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# FUTURE OF SUPPLY CHAIN & PROCUREMENT



RESILIENCE

## A bevy of black swans: how to endure the epoch of disruption

Has building resilience into supply chains ever been more challenging?

Chris Stokel-Walker

Black-swan events are meant to come about rarely. We often talk of them as once-in-a-generation occurrences that batter the global economy and alter how the world works. But they're often more common than that.

Over the past two years supply chains worldwide have been disrupted significantly by factors including the Covid-19 pandemic; the unintended ramifications of Brexit; the week-long blockage of a vital trade route caused by the grounding of a container ship in the Suez Canal; and, most recently, the war in Ukraine.

Any one of these factors could prove sufficient to blow even the best-planned supply chain off course. As China, the world's factory, struggles with pandemic-enforced port closures, supply chains that were already under stress are reaching breaking point. The world is redrawing its economic activity to cut out Russia after its invasion of Ukraine – an action that is affecting supplies of grain and cooking oil, as well as the oil we use to power our factories and vehicles. Catastrophe is being piled on top of catastrophe.

"The expanded global nature and contracting diversity of supply chains have together exacerbated this effect," notes Tim Morley, regional director at Information Services Group, a global research and advisory firm.

Dave Food, head of supply chain at software developer Board International, agrees. "Most supply chains have some element of protection built in to combat disruption – for instance, extra capacity, extra inventory, alternative suppliers or different routes to market," he says. "The problem is that disruptions are occurring in multiple locations on the supply chain, from source to consumption point, which highlights that the existing protections aren't enough. This is not one big event; it's multiple micro black swans."

> Normally, supply chains rebound when demand is relatively stable. That has not been the case recently

Such events have a meaningful impact on everyone's lives because of their chaotic effect on supply chains. For instance, a few months into the pandemic in the summer of 2020, all food and consumer goods firms operating in the UK reported production and distribution problems resulting from the Covid restrictions that many nations had imposed.

"The issue is how organisations can produce further capacity when they already have a limited supply," Food says. "We're stuck in a world that is struggling to catch up. Until we create the capacity to do that, further black-swan levels of supply chain disruption are inevitable."

He predicts that we are likely to see such problems for years to come, because of the interconnectedness of the world and its many moving parts.

Are there any other factors causing the bottlenecks that we're seeing in our day-to-day lives as consumers? What's behind the increases in lead times for the delivery of goods and the reductions in the range of products that shops are stocking? It's not only black-swan events that have restricted the flow of containers around the globe. Demand also interacts with supply in a way that can make a meaningful difference, as Mark Johnson, professor of operations management at Warwick Business School, explains.

"Disruption is a regular occurrence in supply chains, but the recent challenge has been that demand has increased significantly," he says. "Normally, supply chains rebound from disruption when demand is relatively stable. That has not been the case recently."

Although inflationary pressures could change that, demand hasn't slowed for the past two years at least. Rather, it has shifted: the same money we'd have spent in the high street we are now spending online.

Fixing the situation will be difficult. There is a fundamental imbalance and problems keep piling on top of problems, notes Johnson, who adds: "Ships aren't running all routes, there isn't enough port capacity and there aren't enough drivers, trucks, trailers and containers for this situation to be resolved any time soon."

Johnson believes that there is little to no chance of a swift resolution. "We'll continue to see disruptions unless countries and businesses get serious about building resilience by holding more inventory and excess capacity as well as restoring industrial capabilities that have been offshored," he predicts. "I don't see this happening, owing to the primacy of finance and accountancy in determining firms' investment decisions."

The big questions that consumers, business owners and analysts will all ask are simple: are we stuck in supply-chain disarray for years to come? And, if such turmoil has indeed become the new normal, how should businesses respond?

There are several schools of thought on how best to respond to the current circumstances. One is to try to achieve the best view of your supply chains – not only your own, but those of key partners, suppliers and customers.

"The further up the supply chain you can see, the better decisions you can make," Food says. "Enlarging your business's peripheral vision to be able to make a data- and insight-driven decision could save you tens of thousands of pounds. Apply that across the tens and hundreds of decisions taken in organisations every day, and suddenly your profit margins have increased."

Once you have such information, it's much easier to solve problems, especially for larger businesses with more reserves. You can build capacity that will help you to overcome some of the most pressing challenges. In the first year of the Covid crisis, 61% of companies said that they had increased their inventory of critical products, while 55% were dual-sourcing raw materials to manage the risk of disruption to one supply line.

That's not possible for every firm, of course, but "businesses with less capital can advance by being more collaborative, using intelligent contracting and sharing resources with partners", Food says.

Regardless of your approach, it's vital to act quickly to deal with problems before they are compounded by other problems. Time is of the essence – and, with disruptions likely long into the future, simply ignoring the issue isn't the answer.

"The pandemic remains the biggest threat – some countries are still badly affected, causing a substantial impact on international trade," Morley says. "Other threats continue to loom, while new and different factors are waiting to surface." ●

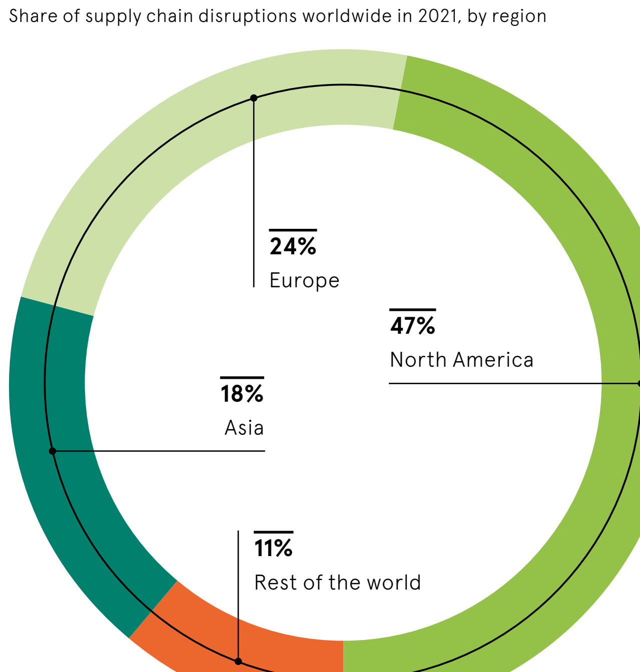
### DISRUPTIONS ARE BECOMING MORE FREQUENT

Number of supply chain disruptions worldwide


Resilinc, 2022

### WHICH MARKETS ARE MOST AFFECTED?

Share of supply chain disruptions worldwide in 2021, by region




Resilinc, 2022

**£24.3bn**

The projected value of the global supply chain management market by 2026

Statista, ReportLinker, 2021

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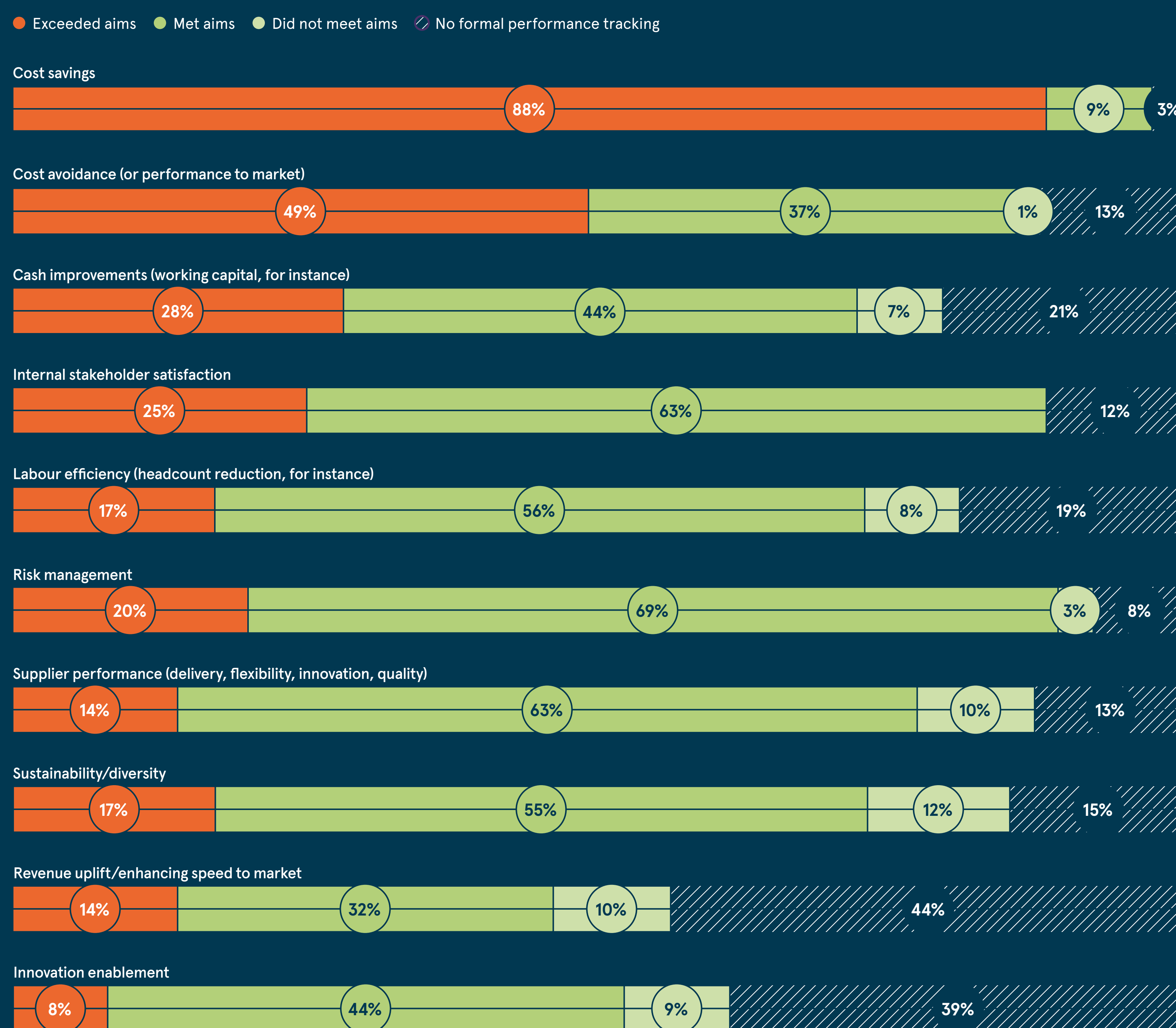
# SPOTLIGHT ON THE CPO

Constant problems in the supply chain have proved a real headache for many businesses over the past two years. As firms struggle to deal with a succession of disruptions, the role of the chief procurement officer (CPO) is becoming ever more important. How is the procurement leader's work changing? And how are the best CPOs ensuring continuity?

## HOW THE BEST CPOs MEASURED UP AGAINST THEIR KEY PERFORMANCE INDICATORS LAST YEAR

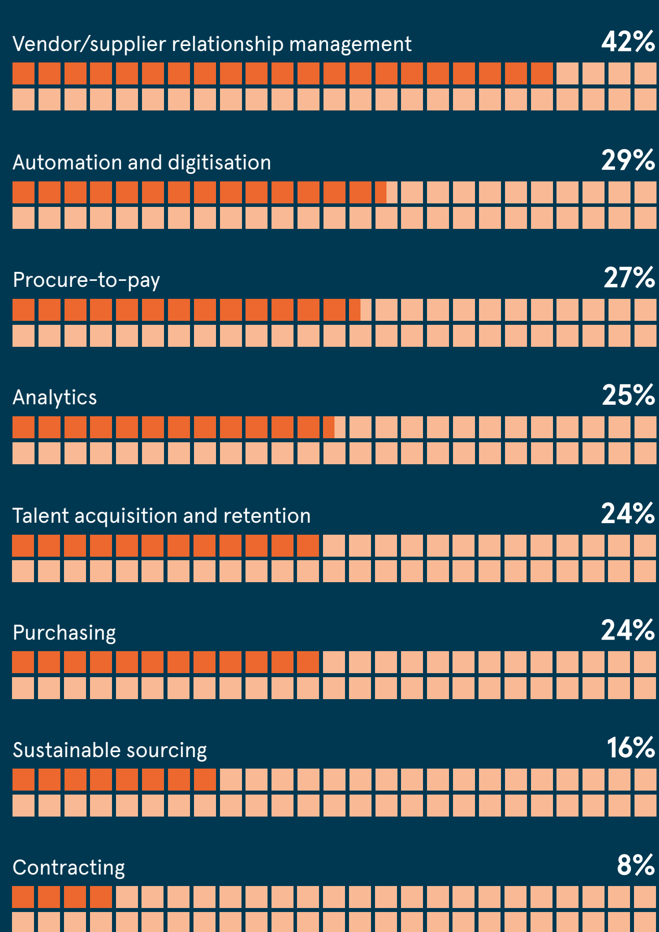
How high-performing CPOs' procurement functions fared in 2021 in the following areas

Deloitte, 2021




## PROCUREMENT AND SOURCING STRATEGY

Share of CPOS citing the following activities as areas of focus

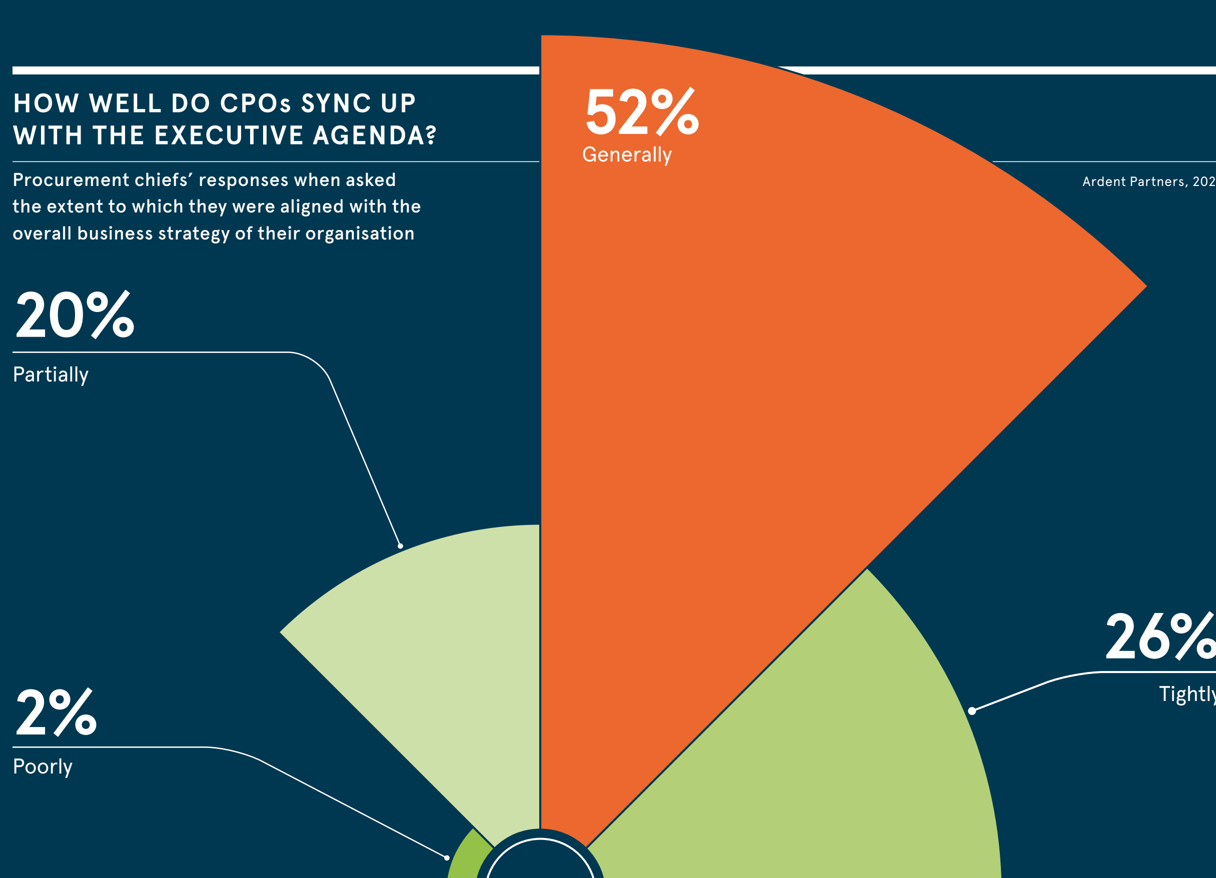



American Productivity & Quality Center, 2022

## HOW WELL DO CPOs SYNC UP WITH THE EXECUTIVE AGENDA?

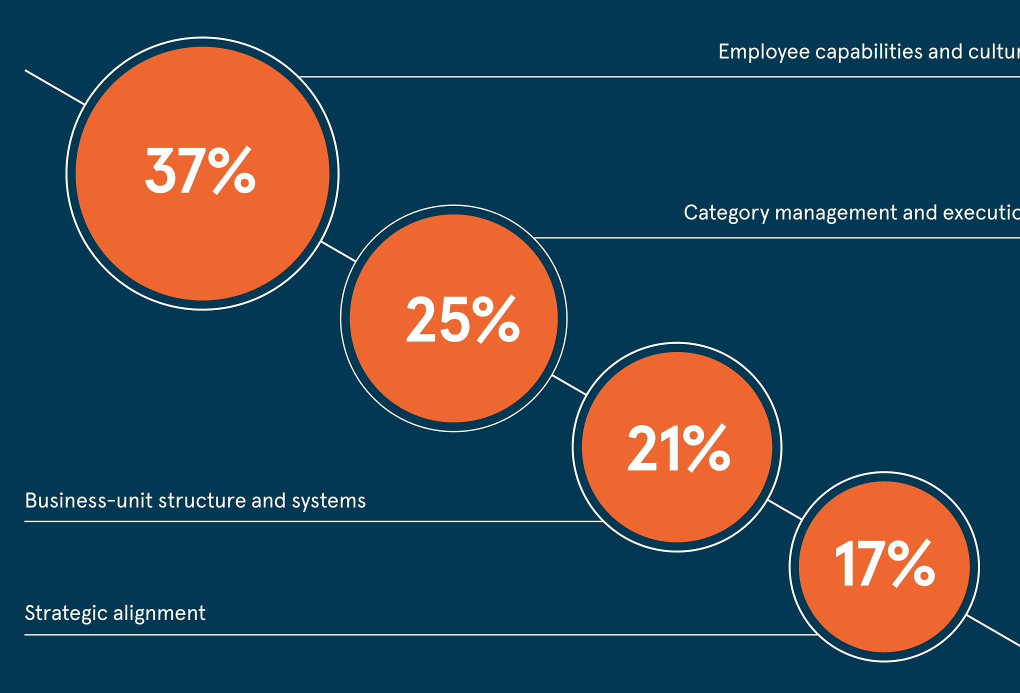
Procurement chiefs' responses when asked the extent to which they were aligned with the overall business strategy of their organisation

Ardent Partners, 2021




## DESPITE DIGITALISATION, THE PEOPLE MAKE THE BIGGEST DIFFERENCE

How various factors in the procurement function correlate with a firm's financial performance

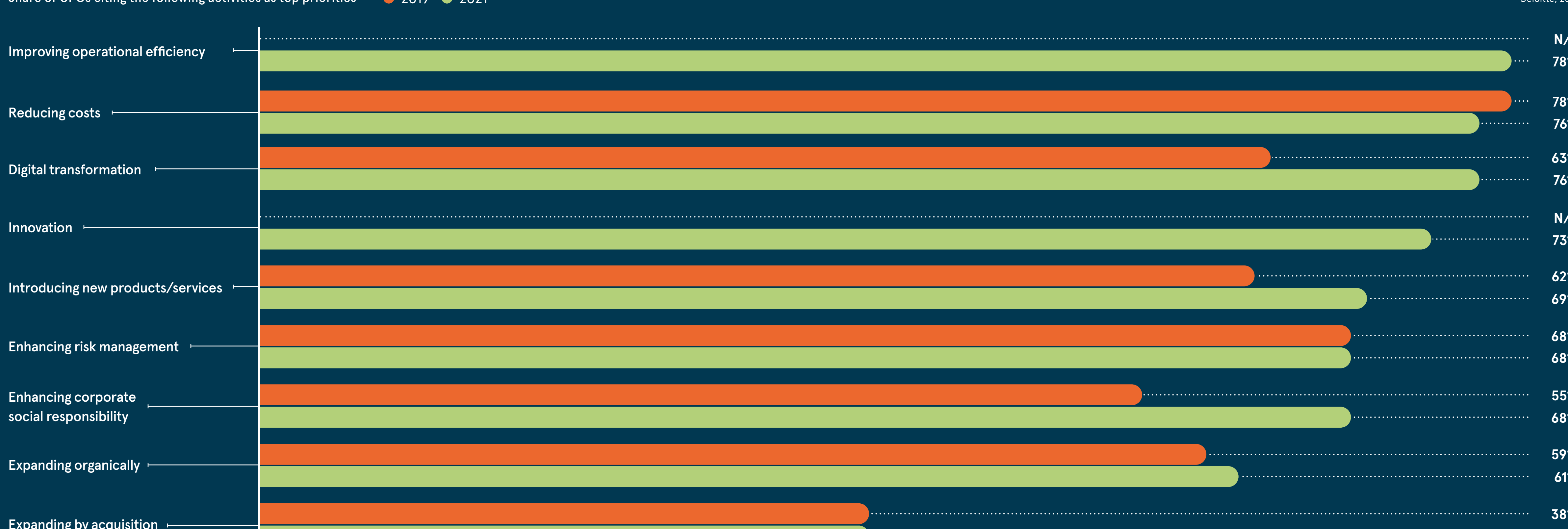



McKinsey, 2021

## PROCUREMENT CHIEFS' RESPONSIBILITIES ARE EVOLVING AND EXPANDING

Share of CPOs citing the following activities as top priorities

Deloitte, 2021



BREXIT

# Bumpy times beckon for Brexit Britain's supply chains

The unintended ramifications of the UK's departure from the EU are just one set of problems that both business and government are struggling to mitigate

Georgia Lewis

Disruption in the supply chain has become the norm for UK plc, with consumers on the receiving end of the delays and shortages. Can it smooth out the bumps?

A recent survey of logistics industry leaders in the UK by project44, a specialist in supply chain management, indicates that this situation is unlikely to change any time soon. The respondents cited Brexit and the UK's reliance on China as the two main problems, although these were far from the only ones they identified.

There is a broad consensus across the sector that the effects of Brexit are real. James Hookham, director at international shipping trade body the Global Shippers Forum, reports that trade between the EU and the UK has declined dramatically and Covid has frustrated progress in establishing new trade agreements.

Hookham says that Brexit has led to a significant reduction in the number of lorry drivers in the country, while the extra bureaucracy it has imposed has caused delays, especially when full UK border controls came into force at the end of January.

> Too many boxes are chasing too few ships

Further import controls on foods and animal products are to come, he adds.

Before the pandemic, China's global role in supply chains was logical and convenient. But Beijing's zero-Covid strategy and trade disputes with the US have since had knock-on effects for moving goods.

The disputes encouraged manufacturers to stockpile materials in anticipation of trade embargoes, says Laurence Dellicott, director of supplier management and fulfilment services at logistics technology firm Avnet Silica. Shortages of electrical components such as semiconductors have been exacerbated by shipping delays.

"Draconian measures" to prevent Covid from spreading have squeezed Chinese exports to the UK, according to Thanos Papadopoulos, professor of management at Kent Business School. These have included lockdowns in the ports of Dalian, Shanghai, Ningbo, Tianjin and Shenzhen.

Consumer demand is on the increase, Papadopoulos adds, which is putting manufacturers under more to produce and transport more raw materials to meet orders. But, for many companies, especially electronics manufacturers, this pressure has been at odds with component shortages, leading to supply chain snarls and increased costs.

"Components became scarce, shipping containers became scarce, finished products piled up in storage and transport costs skyrocketed," he says.

More local problems are also affecting UK firms' supply chains, whether they rely on international routes or not. These include higher demand than anticipated as the UK emerges from the Covid crisis and the indirect effects of energy price inflation.

Hookham thinks that a fundamental problem is that "too many boxes are chasing too few ships, resulting in the congestion of ports and inland distribution networks". This has fuelled significant shipping cost inflation since 2019 (see graph).

How can suppliers overcome these challenges? Some companies have absorbed the costs rather than increase prices for their customers. Some have moved from just-in-time to just-in-case strategies – typically by over-ordering and stockpiling materials and/or finished goods. Lay-Z-Spa UK, for instance, makes its hot tubs in China, but has largely absorbed the increased freight costs rather than passing these on to its customers. Similarly, trade supplies firm Timco has a buffer of five to seven months of stock and £34m of orders from the Far East, while clothing manufacturer Hawthorn International has bulk-purchased cotton to ensure that it can continue to meet demand.

But such solutions will not be practical for all companies, of course. Firms should "avoid overselling and overpromising to customers", Dellicott warns, as diversifying supply chains won't solve every problem. He advises businesses to perform robustness and agility tests on their supply chains.

Len Pannett, managing partner at the Visagio consultancy, is a believer in the ability of a digital transformation to improve the visibility of activities in the supply chain. He also recommends identifying alternative local suppliers and using methods such as 3D printing to "alleviate long lead times and save costs on spare and tooling parts".

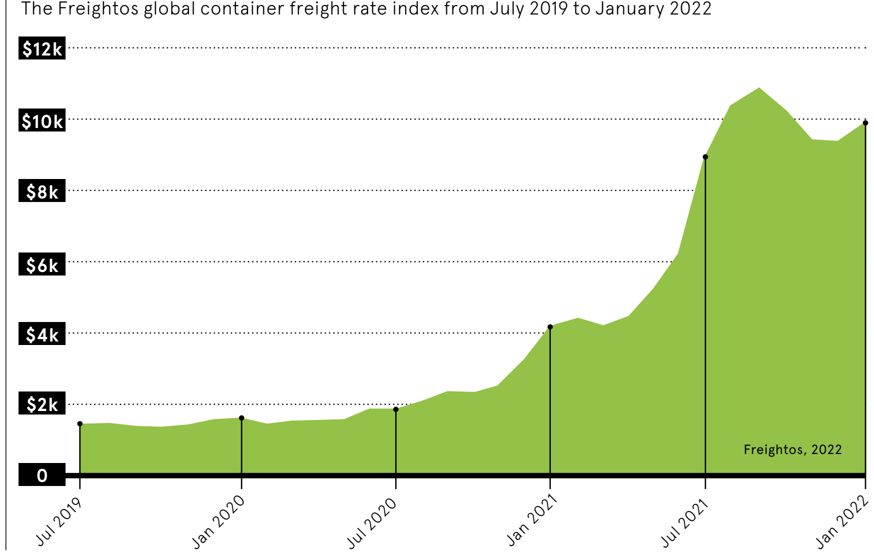
Empowering junior decision-makers to respond quickly to problems and obtaining demand data from suppliers and customers to plan accordingly should ease the movement of goods too, Pannett adds.

Long-term shipping contracts are another solution. But Hookham cautions that, while such deals might buy delivery certainty, a business could "pay over the odds" if the spot market collapses later in the year and container demand falls.

Westminster has been urged to increase investment to ease supply chain delays, including more money for port and rail infrastructure to improve links within the country, as well as technology and research capabilities. Investment in supply chain innovation can be a shared responsibility between the public and private sectors.

**FREIGHT COSTS HAVE GONE THROUGH THE ROOF**

The Freightos global container freight rate index from July 2019 to January 2022




"Digital tools can bring scalability, versatility and cost reduction if deployed correctly," Pannett says. "Solutions such as robotic process automation are proven to give fast returns on investment and can lend supply chains speed and accuracy."

The lorry driver shortage could be addressed by a new law to ease the process of hiring foreign workers. But, in the longer term, pay, benefits and training opportunities will need to be improved to make the job more appealing. Yeovil-based company Bradfords Building Supplies supports its apprentices to obtain HGV licences, but Jon Rendall, the firm's logistics director, says that more will need to be done to ensure that the UK has enough drivers.

Better communication between businesses and the government – and between businesses and suppliers – will help to alleviate some problems, particularly within the UK. But others, including Brexit-imposed obstacles, will be harder to overcome.

Pannett agrees that communication between government and business is important, while advocating for a better Brexit deal, ideally with access to the customs union and the single market. But he outlines the challenge of realigning UK-EU relations: "Rejoining the customs union and the single market… would be helpful, but bring further political implications."

As long as the appetite to make such bold moves remains weak in Westminster, it looks as though UK plc will have to look closer to home to ease its supply problems.



OPINION

# 'Balancing your strategic priorities depends on the business, the goods being sourced and, of course, the supply market'

The importance of good supply chain management is much clearer to everyone after the shock and turmoil of the past two years. The basics of obtaining great value from suppliers, developing initiatives to address sustainability challenges and finding innovative solutions to better serve the business and its customers remain the same. But what has changed is a greater focus on resilience and not just cost savings. A built-in contingency that can flex quickly to handle fluctuations in demand, including switching to local supply or building up additional stock, has now become the strategy for many organisations.

Developing the right resilient approach will depend on individual business objectives. For some, it can mean a clear onshoring/offshoring strategy and not relying on only one supplier or one market for an essential component. The automotive sector was caught out last year, as Toyota, Volkswagen and Fiat Chrysler all struggled to get hold of essential semiconductor parts during a worldwide shortage. The chip shortage was initially caused by Covid-related factory closures in China. Buyers could still get hold of chips from other suppliers such as Dutch and German component makers, but the prices soared as availability decreased.

Balancing your strategic priorities depends on the business, the goods being sourced and, of course, the supply market. But it also depends on the knowledge and skills of the procurement teams. A buyer can make a snap decision to find a new supplier, but a trained procurement professional will see the implications from all sides and get a long-term view of what's best for the business. Trained professionals know how to detect unethical behaviour such as bribery or where to find cost efficiencies. Employing trained, skilled and knowledgeable professionals is essential for a company's reputation and bottom line. The current shortage of this expertise is limiting our ability to establish and manage global supply chains.

But there are also more subtle issues to be aware of. Businesses should consider how they pay their suppliers, especially SMEs reliant on speedy cash flow to remain solvent and grow in line with increased demand. Too many big companies have imposed unfair payment terms on suppliers grateful for the business, or they have taken many months to pay, which can result in bankruptcy for their smaller suppliers.

Another essential step is building transparency into the supply chain – and digitalisation can play an integral role. Technology solutions that scan and monitor can sound the alarm if there are transportation difficulties on the horizon, or even identify whether suppliers' suppliers are in financial difficulty.

What about relationships? Procurement and supply management has long been seen as all about statistics and contracts, but strong relationships with suppliers can get you out of trouble if your company needs extra support in difficult times. Businesses can even collaborate with their rivals to produce industry-wide solutions. Joint ventures in research and development bring rewards and save costs on finding new markets for instance. General Motors and Toyota are working jointly on building vehicles, while Siemens and Philips are cooperating on semiconductor development.

Achieving value from a resilient supply chain is about so much more than saving costs, which firms have focused on excessively in recent years. When the lack of a vital component stops production in the factory, it costs money and you can lose customers as a result. That will cost you far more than you'd gain through the non-existent cost savings. Through collaboration, ethical sourcing, relationship building and sustainability initiatives, your supply chain can become stronger than ever as the world of trade becomes ever more volatile.

**Malcolm Harrison**
Group CEO, the Chartered Institute of Procurement & Supply

INTERVIEW

# Chocolate's dark secret

For decades, the confectionery industry has faced accusations of turning a blind eye to the use of child labour in the cocoa supply chain. Nestlé's Alexander von Maillot says it's time to address the real root of the problem: poverty

Oliver Balch


Nestlé

Chocolate, as we all know, is one of life's guilty pleasures. A nibble here, a cheeky bar there – nothing excessive; just a morsel or two of sugary joy to brighten our days. Yet the delights of chocolate are not universal. In recent years, the multibillion-dollar industry has been rocked by reports of child labour deep within its supply chain.

For once, leading players have fully acknowledged its existence. In 2001, many of the world's best-known confectionery companies jointly committed to eliminating the worst forms of exploitation. Yet, more than two decades on, the problem persists. A recent authoritative study has estimated that well over 1.5 million minors are still working in the cocoa fields of west Africa, the centre of the world's supply.

Alexander von Maillot, global head of Nestlé's confectionery and ice cream business, insists that the industry has not been standing still. He says that action taken by the Swiss food giant has protected almost 150,000 vulnerable children over the past decade, but concedes that "it doesn't deliver on the vision that children get access to a good education and a future".

> The main root cause of child labour is widespread rural poverty

Nestlé, which owns well-known brands including KitKat, Milkybar and Smarties, has decided that the time is right for a change of tack. In the most ambitious move of its kind, the company is embarking on a multi-pronged eight-year strategy for ending the scourge of child labour. Under the plan, announced in Ivory Coast in January, the business will invest CHF1.35bn (£1.1bn) between now and 2030.

Not everything will be overhauled. For instance, measures to monitor smallholdings will continue unchanged, as will remediation policies when the use of child labour is detected. But, as von Maillot argues, such steps deal with the symptoms of the problem rather than the reasons behind it.

"To tackle this holistically, we looked for the root causes of child labour," he says. "We found that the biggest of these is widespread rural poverty."

The logic is straightforward: cocoa farmers earn too little, which means that they cannot employ paid workers. This in turn leads them to pull their children out of school (assuming that there is one) and oblige them to help out on the farm.

"It isn't that Ivorian or Ghanaian parents are bad parents," von Maillot says. "If you cannot afford paid labour, unfortunately your family might have to help."

The solution seems no less straightforward: why not just pay farmers more? While higher gate prices seem a simple solution, he explains that the reality is more complex. Hiking the price could lead to oversupply, causing a deflationary effect. Also, cocoa bean buyers in west Africa do not typically buy direct, purchasing instead through wholesale markets where prices are controlled by the state.

### CHILD LABOUR AROUND THE WORLD

Distribution of children in child labour in 2020, by age and region

International Labour Organization, Unicef, 2021

| | 5-11 years | 12-14 years | 15-17 years |
|---|---|---|---|
| Sub-Saharan Africa | 60% | 24% | 16% |
| East and south-east Asia | 54% | 20% | 26% |
| Northern and western Asia | 54% | 24% | 22% |
| Europe and North America | 51% | 20% | 29% |
| Central and southern Asia | 51% | 19% | 30% |
| Latin America and the Caribbean | 38% | 24% | 38% |

And what of premiums? It's true that a living-income differential of about £315 per tonne was introduced in both Ivory Coast and Ghana. Yet critics argue that the price is still too low and, in any case, some buyers seek to avoid paying the top-up (Nestlé insists that it pays this in full). Chocolate brands also pay farmers extra if they are certified as sustainable ( by the Rainforest Alliance in Nestlé's case). Yet von Maillot accepts that the benefit here goes mostly to large, well-organised farms, with smaller suppliers missing out.

In an attempt to leave no one behind, the company is proposing to make direct cash transfers to individual farmers of up to CHF500. This novel approach is designed to ensure that cocoa-growing households are remunerated for completing any one of a series of prescribed activities designed to increase their incomes. On the list are the implementation of good agricultural practices (such as pruning); the promotion of agroforestry; and steps to diversify (by planting other crops or raising livestock, for example). As a direct nod to reducing child labour, the list includes a commitment by parents to enrol any child aged between six and 16 in school.

"There's an extra CHF100 if a farming family applies changes to all four areas, so that makes up the CHF500," explains von Maillot, who says that half of the money will be paid to the farmer and half to the matriarch of the family. The scheme, which follows a successful pilot involving 1,000 farmers, will cover 10,000 cocoa-producing households in Ivory Coast initially before expanding into Ghana in 2024.

Will the initiative succeed? Von Maillot doesn't underestimate the "super-complex" nature of underage working. Nor is he willing to give a definitive date on when, or if, Nestlé's cocoa supply chain might be said to be free of child labour. Where he does express confidence is in the connection between better farming practices and higher household incomes. He points to Nestlé's past efforts to train farmers in efficient agricultural methods. On average, participating producers have seen their yields increase from about 325kg per hectare a decade ago to about 600kg today.

> To tackle this holistically, we looked for the root causes of child labour

For all its good intent, Nestlé's theory that higher incomes will translate to less child labour remains just that: a theory. Success is just as likely to hinge on shifting cultural attitudes as it will on boosting farmers' productivity – and thereby their profits. Here, Nestlé's focus on paying farmers to change their habits, rather than on better harvests, makes sense in the long term. Much will also depend on whether other key players follow its lead. The governments of Ivory Coast and Ghana are both "fully aligned", according to von Maillot. As for other cocoa buyers, Nestlé is pledging to be transparent with any insights arising from its new approach.

While its initiative has been broadly welcomed, the company's critics are reserving judgement. After such a long wait and many false dawns, such caution is understandable. They are not the only ones who are anxious to see how things pan out. By his own admission, von Maillot didn't sleep so well once he realised the "enormous amount of money" the scheme would cost.

By the same token, he says that there is no turning back. Child labour is "absolutely not acceptable". As for the need to fix it once and for all: "We have no choice."

Commercial feature

# Truly sustainable supply chains go beyond ESG

Achieving sustainability in the supply chain is not just about ticking environmental, social and governance boxes. Financial sustainability is intrinsically linked – and key to raising standards

### EVOLVING ESG PRIORITIES

Percentage of companies that list the following as their top areas of ESG focuse over the next 12 to 18 months

| | |
|---|---|
| Waste management | 18.3% |
| Climate change | 13.3% |
| Community and customers | 13.1% |
| Management systems and governance | 13.1% |
| Equality, diversity and inclusion | 12.6% |
| Water usage and management | 8.2% |
| Human rights | 6.1% |
| Labour practice / modern slavery | 5.8% |
| Local content | 5.7% |
| Taxation | 3.4% |

### HAVING A SOCIAL CONSCIENCE

Percentage of companies that say the following are the biggest reasons why they implement ESG initiatives in their organisation

| | |
|---|---|
| Social conscience | 21.6% |
| Product and service innovation | 16.4% |
| Government legislation | 15.1% |
| Reputational risk | 12.2% |
| Pressure from customers | 11.3% |
| Cost Savings | 10.9% |
| Directive from the board | 9.9% |
| Pressure from employees | 2.5% |

### THE DISCONNECT IN CARBON-REDUCTION STRATEGIES

Percentage of companies

**77%** rate carbon reduction strategies as important to their business strategy

**52%** do not have a carbon-reduction strategy in place

**52%** of companies do not have a sustainable procurement strategy in place

Achilles, 2021

The procurement mindset within businesses has shifted significantly over the last decade. For a long time the agenda was dominated by cost savings, as organisations looked to their supply chain for the efficiencies required to lift their bottom line. But this mindset was increasingly at odds with the growing sustainability agenda, inadvertently incentivising irresponsible practices.

Initially an investor-led movement, the rapid ascent of ESG goals has also been driven by a realisation that sustainable companies are able to command a higher price for their products. While some first sought to expedite ESG progress by subcontracting the less-sustainable parts of their business, supply chains have increasingly fallen under the spotlight, fuelling a growing need to demonstrate not only that your own business is sustainable, but your supply base too.

> One of the assumptions of competitive economic markets is the free flow of information; choosing between two suppliers with full information about them

"Opaque supply chains, far removed from your core business, can see your brand implicated in the bad practices of upstream or sub-tier suppliers you know little about," says Katie Tamblin, chief product officer at Achilles, a leader in supply chain risk and performance management. "If something is in the papers about modern slavery or human trafficking associated with a supplier, it doesn't matter if you're three tiers down the supply chain, you'll be held responsible."

ESG is still a nascent concept and many companies are struggling to meet their ambitious objectives, typically because they exclude financial sustainability from their interpretation of a sustainable supply chain. This is a common omission, despite ESG and financial sustainability being closely linked. Truly sustainable supply chains go beyond a basic understanding of ESG.

A supplier that will be bankrupt next week is clearly not a sustainable supplier, regardless of their environmental and social commitments, and poverty remains one of the biggest killers globally. The considerable overlap is also evident in the current cost-of-living crisis, which was largely caused by supply chain disruptions through the Covid pandemic. Unless a supply chain is financially robust and operationally resilient, it will often cause social issues of its own doing.

A resilient supply chain is one which is able to turn to alternative sources of supply during spikes in demand. Yet the well-publicised global shortage and subsequent price hikes of lithium, which is relied on by governments and the automotive sector to electrify vehicle fleets, has clearly demonstrated how a supply chain lacking financial sustainability can infringe on ESG objectives.

"From an economic policy point of view, it's a classic case where the environmental benefits of electrifying the vehicle fleet are considered in policy making by, for instance, subsidising investments in green energy," says Tamblin. "However, government intervention can only go so far. It underlines the importance of a holistic view across the supply chain, with viable alternative sources of supply.

"If you can't be profitable and pay a living wage, you're not a sustainable business and you're not aligning to ESG goals. You have to be tracking financial metrics and social metrics at the same time. It has to be a balance because if you can't be economically viable and sustainable, you're not going to be around very long as a business. That's why we include financial in our sustainability definition, alongside health and safety, environmental, social and governance factors."

Achilles collects, validates, monitors and analyses supplier data to help reduce cost and risk in the supply chain and increase sustainability. Using smart, data-driven insights, Achilles helps businesses create truly sustainable supply chains, connecting suppliers with leading buyer organisations globally to create efficient networks of highly qualified businesses.

Through a combination of online data collection, validation from its team of experts, desktop assessment and on-site audits, Achilles provides holistic assessments of suppliers. By assessing and scoring suppliers on their sustainability across all five pillars, as well as each one individually, purchases can make their decisions with more knowledge as well as transparency.

Beyond its assessment scores, Achilles also works with suppliers to improve, such as through corrective action plans, partnering with sustainability schools to increase knowledge, and running consultancy and training seminars. By raising the standards of sustainability globally and across industries, organisations can have the opportunity to perform better on all metrics.

"One of the assumptions of competitive economic markets is the free flow of information; choosing between two suppliers with full information about them and their products," says Tamblin. "But as organisations traditionally have not actually had full information about suppliers, when under cost pressure they've chosen the one cheapest option. If all of a sudden they do have the full information and find the cheaper supplier is socially irresponsible, they will think differently.

"Without that information, it's very hard to make the right decision, either financially or in light of ESG metrics. We provide that information, enabling purchasers to make transparent decisions."

The need for transparency will increase further amidst new regulations in Europe and the US requiring organisations to carry out due diligence in their entire supply chain. Considering many companies still don't even know who's in their supply chain, and therefore are unable to know if there are, for instance, human rights infringements among their suppliers, soon they will be facing regulatory fines while failing to meet the ESG expectations of their clients and investors.

"It's about raising standards," Tamblin adds. "At Achilles, we can map out their supply chains with them. We do that through applied data technology and highly accurate processes, supported by our 30 years of experience in working with supply chains. The future of supply chains is being able to identify that transparency across all tiers, which then insulates you from the shock of ending up on the front page due to a tier-four supplier you had no idea you even bought from."

**For more information, visit achilles.com**

Achilles

COST CONTROL

# Five strategies for managing supplier price increases

In an inflationary market where constant disruption has become the norm, businesses need to wield all the tools at their disposal to keep costs under control

Sally Whittle

Arriving back in the office after the Christmas break, Rachel Watkyn opened an email from one of her company's suppliers announcing that it was increasing its prices by 40% – with immediate effect.

Her business, the Tiny Box Company, supplies cardboard boxes to businesses and consumers. The cost of its raw materials has increased by 80% in 18 months.

"Supply costs used to account for 10% of our product costs, but that has risen to 40%," Watkyn reports. "We can't pass all of that increase on to our customers."

Her company's problem is typical of that facing many UK firms. Over the past two years, supply chains have been rocked by the pandemic, poor weather, labour shortages, energy crises and a huge mismatch between supply and demand, according to Simon Geale, executive vice-president at supply chain consultancy Proxima.

"We are in an inflationary market," he notes. "As a business owner, you can't put your head in the sand. You need to do something different."

Many firms can't simply respond to each cost increase with an equal price increase. Watkyn tried adjusting her prices last year. "We made small increases and saw that our turnover stayed the same, indicating that we've reached the top limit of what our market will accept," she says.

Here are five ways to mitigate supply chain cost inflation without increasing your prices and deterring customers.

## Negotiate with your suppliers on pricing


Many suppliers are at capacity, so they're looking for simple orders that they can execute quickly, according to Geale.

"If you can reduce range or increase volume, you'll be a more attractive customer and may be able to negotiate," he says.

A business should also think about what else it could offer that would make it more attractive. Geale suggests asking suppliers if you can serve as a case study or introduce them to other potential customers.

"It's about finding what makes you valuable on top of the value of your order," he says. "If nothing else, consider whether you can afford to offer more favourable payment terms, because everyone is feeling the pressure on working capital."

Just because a supplier intends to hike its prices, it doesn't mean that you can't negotiate to minimise that increase. Surrey firm Silent Pool Distillers buys tin strips in bulk to seal the bottles of gin it produces. When the price of tin shot up by 400%, the company's supplier duly announced that it would be increasing its prices.

The distillery responded by opening negotiations, recalls Ian McCulloch, its founder and managing director. He asked the supplier to break down the cost of its seals to understand how much of the product's price was based on the cost of tin. It turned out that "half was tin, while half was things such as printing, labour, overheads and profit", McCulloch says. "So we offered to pay the higher price on 50% of the cost if the other 50% stayed the same."

This meant that the supplier was able to maintain its product margin while Silent Pool Distillers was able to keep a lid on the price increase.

"We have an agreement that we will bear the cost of the raw material increase, so our supplier is on a fixed profit per unit," McCulloch says. "If it was making 5p per unit before, it's still making 5p per unit."


## Re-engineer your product line

Last year, the Tiny Box Company's bestselling product was a luxury white magnetic box. This year, its most popular item is a basic brown flat-pack box.

"Our customers are reducing the quality of packaging they buy to make savings, so we need to mirror that," Watkyn says.

The company has altered the material it uses to produce its coloured cardboard packaging, switching from dyed board to printed board.

"Rather than the board being white all the way through, it's now printed white on the edges. Making that change has allowed us to absorb the 80% increase in cardboard costs," she explains.

Another change has been to switch the way in which one of the firm's most popular products is structured. By modifying how the box opens and closes, the business was able to slightly reduce the amount and shape of cardboard needed.

"That has enabled us to get 11 boxes out of each sheet of board, rather than 10," Watkyn says. "This means that we've had to pay for new tooling up front, but in the long run it's more cost-effective."

Lastly, the company has changed some of its products altogether. "The most popular jewellery box we sell is a black one for earrings, but it's impossible for us to find them for a decent price at the moment," she says. "We know that there's a global shortage, so we buy what's available and work with our customers to find compromises. It's about saying: 'We don't have black boxes, but we do have grey or brown.'"

This sort of trade-off could be accepted by customers more readily than you might think, Geale suggests.

"You aren't operating in a vacuum. People will accept some changes because they do understand the situation that we're all in," he argues.

Companies could consider switching things like colours or materials, or look at alternative packing options, he adds. "If a large part of your costs relates to packaging, could you look at reduced packaging, recycled packaging or even local pick-up services that don't require packaging?"

## Move your production onshore or nearshore


In recent years, the Tiny Box Company has sourced much of its cardboard from China and the US, but the combined impact of rising material prices and increasingly costly shipping containers prompted the firm to consider other options.

For several years, the company had owned a disused production site in Cornwall. In 2021, it revived this facility and relocated 20% of its manufacturing from overseas to the UK.

By doubling the output of its Cornish plant since then, the company has managed to offset the increased price of sourcing materials abroad. But the rising cost of energy, labour and materials in the UK since the start of this year has eroded some of the cost savings achieved in production, according to Watkyn.

"Those costs have risen by 80% in 18 months, but we have at least reduced our logistics and shipping costs," she says.

## Invest in efficiency improvements


Perhaps the most important thing that any business leader can do in an inflationary environment is conduct a rigorous review of their firm's costs and revenues.

"This is about understanding every component of every cost," Geale says. "What is the challenge you're facing in each area of your business? How might you do things more efficiently?"

The Tiny Box Company needed to improve its efficiency to absorb rising supply chain costs but it didn't want to increase its expenditure on labour, which remains the company's biggest outlay. Instead, it has invested in a number of new IT systems, including a customer relationship management platform, barcode readers and software for automated picking systems in warehouses.

"It means we can be more efficient in areas such as packing, shipping and customer service – and, ultimately, sell more products at a greater economy of scale," Watkyn says. "We generally work to a ratio of £100,000 turnover for every employee. If we can push that to £110,000 by using technology, we'll see huge benefits as a business within a year or two."


## Explore new markets

When you're sitting in the middle of a fire, it's easy to forget that not everyone is sitting in the same fire. Silent Pool Distillers has had to cope with one price increase after another over the past 18 months. The Russian invasion of Ukraine has sent the cost of neutral alcohol sky high, while labels that are printed in the region can't leave port, McCulloch reports.

To keep its turnover steady, the company has had to adjust its marketing strategy, specifically by identifying territories where enough people have sufficient disposable income to spend on premium gin.

"In the UK, families are spending thousands to heat their homes and are paying more tax on top of that. The escape valve is that, if you can grow the business more quickly elsewhere and push the top line, you can get to the same profit. We're pushing hard to grow, to try to soften the impact of the increases," McCulloch says.

The firm has recently started exporting to Brazil, where gin is experiencing a boom.

"Brazilians love gin because it doesn't make you fat like beer does," he says. "They're so body conscious that sales there have gone berserk. And where Brazil goes the rest of the continent tends to follow."

The distillery has also been marketing products in Peru, Mexico and India. Next on McCulloch's list is a small-scale launch in China and, potentially, Taiwan. These regions were always part of the company's strategy, but all the problems affecting supply chains have prompted it to execute them more quickly.

"We've had to pull things forward to keep afloat and do them as well as we can, given the circumstances. We must remember there are many countries that aren't under the same pressures as we are," he says.

RESHORING

# Repatriation games

Spiralling transport costs have prompted procurement chiefs to backtrack on their offshoring policies. But, while it promises several benefits, finding affordable suppliers nearer to home is no easy task

Tim Cooper

zorazhuang via iStock

The widespread move to reverse offshoring as a consequence of Covid-related disruptions to global supply chains is testing the skills of many procurement professionals to their limits and beyond. Yet, if they can manage the onshoring process successfully, they have a golden opportunity to make their chains more sustainable and resilient.

In the decades preceding the Covid crisis, western retail brands had routinely outsourced elements of production to suppliers in lower-cost economies around the world. But research by McKinsey in late 2021 found that, with pandemic-related problems continuing to disrupt global supply chains, 90% of them were planning to pull at least some of these processes back closer to where the resulting goods were being sold.

> Climate change is an existential crisis. Most of the damage comes from supply chains, so supply chain leaders have a responsibility to act

The chief cause of this trend is clear: freight costs are more than four times higher than they were before Covid – and analysts expect them to remain elevated for some time yet. Onshoring can reduce the costs of transporting the items in question while also drastically reducing their carbon footprints.

Malcolm Harrison, group CEO of the Chartered Institute of Procurement & Supply, believes that onshoring can offer even more benefits.

"People tend to think that this is all about transit costs, which are important. But onshoring probably won't give you the lowest overall cost, because it will often entail a large investment to shift your production base, plus higher labour costs," he says. "Instead, a balance that involves more localised production gives the best value by adding proximity and local skills, which increase flexibility. If your supplier is closer to where you sell your products, you can respond much more quickly to changes in your markets."

French multinational Schneider Electric has shortened its supply chain as part of its sustainability strategy. The change has entailed localising production in a multi-hub system covering Europe, the US, China and India. Each hub is responsible for its research and development operations, product specifications and suppliers. The result is that about two-thirds of the products that the company sells in India are designed in India and 90% of them are manufactured there.

"You can't have a small carbon footprint with a long supply chain," says Schneider Electric's chief procurement officer, Dan Bartel. "Climate change is an existential crisis. Most of the damage comes from supply chains, so supply chain leaders have a responsibility to act."

It's a common misconception that large companies such as Schneider Electric can lose economies of scale by making a global to local shift, according to Bartel. But, while economies of scale can be important in some markets, "economies of skill" are more valuable, he says, as localised supply chains can contribute to a central pool of ideas and best practices.

Adopting a localised supply model isn't feasible for everyone, of course. Take semiconductor chips, for instance. These vital computer components, most of which are made in Asia, are too difficult for most western firms to onshore. The pressure on supplies, resulting largely from the trade war between Washington and Beijing, has become so severe that US chip giant Intel is planning to spend up to $100bn on building what could become the world's largest chip plant in Ohio, but few other companies could match that level of investment.

Josh Brazil, vice-president, supply chain insights, at the project44 consultancy, believes that only a small number of industries can make a compelling economic case for onshoring to higher-wage territories. The manufacture of many goods is already highly automated and relies on low-cost labour, he argues.

Onshoring per se isn't necessarily the most effective way to mitigate risk, either. While it will reduce a firm's exposure to supply shocks overseas, the business could be left without alternative suppliers if serious disruption should strike at home.

With these factors in mind, procurement chiefs would be well advised to strike a balance, Bartel notes. Schneider Electric, for instance, maintains global standards for quality to ensure that, if supplies are disrupted in one place, the firm has enough flexibility to use other sources with confidence that they'll follow its specifications.

Swiss pharma giant Novartis serves 155 nations from 50-plus production sites. Amit Nastik is its global head of strategy, operations and local markets manufacturing. He says that onshoring and nearshoring (relocating production to a territory near the home market) have been vital for his firm. They have ensured continuity in its supply of medicines by mitigating problems such as unexpected border closures.

Despite this, the strategy has its limitations in this sector. Nastik explains: "Nearshoring is impossible for some products, because customers stipulate the use of one supplier for intellectual property reasons. And, for some materials, only one supplier can meet the required quality specifications. Some government policies also discriminate against foreign-made products."

Another disadvantage of onshoring is that it can divert resources from offshore suppliers you may still need, threatening their survival, he adds. For all these reasons, Novartis will continue balancing offshoring, nearshoring and onshoring to diversify its supply chain.

> A balance that involves more localised production gives the best value

Harrison contends that not enough procurement professionals are sufficiently skilled to perform such a task effectively.

"Before the pandemic, were accustomed to stable supply and demand," he says. "Now we need more flexible supply chains to manage greater demand variability – and more people with the skills to judge how to structure a resilient supply chain. They need to work out how many suppliers to use, which of them should be onshore and how long the commitment to these should be. Setting up production is usually more intensive than operating an established site. It often involves a long-term investment decision, but what will happen in five years? You must therefore build in agility, which requires strong skills in areas such as scenario planning."

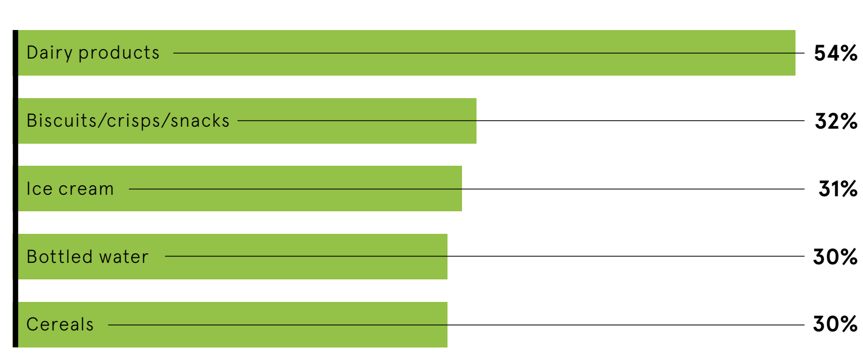
This may entail moving to a bigger supply base featuring a mix of onshore, nearshore and offshore sites. So procurement chiefs may need extra resources and the skills to manage a more complex structure too.

But, as Bartel says: "Sure, redesigning your supply chain can be difficult, but it's worth doing for the long-term benefits. While the current situation won't last forever, suppliers will continue to face crises. Supply leaders therefore need to design their chains to be more agile and resilient."

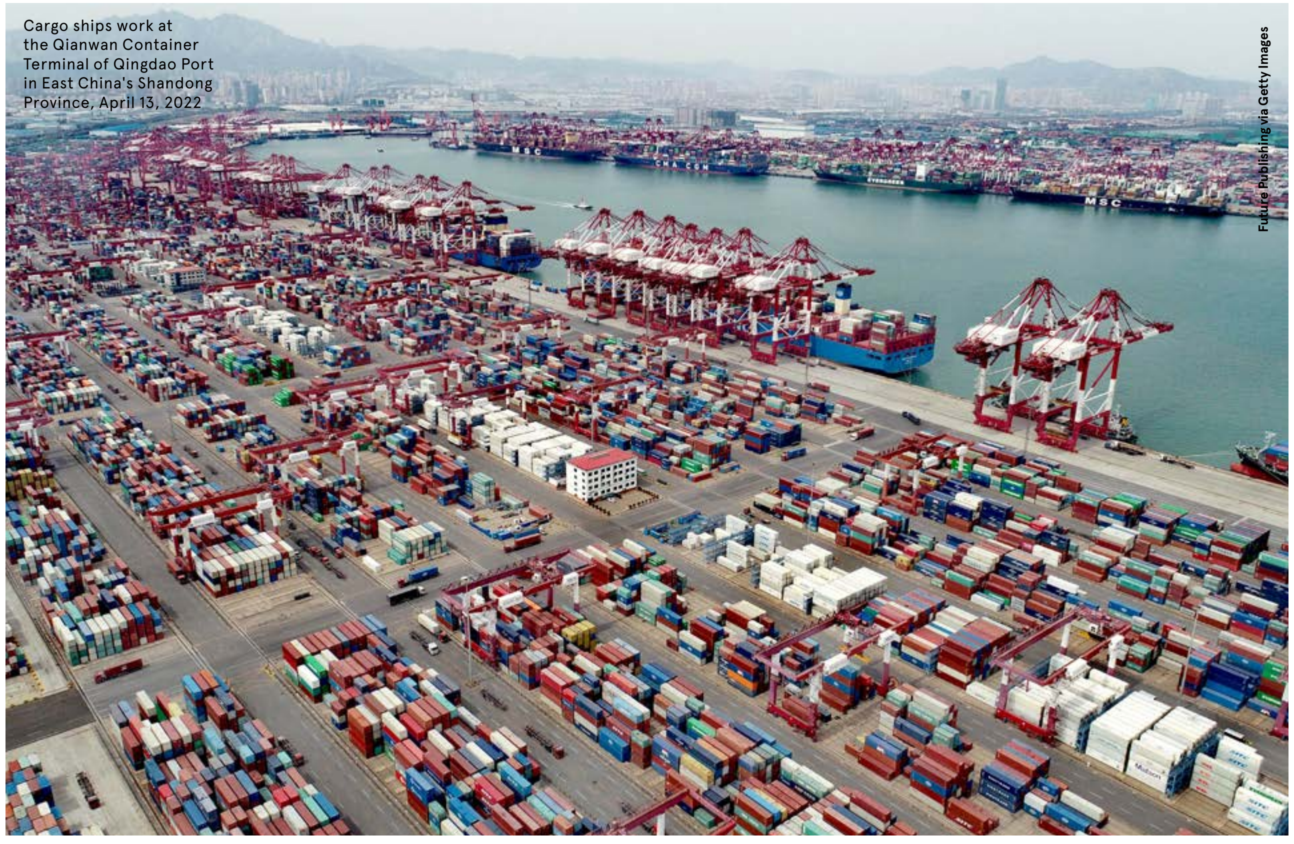
Despite the benefits, onshoring presents so many tough challenges that the process could be likened to turning around an oil tanker. Indeed, it might actually involve turning around a tanker. The question is: does your procurement team have the ability to do it quickly enough?

## DO CONSUMERS PREFER DOMESTICALLY PRODUCED FARE?

Global preferences for local food and drink brands, by category




NielsenIQ, 2020



Cargo ships work at the Qianwan Container Terminal of Qingdao Port in East China's Shandong Province, April 13, 2022

Future Publishing via Getty Images

RISK MANAGEMENT

# Chinese puzzle: time for western firms to diversify their risks?

The pandemic has exposed the world's overreliance on China as a manufacturing base. Learning from this bruising experience will prepare businesses better for future challenges

Georgia Lewis

Beijing's zero-Covid policy has been creating serious problems for global supply chains and trade ever since China's first lockdowns in 2020. The nation's efforts to contain infection have been among the most stringent in the world. It did not take long for their effects to be felt beyond its borders. The ensuing pandemic-induced obstruction to global trade brought into sharp relief the rest of the world's heavy reliance on Chinese raw materials, components and products.

After two difficult years for logistics and trade, President Xi Jinping announced in mid-March that the government would be continuing with its "dynamic zero" policy in response to the latest outbreak of Covid's omicron variant. The policy includes widespread PCR testing in the worst-affected regions, state-built quarantine facilities for anyone who tests positive and targeted local lockdowns.

This time, the north-eastern industrial province of Jilin has been most heavily affected, while a significant number of Covid cases have been reported in provinces along China's east coast and further inland. Researchers at Lanzhou University have told the media they are confident that this latest outbreak will be under control well before the end of spring.

Arnold Ma, founder and CEO of Qumin, a digital agency that connects China and Europe, warns that these outbreaks suggest that "the country's battle against the virus is far from the end".

But what do these latest pockets of Covid mean for global trade? Have there been improvements in how business with China is being done? And have lessons been learnt about our overreliance on China?

There are "definite signs that China is emerging from the pandemic, particularly because of the country's successful vaccination programme". So says Laurence Dellicott, director of fulfilment sales and supplier management in EMEA for logistics technology firm Avnet Silica.

"Its economy is continuing to grow, but lockdowns are still being applied, with some people viewing its zero-Covid policy as too aggressive," he adds.

Dellicott notes that the Chinese supply chain problems are not only Covid-related: "Trade disputes between the US and China were happening long before the most recent variants started spreading. Generally, costs have continued to rise across the board, with many manufacturers struggling to keep up with the scale of demand in China and elsewhere."

Kevin Gaskell, business growth expert and author of *Inspired Leadership: how you can achieve extraordinary results in business*, observes that China's logistics "simply froze" at the start of the pandemic because trucks, aircraft, ships and containers were either locked down or unavailable in the right place at the right time.

"Modern inventory management works on the basis of efficient supply chains minimising their required stock holding," he says. "When supply lines were disrupted, buffer stocks were consumed quickly. Owing to the manufacturing lockdown, replenishment was difficult, if not impossible, for an extended period."

Dellicott says that businesses are "seriously reviewing putting all of their eggs in one basket and spreading their manufacturing more than they usually would, in case of another international crisis."

Many businesses are considering alternatives to treating China as a one-stop manufacturing shop, with reports of a 'deltacron' Covid variant potentially accelerating such decisions, he reports.

For manufacturers, the pandemic has highlighted the importance of either having manufacturing hubs outside China or maintaining a presence in China while planning with neighbouring nations.

"Some companies have been playing on the so-called China plus one strategy, which means that they have expanded their operations to surrounding countries, such as Vietnam and India, as a way to reduce their reliance on China as a production base," Ma says. "This enables companies to maintain a presence in China so that they won't miss out on any opportunities offered by this lucrative market."

The China plus one strategy offers businesses flexibility without abandoning what they have established in China, as he explains: "Operations in neighbouring countries can function as a back-up in a situation such as a pandemic when operating restrictions in those regions might not be as tough as those in China."

In some markets, governments have stepped in to make it easier for businesses to manufacture at or near home. For instance, the White House has invested \$52bn (£38bn) in the semiconductor sector under the Creating Helpful Incentives to Produce Semiconductors for America Act 2021. Meanwhile, the government of India has approved a \$19bn proposal to incentivise global companies to move factories to the country, including manufacturers in the automotive, electronics, pharmaceutical and textiles sectors.

In China itself, the economic impact of pandemic-related pressures on manufacturing and supply chains has improved the sophistication of logistics in the country, according to a recent research report by McKinsey. Advances include the increased adoption of digital tech and use of air freight in response to shipping delays.

Gaskell stresses that the challenges facing manufacturing and logistics have not been specific to China because most interactions with international suppliers have been affected by lockdowns. But he adds that many firms in the UK and EU have started reconsidering the price benefits of sourcing from China.

"In my companies, we're actively reviewing alternative local suppliers," he reports. "The transition will not be simple or quick, but alternative sources need to be considered, because the pandemic has highlighted the existential problem of relying on long-distance supply chains."

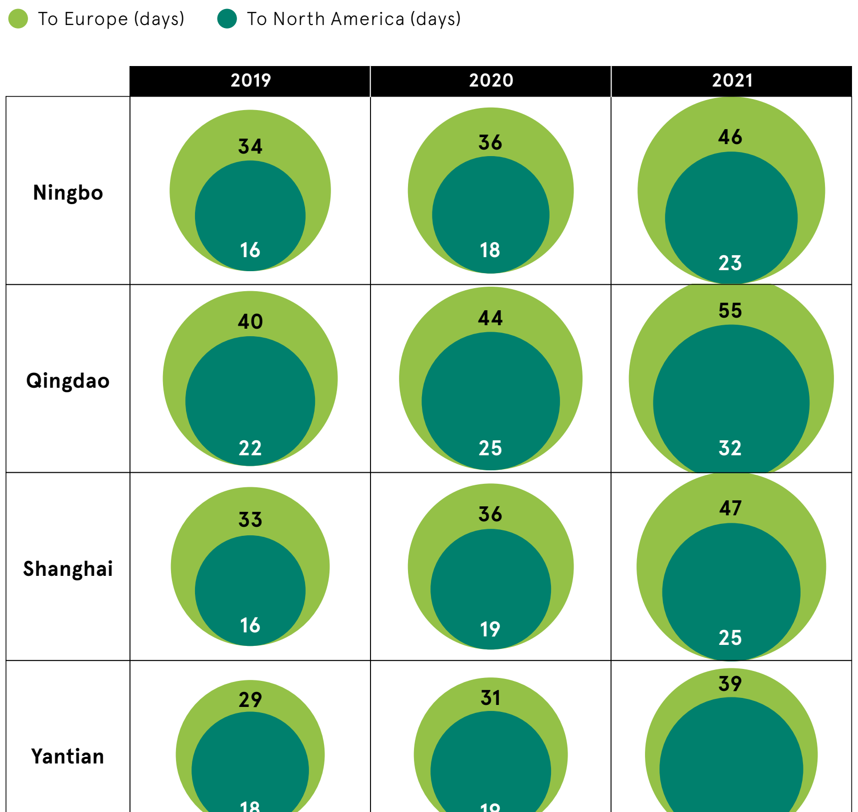
The perfect storm of Beijing's zero-Covid policy and the West's reliance on China for cheap manufacturing and smooth supply chains has created two years of serious disruption. But Kayla McEwan, a strategic analyst at customs compliance specialist TecEx, warns that other risk factors are at play too. Many of these have contributed to the problems during the pandemic and are also likely to remain after the Covid crisis ends.

She says that, for the UK and EU, Brexit is the first issue that comes to mind because of the "trade barriers and other complexities" that have arisen since the UK voted in 2016 to leave the bloc. More broadly, she cites "other adverse factors", such as labour shortages and panic-buying, as causes of global problems affecting production and logistics. The overriding lesson for western firms goes beyond simply reducing their reliance on China, then. Agile businesses will be better equipped to overcome disruptions if they adopt strategies that spread their risks and their responsibilities.

> China's economy is continuing to grow, but lockdowns are still being applied, with some people viewing its zero-Covid policy as too aggressive

HOW SHIPPING TIMES FROM CHINA HAVE INCREASED

project44, 2021

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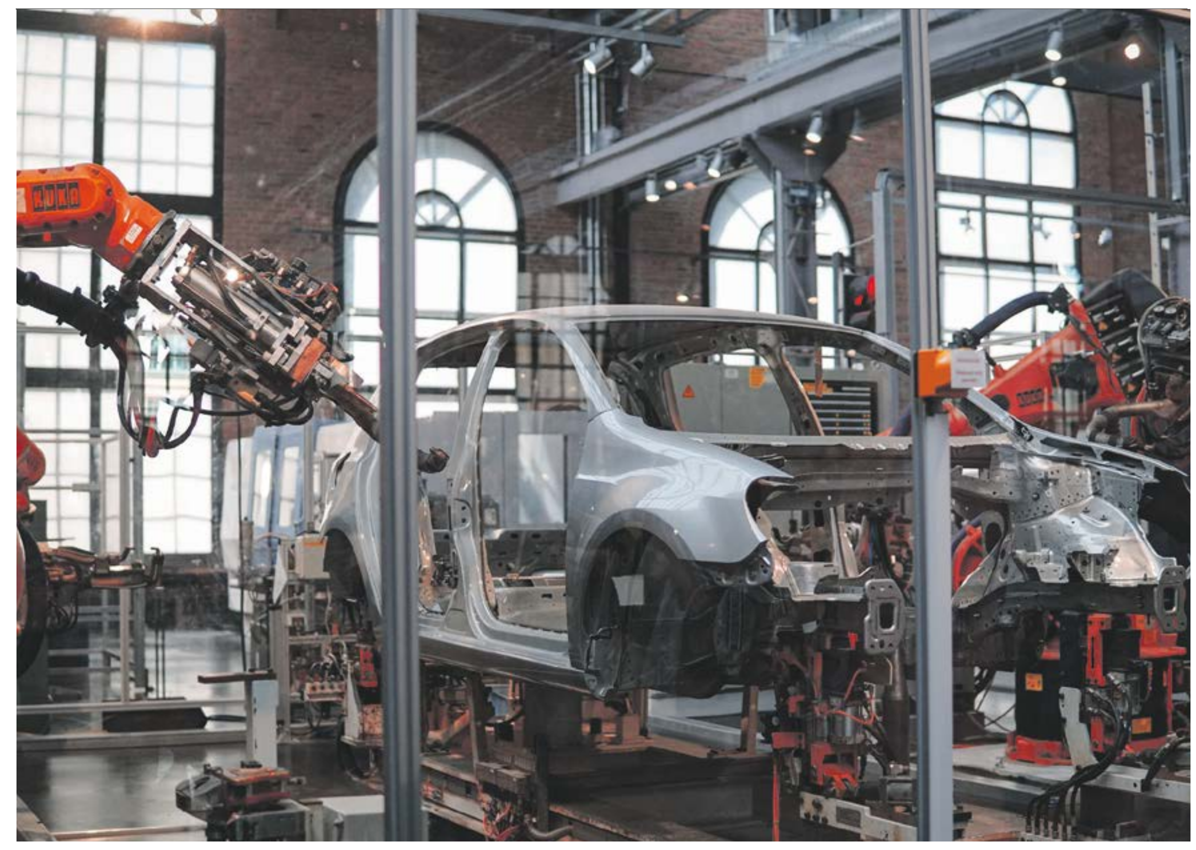

# Optimising supply chain resilience in the automotive industry

The direction of travel for the automotive industry is clear. Customers must remain a key part of the supply chain strategy, experts say

Oliver Pickup

**Q What have you learned from managing your supply chains in the last two years?**

**DDC** Recent events confirmed that we live in a world of change and that crises can come from anywhere. We have the never-ending semiconductor problem in the automotive industry, and now there is a war in Ukraine. How we operate has had to change, and we have to work with very low stock levels. Having that agility and flexibility is critical, as is managing the supplier ecosystem rather than individual suppliers.

**AS** Infor partners with several leading global brands in the automotive industry, and the challenges have been extreme in the last two years. It has become clear to all businesses that cloud computing is key. Infor has benefitted from its strategic partnership with AWS in maintaining to deliver multimillion dollar projects globally; using remote working and collaboration tools to ensure projects are delivered on time and to budget, despite the travel restrictions and lack of face-to-face meetings which would be the norm. The provision of robust, scalable and agile industry specific cloud solutions has enabled Infor to maintain its service levels in this challenging time for businesses, globally.

**DR** At Prodrive, we have learned to be more adaptable and flexible and apply our innovative approach to different uses. For example, we produced a low-cost ventilator during the pandemic in a project with the University of Cambridge. Also, we collaborated again to create rapid-flow coronavirus test kits in just eight months.

**JR** At JLR, we have learned there needs to be greater transparency across the supply chain and coverage of our suppliers. To ensure we have the best outcomes, we need to understand what's going on in real time, where essential parts are and where the gaps might be. Our transformation project, which I'm leading, focuses on transparency and collaboration.

**RH** We have put digital at the heart of the supply chain at JLR. We've created a digital organisation that supports the broader business with data science, automation, analytics and predictive modelling. Of course, there is still more to do, so we can bend and flex the requirements of our customers, but we are being much more responsive.

**OT** Business agility, and greater end-to-end visibility of the supply chain, are enabled by cloud computing. Servers can be spun-up in minutes, it provides scale across continents and has been a game-changer for AWS's customers and partners. There is a big trend of collaboration, too, where original equipment manufacturers, logistics service providers, and even dealers are sharing data that used to be siloed.

**Q How are today's supply chain challenges accelerating the pace of change?**

**OT** First, the pandemic and the geopolitical crisis sparked by Russia have exposed supply chain vulnerabilities. Automation can help, but we also need to make supply chains more sustainable and supportive of circular economies.

**AS** There is now more collaboration and 'co-ompetition' in the automotive industry. Most organisations realise that 80% of the data they need sits outside their existing business, so there is an excellent opportunity to expand the ecosystem and choose expert partners who can help gather that data. With the right partners, and by utilising artificial intelligence and machine learning, organisations can move from a reactive to a more proactive to, ultimately, a more predictive business model over time.

**RH** The pace of change in powering digital transformation requires top-level support, and we are lucky to have a digitally literate CEO. We know the direction of travel, and we know we can get there with that leadership. For instance, in response to the semiconductor issue, and thanks to the cloud, we have created tools to revitalise smart business layer solutions.

**JR** Cybersecurity is a massive focal point for us. It's front and centre of what we're doing in the supply chain digital transformation. JLR needs to take a leading role to ensure we are robust in our cybersecurity requirements. Likewise, our suppliers must understand the importance of cybersecurity. To echo others, the keyword here is 'collaboration.'

**DDC** There is a strong request for safe and affordable mobility, and the industry has realised that we need to provide sustainable solutions, so that is a significant challenge we face. Producing electric cars remains expensive compared to internal combustion engine cars. That has a huge impact on supply chains but reaching carbon neutrality is a must and something we owe to all our communities.

**DR** Thank goodness I don't have the supply chain problems that many in the automotive industry have. It is an exciting time, though, and people's perceptions of, for instance, electric vehicles need updating. Prices are coming down while their battery range and performance are improving. Motorsport is responsible for many innovations we see on the roads.

**Q To what extent are automotive organisations technology businesses?**

**OT** Vehicles are becoming software-based products. In some new car models, there are hundreds of millions of lines of code. Digital is clearly the direction of travel. But the main question has to be: how can we provide a superior customer experience? The automotive industry must look to other industries for cues.

**JR** Data is so important to inform that superior customer experience, as that is where you will learn about customer behaviour. From a supply chain perspective, having greater visibility and transparency will improve resilience and mapping capabilities and show the provenance of the vehicle for the customer. Sharing that knowledge is increasingly crucial for the customer experience.

**RH** Clearly a sustainability agenda is paramount. Those who don't follow that will be left behind. Visibility of the supply chain ecosystem is vital. For example, in the future we would want customers of new vehicles to be reassured that they know where their battery has been mined through to where it is assembled. It's tough to map everything out, but technology makes it easier.

**DDC** The sustainability agenda, which the automotive industry must accelerate, is definitely not straightforward as we operate in a cash-driven industry. [Sustainability] cannot be done without the digitalisation of the supply chain, though. We now have a tremendous and unique opportunity to connect with customers and the supplier ecosystem and improve visibility.

**DR** Most motorsports companies have developed a technology group that works with a range of manufacturers. Together they look at likely challenges and opportunities a decade into the future. Some projects we are working on today might not see the light of day for years, or indeed ever, but manufacturers have to hedge their bets by investing in several technologies at the moment.

**AS** Most of Infor's automotive customers are now building technology campuses alongside their main production facilities, and innovation is at their core. It is becoming more apparent that the vehicle of the future will be an environmentally friendly, super-smart, connected device, whomever is driving it – whether it's a person or a machine. The need for innovation and investment is a constant and digital transformation has a clear role in bringing those products to market faster.

> Digital is clearly the direction of travel. But the main question has to be: how can we provide a superior customer experience? The automotive industry must look to other industries for cues

**Roundtable attendees**

**DDC** **Damien de Cacqueray,** Vice-president, supply chain new projects, Stellantis

**RH** **Richard Harding,** InDigital domain director, global purchasing, supply chain and manufacturing, Jaguar Land Rover

**DR** **David Richards,** Chairman and founder, Prodrive

**JR** **Judith Richardson,** Global supply chain director, Jaguar Land Rover

**AS** **Andy Sutton,** Vice-president strategic accounts, Infor

**OT** **Ozgur Tohumcu,** Managing director, automotive (EMEA), AWS

**To find out more, please visit infor.com**

Detail of a rocket missile on the agricultural field near Kyiv area, Ukraine, 06 April 2022

NurPhoto via Getty Images

SOURCING

# Commodities markets absorb impacts of war

With suppliers in Ukraine and Russia mostly out of the picture, critical industries are urgently seeking out alternative options

Mark Hillsdon

Global supply chains were already reeling from the effects of the pandemic, but Russia's invasion of Ukraine has since added a whole new set of problems, with both the war and trade sanctions choking the flow of vital resources.

The nation is ranked as the 16th-largest exporter by the World Trade Organization, although it has particular strengths, with oil, gas and coal topping the list. But the scale of the global pull-back from Russian businesses has been vast, reports Brandon Daniels, president at supply chain management business Exiger.

His firm has looked at 150 oligarchs and the 2,600 businesses in which they hold material stakes. It has found more than 200,000 supply links to US firms in the critical infrastructure and defence industrial base – an "enormous amount of commerce", he says.

It's hard to reorganise any supply chain, Daniels adds. "But, with pervasive sanctions in critical sectors and individuals that own large swathes of global companies, the challenge of finding, analysing and stopping those transactions is Herculean."

Kate Tamblin is chief product officer at risk management specialist Achilles and author of the firm's supply chain resilience index. Shocks to supply chains are increasing in frequency and intensity, she says, adding: "Supply chains have not had time to recover and we now face a critical tipping point that could have both supply and cost ramifications rippling through industrial and consumer markets for years to come."

The fertiliser industry is one of the key sectors affected by sanctions. Jo Gilbertson, head of the fertiliser sector at the Agricultural Industries Confederation (AIC), says: "What we are seeing across our whole supply chain is a huge amount of uncertainty and a lot of risk being carried."

Manufacturing fertilisers is a particularly energy-intensive process. According to the AIC, mainland Europe supplies the UK with nearly 60% of its fertilisers. With 46% of the gas used by Continental fertiliser manufacturers coming down Russian pipes, there's concern that it could be part of a new wave of sanctions. While much of the gas used in the UK comes from the North Sea, "we are part of the European market for gas, so our prices are linked to European prices, which would soar if several Russian pipelines were to be turned off", Gilbertson notes.

A tonne of fertiliser cost about £245 a year ago; it's now nearer to £815, he adds. "Manufacturers have switched off because they know that farmers can't buy at that price."

There are indirect impacts too. A lack of fertiliser means less grass and winter silage, leading to a decline in dairy output.

Ukraine and Russia together account for about a quarter of the global grain supply. The UK is largely self-sufficient with respect to wheat, but the lack of grain on the market is pushing up prices, reports Alex Waugh, director-general of UK Flour Millers.

An average flour mill processes about 100,000 tonnes of grain a year. Inflation means that it will need to find more than £15m extra this year for its feedstock.

"We can get the wheat we need to make flour; it's just more expensive," Waugh says.

Much the same is true of maize, with more than a quarter of the UK's imports coming from Ukraine. Most is destined for animal feed, especially in the pig and poultry sectors. If it becomes more scarce, price hikes for pork, chicken and eggs are likely.

Other affected commodities include neon (used to make semiconductors) and sunflower oil from Ukraine; and palladium (used in catalytic converters) from Russia, which accounts for 40% of global supplies.

Finding alternative sources is neither simple nor cheap, Gilbertson stresses. More commodities could be shipped from countries such as Canada, but transporting them takes far longer than importing from one of the Baltic ports, say. Other important products, such as phosphates, could be sourced from north Africa, he says, but their long-term quality is questionable, as is the sociopolitical stability of that region.

With Russia out of the equation, "everyone is left scrambling for resources from other countries", Gilbertson observes. That is not good news for the UK, which has only 1% of the global agricultural market and struggles to compete with agricultural powerhouses such as Argentina and Brazil. China's domestic market now uses more than a quarter of the world's reserves.

What can be done? The government has taken some positive steps, such as removing tariffs on US imports including maize, according to Gilbertson. Brussels has been more proactive, making €50m (£42m) available to help fertiliser manufacturers get back online. More controversially, the EU also looking at dropping regulations restricting genetic modification and planting crops on fallow land, which could have a detrimental effect on sustainability initiatives across the bloc.

But businesses can still recover a measure of control, according to Simon Geale, executive vice-president at supply chain consultancy Proxima. Firms have moved on from just in time and just in case, he says, adding: "Now the mantra is 'just go and get it'."

Geale explains that they should approach the market differently, broadening sources of supply. For instance, some of Proxima's clients are purchasing stock as and when they find it. They're dealing with one-off spot markets, rather than signing two- or three-year supply agreements. Also look internally, assess the deals you already have in place with suppliers and work out how they can help, he recommends.

Stop thinking about a supply chain as linear and "start thinking about it as an interconnected economy, because there are going to be knock-on effects," he warns. "Get transparency over your supply chain and the network that supplies it."

Companies should look to technology too. They should consider new systems that can perform smart risk assessments by analysing patterns along the supply chain rather than waiting for all the data to come in.

"We have seen a lot of firms' risk processes fall away during the pandemic as they've started trying to make decisions based on best estimates," Geale says. "Conventional tactics are just not going to apply."

> What we are seeing across our whole supply chain is a huge amount of uncertainty

### THE TOP THREE PRODUCERS OF OIL, WHEAT AND SUNFLOWER OIL

Share of oil production volume in 2020

| | | |
|---|---|---|
| 01 | US | 19% |
| 02 | Saudi Arabia | 13% |
| 03 | Russia | 12% |

Share of wheat exports in 2021

| | | |
|---|---|---|
| 01 | EU | 18% |
| 02 | Russia | 17% |
| 03 | Ukraine | 12% |

Share of sunflower oil exports in 2021

| | | |
|---|---|---|
| 01 | Ukraine | 50% |
| 02 | Russia | 28% |
| 03 | Rest of world | 22% |

Statista, 2022

Commercial feature

# How data can help reduce friction in the supply chain

Time is short and mistakes are costly. Data can help with both

It has been a difficult few years for manufacturers, suppliers and businesses that sell products worldwide. Recent events highlighted the weaknesses in supply chains. Raw materials are in short supply, pushing prices higher and making decisions more difficult. Yet customer demand for new products in a timely manner has not adapted to the new circumstances. This means there is little room for error in every decision made in sourcing, supplying and manufacturing.

For years, the world ran on a just-in-time manufacturing methodology – which worked in a time of plentiful, reliable supply. "And there weren't as many issues impacting the flow of goods," says Julie Driscoll, executive advisor at aPriori. The company automatically generates product manufacturing intelligence that helps manufacturers collaborate across the product development process to make better design, sourcing and manufacturing decisions that yield higher-value products in less time.

Mistakes cost time and money, meaning companies must feel confident in all product development decisions. "There's a lot of buyer demand for personalised products with a broader range of features. Companies are trying to innovate faster and move from design to market as quickly as possible," says Driscoll.

aPriori recently surveyed 24 manufacturers about the pain points they have been experiencing in sourcing and buying products. The key finding? "Current sourcing processes have inefficiencies due to incomplete information and manual steps," says Driscoll. Using data and technology to be more transparent about the product design, price, method of manufacturing and potential manufacturing issues can help businesses collaborate between teams, reducing the time spent searching for information and haggling on the phone or via email.

This is vital at a time when trusted manufacturers may be unable to produce at the scale they once did due to staff or material shortages. Businesses are having to find, befriend and broker deals with organisations they have not previously worked with, introducing friction into an already strained process. "We're talking about reducing friction across your entire product development process," says Driscoll. "From early design of new parts or new products, we can help you speed up the process to get you to market quicker." aPriori was recently used for a deep dive manufacturing and cost analysis for assembly by agriculture and construction equipment company CNH Industrial that evaluated 104 unique part numbers and fine-tuned the manufacturing process, saving the company $2.1m.

aPriori's technology helps reduce friction both while products and components are manufactured and before they're delivered. More than 70% of a product's cost is determined at the design stage, but once set up and in production, reworking products mid-manufacture can cause costly waste. aPriori's software helps identify any manufacturability issues early in the process, suggesting how an item can be made, how long it will take to make, how much material it's going to use, and what the carbon footprint of the product will be. "Automating the product analysis and making the data easy to access and share are crucial to expediting the process," says Driscoll. "Product life cycles are shrinking dramatically, and there's so much more global competition."

That puts pressure not just on the design process, but on the buying process too. "Previously, the push was that you had to go fast," says Driscoll. "Now, fast isn't enough. You need to be able to respond, because things might not go exactly as you wanted." Whether it's a shortage of a key component or shifting the manufacturing to an alternative at short notice, hurdles exist everywhere – and having visibility for options can help you to avoid them. "Digital transformation allows manufacturers to move quickly and to be responsive to disruption," says Driscoll. "You don't know when the next black-swan event is going to happen."

Of course, the supply chain will not remain stalled forever – but the importance of remaining nimble will continue for years to come. "Even if the disruption settles down, efficiency and time to market are going to remain important," says Driscoll. "If you have inefficiencies in your process, you are going to be a laggard."

> Fast isn't enough. You need to be able to respond, because things might not go exactly as you wanted

**To see how real time data can streamline your product innovation lifecycle, visit aPriori.com/contact or call +44 (0)78517 91322**

aPriori

Commercial feature

# B2B procurement embraces the marketplace model

Amid a period of drastic logistical complexity and accelerated digitalisation, a network-based B2B marketplace model holds the key to more robust, transparent and flexible supply chains

A new generation of business professionals have long been questioning why they can order and receive any item seamlessly in their home life, but it can take weeks to get even the most basic items at work. Traditional B2B procurement is inefficient and time-consuming.

Companies have seen two mega-trends collide. Digitalisation was transforming B2B buying experiences even before Covid-19, but the pandemic intensified the shift as the physical economy became a digital one overnight. Meanwhile, lockdown disruptions amplified the risk of relying on a single source of supply, with just-in-time supply chains particularly exposed.

A network-based marketplace model addresses these issues by facilitating a dynamically connected ecosystem of buyers and sellers and digitising key processes to remove the low-value-added tasks in the supply chain. Cloud-based B2B marketplaces accelerate the sourcing of unplanned tactical supplies and empower employees while managing risks.

Analysts expect the future of global trade to be driven through marketplaces, helping organisations build resilience through easier access and greater visibility across the supply chain. The need will grow further given cross-border B2B ecommerce transactions will reach $1.8tn by 2023, some 17% of all B2B sales in the US, according to Forrester Research.

"Companies want to move from a pure linear supply chain to a network supply chain with a large baseline of suppliers," says Julien Lévêque-Claudet, head of marketplace strategy and go-to-market at Tradeshift. "You cannot just do that by yourself. You need to tap into a B2B marketplace, delegating the role of finding and vetting suppliers to a third party which applies the right control and curation. The more connections, the faster you react to the speed of business."

Procurement teams are under pressure to show more strategic value, moving from gatekeepers on spend to revenue generators. B2B marketplaces help them do that through accelerated sourcing and greater efficiencies. As end-users can buy directly from a curated supplier base, procurement staff are able to shift their focus to more value-added activities.

> When physical and financial supply chains are interlinked, they're more resilient, efficient and flexible...helping to unlock the $2tn global SME funding need

A dynamic marketplace model also eases the pressure on supply chains during periods of volatility by intelligently matching areas of high demand with pockets of capacity. It's easy and cost-effective to build a diverse, pre-vetted supplier base in a controlled environment where smaller suppliers are put on a more level playing field with large vendors.

The benefits are clear but not all marketplaces are created equal, with many thinly veiled B2C marketplaces masquerading as B2B but lacking the backend infrastructure to support such transactions at scale with the right level of control and compliance required by small, medium and large enterprises in a B2B environment.

One marketplace solution that's as robust on the backend as it is intuitive on the frontend is Tradeshift. Its network-based B2B marketplace environment allows better transparency and competitive offers for buyers while opening up a broader prospecting base to suppliers at a limited customer acquisition cost.

Tradeshift allows easy integration of multiple solutions on a single platform. Buyers are free to tap into different marketplaces according to their specific needs with centrally managed controls that enable them to set their own rules.

"It's a marketplace of marketplaces," says Lévêque-Claudet. "If a buyer is in the automotive sector, for example, they will benefit from group buying on a dedicated marketplace for direct materials and they can also access other marketplaces for indirect spend such as office supplies. Crucially, this can all take place on a single platform."

The end-to-end digital process for managing trade also makes B2B marketplaces a springboard for sellers to access financial products. A rich seam of data underpinning each transaction means that banks and other third-party funders can start to offer financing options, such as early invoice settlement, directly through the marketplace.

"When physical and financial supply chains are interlinked, they're more resilient, efficient and flexible," Lévêque-Claudet adds. "Suppliers will sell their products but could also activate a financial product from a financial institution, in one place, ultimately helping to unlock the $2tn global SME funding need."

**To find out more, please visit Tradeshift.com**

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