

# The Connected Business

FINANCIAL TIMES SPECIAL REPORT | Wednesday January 26 2011

www.ft.com/connected-business-jan2011 | twitter.com/ftreports

## Supply chain is a strategic discipline

As companies extend their operations across the globe, there is potential for great risk and reward, writes Paul Taylor

Globalisation has driven a revolution in corporate procurement and put a new generation of professional supply chain managers and their technology tools at the forefront of the push to build sustainable and profitable businesses. Supply chain management has changed a great deal over the past decade. A complex web of global partners and suppliers, volatile energy and commodity prices coupled with currency fluctuations are now the norm.

Rick Blasgen, chief executive of the Illinois-based Council of Supply Chain Management Professionals, says: "The number one issue facing our members is the increasing pressure from global competition."

Mr Blasgen, whose 25-year career has included senior supply chain positions at three of the world's largest food companies — Nabisco, Kraft Foods and ConAgra — took leadership of the Council in 2007. He says the second most important issue his members face is keeping tabs on the information transmitted between supply chain partners.

Today, companies need to collaborate with supply chain partners to minimise risk and maximise transparency, he says. "You have to trust your partners with information that in the past you might have considered proprietary."

Businesses operating global supply chains also have a range of other factors to consider including the tax, regulatory and environmental impact of their decisions.

Most importantly, they need to view the supply chain function in an entirely new way. Kevin O'Marah, a Gartner analyst in charge of supply chain research, says, "traditional planning cycles are obsolete."

Businesses operating global supply chains also have a range of other factors to consider including the tax, regulatory and environmental impact of their decisions.

Most importantly, they need to view the supply chain function in an entirely new way. Kevin O'Marah, a Gartner analyst in charge of supply chain research, says, "traditional planning cycles are obsolete."

Businesses should also take advantage of technologies such as GPS (the global positioning system) tracking, RFID (radio frequency ID) tags, communications networks and software tools.

"We always look at how technology is applied," says

### On FT.com

#### Get Connected online

##### Video

The hype cycle and supply chain technologies

ft.com/connected-business

#### Guest column

John Hagel and John Seely

Brown on the CIO as chief

innovation officer: risk-aversion can increase risk

#### Boardroom debate

Ade McCormack

Many companies struggle to envision a future beyond a more automated model of the present

#### In focus

Guest writers on 'the cloud' or how to embrace a loss of control

Research in Motion (RIM), Amazon, McDonald's, Microsoft and Inditex, the fashion distribution group.

But even the best managed supply chains still face unexpected challenges.

Mr Blasgen cites the case of Mattel, the US toy maker that was forced to recall nearly 1m toys in 2007, after it emerged that a Chinese contract manufacturer had covered them with lead-based paint.

As companies extend their supply bases and manufacturing operations across the globe, new risks are introduced, including intellectual property theft, supplier viability, volatile exchange rates, product safety, and even piracy.

"Supply chain risk has become a big deal in the

past five years, and very, very prominent at the time of the oil price spike," says Mr O'Marah. "When oil was hitting \$140 a barrel, people started worrying about whether they were over-exposed in Asia or whether they were overly reliant on materials that are based on oils such as plastics.

Fortunately, there are technologies that can help manage these problems, but nevertheless, Noha Tohamy of Gartner says strategic thinking is essential.

Generally, she says, software tools can be grouped into two main categories.

First, there are those that enable strategic scenario management, or "what-if" analysis. Second, are tools

Continued on Page 2



### The Connected Business

"Internet connectivity and global markets have accelerated change so dramatically that businesses must revisit daily investments in product development, manufacturing capacity, and inventory."

Businesses should also take advantage of technologies such as GPS (the global positioning system) tracking, RFID (radio frequency ID) tags, communications networks and software tools.

"We always look at how technology is applied," says

Rob Riddleston, head of transport and logistics at Barclays, the banking group.

When companies get it right, their supply chains can become a strategic and competitive advantage.

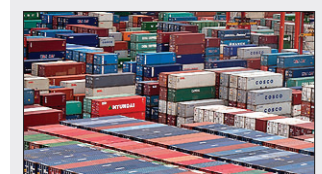
Mr Blasgen notes: "Supply chain logistics used to be viewed as a cost-cutting mechanism; now they are being used as growth drivers to open up new markets, particularly emerging markets."

Which companies operate the most admired demand driven supply chains and document their best practices?

In October, Gartner's AMR unit published its annual list of the top 25 companies that demonstrate leadership in supply chain management. (For more details see ft.com/connected-business.)

Apple, whose extended supply chain is regularly cited as one of the most sophisticated and effective, took the top slot for the third year running. Procter & Gamble, the only company to have been in the top five for six consecutive years, came in at number two, followed by Cisco, Walmart Stores and Dell. Five companies joined the Top 25 for the first time:

### Inside



#### Shipping

The emphasis shifts from speed to reliability **Page 2**

#### Case study

A look at good and bad logistics IT upgrades **Page 2**

#### Risk mitigation

There is no substitute for local staff **Page 2**

#### Emerging markets

Companies must customise **Page 2**

#### Digital delivery

Supplier-customer relationship sees a revolution **Page 3**

#### Recruitment

Skilled staff are in short supply **Page 3**

#### Perspectives

IBM lasts out its stormy century **Page 3**

#### Sustainability

Green companies tend to be efficient ones first **Page 4**

#### Guest column

Tax emerges from the shadows **Page 4**

“WE ARE THE ONES WHO IMPROVED THE QUALITY AND AVAILABILITY OF A GLOBAL INVESTMENT BANK'S ENTERPRISE RISK DATA.”

WE ARE CAPGEMINI.

DISCOVER YOUR EXPERTS' NETWORK  
www.capgemini.com/experts

Marc Zimmerman  
your Financial Services Business  
Information Management expert

People matter, results count.

Capgemini  
CONSULTING. TECHNOLOGY. OUTSOURCING

# The Connected Business | Supply chain

## Supply chain is strategic issue

Continued from Page 1

that focus on what is happening in real time.

Global logistics presents another set of challenges that have been amplified because while import/export was once a small slice of many economies, today it is big and vital.

"The need for both adequate capacity on ocean lanes, rail, road and air links as well as visibility to where your shipments are and whether they're at risk is suddenly mission-critical," explains Mr O'Marah.

But while many logistics firms are being pressed to provide capacity and visibility, adequate technology tools are still lacking, he says.

Supply chain professionals also have to grapple with a new class of supply chain in emerging markets. "Economic growth is disproportionately coming from emerging markets such as India, China, Brazil and sub-Saharan Africa," says Mr O'Marah.

He adds: "Consumer demand is high, but supply chains often look very different, requiring companies to think and build their networks to suit these markets.

So, for instance, in Brazil you have serious problems with the roads, whereas in China you have good roads but you have other issues with respect to borders.

"Unfamiliar local distribution infrastructure, retail networks, manufacturing capacity and of course regulatory and cultural factors all call for specialised strategies."

Companies, particularly multinationals, are also more concerned about sustainability, while environmental accounting is expected to weigh increasingly on supply chains where factories and transportation contribute substantially to their carbon emissions.

Such considerations mainly apply to physical products such as cars, food and clothing.

These have a big variable cost component. Digital supply chains for music, software and games can be reproduced and "shipped" at essentially zero marginal cost and present different challenges.

"Intellectual property ingredients of physical products can often be separated from the plastic, metal or other material that gets shipped," says Mr O'Marah.

Managing 21st century supply chains requires a new set of skills.

The notion of "supply chain" as a professional discipline barely existed a decade ago, says Mr Blasgen.

Before the internet connected companies globally, most people working in the shipping, production and purchasing departments of businesses were tactical operatives in cost centres.

Today, supply chain competence has become a competitive weapon essential to success in launching products, entering markets and responding to competitive threats.

## Emphasis shifts from speed to reliability

### Shipping

Robert Wright says IT should also help increase efficiency

Cranes pointing idly into the sky have been a highly visible sign of the world trade downturn in many big container ports.

Until just before the onset of the economic crisis in late 2008, big ports were mostly full of frantically busy staff and quays lined with vessels loading or unloading.

Yet, while worldwide container trade fell more than 10 per cent in 2009, many port construction projects planned during the good years continued, creating spare capacity. Many now superfluous cranes have been sitting out of use.

The question for the world's logistics industry as the hubbub of activity returns is whether it will find more efficient ways of doing business. There is even speculation that the world outsourcing trend responsible for much of the traffic might slow down or end.

There are certainly signs of change. Shipping lines are placing less emphasis on moving goods quickly. Instead, the focus is on reliability and prompt delivery.

IT systems are playing a particularly important role. Their capabilities have been racing ahead, while the logistics industry has been lying stunned in the wake of the economic crisis.

Yousif Almutawa, chief information officer for DP World, one of the biggest container terminal operators, says the philosophy is to move beyond managing information for the company alone, to managing it for customers as well.

"We're thinking we have to increase the predictability of stock and inventory for the end users, so they can manage their warehouses in a more efficient way," he says.

IT's role in logistics is growing steadily in importance, as supply chains become more complex.

Marc Levinson points out in *The Box*, his history of container shipping, that containers can carry nylon hair for Barbie dolls manufactured in Japan, plastic for their bodies made in Taiwan and clothes produced in China. For more sophisticated products, the picture is more complex.

So many cost, time and reliability factors must now be incorporated in such systems that humans can no longer design them unaided, according to John Pattullo, chief executive of Amsterdam-based Ceva Logistics.

To help customers cope with such complexity, Ceva gives them 19 pieces of information about the progress of each shipment, Mr Pattullo says. "They want to know that each piece of the supply chain is predictable - that the factory will produce the amount it said; the shipping line will deliver the day it said."

Improved information is also smoothing port operations, according to Anil



Taking stock: DP World wants to increase the predictability of inventory for users. Bloomberg

Wats, DP World's chief operations officer. In the busy years, containers would often take up valuable port space for 10 to 21 days after landing, either because customers did not know they had arrived or they were using the port to

'From the time a box is unloaded from the ship, the consignment is shown as available'

store their spare stock.

At Jebel Ali in Dubai, DP World's busiest port, computer information for customers can now make delivery almost instantaneous.

"From the time a box is unloaded from the ship, the consignment is shown as available," Mr Wats says. Reassured by the extra

information, many customers are now less exercised about how fast goods are moving, according to Mr Pattullo. Many container lines have cut ship speeds sharply to reduce fuel bills.

The extra ships required to run weekly services with slower ships have also helped soak up some of the current excess of vessels.

"The less sophisticated end of the market is where speed still predominates as a concern," Mr Pattullo says. "That speed is often built in to remedy failures elsewhere in the system."

Yet the most significant message from the growing engagement between logistics companies and customers is that global supply chains are becoming ever more embedded in companies' operations and the global economy.

Adam Gade, CIO for Maersk Line, operator of the world's biggest con-

tainer fleet, says customers want more than shipping lines' traditional, simple services. Some now want to book spaces provisionally.

"Sometimes we need to qualify a booking because the customer companies see our processes as an extension of their own processes," he says.

There will be still further steps to integrate customers' stock management and ordering systems with logistics suppliers' improved information networks, says Mr Pattullo.

That can only add to the attractions for manufacturers to shift more of their activities to emerging economies - a process Mr Pattullo expects to continue.

"The economics of the manufacturing piece of the equation are compelling," he says. "The advantage of having assembly or manufacturing in a low-cost economy is very significant."

## Consultancy is a good place to start

### Emerging markets

Ed Hammond examines how to find a way in

Big western companies have become adept at sourcing from emerging markets. Now they are trying to reverse the process and sell to them.

From chip boards to cosmetics, the flow of goods manufactured, assembled and moved out of the industrial powerhouses of India and China to the homes and offices of Europe and North America has been a central fact of economic activity during the past 25 years.

However, capitalising on a strong and historically entrenched supply network to become a selling force in increasingly consumption-hungry emerging markets is more tricky than might have been expected.

Managing the relationships between buyers and suppliers requires very different skills from those needed to be a successful seller and, in many cases, there are few obvious advantages for a company that plans to increase its sales effort in a country where it has a long-standing supply chain.

"It doesn't matter whether you are buying car transmissions from Germany or electronics from China; the relationships you need to deal with are going to be very different, and there is no reason that the buying team you have is going to have sales expertise," says George Kessler, joint deputy chairman of Kesslers International, a UK designer and manufacturer of "point of purchase" displays for goods in shops.

"Indeed, sometimes the people you have doing buying are going to be the very opposite of the kind of person you want to be selling for you, so you would need a whole new team of people," Mr Kessler adds.

Mr Kessler says there are some benefits to understanding the political situation in a country and, more importantly, having political ties that can be used to establish a sales position.

In many emerging economies, companies from cement makers to fast food chains have relied on government support to build operations in countries where they have traditionally sourced materials.

However, there are risks to setting up front-end operations in places where the political and economic situation can be less predictable than in more mature markets.

Holcim of Switzerland, France's Lafarge and Mexico's Cemex all experienced the perils of supplying into emerging markets when, in 2009, the Venezuelan government ushered in a nationalisation programme that saw the world's three largest cement producers lose billions of dollars worth of assets.

Other construction companies have utilised their expertise, rather than pro-

viding the physical products they supply in their domestic markets.

Offering consultancy services to less mature industrial sectors, as well as significantly reducing the risks and hurdles to market share overseas, typically provides higher profit margins and can act as a springboard for expansion.

Lance Taylor, chief executive of Rider Levett Bucknall, a global construction consultancy, says that any heavy-side building company - typically contractors specialising in large infrastructural and commercial construction projects - must enter emerging markets first as consultants and project managers.

"Understanding the risks of a new market is crucial to having any chance of success. Putting in a lot of capital investment, whether buying equipment or setting up cement plants and factories, when you are not sure of all the risks is a dangerous game," Mr Taylor explains.

The UK's Balfour Beatty, one of the world's largest construction companies, recently acquired Parsons Brinckerhoff, the US professional services firm, with the stated aim of expanding into new markets first as project managers.

Some construction companies have got round the regulatory and political complications of setting up

'Putting in a lot of capital investment when you are not sure of all the risks is a dangerous game'

shop in places such as China, India and Saudi Arabia by establishing minority stakes in joint venture partnerships with local companies, which will often provide the labour and plant.

However, in spite of the success companies can enjoy overseas, supply chain experts point out that having buyer relationships in offshore markets does not provide an easy passage for a business wanting to establish itself as a sales force.

"If you are a UK business with a big proportion of your supply base in China, there is nothing to suggest you have any success supplying that market with your end-product," explains Simon Chard, a supply chain expert at Deloitte.

"For a start, you have to flip round the whole front end of your supply chain and then there is a wave of regulatory hurdles and local problems you don't have to pay much concern to when you are only sourcing goods from those markets," Mr Chard says.

Mr Chard adds that problems such as logistics and sometimes even the sheer distances that goods need to be freighted to supply a country can prove cumbersome for companies, even if they establish themselves as sellers.

## Well-run systems are central to success

### Case Study ECT

Robert Wright looks at good and bad upgrades

When ECT, one of Europe's biggest container terminal operations, introduced a new computer system in May 2006, it should have improved service to trucking companies and barge operators, its main landside customers.

The upgrade was intended to help the terminal cope with the then fast growing world container trade.

Instead, trucks were soon tailing back for kilometres from the gate of the main terminal site near the windswept mouth of the River Maas in Rotterdam.

Problems with implementing new customs rules had combined with software glitches to leave trucks waiting up to 36 hours to pick up containers. The process should normally take little more than an hour.

The incident was only one of a series in the shipping and logistics industries illustrating that IT

systems now represent a leading risk of serious disruption for many supply chain companies.

Maersk Line, the world's biggest container shipping line, suffered severe problems with customer invoicing as it integrated its systems with those of P&O Nedlloyd after its acquisition in 2005.

By contrast, well-run IT has been at the heart of the success of some supply chain businesses.

Hong Kong's OOCL often claims that the comprehensive, single IT system it introduced in 1999 has been central to its maintaining better profitability than other container lines since then.

According to Wu Choy Peng, chief information officer for Singapore's Neptune Orient Lines, the key is constantly to try to envisage requirements without using equipment that is so advanced that it proves unreliable.

"We really don't want to be at the bleeding edge and be so far ahead of time," she says. "Cost management is often important for a company like ours."

It is immediately obvious talking to IT managers in the logistics industry how important it is to avoid failures like that at ECT.

That is a particular challenge

when systems need to be upgraded.

It is very difficult to know precisely how new software or hardware will react to the rigours of interacting with existing systems.

Yousif Almutawa, CIO for Dubai's DP World, one of the world's largest container terminal operators, says his company's approach is to "measure twice, cut once". He keeps the existing and the upgraded system running in parallel during upgrades.

It is no coincidence that it has often been during integration following a takeover - where the timetable is decided by non-IT considerations - that many companies have experienced their most severe problems.

Adam Gade, Maersk Line's CIO, says that if the line ever undertook another big takeover, he would expect to be involved at an early stage.

Yet, if the basics of maintaining stable IT systems might sound obvious, there remains a debate about the best fundamental approach to creating systems that tie together various functions.

Steve Siu, CIO of OOCL, says his company started developing its system in 1993 and had it in place

only in time for the start of 2000. Two rival lines have since bought OOCL's system, estimating the cost of developing their own alternative at \$50m.

Mr Siu insists, despite the cost and effort, that OOCL's superior system enables staff to make better decisions about how much to charge customers. That improves profitability.

"We have a model showing the amount of revenue we need to cover our costs," he says.

Mr Gade, by contrast, is one of a growing number in the sector to point to standard, off-the-shelf products as a route to smoother, more cost-effective operations.

Maersk Line develops technology only in areas where this will help differentiate it from rivals. In other areas, including Electronic Data Interchange (EDI) with customers, it pursues "standardisation with a vengeance".

"We try to work as many standards into the solution as possible, so it doesn't become difficult for customers to deal with us," Mr Gade says. "We don't want people saying: 'We cannot use that freight forwarder if it uses Maersk because it has a different standard'."

## There is no substitute for local staff or knowledge

### Risk mitigation

Overseas suppliers can be cheaper but need attentive management, writes Ed Hammond

With industrial companies going ever further afield in their quest to strike a balance between the quality and price of materials, the need for a well-oiled, low-risk supply chain is becoming more urgent.

"Companies used to very much be of the mindset of who are you, and why should we do this," says Simon Chard, director of contract risk and compliance at Deloitte, the consultancy.

"But, over the past two or three years, people have started to take the issue of managing the potential risks in their supply chains much more seriously."

Mr Chard's thoughts are echoed by a wide range of supply

chain professionals in heavy construction companies, cement producers and specialised manufacturers.

From keeping a closer watch over the financial health of key suppliers of goods and services, to tightening security around sensitive intellectual property and data, management teams are placing increased importance on making sure they have the right suppliers to minimise risks for their own businesses.

A key reason for the focus on supply chains is the rapid expansion in goods coming from the emerging economic powers of China and India in particular, but also Brazil and smaller south-east Asian countries. Companies are turning to a mixture of technology and risk management professionals, to deal with the complexities of buying materials and businesses services.

Andrew Spence, supply chain business development director at Oracle, the information services group, says that the right compu-

ter systems can mitigate risks associated with working with a long list of foreign suppliers.

"Product Lifecycle Management (PLM) products provide a mechanism for sharing product information to ensure everyone is working to the same specification and that product quality is measured," he says.

"However, technology alone can't solve the potential risks of working with remote suppliers. Companies must build close relationships and trust with a supplier, and this can't be achieved without face-to-face meetings.

"Software technology enables and supports the opportunity to work with remote suppliers, but without human contact, organisations will stumble in the early stages of working with the supplier," he adds.

Lance Taylor, chief executive of Rider Levett Bucknall, a construction consultancy that has managed the supply of goods and services for multi-million pound building and

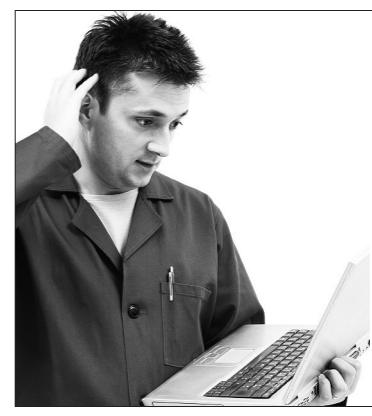
infrastructure projects, agrees.

"You need that culture of understanding and knowledge that only comes from being on the ground. As a purchaser, you need to have a local on the ground who can understand the market, the supply chains and the culture and, when necessary, can intervene," he explains.

The march towards a truly global supply base for industrial companies has, if anything, been accelerated by the downturn in developed economies, but it has also altered the way businesses manage their buying of goods.

Indeed, the financial hypersensitivity spawned by the global recession, while not the cause of the sharper focus on supply chain management, has added to the attention many organisations are paying to the purchasing of goods and services.

As well as expanding the geographical scope of their supply bases, many businesses have increased the number of services and products from single suppli-



Understanding the culture is as important as the software

ers in an attempt to cut costs.

One manufacturing executive says suppliers will always be keen to move up the value chain and offer a wider range of goods and services, but companies must then adjust their risk profiles to reflect greater exposure to problems at certain suppliers.

"A lot of companies will outsource the work you have con-

tracted them to do, meaning you have hidden exposures you really cannot factor in," the executive adds.

Instead of holding extra inventory to offset the risk of faults in their supply chains, businesses - where short of finance and reluctant to have money tied up in working capital - have sought to tighten control over suppliers.

However, while a more globalised supply chain can be economically beneficial, it can bring additional risks, such as financial instability and production problems, that are harder to predict and prepare for.

"Political uncertainty and labour disputes are almost impossible to factor in, but as the supply chain grows and the goods and services become more complex and intricate, so the ability to manage the chain becomes much harder. It is also hard to have technology to support risk management when the supply chain is so disparate," Mr Chard explains.

### Contributors

Paul Taylor  
The Connected Business  
Editor

Robert Wright  
Transport Correspondent

Ed Hammond  
UK Companies Reporter

Jane Bird  
FT Contributor

Alan Cane  
FT Contributor

Stephen Pritchard  
FT Contributor

Ursula Milton  
Commissioning Editor

Steven Bird  
Designer

Andy Mears  
Picture Editor

For advertising contact:  
James Aylott  
+44. (0)207 873 3392;  
e-mail: james.aylott@ft.com  
or your usual  
representative

Follow us on twitter at  
twitter.com/ft.reports

# Supplier-consumer relationship undergoes a revolution

## Digital delivery

The next stage could include the local creation of products, writes Alan Cane

A couple of years ago Accenture, the world's largest technology consultancy, was chosen by Universal Music Group, the world's largest music company, to provide digital supply chain services outside North America. Last month, the success of the arrangement was confirmed by a broadening of the relationship through which the consultancy will roll out its retail services platform on a worldwide basis. "This" the companies said, "will provide UMG with an alternative means of distrib-

ing digital content to its global business partners and consumers".

This partnership between two global groups illustrates how conventional ways of doing business can and are being changed by digital technologies. Digital supply chains – in which nothing moves physically apart from electrons and photons – are revolutionising the links between suppliers and manufacturers, and between retailers and consumers.

So far, the industries involved have been those in which the product can easily be digitised – text, images, music and video – but it may be only a matter of time before products are physically created locally or even in consumers' homes using machines driven by instructions delivered over the internet. The textile industry has for

some years been predicting the advent of a home-based garment knitting machine. Printers capable of building three-dimensional objects layer by layer are emerging from the laboratory.

Royston Seaward, a partner in the consultancy Deloitte's technology integration practice who was instrumental in the design and delivery of the BBC's iPlayer, says that while the move towards shipping digital products and services is changing how vendors interact with their customers, it is also changing the underlying capability needed by an organisation to do it well.

He says: "The consumer expects to be able to self-serve, to be able to 'rent' services as well as buy, and to use his or her purchase in different ways and on different devices. "In the digital supply chain,"

he goes on, "the concept of a 'return' doesn't really exist and the vendor risks its product being copied and used many times. That means that as well as a changing supply chain, how a vendor designs and protects its product is key to exploiting the opportunity."

Toby Nichols, supply chain specialist with PA consulting group, says that, in order to succeed, companies must achieve totally integrated digital operations where digital content of all types is created, stored, shared and accessed quickly, efficiently and securely across all operations and by each member of the content value chain.

He says: "For example, BMW provides updates on faults and performance in its cars online, reducing the need for garage visits and interactions with the physical chain."

He also cites Google's internet search engine capability linked to pay-per-click advertising, Sky's virtual monopoly on live Premiership football in the UK (protected by an effective scrambling system) and Apple's iTunes store. "By using the



**BMW provides updates on faults and performance online, reducing the need for garage visits**

iTunes site to make digital content available to end-users, it made virtual shopping simple," he says.

Digital supply chains differ from their physical counterparts in many ways, some obvious, some not. While a physical product is in transit, it is owned, at

any one time, by a member of the chain. Virtual goods, however, as Graham Hann, technology partner with Taylor Wessing, the international law firm says, are protected by intellectual property rights – the most relevant being copyright.

He points out that copyright law varies from country to country and so when distributing a digital asset through an international supply chain – Accenture's work in distributing the products of Universal Music Group, for example – the laws in each relevant country have to be considered.

He says: "We do not have a private copying exception in the UK and, as such, uploading of CDs to digital platforms such as iTunes is illegal. This is not the case in countries such as France or Germany, where consumers are charged a levy on blank

media such as CDs, which is used to pay rights owners."

Concerns that cyber criminals could introduce security vulnerabilities into information technology equipment passing through the supply chain have led to the formation of a Trusted Technology Forum backed by IBM, Microsoft, Cisco, Oracle and Nasa among others.

Co-ordinated by the Open Group, a not-for-profit consortium, the initial aim is to release a framework that will unify "industry best practices that contribute to the secure and trusted development, manufacture, delivery and ongoing operation of commercial hardware and software products".

The digital supply chain may have advantages over its physical counterpart, but it is clearly only as strong as its weakest electronic link.

# Skilled staff are harder to find than ever

## Recruitment

Consolidation poses a problem, as key personnel often change roles or leave, reports Jane Bird

Working in the supply chain may not seem the obvious career for ambitious young arts graduates from good universities. But employers are wooing them as they search for people with the broad range of talents needed to oversee the entire journey of a product from sourcing to customer delivery in today's globalised market.

Ocado, the UK online supermarket, is open to people who have studied English or Classics in addition to those with technical or business degrees to train in-house. "They need to be bright, problem-solvers, critical thinkers, to stay calm and perform well under pressure and work in teams," says Julie Markey, head of human resources at Ocado.

A high degree of numeracy is also crucial. Supply chain management requires the ability to analyse data very quickly. California-based Karen Butner, supply chain management leader for IBM Institute for Business Value, says: "It's about understanding demand and not having lots of inventory waiting to see whether customers will buy."

Being innovative is another key characteristic. Ocado achieved huge cost-savings when it found a way to transfer customer orders directly from large trucks into smaller delivery vans by rolling them down a slope rather than using fork-lift loaders.

Reducing packaging and speeding up warehouse conveyors are other big challenges. But supply chain managers also need softer skills.

"The whole concept of supply chain has evolved since the days when people went into warehouse management," says Ms Markey. "Now, it is more about understanding what customers want and getting their feedback, rather than What do I want to sell and how can I get it in my shop?"

Finding people with this mixture of skills is tough, as highlighted in a recent supply chain study by IBM. Some 26 per cent of the 664 organisations questioned worldwide cited talent management as one of their top three challenges.

During the past 10 years, globalisation, recession and market volatility have made supply chains much more complex, says Ms Butner. Organisations need supply chain managers with the talent to set up systems that give them information at their fingertips, and make quick decisions.

There is huge scope for things to go wrong, says Ms Butner. "To make everything work, supply chain managers need vision, leadership, procurement, logistics and operational skills."

Many companies take the Ocado approach and develop talent in-house. Others are increasingly subcontracting activities such as transport, warehousing and customs and excise. "Some are outsourcing procurement, call-centres, and even engineering and product design," says Ms Butner.

Globalisation has increased the need for companies to find local people who know the language and culture. Supply chain managers need to understand the impact of a slowdown in cotton production in Pakistan or a flood in Bangladesh, says Nick Jones, chief executive of Ligentia, a UK-based logistics company specialising in China and Vietnam.

Retailers in the west have turned Valentine's day, Halloween and Christmas into huge sales opportunities, but a go-slow in the shipping industry to cut costs can have a huge effect on retailers by adding two or



Challenging career path: globalisation, recession and market volatility have made supply chains and their management much more complex

Charlie Bibby

three days to journey times, he says. Anti-dumping regulations in Europe and protectionism in the US can also cause disruption. "Companies need agile supply chains and the ability to move from region to region, but there is a constant shortage of talent capable of managing this," says Mr Jones.

Universities and business schools are introducing supply chain programmes to fill the gap, including the London Business School (LBS) and Cranfield School of Management in the UK, MIT in the US, and the University of Zaragoza in Spain.

The main problem of skills shortages is at higher levels, says Jérémie Gallien, LBS's associate professor of management science and operations. Even at chief executive level, people need a better understanding of supply chain issues, such as whether to make or buy in, he says.

"When IBM launched the PC, it made a supply chain decision to outsource the operating system to Microsoft," says Prof Gallien. "Had it anticipated the outcome, it would probably have done it in-house."

Zara, the clothing retailer, and Dell, the US PC company, demonstrate what clever supply chains can achieve, he says. Zara can respond quicker to customer preferences than competitors by sourcing products closer to its market, in North Africa, the Iberian Peninsula, and eastern Europe, rather than procuring at the lowest cost in India, China or Africa.

Dell was highly successful with its direct sales model when other PC

companies used dealers and retailers. To develop employees with the ability to spot such opportunities, companies need to reinstate their in-house training programmes, says Mr Jones.

"During the past three years, they've cut back hugely and are no longer supplying the industry with talent." Consolidation has exacerbated the

problem. In 2004, the UK's Tibtet & Britten was acquired by US-based Exel, which the following year was bought by Deutsche Post, which had already acquired DHL Express. With each takeover, there tends to be a shedding of staff, says Mr Jones.

As a result, there is a huge shortage of talent because many of the best

people change roles or leave to work for consultancies.

"Consultants are the hidden enemy for logistics, because they come in and pick off all the bright talent which they hire out again at five times the rate. If this goes on for another two years, and trade picks up, it will be too late," says Mr Jones.

## ADVERTISEMENT



## A lifeline for organisations DROWNING IN DATA?

Businesses have never had so much raw data at their disposal. So how can they prioritise what is most valuable?

The amount of data available and being created afresh has seen an exponential rise in the past two years.

Even in the average household, you are likely to find half a dozen web-connected devices, each of them consuming, creating and disseminating information. Multiply this a thousand times in the workplace and this torrent of data can quickly become an unmanageable flood.

"This is starting to cause real problems – shock in some cases – for all kinds of organisations," says Rob Toguri, Capgemini Vice President and Head of Business Information Management UK.

"When we sit down with both the private and public sectors now, one of the top three conversations they initiate concerns their ability to manage their information assets in a more practical, make-sense manner. "They are urgently looking for

**"In both private and public sectors, one of the main issues is their ability to manage their information assets in a more practical, make-sense manner" – ROB TOGURI**

## CASE STUDY

"We recently dealt with a major UK retailer," says Rob Toguri. "We've helped them to industrialise and to reduce costs in the way they produce reports for the business. We built a data store for them and used a factory-based approach to get a framework of principles embedded. "Interestingly from a commercial standpoint, we didn't take a traditional project-driven approach with fixed

time or materials, but gave them a pay-as-you-play service.

"The result was that within 15 months, we took their average costs per man day for producing reports to the business from £980 to just under £200. We also improved the turnaround time for producing reports from six to eight weeks down to less than four."

>> Search for Capgemini+IBM

informed decisions on how to deal with the data, in which they are often drowning. But they are typically trying to make these decisions in the dark."

In organisations, the question of dealing with information, Toguri finds, has always tended to take a back seat to acquiring technology.

"As a result, there are very few principle-driven approaches embedded for managing information assets. Organisations are struggling with everything from the governance aspects of the data they own to questions of people and process."

Capgemini's approach starts by establishing the business value of the organisation's data.

"We create an information strategy approach, borrowing from a variety of processes focusing on business priorities. It's a rigorous and industrialised process that gives clear project guidelines.

"It's all business outcome-driven," Toguri says. "What do you want to achieve? Which data do you need to achieve it? We also establish understandable, coherent and unambiguous communication lines between management and IT, where there's all-too often what we call a 'lost in translation' effect."

"They have to learn to understand one another. We give them the magnifying glass they need to focus on the business value of their processes and put their data to proper use."

**Capgemini**  
CONSULTING. TECHNOLOGY. OUTSOURCING

# IBM lasts out its stormy century



Alan Cane  
PERSPECTIVES

"What," goes the familiar business school question "is the primary purpose of a business?" No, it's not to make a profit or provide a handsome return for its shareholders, although those are pertinent to the correct answer, which is: "to stay in business".

By those lights, International Business Machines, which celebrates its centenary on June 16, is in a class by itself among information technology companies as the only enterprise with roots in the 19th century (the Bundy Manufacturing Company, a distant ancestor, was incorporated in 1889) still extant.

Actually, the company could have chosen any one of a number of dates to celebrate. The one it has picked is the date IBM's predecessor company Computing-Tabulating-Recording (CTR) was incorporated.

There will be various elements to the celebratory package – a day of service

to local communities, academic colloquia and a commemoration of "icons of progress" among them. The date is something of a surprise.

In the past the company has tended to favour May 14 1914, when Thomas Watson Senior, the man behind IBM's early success, was appointed CTR general manager. The change of name to IBM took place on February 14 1924. And I've always felt there is a case for April 7 1964, the launch of System/360 which heralded the true beginning of the age of business computing, with the availability of a range of compatible hardware and software.

What has given IBM such extraordinary longevity? Not only has it remained at the forefront, if no longer actually the leader, of the data processing industry for most of its existence, but it has weathered storms that would have destroyed a lesser company – the longest antitrust suit in US legal history and, at the time, the largest single-year corporate loss in US business history.

The corporation lost almost \$16bn between 1991 and 1993 after failing to understand the importance

of personal computing and client-server systems.

Its survival, in retrospect, seems to have been thanks to three, or four, key attributes.

First, a powerful sense of corporate culture and identity stemming from practices introduced by Thomas Watson Senior, including sales incentives, attention to customer service and an insistence on a smartly dressed, disciplined sales force.

It is easy to sneer now at the songs, corporate band and so on, that were designed to give staff a sense of pride in IBM, but they worked.

Second, an extensive, well-established and mostly faithful customer base.

System/360 fast became the de facto industry standard architecture for business mainframes. It was followed by System/370 which, while not such an innovation, found favour in the marketplace.

By 1990, revenues were almost \$70bn and progress to the \$100bn mark seemed unstoppable.

That was before IBM fumbled the PC/client server trends and started to report the kind of losses that led some to wonder if the company could survive as a single entity.

Few other companies

could have withstood such thumping losses.

IBM executives knew the writing was on the wall, however, and demonstrated a third survival strategy – a willingness to change rapidly.

A new chief executive, Louis Gerstner, was hired from outside and IBM began its move from computer company to computing services behemoth, incorporating, along the way, the consulting arm of PwC.

A fourth key element, I believe, was its insistence on continuing to invest heavily in research and development, which has guaranteed it is still among the leaders in the kind of complex software that will run the businesses of tomorrow and it is still a leader in supercomputers.

IBM probably deserved many of the brickbats thrown at it over the decades, but has proved its durability.

Today's business environment is in constant flux, but the attributes that enabled it to survive the past century should see it enjoying a few more anniversaries.

It remains to be seen if any of its present competitors will fare as well.

## The Connected Business | Supply chain

# Green companies tend to crack efficiency first

### Sustainability

**Stephen Pritchard says IT investment to improve service or reduce costs may provide tools that can also help the environment**

In France, Pernod Ricard has turned to a centuries-old technology, to make its supply chain greener. The drinks group uses river barges, rather than trucks, to transport its Mumm and Perrier-Jouet Champagne to Le Havre, where it joins ships bound for Asia and the Americas.

Nor is Champagne the only drink to enjoy a more sedate journey. According to John Corrigan, Pernod Ricard's global supply chain and procurement director, the company tries to use air freight only as a last resort, and aims to reduce the number of miles its products travel by road. Even the choice of sea routes affects the company's environmental footprint.

Another Pernod Ricard brand, Jacob's Creek wine, is very popular in the UK. The cheapest way to ship the

wines from Australia to Britain, according to Mr Corrigan, is via Hong Kong, Singapore, or Thailand. But putting the wine on two ships rather than one, with the need to wait quayside between journey legs, risks affecting quality. And the longer, indirect journey, although it is cheaper, produces more CO<sub>2</sub> than a direct shipment from Australia to Europe.

To make these choices, and ensure the various brands reach their markets on time and in good condition, is no simple task. Drinks brands are global, but the products are local. Perrier-Jouet must come from the Champagne region of France, Chivas Regal and The Glenlivet whiskies from Scotland, and Absolut Vodka from southern Sweden.

To manage this, the company uses eight supply chain IT systems, including enterprise resource planning, business intelligence and sales forecasting. Like many fast moving consumer goods (FMCG) businesses, it is combining advanced planning and forecasting tools to help predict demand – and so limit inventories and optimise transport routes – as well as more obvious “green” measures, such as reducing packaging or using thinner glass for bottles.

FMCG brands are among the more

responsive to environmental issues, because of both consumers' growing awareness, and in some cases, pressure from supermarkets.

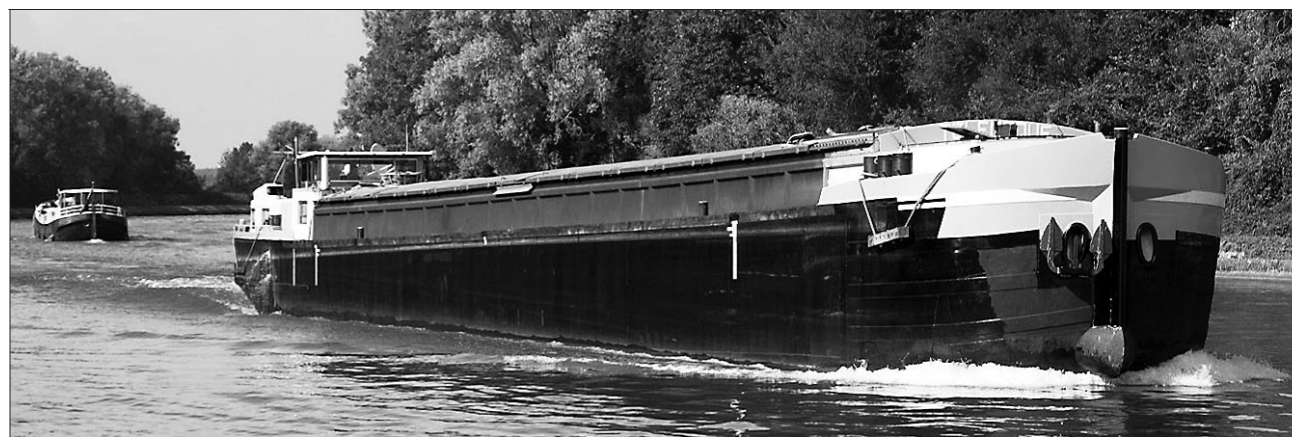
Another business that uses forecasting to help ensure supply chain sustainability is General Mills, the branded foods manufacturer.

“Within the food sector, the key challenge is forecasting and planning promotional activity,” explains Dave Howorth, supply chain director for its UK and Ireland operations.

“The current trend is for promotional activity to be more volatile. At General Mills UK, we transport 90 per cent of our Green Giant, Old El Paso and Nature Valley products from our North Spain and South France plants to the UK by short sea freight. This saves more than 2.5m road miles annually. But road is quicker than sea and so if we have to respond to significant unplanned demand then [that would] increase our road miles.”

In the manufacturing sector, JAE, an electronics and electrical components maker is using forecasting software to help it to switch goods bound for Europe from air freight to sea.

However, according to Matt Harris, JAE's head of supply chain in Europe, cost was the main driver for the investment in forecasting. The envi-



Pernod Ricard uses barges, rather than trucks, to transport some products

CPA

ronmental benefits followed. This view is backed by Hugh Williams, a supply chain specialist at Hughenden Consulting. “If you address supply chain improvement, green is a consequence, not a driver,” he says.

In some areas, businesses have taken significant steps to improve the sustainability of their products, especially in sourcing. Legislation has forced manufacturers to make more checks on raw materials, and to eliminate hazardous substances. Businesses have also tightened up their ability to trace raw materials, especially in the light of scares over foodstuffs and toys in the past few years.

But hazardous materials pose a simpler problem for a supply chain, and the IT specialists who support it. The materials are either present – and need to be recorded and tracked – or are not. For other inputs, including energy and increasingly water, or emissions, such as CO<sub>2</sub>, the challenge

is dealing with multiple variables, perhaps in real time.

Few manufacturers can account for the exact carbon footprint of an item on the line at any one time, especially if it is made from materials, or with energy, sourced on the open market, rather than through long-term contracts, sustainability experts warn.

The more sophisticated manufacturing and ERP systems can, in fact, track many of these variables either directly, or through the use of additional modules. Here, the software companies may well be ahead of their customers' businesses: the tools are waiting in the wings, ready to be switched on when customers need them, can justify their costs or – as one vendor warns – are forced to do so by regulation. Instead, the driver for investment is efficiency.

“The reason efficient companies are green companies is attention to detail,” says Steven Barr, a supply chain expert at PA Consulting Group.

“And it is efficient companies that tend to be green, not green companies that are efficient.” Those businesses that have invested in IT, to improve service or drive down costs, are those that have tools they can adapt to improving sustainability.

Meanwhile, the software companies are working on standardisation, so it is easier to exchange environmental data across a supply chain and to trace the eco-footprint of a given bill of materials. Managing the end of life of a product – through so-called “reverse logistics” – is potentially a big prize for supply chain technologists, as more markets set out to reduce post-consumer waste.

And, as raw material and energy costs both rise, such tools become more attractive to industry, suggests Guy Battle, a partner at Deloitte, the professional services firm. “It is the rising costs of resources coming through the supply chain that increases the incentive to recycle.”

## Tax emerges from shadows

### Guest Column

STUART McDOUGALL

For years, tax in multinational companies has enjoyed a separate existence from the real work of running a successful business.

Performed by boffins hidden in head office, it was only occasionally noticed by the board (usually when something went wrong), and still less by those concerned with managing operations. Tax departments complained of being isolated from decisions, and others saw them as out of touch. Once, the same held for supply chain professionals. But something interesting has happened in the past decades. At the same time as multinationals have turned their full attention to the global supply chain, tax has started to emerge from the shadows.

An interesting result is a loose collection of global strategies referred to as Tax-Efficient Supply Chain Management (TESCM).

Its raison d'être is pretty simple. It exists because tax rates, like labour, property or transport costs, vary from country to country. Companies have belatedly recognised that tax is critical to the overall cost-effectiveness of a supply chain.

Suppose a European multinational is looking to expand globally and boost profitability. It may have grown through acquisition and piecemeal expansion. As a result, it has an unwieldy and expensive operating model of personal fiefdoms, national strongholds and a few terminally loss-making subsidiaries.

It recognises the need to save money by rationalising its global supply chain.

It also wants more control over its volatile trading subsidiaries across the world. It needs a springboard for expansion in emerging markets.

Commonly, it will restructure to create an operating hub to serve a geographical region or perform a specific global function. The hub will house key decision makers and will take some autonomy away from national subsidiaries.

For many years, companies have been rationalising national businesses and moving non-core activities offshore: to shared service centres or to outsourcers. They have been helped by integrated global IT.

Traditionally, a big driver has been labour cost differences, but these kinds of reorganisation are increasingly also driven by opportunities to control procurement spending, increase working capital efficiency and free cash.

The tax-efficient part of TESCM lies mainly in the choice of location of the hub. In the US or Japan, profits might be taxed at

more than 40 per cent. In Singapore or Switzerland, as low as 5-10 per cent. In Dubai or Bahrain, zero. The UK is in the middle, along with most of its European neighbours.

Businesses may also achieve savings in customs duties and other indirect taxes as a direct result of geographical restructuring.

It is not surprising that companies take tax into account when making big operational changes: the impact on the bottom line is too large to ignore.

The first businesses to adopt TESCM in large numbers were the US fast moving consumer goods and tech groups. It is no coincidence that these were also the first to become truly globalised.

The rest of the world has been catching up over the past decade. Centralised supply chains now feature across all sectors and regions.

It was not surprising to see this big expansion. It had been expected for some time, as companies started to get to grips with the inefficiencies in their supply chains.

Research by KPMG and Cranfield School of Management in 2009 showed that organisations that had embraced centralised supply chains were also well ahead of their decentralised peers on a number of working capital and supply chain efficiency measures.

This points to one of the misconceptions about TESCM: the notion that it is simply about saving tax.

Of the supply chain reorganisations we advise on, there is a rough 50:50 split between those based around a low tax location and those where tax savings do not feature.

In KPMG's experience, the range of restructurings concentrate as much on moving regional functions to the UK as relocating them to Switzerland.

Tax is a cost like any other and leaders of multinationals would be rightly criticised if they did not take it into account. As global operating models best suited to the early 21st century are ones that offer commercially driven opportunities for tax savings, we will be seeing more and more TESCM in the next few years.

Most governments are aware of this, but are torn between protecting their tax base and luring investment through attractive and simple tax regimes. Many, including the UK, are trying an awkward mix of the two.

One thing is certain: short of the unlikely event of full convergence between international tax regimes, tax will continue to be a major influence on global supply chain planning.

Stuart McDougall is head of tax efficient supply chain management at KPMG in the UK

## LEADING THE TRANSFORMATION

The mobile ecosystem is in the midst of an unprecedented wave of transformation. As business models adapt, new verticals and players emerge. Technology evolves, perceptions shift, and lives are improved.

At the centre of this transformation is GSMA Mobile World Congress, the must-attend annual gathering of the mobile industry. Our participants – 50,000 senior mobile leaders from 190 countries – enable, accelerate and direct this transformation, leading us into the mobile future. Be there to be a part of it.

[www.MobileWorldCongress.com](http://www.MobileWorldCongress.com)

**GSMA** **MOBILE**™  
WORLD CONGRESS

Barcelona | 14-17 February 2011