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SUPPLY CHAIN INNOVATION

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Contributors

Charles Orton-Jones
Award-winning journalist, he was editor-at-large of *LondonlovesBusiness.com* and editor of *EuroBusiness* magazine.

Jim McClelland
Sustainable futurist, speaker and writer, his specialisms include built environment, corporate social responsibility and ecosystem services.

Mark Hillsdon
Contributor to titles such as *The Guardian* and *BBC Countryfile*, he writes on topics including sustainability, wildlife, health and sport.

Michelle Perry
Freelance finance and business writer, she is the former editor of numerous business magazines and current editor of *UK Landlord* magazine.

Nick Easen
Award-winning journalist and broadcaster, he writes on science, technology, economics and business, producing content for *BBC World News*, *CNN* and *Time* magazine.

Rich McEachran
Journalist covering tech, startups and innovation, he writes for *The Guardian*, *The Telegraph* and *Professional Engineering*.

raconteur reports

Publishing manager
Helen Glynn

Head of production
Justyna O'Connell

Associate editor
Peter Archer

Digital content executive
Fran Cassidy

Managing editor
Benjamin Chiou

Design
Grant Chapman
Sara Gelfgren
Kellie Jerrard
Celina Lucey
Samuele Motta

Head of design
Tim Whitlock

INNOVATION

Collaboration is the driver of innovation

Being faster, better and cheaper than the competition requires colleagues, partners and stakeholders across an entire supply chain to work together

Jim McClelland

From same-day delivery by drone, to blockchain and robotics, tales of new technology are catapulting supply chain innovation on to the front page.

Sexy as it is, however, tech is not the real innovation story. It is actually collaboration that is walking the talk from the warehouse to the board room.

"It is now not unusual for the C-suite to feature a main board director responsible for supply chain management," says Jayne Hussey, partner at national law firm Mills & Reeve.

Indeed, the C-suite has effectively woken up to the potential for competitive advantage, says Ben Balfour, commercial director at Advanced Supply Chain Group. "It's a race to market across almost all sectors," he says. "For supply chain management, this means finding new and innovative ways of being faster, better and cheaper than the competition, without taking shortcuts on quality, compliance or accuracy."

While driverless vehicles might grab headlines, real advances are more likely to be found behind the scenes, in software for stock visibility and data analysis, for example.

"Organisations that have invested in supply chain innovation throughout, not just in the 'last mile' or consumer-facing element, will reap the rewards," says Mr Balfour.

A more systemic approach calls for collaboration, says Fabrizio Brasca, group vice president, solution strategy, at JDA Software. "In today's hyper-competitive, global business environment, collaboration is more important than ever," he says. "As businesses seek to serve customers around the world, via supply chains which can extend thousands of miles and incorporate dozens of partners, they need to collaborate effectively, at a time when the very nature of collaboration is changing."

To a degree, both the rising significance and shifting nature of collaboration are evidence of a changing risk landscape, argues Shaun McCarthy, chair of the Supply Chain Sustainability School, which focuses on the construction sector. "The risks are more significant today, be they reputational and driven by issues such as modern slavery or conflict minerals, or related to extreme weather events fuelled by climate change," he says.

The existence of the school is itself testament to the emergence of a more collaborative ethos, hitherto almost unthinkable in an

Chuttersnap/Unsplash

historically adversarial sector. With more than 30,000 registered users and over 85 partners, many of whom are direct commercial rivals, the school represents a shared response to common problems.

When it comes to labour issues, such collective action can be built upon formal foundations. The introduction of a supply chain charter in which the client stipulates that their suppliers pay fair wages, provide safe working conditions and treat staff well, is now considered best practice and indicative of new ways of working, says Caroline Hill, head of sustainability at Landsec.

"There's been an unprecedented shift in business culture when it comes to supply chains in recent years," she says. "Long gone are the days of businesses not knowing or caring about who is working on their sites or products."

Especially in retail markets, some might say business has been made to care through democratisation of data. Consumers have come to expect their favourite brands to produce safe, ethically sourced goods and are highly influenced by critical reviews, says James Calder, vice president, compliance and regulatory programmes, at Assent Compliance. "Responsible supply chain management is no longer perceived as a voluntary initiative. Rather, it has become a legal and social mandate due to legislative and policy changes," he says.

Transparency laws and expectations are driving data-exchange standardisation, supported by cloud computing and blockchain. In turn, this standardisation has created a real culture of supply chain collaboration among peers and competitors.

Some collaboration is mandated by law, as in the US Dodd-Frank Act, EU Registration, Evaluation, Authorisation and Restriction of Chemicals or Foreign Corrupt Practices Act. With the UK Modern Slavery Act, members of the board, not just the organisations themselves, are even directly, personally accountable, says Mr Calder.

"They are being held to a standard of care, meaning they must be aware of what is going on in the company's supply chain and may be held criminally liable if they do not apply due diligence," he says.

While ethics and sustainability will be among the biggest drivers of supply chain innovation, other short-term geopolitical pressures are also in play, notes lawyer Ms Hussey. "The rise of protectionist policies in the US and reverberations from Brexit, mean global supply chains need to be kept under constant review to remain strong and cost effective," she says.

"We are seeing a real interest from clients looking to explore reshoring, bringing manufacturing back to domestic territories to avoid disruption and counteract emerging barriers to trade."

In uncertain times, and with purpose, the new watchword of a values-led business, leadership is vital to breaking down silos, says Katie Hart of executive search firm Berwick Partners. "Technological advances will only drive efficiency when combined with leadership prepared to prioritise the supply chain and champion a collaborative working culture," says Ms Hart.

If leaders are to promote and drive supply chain collaboration sustainably, they must first define what collaboration means and how performance will be measured, says Jens Roehrich, professor of supply chain innovation at University Bath School of Management. "Incentivising supply chain collaboration and drawing out benefits for individuals and partners to work together is key to securing buy-in from stakeholders," he says.

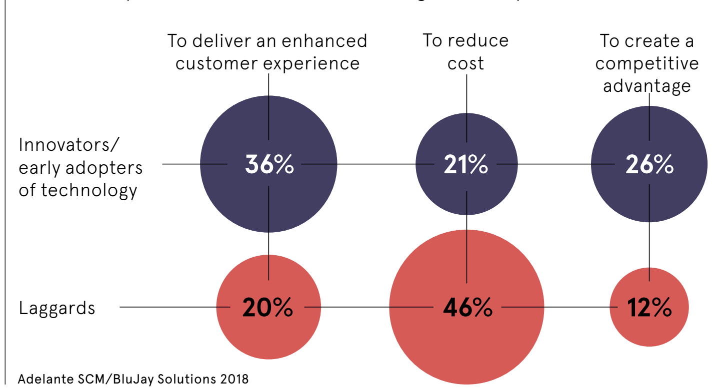
Ultimately, using technology to enable multiple stakeholders to collaborate around sustainability goals is the future. The good news is the future is already here.

Accenture has just launched a circular supply chain capability that leverages digital identity, payments and blockchain to reward sustainable practices of small-scale growers and suppliers directly. It effectively and transparently connects both ends of the supply chain, allowing the customer to "tip" the producer financially for sustainability. Accenture is collaborating in this with Mastercard, Amazon Web Services, blockchain pioneer Everledger and humanitarian organisation Mercy Corps.

Collaborative and connective: this is supply chain innovation.

TOP FACTORS DRIVING SUPPLY CHAIN INNOVATION

Global survey of manufacturers, retails and logistics companies



Adelante SCM/BluJay Solutions 2018

DELIVERIES

Emerging tech remapping the 'last mile'

Forward-thinking technologies are being used to improve efficiency in the last mile of deliveries, which still account for a sizeable portion of supply chain costs and much of the traffic on our roads

AleksandarNakic/Getty Images

01

Rich McEachran

Order a pizza using Deliveroo or Uber Eats and it'll be prepared and cooked fresh and delivered to your door within half an hour. Order some clothes or non-perishable items from an ecommerce site and they could take five to seven days to arrive. Receiving goods shouldn't be this complicated: last-mile logistics need remapping.

Couriers will typically use software that optimises their daily route based on the postcodes of the multiple deliveries they'll have to make. However, a report by Capgemini, released in January, found last-mile delivery accounts for 41 per cent of total supply chain costs, so surely there are ways to make delivering parcels more efficient?

It's a question small-business owners such as Dhruvin Patel, an optometrist and founder of Ocushield, find themselves asking a lot. Mr Patel's company offers a range of blue light-filtering products to reduce eye strain when using smartphones and computers.

"The whole non-delivery part of the last-mile logistics is very tedious. It wastes time for both the courier and our customers. If delivery companies could calculate the possibility of someone being at home at a certain time, then the success rate of delivering first time would increase," he says.

Fortunately for Mr Patel, Locpin is trying to take the guesswork out of delivering parcels. Its elocation service links GPS data to phone numbers and email addresses to pinpoint the exact location of where recipients would like a delivery to be made. This is ideal for the average busy professional, who is generally always on the move and unable to wait around at home during a delivery window, knowing there is no guarantee the parcel will even turn up at the time allocated. Last September, Locpin was one of eight startups selected to join Iceland Food's innovation lab.

According to co-founder Guy Davenport, Locpin attaches a real-time location, accurate to within three metres by three metres, to an individual rather than assign a delivery a physical address. This means that couriers could, in theory, hand over parcels down any street and by the side of any road.

> **The postcode system was never designed to facilitate the transit of such a high quantity of goods. Delivery companies could save millions each year by reducing each courier's route by one mile per day**

"The postcode system was never designed to facilitate the transit of such a high quantity of goods," says Mr Davenport. "Delivery companies could save millions each year by reducing each courier's route by one mile per day."

Couriers are not only under increasing pressure to meet targets and deliver on time, they also have to navigate congestion in densely populated areas. According to Renault, last-mile deliveries account for around a third of all urban traffic.

A spokesperson for courier giant UPS says one of the more convenient options for the firm, which works around customers' schedules, has proven to be its network of Access Points, including smart lockers, around 2,800 of which can be found across the UK alone. "By delivering to an alternative location, we can make more successful first-time delivery attempts and it allows a number of packages to be consolidated to one convenient location," the company says.

Smart lockers are clearly ingenious, but of course there are logistical issues as well. Customers need to live or work in close proximity to one for it to be wholly convenient. Also not all these lockers will be accessible 24 hours a day, such as those in shopping or leisure centres, and this isn't ideal for those customers who work late into the evening.

Jeramey Lende/Shutterstock

Delivering the future

The image of couriers speeding about in their vans or weaving through traffic on their bicycles looks set to be a thing of the past. The way parcels are transported will be transformed by technology.

Amazon has recently patented a system that will allow its customers to collect orders from mobile pick-up locations, such as public buses. Customers could track a bus via GPS and then receive a push notification when it's nearby or approaching a bus stop close to their home or place of work.

At the end of last year, Renault unveiled its own solution to the issue of couriers having to fight against the traffic in urban areas: a fleet of Ez-Pro robot-vehicles. The car manufacturer claims these driverless pods will make delivering more agile, as courier staff will be free to focus on value-added tasks, such as optimising the route for deliveries and maintaining the vehicles.

Meanwhile, researchers at the technology institute Academy of Robotics, spun out of the University of Aberystwyth, are also exploring autonomous vehicles. They claim the Kar-Go technology they have developed will remove up to 90 per cent of the costs associated with last-mile logistics.

01
Companies such as Locpin are now tracking the real-time location of individuals rather than deliveries of parcels to a physical address

02
In partnership with Starship Technologies, Hermes is trialling autonomous parcel robots for last-mile deliveries

A way to solve this conundrum could be customers having their own smart lockers at their front doors or on their porches. It's something that Chinese ecommerce powerhouse Alibaba has been exploring with its Cainiao Smart Locker concept.

Mark Adams, vice president and general manager at BigCommerce UK, Europe, Middle East and Africa, isn't convinced that personal smart locker solutions are what consumers will want, at least in the short term.

"I remember Amazon testing a programme in the US last April that made it possible for Prime members to have packages delivered to the boot of their car," says Mr Adams. "Amazon reported limited interest in the programme. To me, it felt more like a stunt than a serious solution and I expect that smart lockers outside homes would largely be met with the same reception."

At the end of the day, consumers only care about two things when it comes to delivery: convenience and cost. While the placement of smart lockers would certainly be convenient, it's not a fix-all solution, argues Mr Adams.

"It places the onus on the customer to purchase and maintain their individual smart locker, without being provided with any explicit return on investment," he says.

Another way ecommerce companies could look to improve last-mile logistics, according to Mr Adams, is to leverage transaction data to identify the most-valued customers and then provide them with advanced product access and smarter, expedited shipping.

"Knowing who the VIP customers – those who have a high lifetime value – are is one thing, treating them to a personalised VIP experience, which drives trust and loyalty at scale, is more difficult," he adds.

Sometimes deliveries won't arrive regardless of "guaranteed" speed and efficiency. If a customer mistypes an address, a parcel is more likely to end up in the wrong hands or back at a depot than reach its final destination.

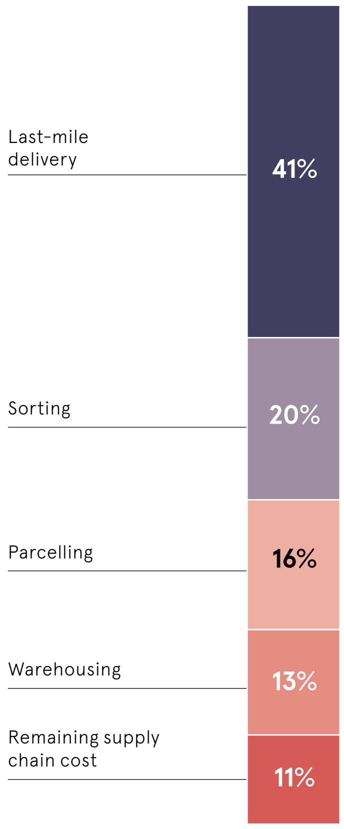
In an attempt to reduce the likelihood of this happening, Naviaddress, a startup headquartered in Cyprus, has developed a blockchain-based platform for address verification that encodes and stores relevant information, including details of a physical address, route directions and photos for visual reference. This information can be shared and accessed securely.

More than 2.4 million digital addresses have been created so far and there are some 1.8 million businesses worldwide using the system. Russian delivery firm ExpressRMS and DPD are two of the startup's current partners.

"In a world where we have smartphones, smart cars and smart homes, it makes sense for addresses to become smart as well," says Yulia Pohlmann, Naviaddress's chief marketing officer. "The last-mile logistics challenge is not only about improving the delivery for the courier, but it's also about when the delivery works better for the customer." ●

COSTS IN THE DELIVERY SUPPLY CHAIN

Global survey of supply chain executives*



*Percentages do not equal 100 due to rounding

Capgemini 2019

DANIEL BOCKWOLDT/AFP/Getty Images

Commercial feature

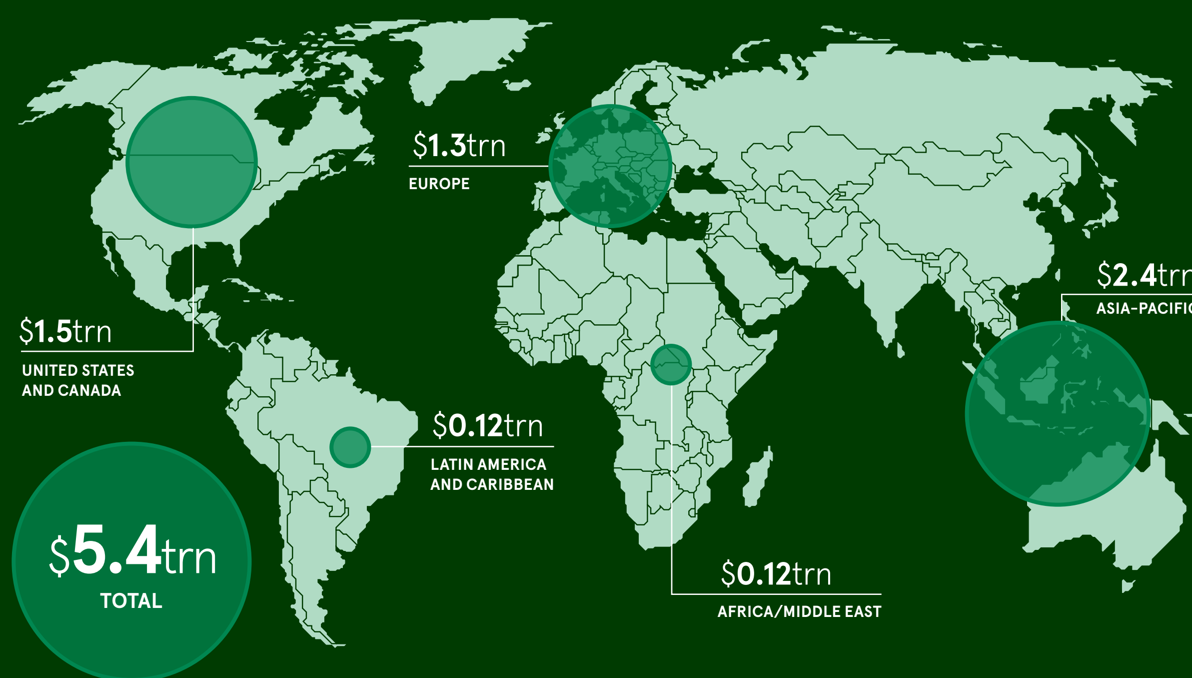
Unlocking supply chains sets trillions in cash free for good

Greensill makes finance available to all businesses cheaply, easily and seamlessly using the latest technology, financial innovation and capital markets. They call this process the democratisation of capital

A FINTECH SOLUTION FOR A GLOBAL PROBLEM

CASH LOCKED UP IN GLOBAL INVOICES

Sum of accounts receivable last quarter reported in 2018 ($trn)



Cap IQ and Greensill Research

SUPPLY CHAIN FINANCE OPENS OPPORTUNITY

Example timeline (180 days)

More than $5 trillion is locked up in vast supply chains that deliver the products and services that enable our globalised economy to function.

Imagine what an innovative and modern business, small or large, could do if access to such a large pool of capital were available to it? The possibilities are endless: a new manufacturing plant, a global expansion plan or even something as simple as payroll and funding capital expenditure.

This is what that cash should be doing, but it can't because it is locked up in unpaid invoices of companies all around the world, struggling with inefficient supply chains funded by cumbersome traditional banks.

Much of the cash is owed to small and medium-sized enterprises that, in the most extreme cases, may have to wait up to nine months to get paid. Sometimes they cannot hang on and are forced out of business through no fault of their own.

Greensill, the world's leading provider of working capital finance, is changing this with a unique technology-driven approach that is helping to oil the wheels of the global economy and keeping supply chains all over the world running smoothly.

Supply chain finance (SCF) has been around for more than three decades and the market has grown by around 30 per cent in the past eight years. This increase is largely because technology-driven SCF programmes have become recognised as much more efficient and cost effective than other forms of finance such as taking on debt.

Today, however, big data and artificial intelligence are among new technological advancements disrupting traditional working finance models to produce ever faster, easier and more efficient ways of providing companies with the cash they need.

"There are going to be a bunch of very significant changes that take place over the next few years and the broader finance industry, frankly, isn't really keeping up," says Lex Greensill, founder and chief executive of Greensill. "Greensill is way ahead of the curve."

Founded in 2011, Greensill is the world's largest non-bank provider of working capital and has become one of the leading disruptors in SCF.

The London-based company has offices around the world and has extended $50 billion of financing to a pool of 1.7 million suppliers in 60 countries since inception. It also owns Greensill Bank, based in Germany, and runs a suite of SCF funds which together have more than $5 billion of assets under management.

Greensill's mission is the democratisation of capital, making cash available to the smallest of firms on the same terms traditionally enjoyed by the biggest multinationals.

The firm works with some of the biggest and most complex organisations, with supply chains that include tens of thousands of companies, to devise unique and innovative working capital solutions.

For example, Greensill has helped Boeing change the way aircraft purchases are financed without the need for traditional US and European export-import bank support. It has assisted telecommunications providers such as Vodafone in finding a cost-effective way of financing increasingly expensive mobile phone handsets for millions of consumers worldwide.

By reimagining mobile phone handset financing in Latin America, Greensill is putting smartphones in the hands of more people in remote regions who can now connect to the wider world on a scale not previously possible. In Australia, meanwhile, the company is working with its largest clients to devise a new means of providing finance for indigenous-owned suppliers in an effort to level the playing field and democratise capital further still.

Greensill also works with governments. It is the sole provider of SCF to the UK government through a £1-billion programme with the Crown Commercial Service. The government SCF scheme ensures prompt payment to high street pharmacies, which were being hampered by slow government payment mechanisms. North of the border, Greensill also devised a unique financing plan with the Scottish government to provide low-cost hydro-energy.

"We are always looking ahead, asking ourselves how we can further revolutionise working capital finance," says Mr Greensill. "Every day we ask ourselves 'how can we unlock that capital so our clients can put it to work?' That's what gets us out of bed in the morning."

To that end Greensill has recently developed a data-driven version of its basic product.

As the suppliers that have provided invoices to Greensill over the past eight years automatically feed information into the firm's systems, this trove of accumulated data has become a vital resource in providing an evermore efficient route to unlocking capital. The quantities of data are so large that the only way to analyse them and put them to the most effective use is with artificial intelligence and machine-learning.

"By constantly analysing this data, we get a real-time view of any company's financial health an from this we can deduce risk with an unprecedented degree of accuracy," Mr Greensill adds.

As the digital age gathers pace, the need for innovative solutions to the funding, development and manufacture of new products, and the evermore complex supply chains behind them, will become greater.

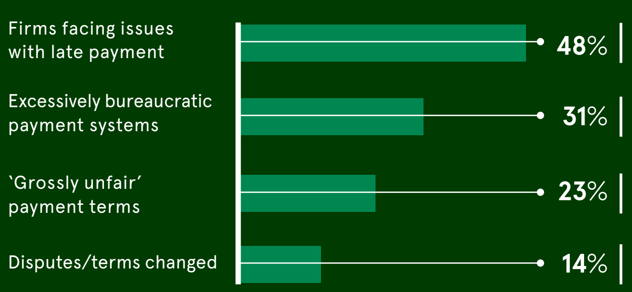
For example, the rollout of 5G connectivity over the next three years is expected to see the rise of autonomous machines and emergence of completely new industries connected to the much-heralded internet of things. Greensill forecasts show that the development of the so-called fourth industrial

> "We are always looking ahead, asking ourselves how we can further revolutionise working capital finance

IMPACT OF LATE PAYMENT

Late payments are the scourge of businesses everywhere. Greensill's groundbreaking approach to working capital finance puts an end to late payments

50k small firms in the UK are put out of business by late payment, costing the economy an estimated £2.5 billion each year



IoD and Greensill

TECHNOLOGY SETS FINANCE FREE

Technology can unlock the value of the supply chain, reducing the need for bank finance

Using data analysis, future demand for goods, services and finance can be accurately predicted

A virtual credit rating can be created for business based on their transaction history

Finance linked to data analysis can help make businesses behave more sustainably

30%
growth in the supply chain finance market over the past eight years

$2.7trn
estimated cost of financing the 5G revolution, which includes the IoT, by the end of 2020

Greensill & IDC

revolution will require upwards of $2.7 trillion by the end of 2020 alone.

It represents a huge challenge to the whole concept of SCF. Yet there is plenty of liquidity in financial markets, more than enough to fund a future of self-driving cars, robot surgery and all the other imagined applications that will rely on 5G technology.

Working capital finance will evolve to meet any challenge, using artificial intelligence and big data while tapping into financial markets. Modern technology is helping Greensill make cash available to a wider cross section of companies in a way that is more cost effective, faster and easier.

"We are in a technological arms race to provide access to an enormous global pool of capital," Mr Greensill concludes. "Greensill is winning that race right now and through the hard work of our excellent people all over the world, we innovate every day to ensure we continue to unlock that capital so our clients can put it to work."

For further information please visit www.greensill.com

Greensill

Q&A

Greensill is changing finance to change the world

Lex Greensill CBE, founder and chief executive of Greensill Capital, shares his insight into supply chain finance and more

What is Greensill and what does it do?
We are a market-leading provider of working capital finance, unlocking cash so companies can put it to work. Greensill is all about the democratisation of capital, making working capital available to the smallest firms in the same way as the big banks offer it to the largest multinationals. We believe every company has the right to working capital as this oils the wheels of global business.

However, we are about much more than supply chain finance (SCF). Greensill uses the power of financial markets to unlock capital on terms that fit the requirements of our clients, from 20 days to 20 years and beyond.

Since inception in 2011, we have become one of the world's largest providers of alternative working capital, specialising not just in SCF, but in providing bespoke finance solutions to companies internationally. The company is headquartered in London and has more than 290 specialists in New York, Chicago, Miami, Frankfurt, Bremen, Mexico City, Sydney, Johannesburg, Singapore and São Paulo.

Greensill is transforming finance so our clients can transform the future.

What is supply chain finance?
Essentially, supply chain finance, or SCF, enables any supplier, from small and medium-sized enterprises (SMEs) to large multinationals to get invoices paid instantly. To do this the supplier sells its invoices to a SCF provider as they are approved by the buyer. That allows the buyer to pay later and the supplier to secure its money earlier.

Imagine a person stuck in the desert dying of thirst. All he needs is water. We will deliver 99 bottles of water to that man right now, whereas the big banks would tell him: "You can have 100 bottles of water, but fill out these papers and we will get it to you in three to six months." I think we all know what would happen to the man in the desert.

That's the predicament many SMEs find themselves in today. If only they had access to cheap, safe and fast-working capital, their businesses would be much healthier, more profitable and less likely to go bust.

What does Greensill do differently?
Firstly, we are financially robust. We own our own bank, based in Germany, and we have SCF funds with a combined $5 billion under management. Most companies that operate in the fintech space or in SCF do not have that kind of underpinning. Then our model uses the capital markets to package up the invoices we acquire into bonds and sell them to investors. Our approach is simply better for our clients because it is faster, cheaper and easier to access. This flexibility enables them to fund their suppliers while maintaining healthy levels of working capital.

> "Greensill is all about the democratisation of capital... We believe every company has the right to working capital as this oils the wheels of global business

What is Greensill's innovative approach to working capital finance?
Greensill's expertise enables us to anticipate challenges and develop solutions as they occur. We anticipate problems and work with companies to provide different financing options.

We are always looking ahead, asking ourselves how we can further revolutionise SCF. We are doing that now using big data analytics.

Our innovative and technology-driven approach has enabled us to provide a diversity of products and solutions for our clients. For example, Greensill has recently enabled companies to finance more than $2 billion of acquisitions across multiple sectors.

We have assisted Boeing and Marsh develop an entirely new means of financing aircraft purchases and take advantage of a gap in the market left by the US and European export-import banks. Greensill also worked with long-time client Vodafone to unlock hundreds of millions of dollars to finance the purchase of mobile phone handsets.

What Greensill projects are changing finance to change the world?
With our new way of financing handsets, we are helping people in remote parts of Latin America to connect to the mobile economy in a way that was previously impossible.

We are also protecting vital frontline healthcare in the UK. High street pharmacies play an essential role in communities, but have been hampered by slow government payments. Greensill's tech-driven £1-billion SCF programme with the Crown Commercial Service ensures prompt payment every time.

Meanwhile in Australia, we are working on a plan we hope will level the playing field for indigenous people in a competitive global landscape.

What is your partnership with General Atlantic?
Growth equity firm General Atlantic last year made a minority investment in Greensill, continuing its strategy of supporting companies that use technology to disrupt the financial system. The firm is our first institutional investor and invested $250 million, valuing Greensill at $1.64 billion. This gives us access to a wealth of expertise, both at General Atlantic and among its stable of portfolio companies, as well as opportunities to enter important markets such as China, India and Brazil.

COGNITIVE SUPPLY CHAIN

New brains of the supply chain

Cognitive supply chains that are able to predict and adapt in times of uncertainty are set to revolutionise trade, and will be a key competitive advantage in the coming years

Nick Easen

As complex algorithms, machine-learning and artificial intelligence become mainstream, it seems inevitable that they'll disrupt global supply chains. Companies, whether they're Maersk or GSK, Jaguar Land Rover or Tesco, increasingly need inventory and distribution management systems that are self-learning, predictive, adaptive and intelligent; so-called cognitive supply chains.

"We're at a unique moment in the evolution of the supply chain where advanced technologies have matured enough to match the proliferation of data. There is a current transition among leading companies where they're aggressively reinventing from the inside out," explains Jesus Mantas, managing partner for global strategy at IBM Global Business Services.

"The typical supply chain in 2018 accessed 50 times more data than just five years earlier. There's an increasing focus on supply chains to reduce costs across incredibly complex, global operations. However, less than a quarter of this data is being analysed in real time."

The fact is smart, fully digitalised supply lines and inventory management systems that think for themselves are still thin on the ground. Amazon's anticipatory shipping technology, which calculates demand for items in specific locations and moves them around efficiently, is still a widely used example. Yet it's not the norm.

"There is a huge appetite to develop cognitive supply chains, which is only set to increase as more success stories come to light. But for many, achieving a fully cognitive one is currently just a pipe dream because of poor quality data," says Alex Saric, smart procurement expert at Ivalua.

> "Cognitive supply chains are able to sense in real time, understand implications and trade-offs; they'll also drive competitive differentiation to the next level

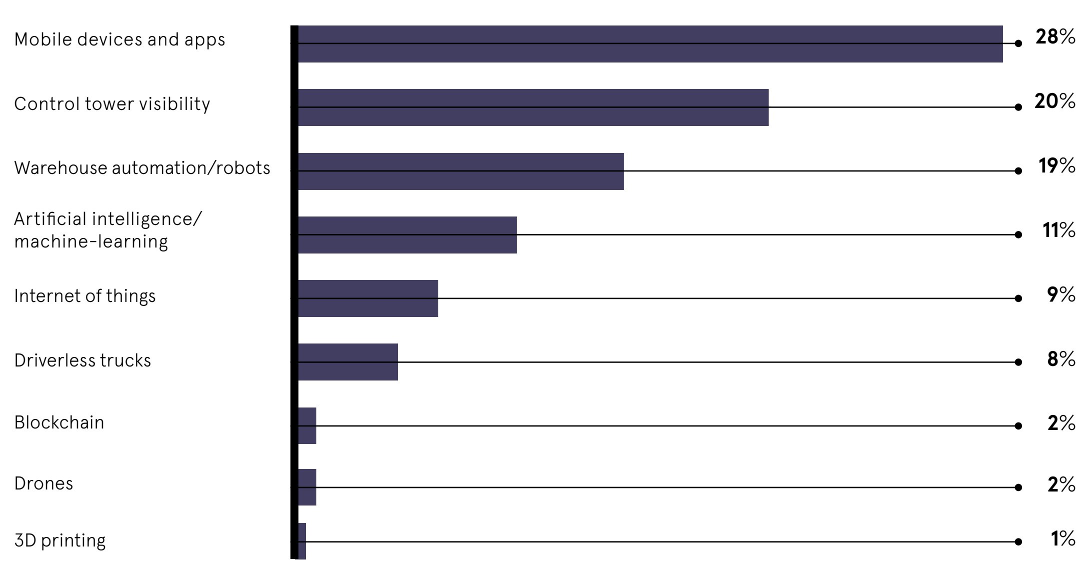
The age-old issue of siloed, unrationalised-data legacy systems, as well as companies that don't talk to each other, is widespread. And with deploying cognitive supply chains, there is still a risk of being a first adopter, at the same time as there's the worry of being left behind, while the dread of potential failure can be an even bigger limiting factor.

"We still see many companies stuck in pilot purgatory. They have many artificial intelligence learning pilots, as well as proof of concepts, but with few examples at scale," says Matthew Burton, partner at EY Advisory.

Get it right and the benefits are legion. Algorithms can tune supply lines based on human behaviour. The outcome can be better, personalised, customer service with lower inventories and a better utilisation of factory hours. Just-in-time supply chains prevalent in automotive, food and healthcare, which look to cut costs by reducing

MOST INNOVATIVE TECHNOLOGIES

Global manufacturers, retailers and logistics companies were asked which technologies will have had the most supply chain innovation benefits in five years



Adelante SCM/BluJay Solutions 2018

the materials a company holds in stock, are eyeing up these innovative solutions.

"A cognitive supply chain can help companies mitigate risks, improve insights and performance, as well increase transparency. Having one is crucial as the global trade wars wage on. Forward-thinking organisations that adopt these digital capabilities will be best prepared to navigate an unpredictable future," explains Mike Landry, supply chain business leader at Genpact.

Growing global competition and market pressures are forcing companies across all industries to do more with less. As data explodes and becomes available from multiple sources in real time, it's also impossible for traditional supply chains to keep up.

"Companies can no longer use a historical statistical approach for demand streams to make sense of what the future will look like. Cognitive supply chains are able to sense in real time, understand implications and trade-offs; they'll also drive competitive differentiation to the next level," says Fred Baumann, general vice president of industry strategies at JDA.

Building cognition into supply chains and inventory management systems doesn't have to be a multi-million-pound, insurmountable corporate mountain. Buy-in from the C-suite helps, so does a bite-sized approach.

"Companies should start with simple use cases as part of an overall roadmap. Starting with cost-savings targeting near-term return on investment to prove that its value can help spark change. The emergence of a new role, the supply chain architect, can also help drive change," says Kevin Doran, managing director at Accenture Strategy.

The primary challenge once a business decides to deploy a digital supply chain is that data across the distribution lines, end to end, is not owned by any single entity. Data definitions are different across industries and at different stages.

"Consensus on data standards takes time and that process unfortunately doesn't move as fast as the speed of supply chains. Companies need an open API [application programming interface] that can take digital streaming from any source and is capable of ingesting real-time data. No single company can achieve end-to-end visibility, as this also requires a partner ecosystem," says Mr Baumann.

As technologies continues to mature so will the roles for management of the digital supply chain, as well as new concepts such as the virtual supply chain or digital twin. Dummy data can now be used to test issues with supply, distribution, inventories and products. It is based on a transparent supply chain strategy, comprised of rules on how to absorb and refine costs.

"Uncertainties such as pending tariffs or disruptions can be run through 'what if?' scenarios to understand the service, cost and risk implications of decisions and unexpected market conditions," says Mr Landry.

Blockchain-enabled smart contracts also offer a particular advantage when it comes to cognitive supply chains. The reliance on extensive paperwork is still one of the biggest challenges. "By coupling smart contracts with other technologies, like the internet of things and tracking tags, smart contracts could automate individual processes within a supply chain," says Ian McKenzie, associate director at Osborne Clarke.

In the United States, Walmart now requires suppliers of leafy salads to use blockchain technology. Romaine lettuce contaminated with E. coli prompted this. Using blockchain, Walmart tracks each item as it moves along the supply chain. This enables the retail giant to pinpoint the origin of contaminated food in minutes rather than days, with the potential to save lives. This issue has made the supply chain smarter in the process.

According to IBM, which is rolling out their Watson Supply Chain, we also shouldn't forget the human element as we development cognitive systems. "Artificial intelligence allows organisations to free up their professionals from mundane, transactional activities to focus on higher-value responsibilities," says Mr Mantas. This is perhaps where the real advantage lies.

Min C. Chiu/Shutterstock

Brexit rethink over just-in-time supply chains

Brexit remains a major unknown. This is especially true for complex, smart supply chains that span out across Europe supplying the UK daily with goods in many sectors from automotive parts to drug or food ingredients and aerospace components.

How supply chains are optimised comes into question when there's a risk of fresh border checks or new routines, which could cause long delays at ports. Certainly, agile distribution lines could suffer.

"Self-organising cognitive supply chains often rely on a steady flow of just-in-time inventory. These will be particularly susceptible to disruption unless companies plan ahead and build additional inventory capacity to buffer for potential additional delays on imported or exported goods," says EY Advisory's Matthew Burton.

Tying up capital in inventory will be an issue and risk management will become vital if the new normal is volatility. The predictability of post-Brexit trade and how this can be modelled is a big challenge.

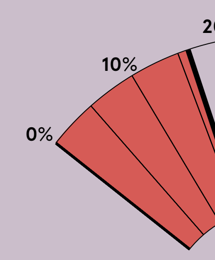
"Brexit should present the stimulus for companies to develop truly resilient and responsive supply chain management capabilities, underpinned by cognitive, data-led decision-making that senses and reacts to supply risk and disruption before it impacts the customer," says Kevin Doran at Accenture Strategy. Not a big ask then.

NEED FOR SPEED

Consumer cravings for instant gratification are creating challenges for transport and logistics companies, with retailers and service providers desperately figuring out how to still turn a profit and offer deliveries at the lowest possible cost. However, even as new shipping options and technologies begin to emerge, what customers seem to value beyond all else is that deliveries remain free (or at least, cheap), leaving companies scrambling to make their supply chains as efficient as they can be

CONSUMER IN

Percentage of cons



Yes, t

EMERGING SHIPPING OPTIONS

Percentage of manufacturers, retailers and logistics firms who expect to be using the following in ten years' time

- Dedicated delivery person — Delivery service picks up parcels at a consolidation point — 96%
- Store fleet or store staff — Car, bike, foot — 91%
- Crowdsourcing — Driver network selects a specific delivery order — 87%
- Semi-autonomous ground vehicles — Delivery person completes administrative tasks while vehicle does the driving — 86%
- Autonomous ground vehicles — Parcels are delivered to a third-party location without human intervention — 85%
- Drones — Autonomous aircrafts carry parcels along the most direct route at a relatively high speed — 81%
- Bicycle couriers — Small number of parcels delivery by bicycle — 80%
- Droids — Small autonomous vehicles deliver parcels via sidewalks rather than streets — 78%

Zebra Technologies 2018

88%

of online shoppers say that free shipping is more important to them than fast shipping

Deloitte 2018

67%

of shoppers said that free returns is the most important factor when returning orders

KPMG 2018

90%

of manufacturers, retailers and logistics firms believe delivery is an extension of a retailer's brand

Zebra Technologies 2018

BIGGEST CHA

Global survey of log

3% Other

2% Routing

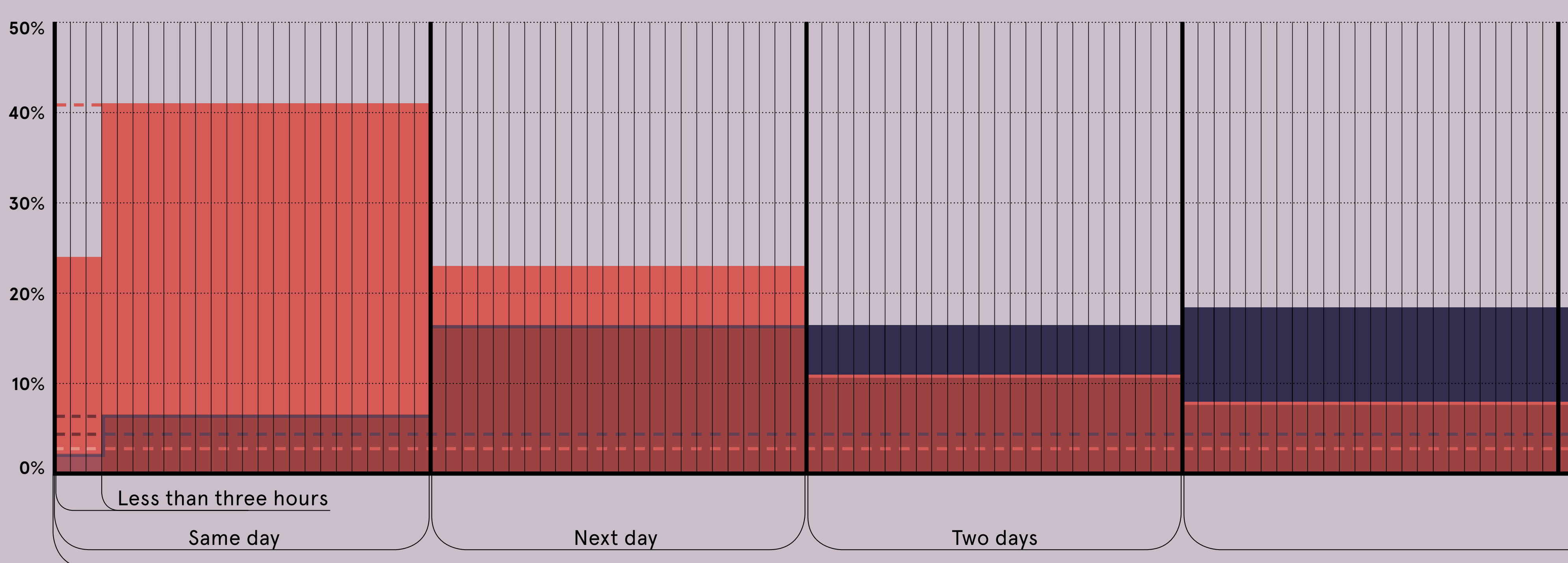
8% Missed deliveri

10% End-customer i

13% Increased costs

CONSUMER EXPECTATIONS FOR ONLINE DELIVERIES

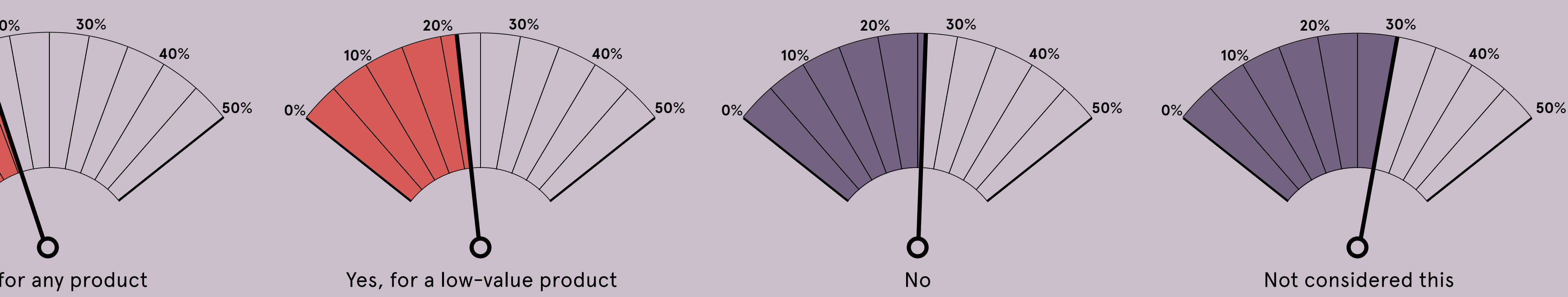
How soon consumers expect their goods to arrive, and which timeframes they are willing to pay for



ITEREST IN DRONE DELIVERIES

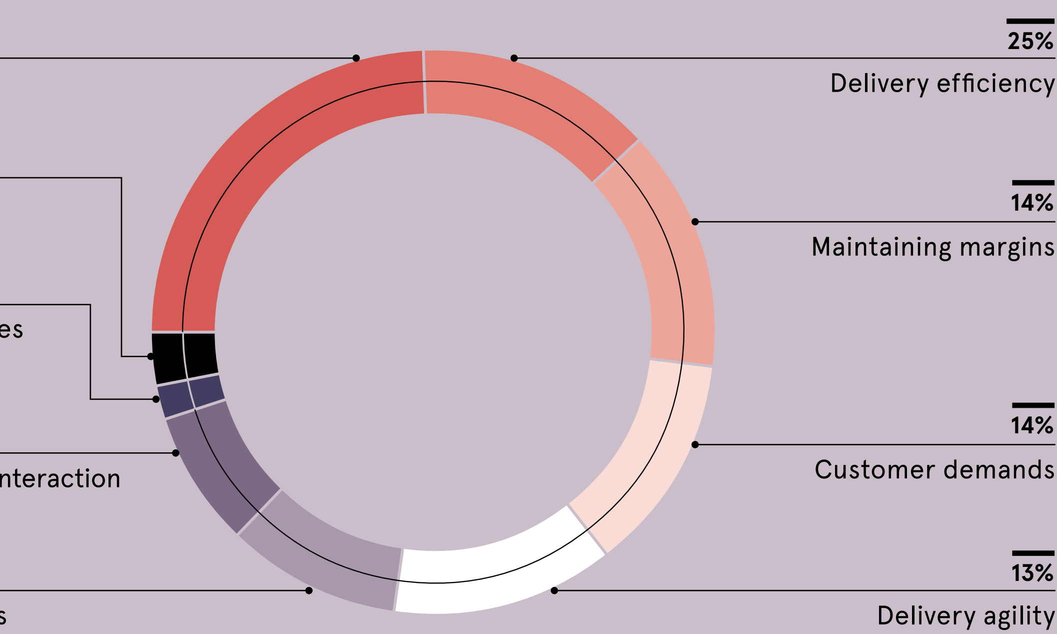
umers who would trust a drone to deliver their package

PwC 2018



LLENGES WITH LAST-MILE DELIVERIES

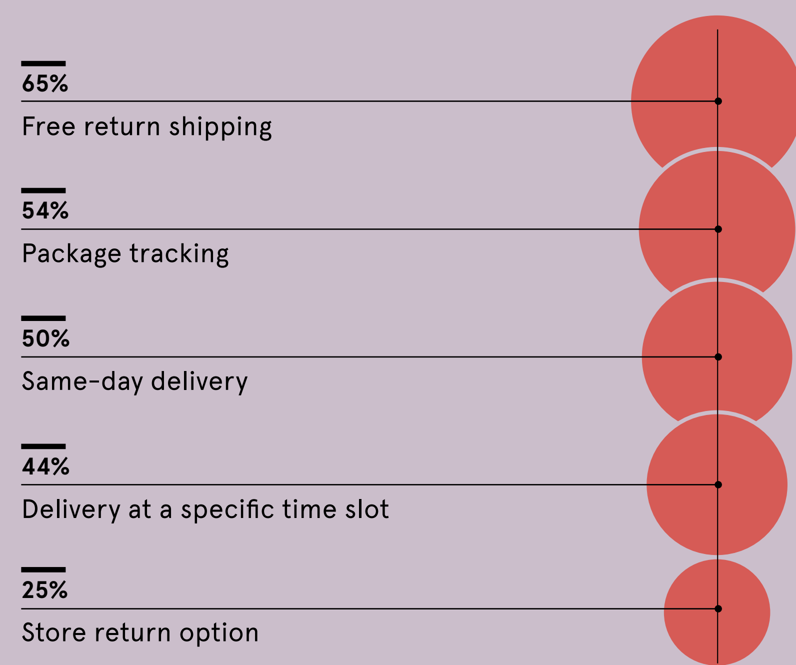
istics providers and supply chain executives were asked to choose their biggest challenge



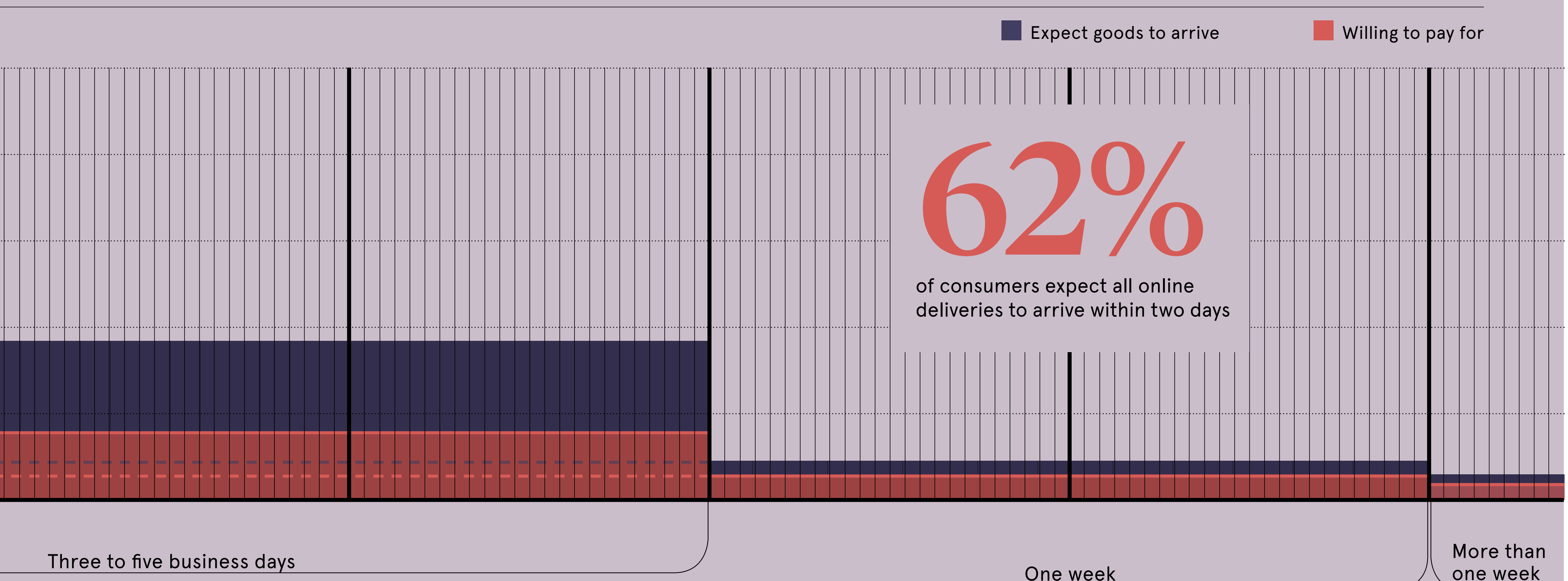
Eft/Localz 2018

MOST VALUED FREE DELIVERY SERVICES

Percentage of consumers who believe the following free options are attractive



PwC 2018



PwC 2018

AGRICULTURE

Tech drives fairer pay for marginalised farmers

Blockchain and other digital platforms are opening up complex supply chains in agriculture, but without involvement at every level there are limitations to their success

Mark Hillsdon

From the barley fields of Uganda to cassava farms in Zambia, blockchain – the technology behind cryptocurrencies such as bitcoin – is bringing a new transparency to the world's agricultural supply chains.

Blockchain in agriculture is a reaction to our growing demand for ethical products that have been sourced sustainably and from farmers who have been paid a fair market price.

But agricultural supply chains are complicated beasts, often operating in their own small silos. This can obscure transparency and thwart access to sound, reliable information, leaving smallholders marginalised and unable to get the resources they need.

"The global food value chain is a complex network extending from farmers to processors, to transport companies, to distribution centres, to grocery stores," says Eric Somitsch, senior director of solutions for consumer products and agribusiness, at software provider SAP.

"Before food reaches our plates, it has often travelled halfway around the world and been touched by many intermediaries. Therefore, providing transparency from farm to consumer is difficult to achieve and without transparency it is hard to get people to trust the system; this is where blockchain can help."

When AB InBev, the world's largest brewer, started looking at its supply chain transparency in Africa, they began talking to local farmers. "We quickly realised they weren't getting the prices that we thought they were," says Katie Hoard, global director of agricultural innovation and sustainability. Corruption and too many middlemen were taking their toll on the money that farmers were actually banking.

To tackle the problem, AB InBev linked up with technology company BanQu to launch a simple mobile app based around blockchain, which offers farmers a secure, immutable platform that records their transactions.

Importantly, explains BanQu co-founder Ashish Gadnis, the system creates an economic identity and transaction history, making it easier for farmers to deal with banks and other financial institutions. "When the farmer says 'I exist in the AB InBev supply chain', they become bankable," he says.

Currently, more than 20,000 barley and sorghum farmers in Uganda have been added to the platform, along with a further 2,000 cassava farmers in Zambia.

Blockchain brings very practical benefits too, adds Ms Hoard, who recently spoke to a farmer in Uganda whose paper receipt for barley sold, the only proof she had of the crops she produced, was destroyed in a torrential downpour. "With blockchain there is always an electronic receipt sitting on her cell phone," says Ms Hoard.

But blockchain is only one piece of the puzzle, says Mr Gadnis, and other farmer-centric platforms have an important role to play in ensuring the long-term viability of supply chains.

Olam is one of the world's largest agri-businesses, with supply chains covering a range of commodities from cashew to cotton. Last year the company launched AtSource, a non-blockchain technology which is also designed to improve supply chain transparency and farmers' livelihoods, says Siddharth Satpute, programme director of Olam International's digital task force.

It tracks the environmental and social impact of a product at each stage of its journey, helping Olam to provide its customers with the data they need to measure their own sustainability commitments.

"More data and insights means better targeted, and therefore more efficient, sustainability programmes," says Mr Satpute. "In turn, this means faster change for farmers to improve livelihoods and better protection of natural resources, resulting in more resilient supply chains."

However, Chris Isaac, managing director of AgDevCo, offers a word of warning. "Mobile agtech is a powerful tool for reaching farmers but, unless it is part of a wider ecosystem, it is likely to disappoint," he says.

AgDevCo is an impact investor, funded by the UK Department for International Development, working with small agri-businesses across Africa and helping them connect with smallholder farmers.

"There's a lot of excitement about mobile agtech solutions, but they can't help smallholder farmers in a vacuum," he says. "You need the local processor or aggregator, who engages with farmers on the ground and acts as the link to international markets."

In Mozambique, for example, AgDevCo works with Moz-Agri, a business which buys goats from thousands of farmers and is introducing a digital traceability system using electronic ear tags. Elsewhere, in Malawi, AgDevCo is helping Jacoma, a macadamia nut processor, to roll out a system to register hundreds of growers. They can then build a database to support traceability, help with training and inputs distribution, and better monitor farmers' yields and incomes.

Mr Isaac concludes: "Digitisation gives a direct channel to the farmers that potentially cuts out some of the middle men. It allows you to get better information on where some of the stuff is coming from and that, potentially, allows you to pay better prices because you know that farmer is giving you a quality product. Long term, this is surely the direction things are heading for many commodities."

01
Barley farmer Grace Mokoso from Sipi, Uganda, works with BanQu, which offers farmers a secure platform to records their transactions

02
Nile Breweries Limited (AB InBev) farmers using the BanQu app

Three companies shaking up agriculture

01 Moyee Coffee

Ethiopian-Dutch company Moyee Coffee is using blockchain to improve traceability, as well as allowing buyers to deal directly with farmers, cutting out the go-betweeners and ensuring growers receive a bigger piece of the profits. Buyers can access profiles of the farmers they work with, see exactly how much they are being paid and even help to fund new planting projects.

02 Honey Flow

Nigerian-based Honey Flow is bringing internet of things technology to beekeeping, with sensors that monitor the temperature, humidity and noise within the hive, factors which can have a huge impact on the productivity of the bees. The system can help beekeepers maintain optimal conditions, preventing bees from swarming and avoiding the financial impact of a deserted hive.

03 Aerobotics

South African business Aerobotics uses drone technology to help with the early detection and identification of pests and disease in orchards and vineyards. The airborne reconnaissance is sent to the farmer's smartphone, enabling them to pinpoint problems on a tree-by-tree basis.

OPINION

'The bedrock of innovation is constantly to question and challenge the assumptions'

Someone said: "If you do what you always did, you'll get what you always got." Many people have laid claim to this quote, including American author, entrepreneur, philanthropist and life coach Anthony Robbins and before him Albert Einstein, Henry Ford and even Mark Twain. Regardless, what matters is the point it makes.

Managing complex supply chains means we are often working with long-established, well-honed and complex processes. It only takes one small disruption to cause absolute chaos, so it is no wonder that we continue to follow established and familiar approaches. It is no surprise that those with complex international supply chains are most concerned about the short-term disruptive impact of Brexit.

We increasingly work in changing environments with constant mergers and acquisitions, increased risk in supply chains, as well as heightened legislative and global political challenges. Organisations are struggling to translate a deluge of data into information that will support better decision-making. There is a shortage of skilled talent to clean, integrate and extract value from big data. In fact, in PwC's *22nd Annual Global CEO Survey*, 55 per cent of respondents noted that the talent shortage meant they had an inability to innovate effectively.

Yet things are moving forward; change sometimes feels faster and more dynamic than ever. Buzzwords such as artificial intelligence and blockchain are actual technologies being implemented in real organisations. They are forcing organisations to adapt quickly, preferably with minimal disruption and cost.

There are many ways for the procurement and supply profession to lead the way on innovation, and it doesn't have to be centred on the latest technology.

Collaboration is the key. In a digitalised global economy you can't manage a global supply chain without internal and external collaboration. Sharing cross-functionally and sharing with suppliers is a very powerful way to innovate. Encourage your suppliers to look at things differently and seek value. Ensure procurement and supply is seen as an enabler, not just a cost saver. Focus on the outcomes and how your supply base can bring innovation to achieve those outcomes, rather than just meeting pre-specified inputs.

Organisations are prioritising simplicity and visibility, designing networks that can be easily reconfigured to react to external circumstances. If an agile and flexible approach can be fostered without too much fear of breaking with the norm, an organisation can respond much quicker when innovations are presented, reaping the benefits fast and without having to wade through layers of process and due diligence. This can become a competitive advantage.

Challenge the status quo. Larger suppliers will often be the harder ones to shift in terms of their approach, so look at the periphery of your supplier ecosystem. Smaller organisations are often much more able to bring the speed and agility that is needed. But often small and medium-sized enterprises (SMEs) and startups face huge barriers when it comes to working with large corporates and their unwieldy procurement procedures.

Many larger organisations have now created schemes to make it easier for SMEs to become suppliers. Open innovation platforms allow smaller suppliers to join the conversation. *The State of Innovation Report* from the Unilever Foundry, Unilever's platform for startups, predicts that within five years all top corporates will be collaborating with startups. This is a big commitment and a fundamental shift in approach, so it's essential you take the wider organisation on the journey with you.

The bedrock of innovation is constantly to question and challenge the assumptions; keep asking the question why? So why are you doing something you have always done and therefore why are you still getting the same results? Think differently and unlock the potential of innovation, to drive both efficiency and growth. ●

Malcolm Harrison
Chief executive, Chartered Institute of Procurement & Supply

Commercial feature

How to build an end-to-end supply chain

Data should flow smoothly across all partners to create a unified supply chain. **John Lash**, vice president of product marketing at E2open, explains how this can be done

Let me be blunt. Most companies struggle with their supply chain. Their view is fragmented. All they can see is a patchwork of siloed data, with no single overview. It's a mess.

There are historic reasons for this. When supply chain software first appeared around 30 years ago, computing power was at a premium. Storing data was expensive. So software writers created individual solutions for each component of the supply chain. You'd have one system to manage logistics. Another for inventory. Another for channel partners. And for many companies that history is their present.

But it needn't be. There is an alternative. Imagine 100 per cent visibility in real time. And an integrated view stretching not just across the enterprise, but extending to the wider ecosystem, suppliers, retailers, manufacturers, outsource partners, customers, the lot.

This is known as end-to-end (E2E) supply chain management. For a growing number of leading companies it is already a reality and a source of advantage.

E2E's impact on performance is huge. Here's an example. If a consignment of goods leaves Hong Kong for London on a ship that gets delayed, the system can flag this, even though the goods are still with a logistics outsourcer. The manufacturer's team can address the challenge using real-world, real-time data. They can assess inventory levels to gauge what impact the delay will have on stocks. If the delayed goods need substituting, it is possible to identify globally where replacements are held. The knock-on effects of different strategies can be modelled and actions plans automatically executed.

It's clearly the best way to manage a supply chain. So why don't more companies embrace it? Truth is, it's not simple to create an E2E picture. Much of the vital data sits outside the enterprise. Logistics companies, retailers and supply partners have their own IT infrastructure, each with their own complexities. The data is locked away in each infrastructure with the vast majority of it being in systems outside your control. Building something to overcome these challenges in-house simply isn't feasible.

There is a solution. E2open offers a ready-made network with true E2E supply chain management. Our network already includes 53,000 suppliers, 2.3 million resellers and thousands of logistics partners. When a new customer joins, they gain instant access to these connections, slashing time to value.

Naturally, there will be gaps to fill. E2open works with clients to ensure their entire extended supply chain is included. We build physical connectivity, then cleanse and normalise data, ensuring it flows smoothly. We offer a suite of applications to manage operations, from logistics and warehousing, to retail and forecasting. And our E2open Harmony platform offers a single pane-of-glass view of the supply chain with no need to flick between screens or modules; a complete overview is right there.

E2open is used by Amazon, Boeing, Caterpillar, Google, Jaguar Land Rover, Procter & Gamble and Seagate, to name just a few.

Gartner ranked E2open as the leading vendor for completeness of vision and ability to execute in last November's 2018 Magic Quadrant for Multi-Enterprise Supply Chain Business Networks. Among our strengths, Gartner cited our "vision and roadmap for addressing supply chain convergence and emerging technologies on a single integrated platform".

With our Demand Sensing module, clients can benefit from information that sits outside their monitored ecosystems. Artificial intelligence analyses all known data to create ultra-accurate demand forecasts, harnessing both supervised and unsupervised machine-learning. When deployed with our full solution, E2open Demand Sensing can cut safety stock by 31 per cent, lower forecast error by 36 per cent and double forecast added value.

Any company with a complex supply chain needs total visibility with no silos keeping data hostage. Data must flow smoothly across all partners, from suppliers to retailers and everyone in between, to be transformed into action and advantage.

This is the opportunity E2open offers. And it's one that many global leaders in manufacturing, aerospace, consumer goods, pharma and retail have seized upon. Its benefits are game-changing.

31%
reduction in safety stock when using multi-echelon inventory optimisation in conjunction with demand sensing, compared to traditional single-echelon inventory management

13%
reduction in safety stock using multi-echelon inventory optimisation alone (without better forecasts from demand sensing)

36%
error reduction using demand sensing

#1
E2open's Gartner ranking among multi-enterprise supply chain networks for its ability to execute and completeness of vision

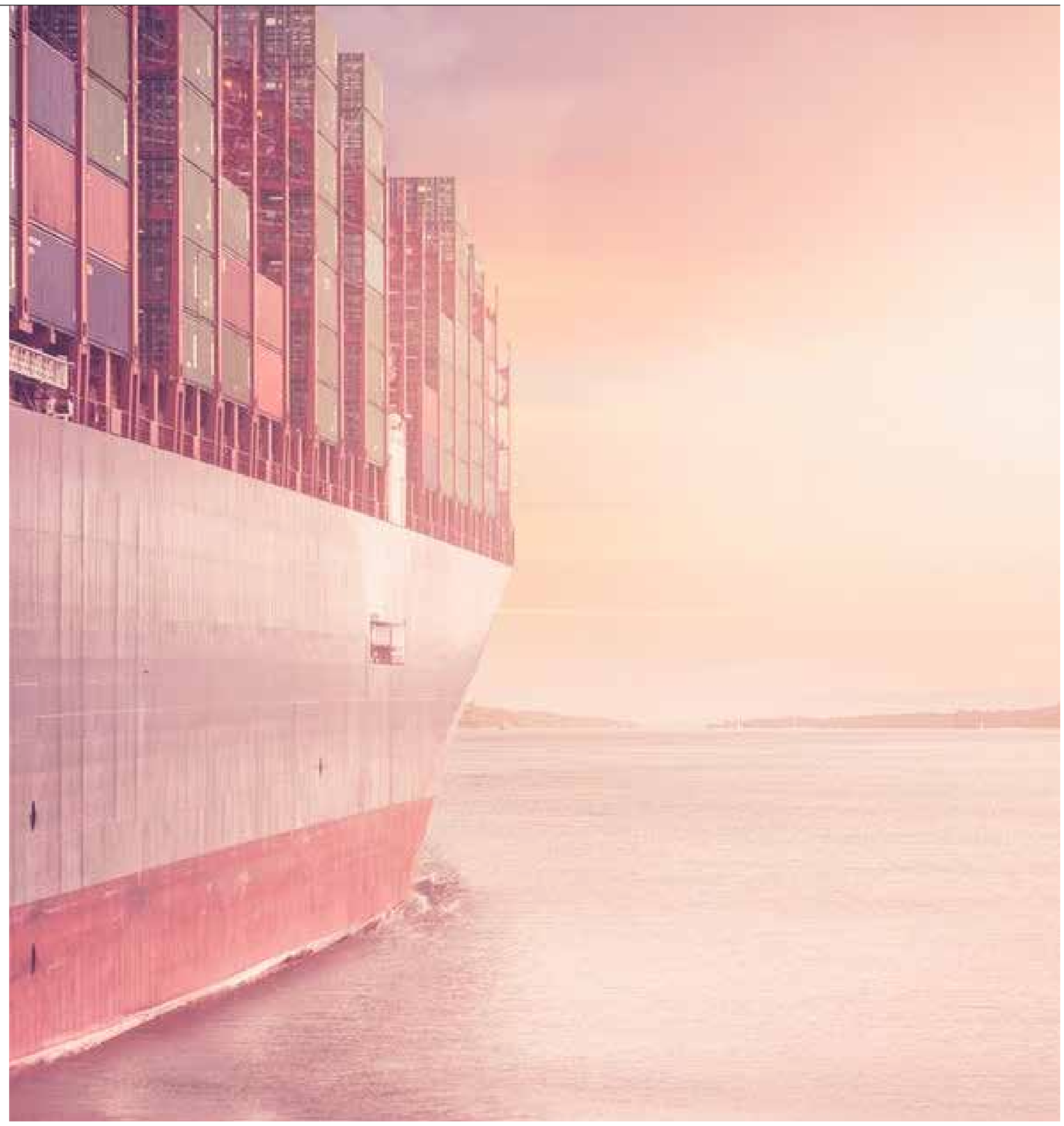
To find out how you could enjoy these benefits, get in touch and we'll introduce you to a new way of managing your supply chain. Visit E2open.com, and head to our Resources section for our new "Forecasting and Inventory Benchmark Study".

E2OPEN®

Commercial feature

Let's say yes to the mid-market

Medium-sized companies desperately need better access to supply chain finance. **Maurice Benisty**, chief commercial officer of Demica, explains how to fix it



In recent years, supply chain finance has become a mainstream tool for increasing trade and boosting working capital. It makes perfect sense. A company can leverage its credit rating to extend finance to suppliers at a more favourable rate than they might otherwise receive.

It means they extend their own days payable outstanding while enabling suppliers to reduce days sales outstanding and finance their receivables. Supply chain finance, known as SCF, brings working capital benefits to both parties, while also strengthening relationships and improving the overall resilience of the supply chain.

But SCF is not universally adopted. Mid-market companies are neglected. Demica estimates the untapped potential of SCF to medium-sized companies to be as high as $3 trillion. It is also true that companies in emerging markets are struggling to find finance. This market failure is damaging both to the affected companies and the overall supply chain.

It is worth first defining what we mean by mid-market companies. While company sizes can range from $10 million to $3 billion depending on country, we are talking about companies at the higher end of the range with minimum revenues of $500 million.

Maurice Benisty
Chief commercial officer, Demica

So how can supply chain providers embrace these neglected companies and bring the benefits of SCF to all? First, let's start with the reasons mid-market companies are in this situation.

Mid-market companies are less likely to have the same rate arbitrage over their suppliers as is typically found with large corporates. They are also less likely to have the bargaining power needed to extend supplier payment terms. Likewise, mid-market companies may lack the resources needed to navigate complex contracts and oversee supplier onboarding.

Banks may face obstacles when it comes to providing SCF to medium-sized companies. Large global banks may be less interested in providing SCF to companies of this size and while regional banks may have more appetite for smaller scale programmes, they may lack the product expertise and technology platform needed to operationalise them.

When supply chains extend into emerging markets the equation gets a whole lot worse. Most SCF schemes are structured on a domestic basis, with buyers offering SCF to suppliers based mainly in developed markets. Banks may struggle to onboard suppliers in countries outside their own regions. Reasons for this include diverse know-your-customer (KYC) procedures, multiple languages and differing compliance requirements.

Banks adopting a more regional focus means many are not in a position to support SCF spanning different regions and jurisdictions. It's a regrettable trend when so many companies are building increasingly globalised supply chains.

Fortunately, there are solutions. A notable development is the arrival of fintechs, which enables a wider range of investors to fund middle-market companies with risk distributed across multi-funder platforms.

> **Demica's goal is to help extend SCF to mid-market companies and to those trading in emerging markets**

One of the most notable is Demica, a rapidly growing fintech company providing working capital solutions to corporates and banks.

Demica has a long list of funding partners looking for assets and as a result has funded new working capital programmes with a value of more than $1.6 billion over the past year across Europe, Asia-Pacific and the Middle East.

Supplier onboarding is being shaken up by Demica, which has developed slick graphical user interfaces common in most consumer finance applications. Currently, we see suppliers that lack the resources needed to comply with highly manual KYC or onboarding procedures. It means they can fall by the wayside. The consequences are severe. Half the respondents to PwC's *2017 SCF Barometer,* for example, cited the supplier onboarding process as a key success factor, while 31 per cent flagged it as a bottleneck.

To extend reach into emerging markets, Demica has partnered with the FCI, the global representative body for the factoring and receivables finance industry, to develop FCIreverse, which is a plug-and-play platform enabling FCI members to provide SCF across multiple currencies and jurisdictions.

The platform allows funders to leverage FCI's network of more than 400 banks to onboard and fund suppliers locally, while retaining the risk of the buyer and sharing the discount applied to the invoice purchase. FCIreverse radically improves onboarding across different jurisdictions using established FCI member relationships and Demica's powerful online supplier onboarding tool.

While FCIreverse is the first solution of its kind, this does follow the established use of third-party technology platforms by corporates to extend beyond the traditional scope of one bank, one buyer and a group of suppliers. Being able to manage all bank funding partners across a single platform brings further simplification opportunities for corporate treasurers. This is not least because the platform provides reach into an extended universe of financial institutions, which have long worked together under the FCI.

Demica's goal is to help extend SCF to mid-market companies and to those trading in emerging markets. As one of the world's largest facilitators of SCF, spanning 135 countries with $110 billion in receivables and payables arranged each year, we see it as our duty to make supply chains as resilient as possible.

Our approach to supply chain finance is proving a huge hit with clients. The industry has recognised our efforts too. Demica is a winner of several prestigious industry awards, including last year's BCR Supply Chain Finance Provider of the Year (non-bank), Global Finance's Supply Chain Finance Provider 2019 (non-bank) and Trade Finance Global's Supply Chain Financier 2019 award.

The market needs service providers that can give corporates what they need to optimise working capital management. This means a collaboration between relationship banks, often best placed to assess corporate credit, alternative funders to structure and price for risk, and platform providers to bring it all together. It is likely that the investment in technology to make this happen will come from a combination of new and existing market participants. Demica will be at the forefront of these trends to drive more capital into the market.

To find out more about Demica SCF please go to Demica.com

wavebreakmedia/Shutterstock

CUSTOMER SERVICE

Balance of power could shift to consumers

Some experts predict increasing competition between parcel delivery companies could change traditional market dynamics, with logistics firms having to differentiate themselves to win the loyalty of online customers

Michelle Perry

Consumer choices have become increasingly important in logistics, a market more used to catering to the business sector, with the range of delivery options and quality of service now core to the offering. But has the balance of power shifted so far in favour of consumers that it is the customer who will soon dictate the delivery company, rather than the retailer?

That's what some parcel delivery companies believe and they are positioning themselves ready for that switch. The future of logistics and the critical last mile is being quietly fought with technological wizardry. Whoever is the best at accommodating the all-powerful consumer with the most individualistic and personalised delivery journey will ultimately be the winner. And there's a lot to fight for.

Last year, the UK parcel delivery market was worth nearly £10 billion, a rise of 5 per cent on the previous year, according to analysis from the Office of Communications, Ofcom, published last November.

Considering recent growth in online spending in the retail sector, the potential is massive. Latest analysis shows UK online sales made up 18.8 per cent of all retail spending in January 2019, while the value of online retailing rose by 11 per cent in September 2018 compared with the previous year, according to official figures.

The changing nature of the future of logistics is not going unnoticed by the main players in the UK – Royal Mail, Hermes and Yodel – especially with the entrance into the marketplace of Amazon Logistics.

In recent years, parcel delivery companies have been stepping up their consumer software development, improving apps and beefing up their websites. As well as providing the now expected "in-flight" delivery options of home, neighbour, safe place, companies such as DPP, Hermes and Yodel are offering an even greater range of choices and one-hour time slots, as well as driver tracking in real time.

But many of these developments offer little variation for the customer. It is becoming trickier for parcel delivery companies to differentiate themselves. And with the pace of competition hotting up, with Amazon Logistics at the forefront of delivery technologies, the race is on.

Since 2016, Amazon has been trialling autonomous drone deliveries, which can carry packages up to five pounds in weight and deliver within 30 minutes. And in January, it unveiled a new, fully electric delivery robot called Amazon Scout. Clearly, these kinds of technologies are where the future of logistics lies, but autonomous ground vehicle and drones aside, how can parcel delivery companies differentiate themselves further?

Richard Blown, head of innovation at Hermes, thinks he has the answer. He believes that UK consumers will soon be given the option to choose the parcel delivery company when buying online and he is therefore trying to make his company stand out from its competitors. "It's about giving customers more assurance and control," Mr Blown says.

With that in mind, he is positioning Hermes to be the company that brings car-boot deliveries to the UK. Car-boot delivery is already quite popular in Germany and Scandinavia, and Mr Blown is working on introducing it to the UK. The option will work by allowing the delivery driver time-sensitive access to a customer's car boot through a Hermes app using cloud-based software.

"It's another option for the consumer. We hope it'll happen this year. It's depends on the car manufacturers," Mr Blown says.

He is also focusing his efforts on greater personalisation at Hermes, which is due to unveil a new product called Hermes Play. The service enables customers to record a video message to attach to a parcel. Using augmented reality, the recipient can then view the video by hovering the Hermes app over the parcel's barcode. Mr Blown suggests it might be something of interest to retailers too.

Click-and-collect options are also gaining traction among parcel delivery companies. Hermes recently announced a partnership with InPost, a parcel locker network, providing it with a click-and-collect service for customers to pick up their goods on their way home from work if they don't want them left with a neighbour. Royal Mail has also been conducting trials of parcel post boxes, a new street-level infrastructure providing access to its delivery network.

Delivery companies may soon have yet another option available to them. London's largest bus operator Go-Ahead is considering opening up depots as parcel delivery hubs and possibly using its buses to deliver goods around the capital to tackle congestion.

But not all logistics experts agree that the choice of carrier will be in the hands of the consumer any time soon. Tim Jones, marketing director at DPD, does not foresee the choice of company shifting to the consumer soon in the UK.

Mr Jones says: "It's true that in the US that's the norm. But in the UK, the retailers want control of delivery due to the cost and service levels. So they might offer premium services, but they won't necessarily list the carrier."

Neil Ashworth, chief executive of CollectPlus and chief commercial officer of Yodel, thinks that for now the status quo won't change. "Carriers have to ensure that the customer understands their proposition and the way they operate," he says. "It's very important to provide choice. There's a worldwide trend for individuality and personalisation, so we have to offer customers the right delivery solutions to meet their needs." ●

> **"There's a worldwide trend for individuality and personalisation, so we have to offer customers the right delivery solutions to meet their needs**

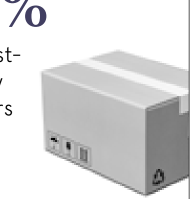
Improving customer service in logistics

Measures global logistics providers have implemented to improve customer service for last-mile deliveries

73% Improving customer communication for customers

66% Training for delivery staff

60% Increased last-mile visibility for customers



54% Increased last-mile delivery options for customers

Localz 2018

NETWORK MANAGEMENT

Splitting supply chains in uncertain times

Making a supply chain completely agile and adaptable is necessary in times of economic uncertainty and disruption, but this requires real-time visibility over a connected network of suppliers

Mark Hillsdon


ColorBlind Images/Getty Images

Traditional, monolithic supply chains have gained a reputation for being slow and inflexible with ponderous lines of procurement, no longer fit-for-purpose in global markets characterised by uncertainty and rapid change.

Factors such as the rise of a new, affluent middle class in countries like China, greater disposable incomes in some developing countries, and more short-term consumer events like Black Friday, now call for a supply chain that is agile and quick to respond to new commercial opportunities.

But is breaking up big supply chains, with their in-built economies of scale, the best way to make them more responsive?

"Today's supply chain management is all about managing a nimbler supply chain, although not necessarily a smaller one," suggests Wael Elrifai, vice president of solution engineering at data agency Hitachi Vantara. But rather than splitting a supply chain into smaller units, he suggests businesses need to act smarter, and streamline the practices they use to manage multiple suppliers.

"This allows them to maintain quality and responsiveness while creating a robust and efficient market, and ultimately lowering prices," he says.

David Williams, chief financial officer at global supply chain enabler Tungsten Network, agrees. "Supply chains of all sizes can be complex in nature not just because of their scale but also because of industry, sensitivities around a product or service, and the geographic compliance landscape they operate in," he says.

"For large global businesses, operating in an uncertain world, having a multitude of suppliers to rely on can be a real advantage. The onus is then not on businesses reducing the supply chain size but focussing purely on managing them more effectively – improving efficiency and increasing foresight so that supply chains are able to respond quickly."

Managing a traditional supply chain is labour intensive, bureaucratic and fraught with the dangers of human error; modern networks increasingly rely of digitisation and better connectivity. They have been transformed by a host of new technologies including artificial intelligence, fully automated robotic warehouses and blockchain – a system which automatically logs every transaction on a secure database that is shared, replicated and synchronised among stakeholders.

> "For large global businesses, operating in an uncertain world, having a multitude of suppliers to rely on can be a real advantage

This makes smart contracts crucial, explains Jonquil Hackenberg, head of C-Suite Advisory at Infosys Consulting. "Instead of storing documents and contracts in silos... blockchain enables organisations to store information on a decentralised ledger where terms and conditions can't be changed, bringing a much higher degree of trust."

Supply chains have always been data heavy, but as businesses look to digital solutions, the volume of data produced is skyrocketing. This brings the risk that all this information could become a burden if it isn't managed properly, with companies drowning in a sea of facts and figures.

"Supply chain managers need to empower themselves to transform the cost centre of data management into a value driver for their companies," says Sian Hopwood, senior vice president at logistics software specialists BluJay Solutions.

"Good data will give them the opportunity to thrive by identifying and exploring new markets with comparably lower risks."

This idea of risk is also picked up by John Palmiero, senior vice president of Europe, Middle East and Africa at risk management software company MetricStream. "As a business's third and fourth-party supplier network expands, it can be easy for one supplier fail to trigger a domino effect," he explains.

"With new risk types emerging, organisations need to be better prepared and utilise technology to ensure a robust and healthy supply chain."

Traditionally, understanding these inherent risks relied on personal relationships and human interaction, but today the complexity of supply chains means it is increasingly based on the analysis of data, he says. It is technology, not someone on the ground, that is best placed to manage and track suppliers and their activities, and provide real-time information that flags up infringements and issues of non-compliance.

"Whether you keep monolithic supply chains or split into nimbler sub-sets, the key to agility and tackling complexity is to be able to have real-time visibility of what is happening on the ground at a local level," suggests Ian Stone, chief executive at management consultants Vuealta. "No matter how big it is, if your supply chain is not connected, you can't keep pace today."

Increasingly, this technology is enabling companies to enter new markets and establish new supply chains, helping them to cope with the demands of an ever-changing regulatory world involving issues such as ethical sourcing, child labour, counterfeiting and provenance.

"Organisations across the world do not contend purely with economic uncertainty or industry-specific volatility, they also need to be able to operate amidst a changing compliance landscape which varies from country to country and threatens hefty consequences for non-compliance," explains Mr Williams.

"The use of procurement technology supports greater visibility into the supply chain. It offers detailed insight into the reliability of particular suppliers, and the opportunity to foresee issues within the supply chain before they occur. Businesses can operate with an almost birds-eye view of supply chain behaviour."

"Trust is one of the biggest obstacles to opening up new markets in developing countries," adds Ms Hackenburg. "By harnessing the power of new technologies, organisations can build trust into the fabric of their supply chain, and begin building bespoke supply chains for different markets."

TOP TOOLS/STRATEGIES TO MITIGATE AND MANAGE SUPPLY CHAIN DISRUPTIONS

Percentage of shipping companies that are using the following

Korn Ferry 2019

Commercial feature

Five ways to collaborate more effectively in the supply chain

Dr. Anne G. Robinson, chief strategy officer at Kinaxis, explains how organisations can break down silos in their supply chain, enabling better collaboration and faster, more confident decision-making to help meet the changing needs of customers

Supply chain management has experienced a remarkable evolution over the past decade. From an organisational perspective, the realisation that supply chains play a critical role in understanding customer dynamics, as well as bottom-line cost, has given many chief supply chain officers a seat at their company's head strategy table.

At the same time, demands on supply chains have become increasingly complex. In an era of extreme personalisation, customers not only expect diverse product availability, resulting in proliferation of stock keeping units, but also delivery to them when and how they want it.

Growing globalisation and market volatility have resulted in multi-sourcing requirements, dynamic supply chain networks due to availability and pricing, and dispersed suppliers that are often also competitors or customers. Geopolitical instability, climate events and regulations, such as country of origin trade rules or restriction of hazardous substances, add further complexity.

This evolution has driven a need to increase the velocity and transparency of the end-to-end supply chain to more effectively sense and respond to customer requirements, while concurrently mitigating supply chain risk.

Leading supply chain executives are managing the challenge by actively driving collaboration and breaking down silos, not only in their own organisation, but also with other peer groups, such as marketing and finance, as well as partners up, down and across the extended supply chain.

Here are five recommendations for enabling collaboration in the supply chain.

01 Create a common vision for your supply chain organisation

Traditional supply chain trade-offs can often lead to divergent objectives in the different components of the supply chain. Creating a common vision that is supported from the top seeds a cohesiveness across all the supply chain players. Having established this, technology and tools can be utilised to enhance visibility across departments and geographies. Once you realise the power in everybody sharing a vision and being able to see the same information, you can work effectively around the sun because you don't have people on one side of the globe waiting eight to twelve hours to find out what decisions should be made.

02 Identify and propagate key performance indicators

Creating a vision alone is not enough to break down organisational silos. Supporting your vision with the right set of performance indicators enables a language and a tool for collaboration. However, it is important to propagate these metrics vertically. Vertical alignment means that the key performance indicators (KPIs) reflect the overall company strategy and ensures the supply chain organisation is meeting corporate objectives. The KPIs must be designed so they can be shared throughout your organisation. With this approach, individual contributors, such as demand planners and sourcing leads, can recognise how their work drives the top-level objectives. The closer you can get between the front end and back end planning function, the more agile and responsive your supply chain can be to the most complex elements that impact your business.

03 Ensure culture readiness

The organisation must recognise collaboration as a strength to break down silos. This may require a culture shift which relies heavily on change management. It falls on the chief supply chain officer to not only drive the necessary change and communicate the value to multiple stakeholders, but also deploy the right resources and technology to enable collaboration across the organisation. It's important that people want to use the technology available, which means ease of use is crucial, but so is broad buy-in to the vision and goals throughout the business. Collaboration often requires a deliberate shift in mindset. When that shift can happen within the supply chain system, people working in different time zones or in different languages can all be in sync.

04 Reduce digital latency

Disparate data sources and divergent systems are frequently identified as causes of siloed behaviour in the supply chain. The latency from one group to another, either from manual execution or simply delayed system updates, can result in errors in decision-making and delays in responding to customer needs and supply chain disruptions. Digital transformation and increased automation can help overcome the challenges from legacy systems. Investing in better information infrastructure with integrated data sources as well as smart technology, enables more seamless execution of the supply chain, empowering people and teams to focus on more strategic projects, rather than being mired in manual tasks.

"The more data, people and processes you can connect to in the supply chain, the more you reduce your risk, improve performance tracking and ultimately make better decisions

05 Establish end-to-end transparency

Expectations around supply chain professionals have changed from being operators to requiring a broader knowledge of the industry and product from an end-to-end perspective. Having effective collaboration and communication, particularly if you are a global business, is heavily dependent on technology. By enabling this collaboration to happen you can reduce latency and continue the flow of business to meet the expectations of your customers. The closer you can bring the information to the individuals who are responsible for the next action, with tools that provide a shared view of the right data and enhanced transparency across the whole organisation, the greater velocity you can have.

THE TIME IS NOW

The reality is you will never eliminate volatility in the supply chain. However, the result of being connected and collaborative across supply chain functions enables greater agility and the ability to react and adjust to the ever-changing environment.

Breaking down the silos, sharing a common data set and embracing collaboration across the supply chain will put your people in the best position to succeed. Moreover, this collaboration can be extended outside the four walls of an organisation and bring in suppliers, distributors and customers.

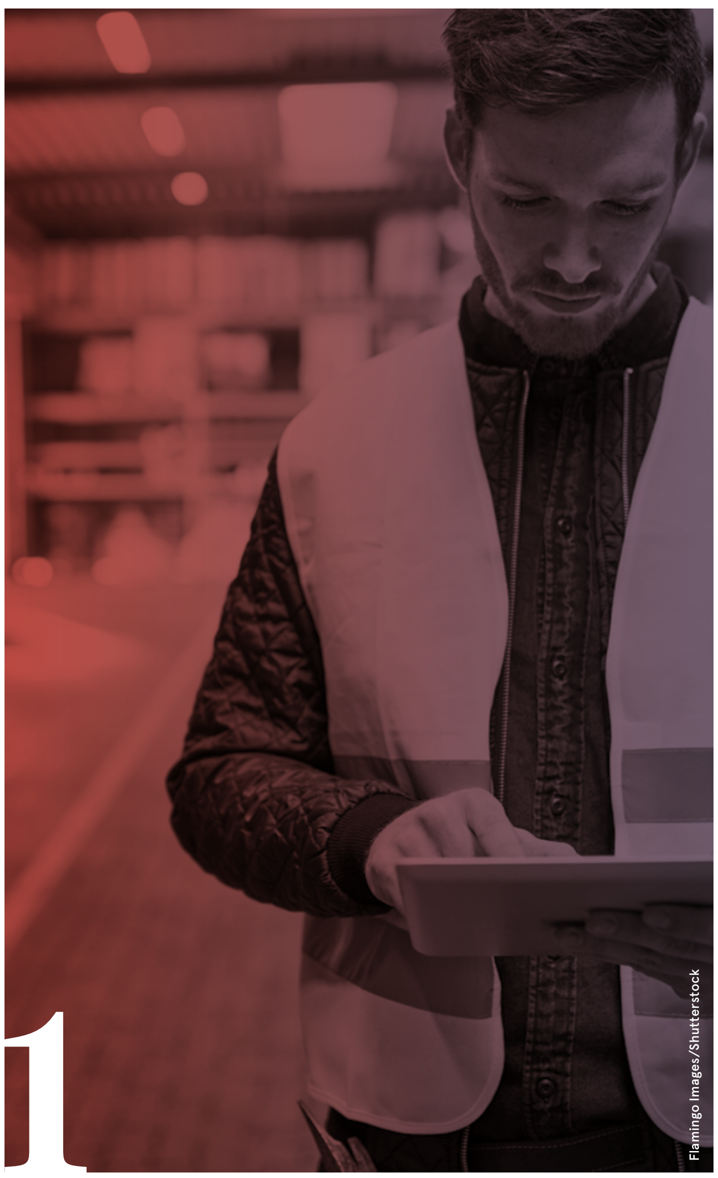
The more data, people and processes you can connect to in the supply chain, the more you reduce your risk, improve performance tracking and ultimately make better decisions.

PLATFORMS

Why supply chain platforms are booming

Supply chains are moving onto cloud-hosted platforms. In these environments hundreds of thousands of partners on a supply chain can share inventory, shipping information and invoices. Here are seven reasons why platformisation could be the future for supply chain management

Charles Orton-jones



Total visibility

A platform gives enterprises the ability to see far beyond their own walls. It becomes possible to receive automatic updates from suppliers, stockists, logistics partners and financial service providers all within a single environment. The best platforms offer a global community of users, which newcomers can join and plug into. Avon, the cosmetics company with $10 billion in sales, uses E2open's platform to manage its supply chain. At any time, the company has 80,000 stock keeping units or SKUs. The platform helps Avon to see the inventory from component suppliers through to resellers. If stock moves outside agree parameters then alerts are triggered. It gives Avon a unified view of operations across a whole network of partners.

Uniformity of data

A basic problem of supply chains is that data is held in umpteen formats. Incompatible systems try to talk to each other, leading to errors and malfunctions. A platform acts as a single source of data for all parties, eliminating duplication of effort. It also converts data to a compatible format at source. For example, The Edge, a platform made by Virtualstock and used by Sainsbury's, Argos and John Lewis, offers a suite of tools for newcomers to convert data. It validates data before ingestion: errors are flagged and the bad data is quarantined. The Edge is also flexible, able to pull in data from a variety of other systems, converting where needed. As a result, all participants on the platform enjoy correctly formatted, up-to-date data.

Less bureaucracy

Platforms are designed to automate actions and remove manual processes. This frees up staff to concentrate on more important matters. For example, the GT Nexus platform is used by CAT, Pfizer and Levi Strauss to share information and auto-create documents. Orders feed into packing lists, and packing lists auto-feed into invoices. Customs invoices and supplier payments are generated instantly from a single data prompt. Accounts are updated in real time, giving users of the GT Nexus platform a clear overview of their financial position. Compare this with non-platformed supply chains, where data is entered manually, invoice information emailed or sent by post, and data is replicated multiple times on multiple systems.

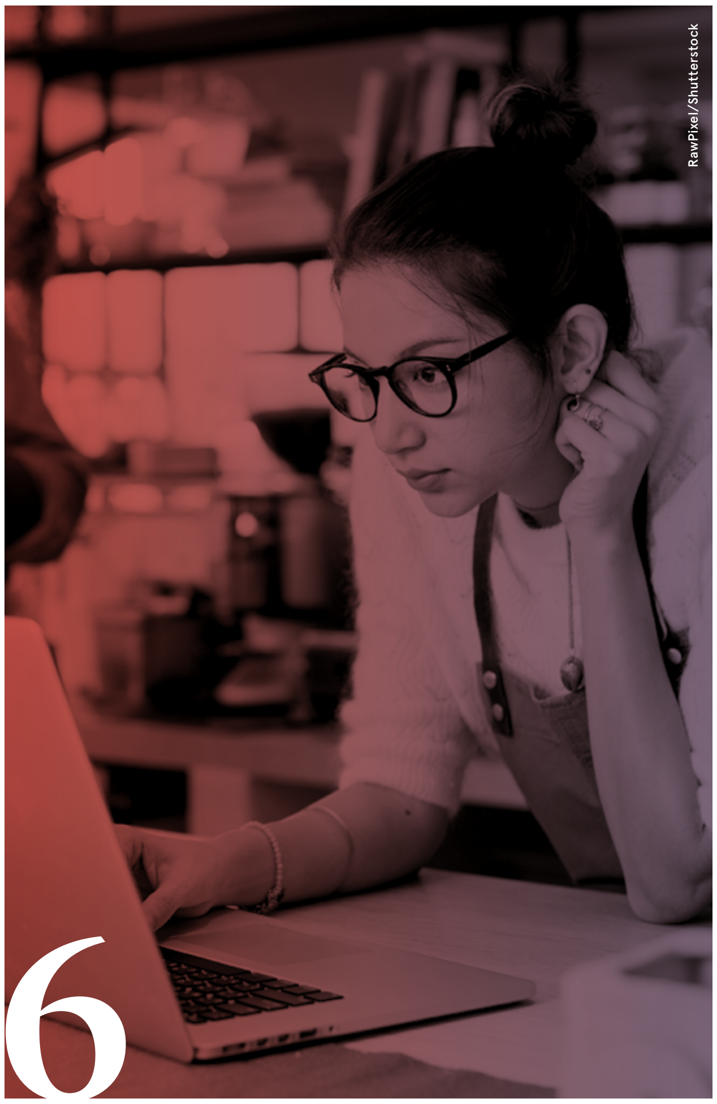
Better invoicing, better credit

The benefits of using a platform to send invoices are obvious. What is less appreciated is how a platform can improve credit ratings. Lenders are able to more easily see the financial status of credit applicants more quickly via a platform, they can see inventory pipelines too. Michael Walker, global head of corporate banking sales enablement at Finastra, a provider of finance software, says platforms can "integrate provenance data to provide improved visibility to banks across an entire supply chain, allowing more effective judgement of transaction risk". Cash flow can be boosted a second way, by offering

discounts to early payers. Platforms make the offer and acceptance of discounts simple, and give vendors an automated way to track who is taking advantage of the deal.

Make use of the app store

Just as with iPhones and the App Store, supply chain platforms really come alive when apps are added to the main service. The Tradeshift platform is teeming with commercial apps which enhance the service. There's PayPal for payments and a connector app for Sage 50 accounting software. There's an app for supplier onboarding, for conducting surveys of partners, and for digital document signing. It is even possible to obtain a business loan via an app. The advantage is that the apps are built specifically around the platform, so offer slick integration with other functions. Non-platform users may find the same functionality offline, but will struggle to find the same degree of data continuity across their systems.



Pre-built, so just sign up

It is possible to build a proprietary supply chain platform, but you've got to be big to do it. Denis Baranov, principal consultant at technology consultancy DataArt, says: "Tech-savvy Ocado is a great example of the platform-as-a-service strategy. The company created its own e-commerce platform, the Ocado Smart Platform, which it sells to other retailers, like M&S and Kroger." But Mr Baranov stresses that this is only for the big boys. Small companies can join a platform knowing it is developed and battle-ready. Even multinationals often prefer to join a pre-existing structure. Carmaker Volvo opted for BluJay's supply chain platform to manage the distribution of vehicles worldwide. With 26 existing IT systems, 35,000 routes to market and 30 existing carriers, it was a huge job. In five months the supply chain was up and running on BluJay – something implausible with an in-house strategy.

AI and forecasting

The holy grail of supply chain is to see the future with perfect clarity. A platform can contribute to that mission by providing rich pools of clean data, which an artificial intelligence (AI) or machine-learning (ML) engine can consume. A new platform, JDA's Supply Chain Management, aims to deliver AI and ML as part of the cloud-based service. The logic is clear. By including variables such as supply partners' inventory, plus traffic conditions, weather, port congestion and other data, forecasts can be made accurate to previously unattainable levels. The AI engine at JDA is created by BlueYonder, originally founded by a team of particle physicists who wrote the algorithms for the Large Hadron Collider, where the Higgs boson particle was discovered. Once again, companies are entitled to go it alone, and build in-house solutions, or adapt standalone forecasting applications, but the appeal of moving to a platform with integrated AI and ML will be hard to resist. ●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