minutes of a package being collected or delivered. This is just one of many examples of how the use of highly effective mobile technology can add value to the supply chain.

More business sectors are starting to expand their mobile systems. Retailers have used in-store mobile devices for many years. However, they now need to track goods as they move between the warehouse and store and between the store and home deliveries. To be competitive in this market, a mobile solution that connects with central IT systems is vital. The exceptional success of online grocery store Ocado, for example, comes not just from their warehouse picking systems but also from their advanced mobile technology that gives them accurate one-hour delivery windows. In fact, all manner of industries are demanding more effective enterprise-wide solutions; from the field service market such as maintenance and lift engineers, white-good repairers and utility inspectors through to government and healthcare professionals. They all demand real-time scheduling and accurate customer information to be able to deliver the highest level of service.

These groups of users have a unifying characteristic — they are undeniably instrumental in doing mission critical line-of-business activities. The organizations need to 'keep the workers working' and provide them with the mobile tools and infrastructure they need at the right time, in the right place.

In these types of scenarios, a mobile device management solution must be in place to manage the entire mobile infrastructure.

Early Market Adoption

The technicalities of managing thousands of mobile computing devices are very different to an in-premise IT system and many organizations are still grappling to find the solution. The approach that has caused the most problems is when companies try to mirror what they learned with office-based systems. Inexperience with the mobile environment means they can be surprised by a whole set of new issues. What do you do when devices break down miles from the office or when regular software updates are required? How do you know if your workers are finding it hard to change from paper-based to "on screen" processes? From the outset, the team at B2M Solutions recognized that this type of line-of-business worker requires special attention. They need mobile devices that are fundamentally a business tool and the organization itself has to be in full control.

What is the Best Approach?

To date, B2M has observed a wide range of different behaviours. Larger organizations such as global parcel carriers and retailers are buying many thousands of mobile devices. As their systems expand across wider geographies and countries, they recognize the need to manage their mobile workers using a comprehensive management platform. These larger enterprises often require a scalable solution such as B2M's mprodigy mobile management suite that can be rolled out on a country-by-country basis. Designed from the ground up as a global enterprise product, it can provide the management solution for many thousands of mobile devices across multiple countries. Newer users of mobile technology often have fragmented technological solutions and their first priority is usually to minimize costs. As awareness grows that the mobile devices can add value to their organization, so the need for reliable management data becomes a key driver.

The solution for these smaller mobile enterprises may be to opt for a managed service solution. In this instance, a specialist IT company will provide the mobile hardware and applications alongside the mobile management software capabilities, as part of a managed service. This enables the IT company's customers to grow at their own pace. In this situation, a modular approach to a mobile deployment will help to contain any perceived risk. Further down the road, when the mobile solution is recognized as being fundamental to the competitive advantage of an organization, then the mobile management system is seen as the glue that pulls the whole mobile enterprise together. The management system is then ideally placed to help the company to continually adapt and manage change — and introduce new business processes to cope with these changes.

Maximizing Value

As mobile systems mature, companies will need to gain greater value from their devices. An expensive overhead is when devices are stored in float stocks or out of action in repair loops. However, by tracking all mobile assets within an organization, it is possible to reduce float supplies and ensure that repair cycles are reduced to a minimum. Also, new lower cost mobile devices are entering the market from the Far East. This will provide users with more choice at lower price points. This in turn will pave the way for a proliferation of multidevice sites — where companies use a combination of ruggedized devices alongside semirugged and PDA-type devices. B2M's mprodigy mobile management system is 'device agnostic.' It thrives in multidevice environments and is optimized for use in a 'multiuse' environment. This means companies can make full use of the

next generation of mobile applications where devices can switch roles. This will improve the versatility of devices and will yield a greater return on investment.

Switching the role of a device and its software takes only a few minutes. All the information about a device with full visibility on its location and assigned role is available to managers for continual review and revision. So for example, one single device may be used in the warehouse as a picking tool, in the vehicle as a route finder and scheduling tool and at the doorstep to provide proof of delivery. In the same way, devices used in a store for shelf scanning and shelf audits can be switched to queue busting at peak periods of the day.

Unleash the Full Potential

As companies gain a higher level of understanding of the mobile opportunities, they needn't limit their thinking to a particular device or application. With mprodigy, they can draw on all manner of mobile technologies and then switch applications on the devices when they need them. Mobile technologies can move the boundaries of customer choice.

Thinking outside the box is necessary. Perhaps in the near future, daily post deliveries will be combined with the sale of TV licences or car tax. The customer can potentially choose the service they want on their own doorstep.

Another example is in the healthcare industry, where there is a great need for totally integrated information. If healthcare workers visiting patients in their own homes are equipped with the latest information about each patient, uploaded live on to their mobile device, they will be able to provide a higher standard of care and offer greater accuracy of diagnosis.

The Real Mobile Revolution

Once an enterprise extends out to the point of contact with the customer, beyond the traditional four walls to that of the Intra-Organization, it will then want to ensure that inefficiencies do not creep in. Taking full advantage of the data available at every single step of the supply chain will enable management to make informed decisions about the business. Initially, they are likely to want to track information on the performance of the devices, networks, etc. However, as

we have discussed in this article, mobile management is far more than just managing hardware and software. Once an organization has the technology under control, it can then monitor all aspects of how individuals are using mobile applications on a day-by-day basis. This means they can capture vital information on the effectiveness of business processes.

Ultimately, the value of a mobile enterprise will come from this deep understanding of mobile business processes. Only by making swift and seamless improvements to those processes will the ever-increasing squeeze on margins be reduced, in an ever-increasingly competitive world. The evolution of the mobile intra-organization is a hugely exciting era. We at B2M consider ourselves privileged to be instrumental in meeting the needs of our customers who are bringing about these changes to the ways in which we live and work. ●

For more information

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THE BUSINESS CASE FOR AUTOMATING INVOICE PROCESSING A–SAP

Whether you're the CFO, CIO or Accounts Manager, the financial, management and operational advantages of adding invoice automation to SAP certainly add up — to 95% cost and efficiency savings. Bernd Kosnar of Basware explains how.

Deploying SAP helps to put certain key business processes in the fast lane. Unfortunately, for many companies, this can leave accounts and billing processes stuck in the cycle lane. These either remain tethered to paper-based manual processes or are the victims of dead-end attempts at automation. AP and order-to-cash cycles may still involve printing, mailing or faxing invoices and other accompanying documents, driving up costs and eating into profitability. Any stage in the accounts process that involves manual processing acts as a further drag on efficiency. So it's no surprise that SAP users are turning their attention to extending process automation across the organization, beyond core processes to traditionally paper-intensive areas such as procurement and invoice processing.

If critical financial data from key documents such as orders, invoices, goods received notes and so on is taken into digital form — usable in the SAP core and other management systems — it's possible to make a real dash toward efficiency. So exactly what benefits would your organization see from automating invoice processing? How would it improve overall financial management, and what impact would it have on the existing IT infrastructure and day-to-day operations?

Doing the Maths

Put simply, while traditional invoice management and workflow solutions deliver savings of up to 40–50%, in a full e-invoicing environment the automation of invoice processing activity can bring about cost savings of 70–95% — making it a compelling business proposition for CFOs and finance managers. Let's be honest,

the CFO probably doesn't care about how invoice processing works, what he/she cares about are the numbers, and how to cut down on operational expenditure. Automating it meets this requirement by reducing the need for manual intervention to a minimum, delivering tangible cost savings and measurable efficiency gains.

Another key consideration for the finance department is clarity, and the ability to plan and forecast. By establishing an

> You'd assume that a product programmed inside SAP would be the perfect fit, developed with the latest functionality and easily integrated. You would be wrong on both counts.

invoice automation solution and digitizing invoices and collateral documents, valuable business data is unlocked. The resulting full visibility of the order and payment pipelines not only aids cash flow and projected cash flow planning but, via the analysis of spend patterns and supplier activity, it enables increased innovation in supply chain management. As a result, finance managers get a clear, top-level picture of what is happening now and what is going to happen in the future. Processes and business rules are more easily shared, understood and complied with by users, enabling better planning and easy identification of further savings opportunities. This ensures good cash management and means that funds can be invested as effectively as possible, supporting continuous business improvement. Data from invoice processing and accounts payable also provides a rich resource of information on how to improve business processes, and can easily demonstrate the investment value of changing business models and processes.

Solving the SAP Jigsaw Puzzle

The advantages of real invoice automation are compelling, but what's the best way to go about it, and how will it impact on existing SAP systems and business processes? What's needed by users — from CIOs to IT and credit control managers — is a solution that is easily and seamlessly integrated into the existing SAP platform, without requiring timely and costly upgrades and custom coding, a solution that fits snugly into the SAP picture and keeps the rest of the SAP implementation in its 'vanilla' state. There are two ways of approaching this: to use a tool installed

inside SAP or a SAP-accredited third-party tool working alongside SAP. You'd assume that a product programmed inside SAP would be the perfect fit, developed with the latest functionality and easily integrated. You would be wrong on both counts.

Much like SAP's databases, office and business intelligence tools, which are often eschewed in favour of third-party specialist tools, third party IP workflow software within SAP is not as advanced or as flexible as some "outside" solutions. So-called 'open-heart surgery' solutions that operate from within the SAP environment also need to be professionally installed, integrated and maintained by SAP engineers, which can be costly and can require key systems to be newly customized or even redone. The fact that companies often run multiple new, old and acquired SAP systems within their organization makes the open heart surgery approach an even worse idea. Implementation and permanent synchronization could prove to be an IT nightmare. And that's without factoring in any non-SAP systems that need to be integrated into the overall process.

Plug and Play

The time and cost involved in implementing an 'internal' SAP invoice processing tool is precisely why many companies opt for an external third-party expert system that is a module of a state-of-the-art purchase-to-pay solution. SAP has well-defined interfaces that have been designed to support SAP-accredited tools and systems operating outside of the SAP environment. The advantage of this approach, which is more analogous to key-hole surgery, is that SAP organizations get the benefit of specialized third-party solutions, which involve minimally invasive installation, and which also have no impact on the running of core SAP systems. The advantage of this is that you get a focused extensible invoice automation solution that delivers clear business benefits and extends process automation, yet also operates independently from SAP and is, as a result, unaffected by any SAP upgrades, installs or changes for greater operational stability.

Adding Up the Benefits

Extending automation into the finance department provides strong functional and business benefits and unlocks the very real potential for future enhancements. As a result, CFOs will be able to realize immediate and sustained cost savings, as well as having the clarity to optimize business processes and maximize investment opportunities. Financial managers will be able to exercise more control on the spending processes and make payments more accurately and timely. In addition, true Invoice Automation will bring significant added value to ERP, by removing the need for dedicated data validation, cleansing and enrichment tools for purchase-to-pay processes. As a result, the quality and context of invoice data is improved, supporting greater overall visibility of processes and enabling the effective implementation of corporate policies. By opting for a SAP-accredited third-party automation solution, you'll also get the buy-in of the CIO, who has the reassurance of simple out-of-the-box installation and easy integration via certified SAP interfaces (Certified for SAP NetWeaver) — meaning no downtime, no impact on SAP resources and minimal set-up cost. The business case for real invoice automation and going beyond this certainly adds up. Isn't it time you looked to deployment, A-SAP. •

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