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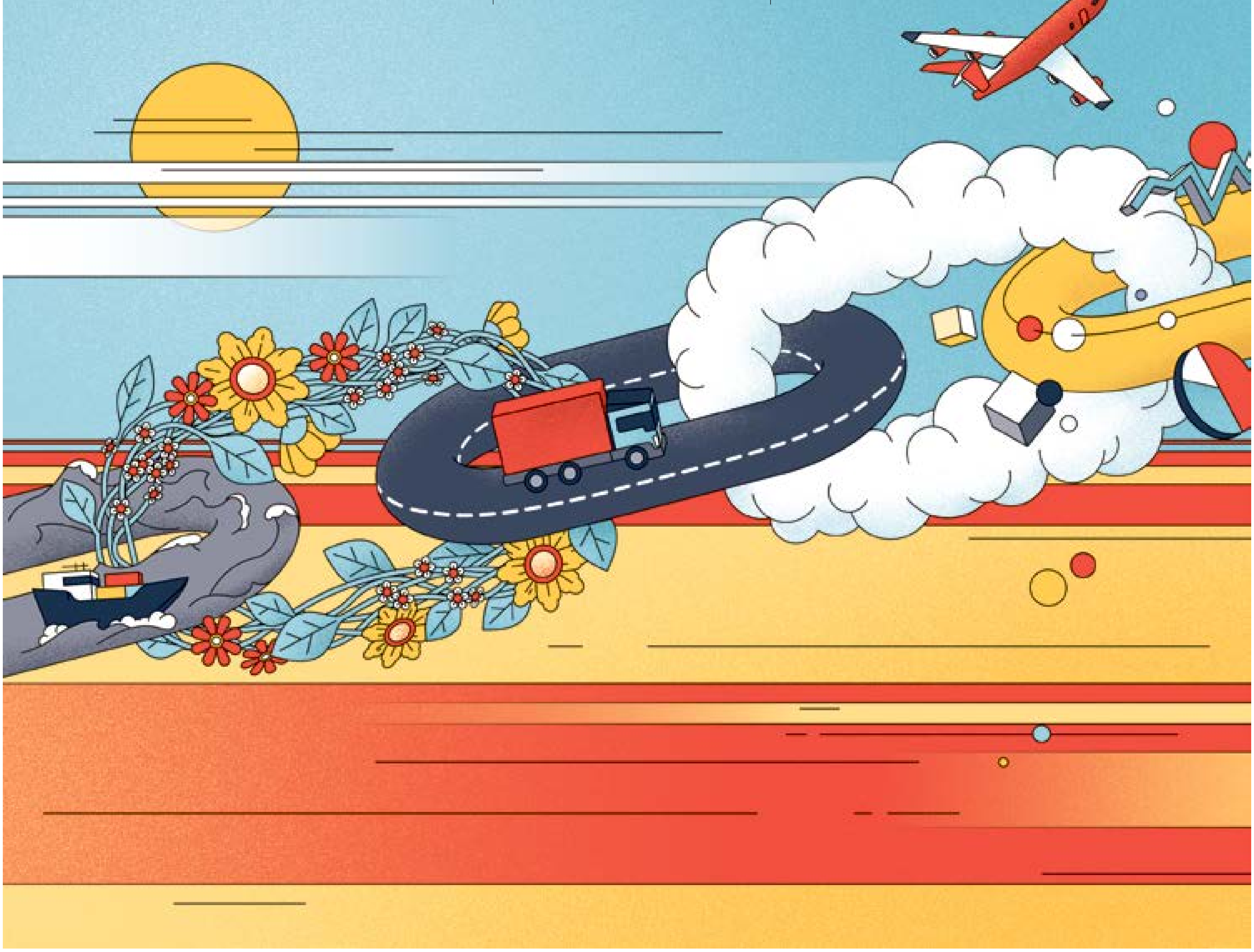

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SUPPLY CHAIN RESILIENCE

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MANUFACTURING

Brexit pays out a green dividend

Can the costs of leaving the EU be offset by green benefits? Some manufacturing companies are reporting positive outcomes from moving supply chains back to Britain

Georgia Lewis

Leaving the EU meant the end of free trade between Britain and its European neighbours, along with an end to the free movement of goods, services and people. For many companies, especially manufacturers that rely on European partners for components, this has led to inevitable supply chain upheaval.

John Breen, geopolitical consultant for strategic advisory firm Sibylline, says the main challenges for manufacturing businesses in the wake of Brexit include trade barriers, exacerbated labour shortages, increased logistics costs and tariffs.

"Brexit is having a negative impact on UK export-focused industries like manufacturing," says Breen. "The new customs rules as of January 2022 have increased operating costs for UK manufacturing industry."

Increased costs and paperwork are the main effects on supply chains for manufacturers who import components from the EU, as well as those who did enjoy free access to EU markets for export. Breen says this is significant because the EU accounts for 42% of all UK exports, so extra costs on the distribution side of the supply chain are unavoidable for British manufacturers.

"In goods alone, the majority of the UK's top 10 export and import partners are in the EU," says Breen. He adds that the UK services sector "has not experienced as much disruption to date as London remains an important European financial hub".

A recent report on tackling carbon emissions and trade policies, by the UK Trade Policy Observatory and Centre for Inclusive Trade Policy of the University of Sussex Business School, recommended a comprehensive approach to supporting decarbonisation on a global level. Both the UKTPO and CITP support low-carbon supply chains. At government level, the report recommends green investment, climate finance, technology transfer and co-operation in the development of international standards for reducing emissions on supply chains. In the meantime, though, British companies are taking matters into their own hands to reduce the carbon footprint of supply chains outside the EU single market.

Tim Warrington, CEO of robotics company Servicerobots, says the firm sources all of its components within the UK. "If we can't, we try to manufacture components ourselves,

which means a low carbon footprint," he says. As well as the green benefits, he reports long-term financial and quality-control benefits by keeping supply chains within the UK.

"After the initial set-up of tooling, producing parts ourselves is around 80% cheaper than buying them in," he explains. "That helps us cope with costs incurred by Brexit. Companies taking this approach are helping to increase manufacturing in the UK to cope with demand." Warrington describes operating outside the EU as "challenging because of the usual red tape to get parts but, like anything in business, you just have to get over the hurdles and make the most of the positives, such as increased demand for parts made in Britain, which are now harder to source in Europe."

Kanzen Skincare also reports advantages of not relying on EU suppliers. As does Servicerobots, David Connor, joint CEO of Kanzen Skincare, says the company sources "100% of our components from the UK. As a startup, it was vital for our development and brand to act fast and talk to UK suppliers if we need them," he explains. Keeping supply chains for components in the UK is also important for the company to meet its sustainability goals. "We're carbon-neutral – and the first cosmetic company to achieve plastic neutrality in oceans," he says. "Working with UK manufacturers has had a huge impact on our carbon-neutral status."

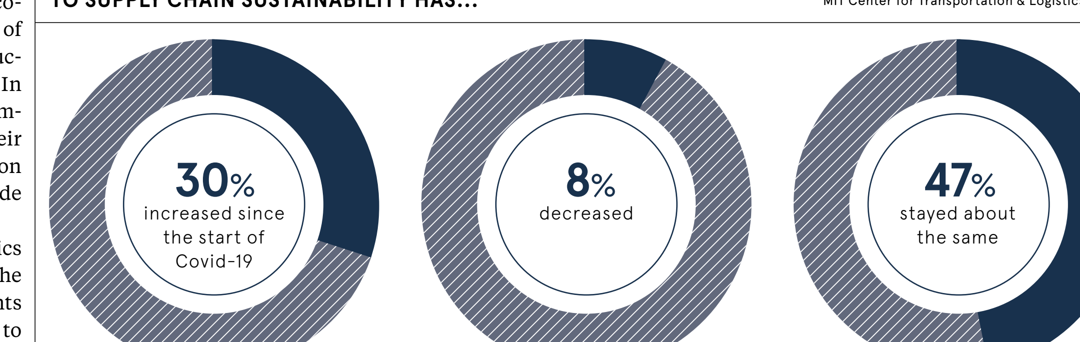
Connor agrees with Warrington that costs may be linked to keeping supply chains within the UK. For Servicerobots, it was readying the factory to make more parts onsite, while Kanzen says that UK manufacturers can be more expensive.

"But as a premium skincare brand we've factored in these costs – and the speed and ease through the supply chain outweigh the change in costs," explains Connor. He is clear that keeping supply chains within the UK has also helped manage costs incurred by Brexit. "We find it easier to manoeuvre regulations in the UK since Brexit. Our only challenge is the export of goods to European countries because export regulations are tighter and we pay double for registration of products," he says.

Companies such as Servicerobots and Kanzen Skincare are taking the initiative in greening supply chains by bringing them within the UK's borders wherever possible, although cost benefits can vary and distribution to the EU is more expensive than it was. Private companies can – and often do – take direct and positive action before legislation is in place or government climate policies have caught up with the need for change. ●

GLOBAL BUSINESS EXECUTIVES SAY THEIR FIRM'S COMMITMENT TO SUPPLY CHAIN SUSTAINABILITY HAS...

MIT Center for Transportation & Logistics, 2022



Commercial feature

How predictive analytics could future-proof your supply chain

Just one day of supply chain disruption is enough to damage reputation, revenues and profits. But predictive analytics are helping businesses to optimise supply chain visibility, respond before crises occur and save millions of pounds

How much would it cost your business if your supply chain suffered just a single day of disruption? How quickly could you identify the cause of the problem and implement the right solution before your supply chain returned to breakeven? And is there a way of predicting risk before disruption occurs and saving your business from damaging financial losses?

Those are the three big questions being asked by business leaders in boardrooms and offices worldwide, who want to future-proof their supply chains from disruptions at global, regional and internal level. Global trade issues, natural disasters and cybersecurity breaches are just three of a growing number of threats to supply chains that can and have stunted revenue growth and wiped out the profits of businesses big and small, sometimes in a matter of hours.

The costs of inaction can be fatal. Supply chain issues erode customer trust, public perception and, eventually, shareholder value. The Economist's Business Costs of Supply Chain Disruption report revealed that two-thirds of participants suffered revenue losses of between 6% and 20% due to pandemic-related disruption. McKinsey has predicted that in as little as 10 years, disruption could cost some companies 45% of annual profits.

> **The question is: can you afford not to invest in your supply chain?**

Businesses across almost every industry are taking action. They are turning to machine learning to gain visibility beyond tier one and two suppliers, and use supply chain analytics to predict and navigate disruption weeks, or even months, in advance of crises occurring. Many companies have already saved millions of pounds in potential losses and increased revenue by minimising supply chain costs.

Everstream Analytics helps some of the world's largest companies, including Google, Anheuser-Busch InBev and DuPont, to do just that. Everstream calculates what it calls 'the value of a single day' to show the true impact of disruption to a company's supply chain. This is the financial cost of just one day of disruption and highlights the value for a business in investing in analytics to boost supply chain visibility and disruption response time.

The gross margin impact of a single day's disruption at one of Everstream's customers was recently calculated at almost $275,000 (£228,000). In this instance, just one minor disruption translated to a drop in shareholder value of more than $6m (£4.9m). This potential loss would also create non-quantifiable issues, such as sinking public perception and consumer trust, which would only worsen if competitors avoided delays and seized market share.

Julie Gerdeman, CEO at Everstream Analytics, believes this level of detail and insight is now imperative at C-suite level. "Supply chain visibility is mission critical - executives are expected to provide these insights to their CEO and board," she says. "Manual supply chain risk management is catastrophic for some businesses because they can't react fast enough. Time and again we've seen companies fail to meet revenue targets because of supply chain issues. The question is: can you afford not to invest in your supply chain?"

For one of the world's largest automotive manufacturers, the answer was no. The company partnered with Everstream and set a clear goal: to create a system that identified early risk indicators of supplier distress to save on working capital and avoid production outages.

Everstream used a combination of AI and human analyses to identify more than 1,000 sub-tier suppliers so the company could respond at speed to disruption before it occurred. The move paid off. Soon after, they were alerted to a cyber attack on a supplier and sourced aluminium from the spot market earlier than competitors. The company saved more than €1m (£845,000) by purchasing before the price of aluminium rose.

Gerdeman says an analytical, data-driven approach is giving businesses the ability to be proactive, rather than reactive, and use supply chains to gain a competitive advantage. She says: "Being able to see things well in advance and make decisions doesn't just help to stop disruption and build resiliency, it also helps to capitalise on opportunities ahead of competitors."

THE VALUE OF A SINGLE DAY

If Everstream can make my processes faster to avoid one incremental day of disruption impact, what is the value to my company?

On average	Impacted KPIs	Where is the impact?	Impact per day
Revenue per day at one manufacturing site	Customer satisfaction	Brand, market share, renenvue growth	£793,513
GM £ per day at one manufacturing site	Asset utilisation	EPS	£232,499
One day of inventory per site	Working capital	Inventory turns, cash flow	£85,687
Expedited freight £ per day per site	Freight cost	EPS	£5,610
One day of 1% cost increases on a strategic commodity	Gross margin	EPS	£8,583
One day of risk management HC time	Return of human capital	Employee satisfaction	£2,217

Shareholder value analysis	£
One day revenue at one manufacturing site	813,070
Days of disruption reduced	1
Total GM £ impact	238,229
EPS impact	0.0003
Share price impact	0.01
Total shareholder value	5,398,285

The gross margin impact of a single day's disruption at one of Everstream's multi-national customers was calculated at almost £238,000. In this case, this "minor" disruption translates to a drop in shareholder value of over £5.2m.

Everstream provides this visibility, as well as predictive, and prescriptive, analytics by harvesting data from a multitude of proprietary sources. The company uses meteorologists and a 20-year bank of environmental data to predict future weather patterns and climate-related disasters such as hurricanes, wildfires and flooding to warn customers to change course. A proprietary relationship with DHL and its half a million workers around the world provides valuable, real-time logistics data. It also pulls together proprietary and public data from ports to monitor potential shipping days.

But with mountains of data to sift through, selecting the right data is crucial. A truck manufacturer may need better supply-chain visibility and transparency on logistics flows, right down to component level (for example axles and tyres), and a detailed view of high-risk global events (strikes, weather alerts) that could impact their production sites or global supplier base. In contrast, a cotton manufacturer may require historical and predictive temperature data to predict weather patterns that could affect farming or help them to save money on temperature sensitive freight costs to avoid spoilage during transportation.

The Everstream platform is able to make sense of all this data and tell clients clearly what it means for their operations and advise on how best to respond. "It's about providing insights, not just more data," says Gerdeman. "There is no shortage of data, but that can create a lot of noise and confusion for businesses. Every business requires different types of data to achieve different goals, so relevance and quality is key."

These predictive insights are giving businesses the tools to map out supply chains of the future and protect revenue and profits. Water shortages have prompted companies that rely on access to water production to use Everstream's climate data to consider where best to build manufacturing facilities. They're also helping to inform sustainability decisions and give companies the visibility to partner with ethical suppliers.

Those businesses that don't tap into the power of analytics could face a testing future as supply chains come under increasing pressure in the months and years ahead.

For more information please visit everstream.ai

everstream ANALYTICS

Guy Smallman via GettyImages

EMPLOYEE ENGAGEMENT

Striking staff threaten supply chain success

The summer of discontent is causing more disruption to an already fragile supply chain. What can logistics companies do to improve staff engagement and wellbeing to future-proof their operations and keep supplies flowing?

David Stirling

The UK supply chain was starting to make a recovery from Brexit and Covid this summer, only to be derailed by a series of strikes across industry.

The cost-of-living crisis has driven industrial action by workers in the railways, the Royal Mail and the UK's largest port, Felixstowe, over increasingly stretched pay packets.

The logistics sector, highly praised for continuing to fulfil deliveries throughout the pandemic, has also been a hotbed of dissatisfaction, with DHL distribution centre workers in Scotland voting to walk out. Amazon workers in Tilbury have staged a protest over working conditions and pay, while HGV drivers at dairy firm Muller have gone on strike in protest against imposed rota changes.

These concerns in the logistics sector are not new. A City and Guilds report this year said the sector is likely to have worker shortages of 400,000 by 2026 because of low pay and unattractive working conditions.

It found that only 23% of people said they would consider a job in logistics with 8% saying they were willing to drive an HGV. There have been reports of warehouse staff employed on insecure, zero-hour contracts, subject to firing and re-hiring on less favourable terms and even claims of timed toilet breaks.

As a result, according to the 2021 *Stress & Mental Health* study, up to 27% of employees in the transport and logistics sector had taken time off work for mental health reasons.

When it comes to pay, according to Statista, the median annual full-time wage for transport and storage workers in the UK in 2021 was £31,000. This is compared with the top sector – financial services at £43,000 and the lowest of £20,000 in food service.

Wouter Satijn, sales director at materials handling group Joloda Hydraroll, says: "Lorry driving, and working in logistics in general, is a demanding profession. It's very physical and drivers are under pressure to deliver goods to their destination within the allotted travel time. Who wants to work in a cold, damp and potentially dangerous unloading bay?"

So, what can be done to improve staff engagement and wellbeing in the sector, retain and attract talent and toughen up the supply chain?

Higher pay is an obvious solution. Logistics UK stated that HGV driver wages rose 12% in the year to January 2022, partly due to shortages. Aldi has agreed a wage increase of up to 9% for workers in its UK regional distribution centres. And the union Unite recently helped to secure a 12% pay rise for Sainsbury's HGV drivers in Basingstoke.

North-east-based Moody Logistics and Storage has doubled the usual reward percentage from its profit-related pay scheme for employees. "We've recognised the cost-of-living issue and want to ensure our staff are not disgruntled," says managing director Caroline Moody.

In August, more than 100,000 postal workers walked out in a dispute over pay

It's only part of a raft of staff benefits the company offers, which include a minimum of 28 days of paid annual leave, an auto-enrolment pension scheme, health care and company uniforms.

"We are trying to be a family business, not just by name but by nature too," says Moody. "We also have annual company awards and little things such as buying each member of staff a family barbecue pack the Friday before last year's May bank holiday. All of these measures help with our productivity and retention figures. I can't remember the last time we lost a member of staff."

Despite this success, it's clear that rewards, like pay, are still not enough to keep all logistics staff happy. When the Amazon walkout was taking place the organisation highlighted its offering of private medical insurance, life assurance, income protection, subsidised meals and a company pension plan.

Suzanne Marshall, head of clinical strategy at wellbeing experts GoodShape, isn't surprised that some staff remain unhappy. She believes that companies need to be careful that they don't offer benefits which don't address the right problems.

"Times are tough. Crippling staff shortages in the sector and spiralling living costs are adding pressure to everyone. And while a drinks fridge in a breakout room might be a nice perk, it isn't going to improve either wellbeing or staff retention," she says.

Instead, Marshall urges a clearer focus on addressing operational issues, such as the sector's working patterns. "Logistics typically has high levels of staff working remotely on shift patterns. This adds challenges when it comes to communicating and understanding the issues and barriers to wellbeing," she says.

"One logistics company we worked with was seeing higher levels of absence in one shift. By unpicking their data and insights they established that not enough time was being given for drivers to hand over to the next member of staff.

"This resulted in insufficient time for drivers to adjust their chair position and subsequently a higher level of musculoskeletal-related absences. Logistics firms need a better understanding of the cause of staff absences so they can provide better support."

> **As employers we always complain we can't find the right people, but you have to look after them in the right way**

Akshatha Veerendra is principal consultant, energy, sustainability and wellness at RPS Group. She says that logistics firms, inspired by the pandemic, are trying to improve employee experiences by reimagining warehouse design.

This includes sites with more natural light, green pathways and even running tracks on roofs. It means more space, aiding health and safety among the forklifts and pallets, and meditation and training zones.

"There is competition to develop the best sites to increase employee engagement, reduce absences and missed deliveries but also meet ESG requirements," explains Veerendra.

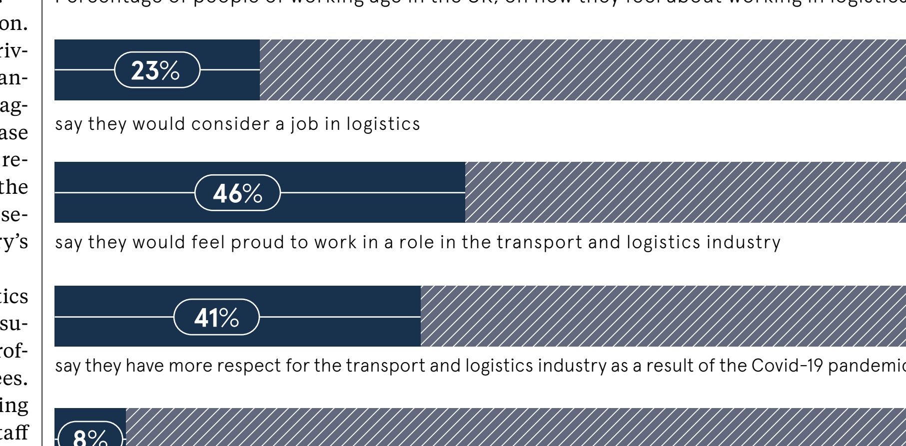
Satijn calls on logistics firms to also invest in warehouse and logistics automation to help up-skill staff to more added-value roles. "Automating the warehouse is an essential next step to gaining efficiencies that will also positively impact driver satisfaction and productivity," he states. "As employers, we always complain we can't find the right people, but you have to look after them in the right way. If we don't move at a higher and faster pace, it will mean more empty shelves in our stores and a big impact on everyday life."

But Moody says it can be hard for logistics firms to find the time and financial headroom to make the necessary changes. "When you're making money you can afford to do these things – it becomes self-fulfilling with better engagement and productivity," she says. "For a lot of hauliers it's about taking that initial step."

Veerendra agrees that change will take time. "We're seeing improvements but it is slow. There needs to be a cultural shift in the sector throughout the supply chain around engagement and wellbeing." ●

HOW THE UK SEES THE LOGISTICS PROFESSION

Percentage of people of working age in the UK, on how they feel about working in logistics



City & Guilds, 2022

TECHNOLOGY

How to maximise supply chain tech investments

Businesses are spending millions on emerging technologies to handle supply chain challenges. How can they make the most of their investments?

Christine Horton

To navigate the many complexities of the modern supply chain, businesses are turning to technology.

Research by supply chain platform Blue Yonder shows that 71% of UK organisations have implemented new technology over the past 12 months to reduce disruption in the future. One in 10 organisations are investing more than $25m (£22m).

Organisations have earmarked planning, forecasting, and inventory management as top areas for technology spending. They're seeking a real-time, end-to-end view of their supply chains, often leveraging technologies such as artificial intelligence (AI) to recommend and optimise actions.

And it's not just AI. Technologies like big data, machine learning (ML), 5G and the Internet of Things (IoT) are also delivering in terms of supply chain resilience.

Dave Food is head of supply chain at Board International and postgraduate supply chain lecturer at the University of Warwick. He says the most critical technologies are those that enable intelligent, integrated decision-making.

Food singles out technologies that enable 'intelligent planning' as indispensable for driving collaboration and alignment, across all departments. Essentially, intelligent planning is the process of analysing data to generate actionable insights. It enables cross-functional teams to unify strategy, finance and operations to plan smarter, make better decisions, and take control of performance.

Integrated planning is key to planning intelligently. It is crucial for creating an autonomous supply chain management system.

"One of the undervalued benefits of intelligent planning is the improvement of cross-functional collaboration," says Food. "For businesses that are looking to improve their customer experience, integrated planning can help to improve supply chain visibility, allowing intelligent identification of issues related to stock shortages and capacity constraints."

By enhancing supply chain performance and customer relationships through tech investments in decision-making, advanced analytics and visualisation, Food says that businesses can grow and become more competitive. Indeed, a Gartner survey shows that 61% of business leaders see technology as a source of competitive advantage. Critically, these technologies are then used to drive even greater efficiencies across the business.

> It is only through use of technology that an optimised supply chain can be orchestrated by streamlining and synchronising operations and logistics processes

Conversely, Food believes that businesses that do not invest time and capital into improving their visibility and planning for different scenarios will struggle with cash-flow and even fall by the wayside.

"The benefits of greater business visibility can be compared to a human's peripheral vision," he explains. "It allows companies to see things they might not have seen before, resulting in reduced risk, improved decision quality and cost savings, as well as improved performance and streamlined operations."

For example, businesses can optimise both vehicle and driver utilisation by leveraging intelligent planning across multiple fleets and operating sites.

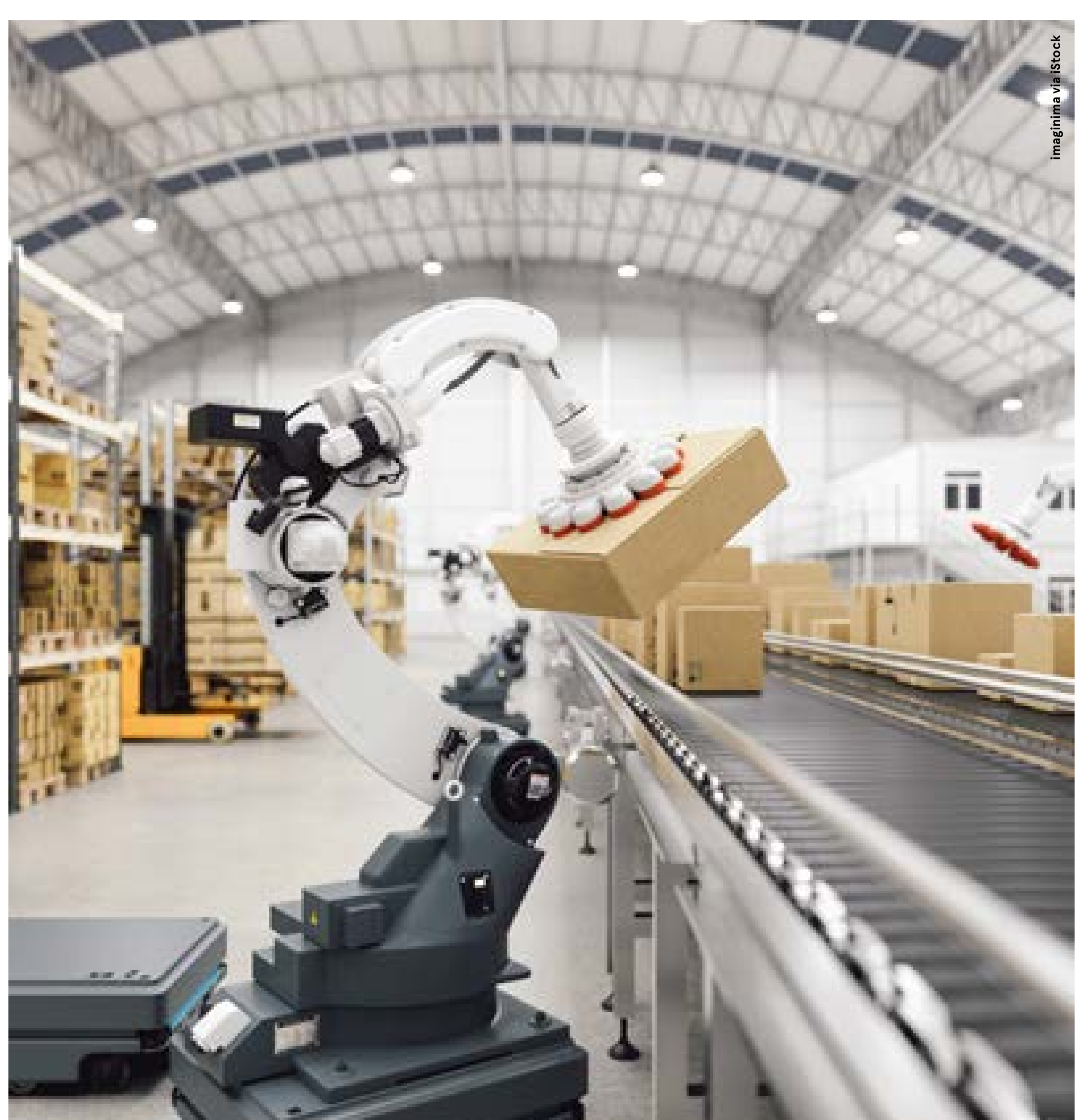
"To increase accuracy, it is important to use the latest forecasts within the organisation and to update plans when new information becomes available. By combining IoT sensors, GPS tracking and edge computing with external data sources, it is possible to better understand real-world constraints, enabling optimisation of large-scale, volatile, and complex transport plans," says Food.

The planning process often allows businesses to understand risks, mitigate them with some buffers, and then execute accordingly, Food says. Such flexible plans mean businesses will be prepared to navigate turbulence in times of uncertainty.

"It is only through use of technology that an optimised supply chain can be orchestrated by streamlining and synchronising operations and logistics processes, as well as using intelligent planning platforms to analyse and use massive amounts of data," he adds. "This will help ensure the supply chain is aligned with procurement, production, warehousing and transport."

Technologies such as big data, AI, 5G and IoT are enabling collaboration and improving communication across organisations. By automating and streamlining administrative processes, businesses are then free to focus on more strategic, revenue-generating initiatives.

Organisations are making huge investments in supply chain technologies. By leveraging the latest tech and trying to maximise those investments, businesses are in a stronger position to weather the current disruption to the supply chain. ●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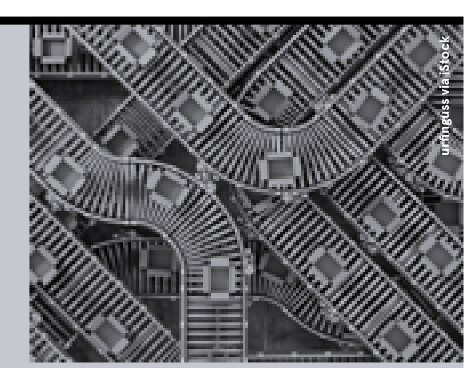
The prime drivers of supply chain innovation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What trends and technologies are moving the needle on supply chain resilience? Gary Connors, partner at business transformation specialists Oliver Wight EAME, outlines what should be on the radar for supply chain leaders.

Amazon

It may have been inconceivable a few years ago that Amazon would be a disruptive influence to supply chains. But this giant made a splash as it entered the pharmacy sector, delivering medicines overnight and cheaper than many local pharmacies. It did the same in the electronics sector, and is now entering the convenience food sector. They may even extend to banking in the foreseeable future and that is a scary thought for the large, inefficient behemoths of the past. While Amazon may be the flag bearer of this wave it is not alone. Google, Facebook (Meta) and Uber offer a few examples of how agility and focus can be leveraged in a rapidly changing landscape.

Blockchain

A platform for secure trading of cryptocurrencies, blockchain is less known as a secure platform to process supply chain transactions. With the colossal number of transactions needed to record the movement of goods through a supply chain and the even larger cost of administering these transactions through third parties, blockchain is well placed to disrupt this activity by making the transactions quicker and cheaper. They don't have the critical mass to deliver this today but woe betide those who ignore this threat.

Driverless logistics

Less than three years ago, the thought of driverless vehicles on our roads was almost inconceivable. But for many people, this is becoming a reality. We are seeing automation in the vehicles that we drive in our daily lives, helping drivers keep in their designated lane and providing collision avoidance inputs when needed. As these automated inputs become the norm in our daily commutes, it must be obvious now how this technology can be applied to logistics vehicles very soon, to the extent that human drivers for these vehicles will not be needed. The velocity with which goods move through the supply chain will improve exponentially. The more worrying outcome will be how we deal with the mass of professional drivers that will become unemployable as a result.

Commercial feature

Just in time or just in case?

Why organisations are turning to modern logistics hubs to ensure business resilience

The UK Government's proposed Future of Freight Plan reflects a wider changing of the tide for global supply chain operations. Following a chaotic and disruptive period in which businesses have had to fight numerous fires simultaneously, they are now taking steps to future-proof, and enhance resiliency levels. The heart of this effort revolves around their chosen logistics hubs.

Having the requisite volume of space, positioned in an optimum location, and built to new and innovative specifications, is more important than ever. The urgent need for more space for urban logistics operations is reflected in the fact that warehouse occupancy levels are now beyond 99%, with rental rates doubling over the past decade.

The battle for premium spaces in prime locations, in part, derives from a change of emphasis in the face of recent supply chain crises. Covid-19, the Ukraine war, microchip shortages, inflation and Brexit have all contributed to a mindset shift from 'just in time' to 'just in case'. Compounding this need to cover all bases, consumers' expectations have altered amid the rise of ecommerce, resulting in demand for quicker deliveries, in more sustainable ways, from trusted brands.

'Resilience' in this context comes from being agile to changing and often unforeseen dynamics, while stabilising existing operations and getting closer to customers.

It's a trend that certainly hasn't been lost on those providing much-needed logistics space.

"There were huge lessons learned from the global financial crisis, where landlords were left holding on to properties that were no longer attractive," explained Caroline Musker, head of planning at Prologis. "Now, there is a need to think more holistically and in a more agile way, following a pandemic period which really shone a spotlight on the importance of logistics.

"Hopefully, the Future of Freight Plan here in the UK shows the drive for change, with various government departments coming together to ensure that the industry's needs are better understood. This collaborative working and proactive engagement with the proposed changes to the planning system is encouraging, and will help businesses to meet consumer demands and create more agile operations."

Attracting talent

Prologis has been building logistics facilities for more than 20 years as part of its expanding portfolio of parks, giving the company a front-row seat to the numerous challenges impacting supply chains in recent years.

Ongoing market, economic and geopolitical disruptors have exposed manufacturers' and retailers' weaknesses, whether they were stretched distribution operations, inefficient deliveries, a lack of data-driven processes, sub-optimal green credentials, or – in particular – labour concerns.

For too long, the sector has grappled with negative connotations around low pay, monotonous work, and progression limitations. Attraction and retention have become subsequent struggles, but amid the clamour for more modern and innovative logistics hubs, Prologis is urging a rebranding of the sector as a whole.

Sally Duggleby, the company's vice-president of capital deployment and leasing, said: "Logistics is a sector that is constantly evolving, and with that comes a lot more STEM opportunities than people imagine. Modern warehouses rely on data, automation, robotics; and they often come equipped with gyms, canteens, and perks that embrace the surrounding environment or location.

"They're not all that different from the idea of a modern business HQ, and as more and more companies inhabit these facilities, they have to do better at selling this environment to potential talent."

The Prologis Warehouse and Logistics Training Programme is an example of the company's commitment to providing gateway opportunities to people wanting to enter the logistics sector. This sits alongside consultative work with warehouse occupants to aid their attraction, training and retention credentials.

Be part of the ESG conversation

What this HR effort also accounts for, is occupiers' increasing focus on environmental, social and governance (ESG) initiatives.

Taking steps to become a reputable service provider and employer of choice are two upshots from more sustainable operations; while another relates to companies' green impacts.

Supply chain resiliency in this vein derives from both the direct efficiencies that can be achieved through streamlining warehouse operations, but also the reputational enhancements that can be yielded should carbon footprints be reduced.

"First, there is the issue of transportation," Duggleby explains. "And even large, international corporations are shifting their operations in an attempt to reduce their carbon emissions.

"However, beyond that, companies are also being more proactive across their power makeups – the extent of solar panels on their buildings, moving away from gas towards electric, incorporating EV charging in car parks, and so on.

"I'd say that this ESG conversation is really where Prologis has set itself apart over the past two years. Prospective occupiers are asking about power setups, EPC ratings, renewable generation and the like; long before topics of yard depths or dock accessibility that would traditionally have been priorities.

"Prologis is enabling that change of mindset quickly, via facilities that are situated in sought-after locations."

> Having the requisite volume of space, positioned in an optimum location, and built to new and innovative specifications, is more important than ever

Challenging perceptions

What Prologis looks to affirm with clients is that a logistics facility is more than just a basecamp – it sets the tone for the whole company, in the eyes of partners along the value chain, customers and workers.

In the face of recent crises, there has been a need to alleviate risk through the 'just-in-case' model, pertaining to hub positioning and supply management. A traditionally underwhelming talent attraction record has called for more modern and dynamic surroundings, and pressure to showcase improved environmental impacts has prompted a need to rethink both building and transport setups.

An optimised logistics hub isn't just a way to stabilise the supply chain, therefore. With these metrics in mind, it can be the very focal point for future business resiliency and success.

Musker concluded: "For us, it's all about challenging the way that people view supply chains, away from that image of logistics parks as big boxes creating negative impacts on traffic and emissions.

"Following the pandemic, hopefully people have a better awareness of how critical supply chains are to their lives, and we want to work with the communities and our customers now to build on that perception in a positive way. This means being dynamic, collaborative and bespoke in our solutions to customers, as they seek to find logistics spaces that can carry them forward in the face of the challenges still to come."

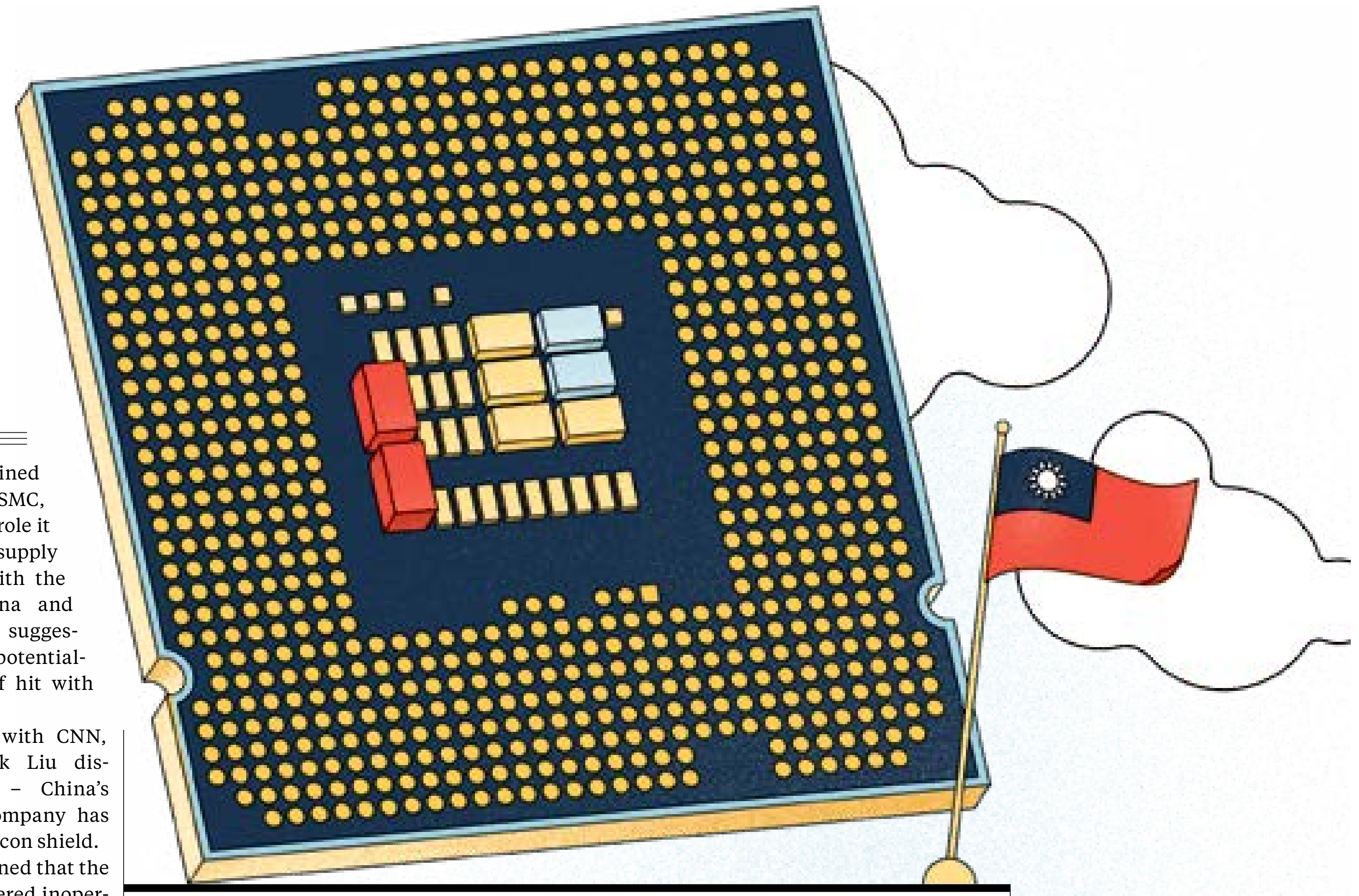
For more information visit prologis.co.uk

PROLOGIS®

SEMICONDUCTOR SHORTAGE

Can the West wean itself off Taiwan's chips?

The island nation accounts for around two-thirds of semiconductor production, but flaring tensions with China have underlined the fragility of the global chip supply chain



Rich McEachran

Chips are the building blocks of all modern devices. They power our cars, smartphones and household appliances, and will drive progress in artificial intelligence, robotics and 5G wireless networks.

The problem is that the supply of chips is currently dominated by one company: Taiwan Semiconductor Manufacturing Company (TSMC).

The foundry is the biggest contract chipmaker in the world, supplying the likes of Apple and Nvidia. TrendForce has forecast TSMC will contribute 56% of global foundry revenue this year, up from 53% in 2021. Taiwan accounts for two-thirds of the global foundry market.

The US House Speaker Nancy Pelosi's recent visit to the island, during which she dined with executives from TSMC, underlined the critical role it plays in the global chip supply chain. The meeting with the foundry angered China and there have since been suggestions that China could potentially seize the foundry if hit with sanctions by the US.

In a rare interview with CNN, TSMC chairman Mark Liu dismissed such claims – China's dependence on the company has been referred to as a silicon shield.

Nevertheless, Liu warned that the foundry would be rendered inoperable if China were to invade Taiwan. The company's headquarters and fabs – industry lingo for manufacturing plants – are situated on the west of the island, making them a potential target of any attack.

The US and EU are all too aware of the dangers of their chip supplies getting caught in the crossfire of flaring tensions between Taiwan and China. Both are taking steps to reduce their reliance on Asia and to onshore chip production.

The US is to implement the Chips Act, a $52bn (£45bn) package offering subsidies to foundries to build out their manufacturing capacity on its soil, as well as fund future semiconductor research. The legislation also comes with overseas investment restrictions.

Meanwhile, the European Commission has put forward the European Chips Act to enhance and strengthen the bloc's role in the global semiconductor industry. More than €43bn in private and public funding is to be invested between now and 2030.

These government subsidies are designed to lower the cost of onshoring production and help attract manufacturers that are deciding where to ramp up investment.

Some major industry players are already leading the way. Back in January, Intel chose Ohio for its new $20bn factory, which would potentially become the biggest in the world. US President Biden has described it as a "field of dreams" on which "America's future will be built".

GlobalFoundries and STMicroelectronics announced in July that they had selected France as the location for a new $5.7bn chip factory, with the French government set to provide significant financial support.

As the West looks to ramp up domestic production, weaning themselves off Taiwan won't be straightforward.

"Even though the legislations passed by the US and EU are good starting points to boost their capacity, they aren't expected to be sufficient," says Suryadeep Jain, industrial procurement specialist at analytics firm The Smart Cube.

For starters, the need for the US and EU to onshore is necessitated by the global semiconductor shortage, which is now not expected to end until late 2023 or early 2024, Jain points out.

What's more, this urgency to boost domestic production is likely to decline once the shortage ends, Jain adds, at which point the challenge will be convincing chip manufacturers to invest in the US and EU over Asia.

Procuring chips from Asia makes economic sense due to the much lower costs. Despite attempts to stymie China, it's the biggest producer of silicon – the prime material used in semiconductor manufacture – and it's expected to become the leading chip producer by 2030 as its own domestic capacity continues to expand.

The question is whether the US and EU will be able to continue pulling in the investment needed to strengthen capabilities, not just in the supply chain but also in talent, design, research and intellectual property. This will be key if they are to compete with Asia's dominance, says Thibault Pucken, managing director of procurement consultancy Inverto.

There's also the thorny issue of how China might respond to the Chips Act. The China Semiconductor Industry Association has accused the US of violating fair trade rules and has warned that there could be chaos ahead for global supply chains.

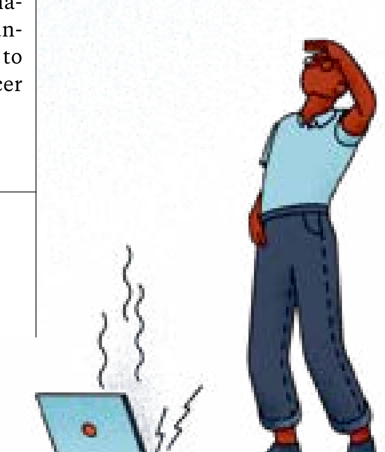
"Disentangling the complex semiconductor global value chains will create severe supply chain disruptions," says Oliver Sawbridge, policy and insights manager at Economist Impact. "Any attempt to onshore production without the proper mechanisms in place will lead to more supply-side shocks, higher prices and potentially lower long-term growth."

The nature of supply chains and the risks attached to upsetting the status quo mean it's unlikely the US and EU will eventually be producing all the chips they need themselves. "To completely wean themselves off Taiwanese parts – if at all possible – would come at a high cost and would take an extremely long time," observes Pucken.

To this end, chip autonomy might seem that it would solve a problem, but it would only create new ones. There are better ways to achieve resilience in the supply chain.

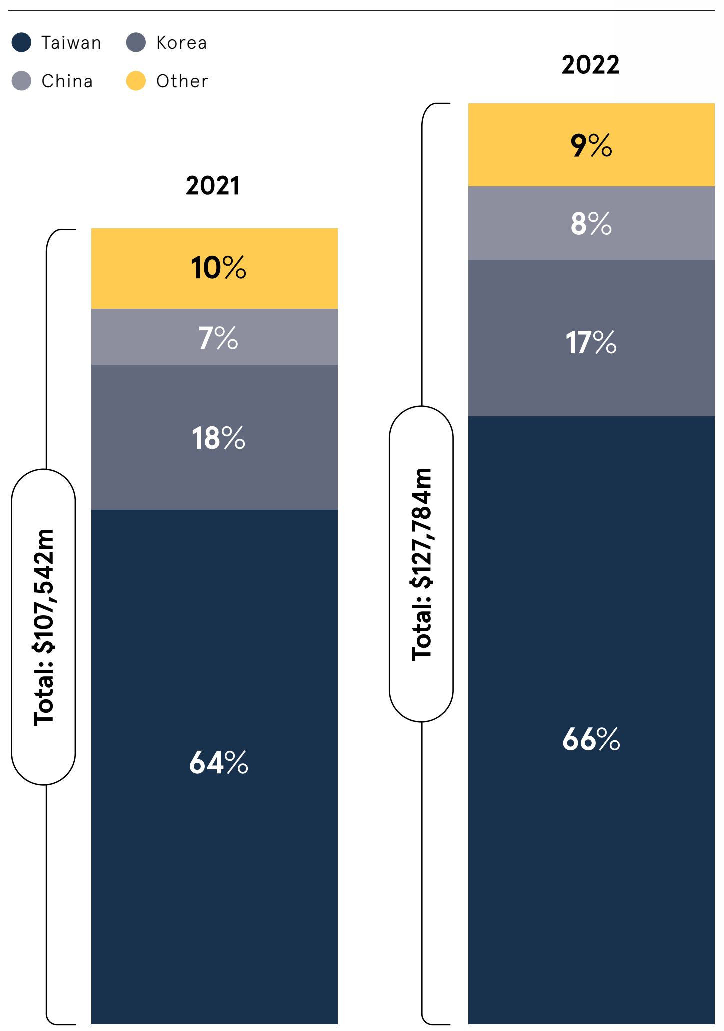
"The solution has to create more flexibility within the entire chain," argues Pucken. "This means diversifying manufacturing capabilities, geographies and the suppliers in the value chain, and not just relying on one." ●

> It's unlikely the US and EU will eventually be producing all the chips they need themselves



> To completely wean themselves off Taiwanese parts – if at all possible – would come at a high cost and take an extremely long time

FOUNDRY REVENUE BY MARKET SHARE



TrendForce, 2022

US chips flowing into Russian weapons

A perfect illustration of the tangled web the global semiconductor industry weaves is the fact that US-made chips are ending up in Russian weapons being used against Ukraine.

Since the start of the war at the end of February, global exports of semiconductors to Russia have plunged as countries slapped Moscow with sanctions. The resulting shortage has meant that Russia has been unable to get its hands on advanced chips that typically go inside its military equipment and machinery.

Given that repairs and upgrades have been difficult to carry out, troops have been scrambling for chips found in household appliances.

"We have reports from Ukrainians that when they find Russian military equipment on the ground, it's filled with semiconductors that they took out of dishwashers and refrigerators," Gina Raimondo, the US secretary of commerce, told a Senate hearing in May.

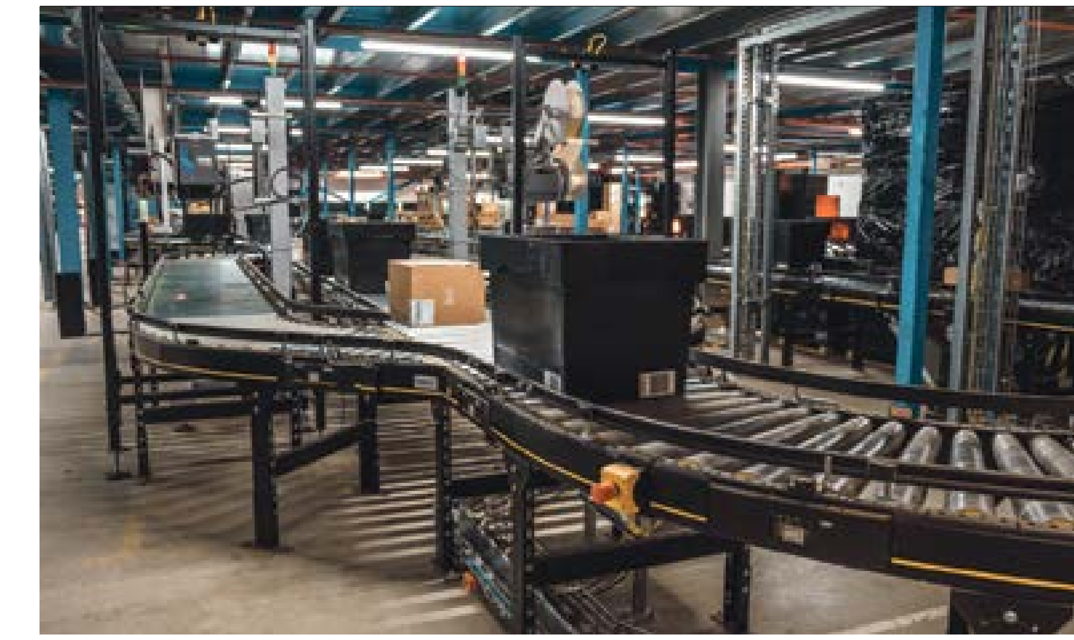
Despite the export restrictions, some US-made run-of-the-mill chips have still made their way into the country since the start of the invasion. This is according to a special investigation by Reuters and the think-tank Royal United Services Institute, the results of which were released in August.

The reason for this is that consumer products have generally not been subject to export rules. They can be shipped in, opened up and then the chips removed.

Perhaps even more worryingly, shipments of US-made military-grade parts are still being smuggled into Russia, mainly through third-party sellers.

The US manufacturers whose chips have been discovered in Russian military equipment and machinery told the investigation that they comply with export controls and trade sanctions. They're currently conducting internal reviews.

Commercial feature



Human meets robot to build the warehouse of the future

Whether it's rapid delivery or real-time stock updates in an omnichannel environment, evolutions – revolutions – in retail, manufacturing and direct to consumer commerce are making more demands of the warehouse than ever before

More than just a place to house stock, the warehouse has become the engine of ecommerce and the heart of customer experience as it takes on a central role in delivering, both literally and figuratively, on customer expectations.

"Immediacy is a commercial imperative. Sales are won or lost on availability and brand reputation is at the mercy of how effectively deliveries are made and returns are processed," explains Invar Group managing director, Craig Whitehouse. "The rise of the intelligent warehouse – a mechanised, automated function that is digitally integrated with the wider supply chain means the future looks bright – but it's not without its challenges," he warns.

In its latest whitepaper, The rise of the intelligent warehouse, Invar Group outlines how a changing retail and ecommerce ecosystem is placing many more demands on the warehousing sector. But, at the same time, macroeconomic trends are contributing to some very difficult operating conditions.

Retailers have to contend with complex customer journeys, merging on and offline activities that are changing the shape of fulfilment. In addition, many companies have discovered the power of direct-to-consumer sales, meaning there is even more demand on warehousing and logistics. One report suggested that UK retailers expected an additional £19.6bn of home deliveries by 2025.

Shopping trends need to be considered alongside wider impacts such as labour shortages, escalating energy costs and the simple question of warehousing space. In the whitepaper, Invar Group cited a Logistics UK report that revealed 13% of businesses were experiencing problems recruiting warehouse staff and the UK Warehousing Association reports vacancies holding at 20%. It's clear that the warehousing industry needs to find answers to these difficulties – and fast.

In one respect, these challenges have come at the right time, dovetailing as they are with some significant forward steps in warehousing technology. The use of Autonomous Mobile Robots, or AMRs, in particular, is proving a boon to businesses large and small when it comes to responding rapidly to market change. Invar Group reports that AMR systems can boost order picking performance from under 100 units an hour, to as many as 400, with return on investment seen in as little as 12 months. That the solution is scalable, meaning it can respond to fluctuations in demand, will be of huge benefit to companies looking to keep control of costs.

It's not only improved efficiency that will prove to be a benefit in demanding market conditions. As demand has increased, the ready supply of labour has not kept up, meaning the warehousing sector in particular is not necessarily able to operate at full capacity. AMRs such as 'follow me' type mobile robots cut down time-consuming runs in the warehouse, picking alongside human operatives, as well as operating in difficult conditions, such as refrigeration and freezer units, as low as -25C.

What companies will have to navigate, however, is the potentially bewildering array of AMRs and the challenges they can solve. As each has its own particular specification and range of capabilities, it takes a degree of specialisation to understand how these technologies might best fit together.

And, at a time when there are significant cost pressures, it's understandable that organisations are cautious about investing in new technologies. "It helps to consult an independent systems integrator," Invar's Whitehouse advises. "Not being bound by any one technology or in-house manufactured solution, they are free to be objective about specifying the right tool for the application."

From simulations that can select the most suitable materials-handling hardware to data analytics that help warehouse managers understand how to optimise performance – both manual and automated – there are many arguments in favour of moving towards a technologically-enhanced warehousing future. "An intelligent system," Whitehouse concludes, "drives productivity and offers the agility needed to respond to change."

To download the whitepaper, *The rise of the intelligent warehouse*, visit resources.invargroup.com/download-your-free-white-paper and for more information on Invar Group, go to invargroup.com

invar
intelligent warehouse solutions

BUSINESS MODELS

To end waste, control the supply chain

Speed is crucial for made-to-order businesses, but the rush to meet targets could lead to expensive problems with waste


agrobacter via iStock

Andy Jones

Boutique gin and vodka brand Silent Pool Distillers could tell you plenty about bottlenecks and broken glass.

Fed up with both, in 2021 it became the first distiller in the world to use paper bottles, reducing waste and supply chain issues by switching its Greenman Gin brand from hard-to-source glass bottles into foldable paper cylinders.

The eco-friendly Frugalpac bottles are smash-proof and can be stored more easily. They've also removed a bottleneck for the company, which sells to 40 countries from its Surrey Hills base.

"Bottle supply is very tight and expensive," says Ian McCulloch, managing director of Silent Pool Distillers. "A Ukrainian bottle plant was taken offline and that demand is chasing supply from other plants."

Greenman Gin's high-wire act of delivery speed versus cost will sound familiar to many SMEs. Norwegian e-grocer Oda, for example, has cut waste almost to zero.

The grocer was founded in 2013 and delivers in Norway, Germany and Finland. It bakes every loaf of bread to order, leaving no back-up supply on shelves. This demands a bake speed of 1,500 loaves per hour.

Every pallet of fruit and vegetables is also sold the day it arrives, meaning a waste surplus of only 0.5%, way ahead of many other European e-grocers. No plastic bags are used in customer deliveries, with reusable cardboard boxes taking their place.

This approach helped generate revenue of €200m (£170m) last year, allowing Oda to open its biggest factory – the size of 70 supermarkets – in Liertoppen, Norway. The grocer covered the whole exterior of the site in solar panels, meaning one-third of its future total energy needs could be met from a single location.

The 10 founders combine different backgrounds in data software and car-assembly-line manufacture to fine-tune every inch of the process, one of the key factors in the company's success. The made-to-order model kills waste on the shelves, too, says CEO Karl Munthe-Kaas. There isn't enough wastage to require flash sales or buy-one-get-one-free deals, which helps reduce the company's carbon footprint.

But having only limited back-up stock depends on a consistent and reliable flow of goods, says Alex Saric, smart procurement expert at Ivalua, whose data-driven platform allows organisations to test decisions and savings. "Like the just-in-time model, made-to-order exposes supply chains to potential shocks if manufacturers aren't prepared for disruption. Organisations need to be in constant communication with suppliers as customer demand fluctuates."

> “Like the just-in-time model, made-to-order exposes supply chains to potential shocks if manufacturers aren't prepared for disruption

It is incredibly difficult to gauge customer demand and plan effectively every time, says Saric. "While the model may bring efficiency benefits and reduce wastage at first, without any backup supply, organisations can struggle to meet unexpected surges in demand or adapt to sudden shortages."

This can be offset by onboarding supply chain technology. Woohoobox allows consumers to create their own stationery sets from 20,000 potential product types and gift them in bespoke packaging. A sudden surge in demand placed stresses on warehouses and packing, resulting in significant waste, says co-founder Azar Shirinov.

"As the variety of our products increased, we started having issues with complexity and not being able to fulfil orders correctly. As we could not accept returns correctly, we encountered product loss, stock loss, and imbalance in stock numbers."

To resolve the issue, the company handed some control to a supply chain technology called OPLOG, which provides SMEs Amazon-like fulfilment services which gave digital transparency to the whole process and reduced waste.

"OPLOG saved us from the problems in returns management, inventory management, storage process, stock controls, picking, packing, value-added service, and shipping operations," Shirinov says. This allowed Woohoobox to cut waste and mass deliver, while maintaining the bespoke touch to its business.

Made-to-order businesses can also make savings by taking their equipment from – or selling it to – the circular economy. A typical small to mid-sized facility will often hold parts inventory worth £200,000, but many industrial businesses have mountains of surplus spares in case of an outage, with much eventually sent to landfill.

To put these spares to use, the Machine Compare marketplace allows firms to sell unused spare parts directly to other buyers, reducing the need for warehousing on both ends. This also creates a way for wannabe made-to-order firms to make more things in-house at reduced cost, either in the short or long term. By sharing parts across industries, Machine Compare can also offer shared data, says Ben Findlay, the company's CEO.

"An industrial business might only have 3% to 5% of the data relating to their own stock of spare parts, meaning that they only really know a tiny fraction of information about their own stock. We can increase that to 70% with a bit of extra work. It's an insight that makes the whole world your spare-parts storeroom."

Made-to-order can cut costs in some areas. But if it isn't managed with perfect demand forecasting and hyper-efficient communication, it can unwittingly increase costs and waste, says Saric.

"On paper, the made-to-order model can offer environmental benefits, as it minimises the amount of surplus stock. In practice, however, manufacturers can be forced into unsustainable transport and logistics solutions as it relies on smaller and more frequent shipments, rather than in bulk."

Silent Pool Distilleries has found that by keeping everything in-house, there are savings that can't necessarily be put on a spreadsheet, says McCulloch.

"We create at greater volumes, we better utilise machinery, we hire better staff. All of that has reduced our cost per bottle."

74%

of senior supply chain and procurement decision-makers in the UK say they are not currently tracking the amount of food their organisation's wastes

94%

are considering changing their organisation's procurement criteria to reduce food waste within the next 12 months

95%

plan on working with suppliers to help them improve their monitoring of food waste

Sodexo, 2022

INSIGHT

'We must embrace the challenge of developing skills and strengthen those we already have in abundance'

The head of procurement and supply chain's professional body, **Malcolm Harrison**, on how to weather the industry's talent and skills shortages

Today we live in a substantially different business environment from the one we shared just a few years ago. In the wake of the Covid-19 pandemic, an international shortage of skilled workers, exacerbated by the great resignation is an issue frequently debated in boardrooms.

In our profession, the need for strategic thinking, flexibility and adding value across the supply chain has become a priority as businesses strive to avoid the devastating impacts of supply disruption. Moreover, organisations are under increasing pressure to ensure their activities support a more ethical and sustainable society.

For this to happen and ensure companies continue to thrive, we must embrace the challenge of developing new skills and resources and strengthening those already in our teams. But skills shortages are not unique to UK companies, although Brexit has created specific challenges. As geopolitical issues threaten long-standing supply chains, businesses are looking to source closer to home. Our research shows a majority of international companies are actively looking for locally based partners, while 40% of UK firms have switched from an international supplier to a domestic one in the past year.

Challenges on this scale necessitate change which could leave the skills and capacity required in short supply. So, how can companies ensure they attract the right talent to meet the challenges they face?

Rewards and benefits are important, particularly as people struggle with the rising cost of living and there is an expectation of flexible working patterns, which this profession can absolutely accommodate.

Employees and companies that have invested in CIPS training and value the high standards we instil across procurement fare well here. According to our *Procurement Salary Guide*, sponsored by recruitment firm Hays, our MCIPS professionals (fully qualified members of CIPS) reported salary levels 21% higher than non-MCIPS. The drive towards employing the most skilled is a strong one for businesses. The average pay rise among procurement professionals in total was 4.9%, compared to the UK national average of 3.8%.

The top skills needed from procurement professionals were also constant across all sectors compared with previous years of our research, with supplier relationship management the top sought-after skill, named by 51% of respondents. Second highest was communication skills (49%) and negotiation skills had equal billing. As procurement becomes more strategic, it is no longer about just 'buying'.

But financial rewards are not the only draw for employees. Companies that positively contribute to a better society through the ethical treatment of suppliers, eliminating slavery in their supply chains and seeking sustainable solutions, are increasingly attractive options for a mobile, flexible workforce. By embedding these values at the heart of procurement, values which are fundamental to our core purpose at CIPS, businesses will not only make themselves more attractive to future and current employees but will be good corporate citizens working towards a fairer, more equitable society.

Employers will find their pinch points in terms of skills and capacity and can't rely on hiring. As the threat of a UK recession looms, we must stay alert and react to what's next and proactively manage resilient approaches to the next iteration of our supply chains.

More than ever, people are realising the importance of supply chains to the efficient functioning of society. To make that a reality governments, industry and other organisations need people with the skills and values to create and manage those supply chains. It is a good career option now and for the future.


Malcolm Harrison
CEO, CIPS

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RACONTEUR

THE RISE OF AIR CARGO

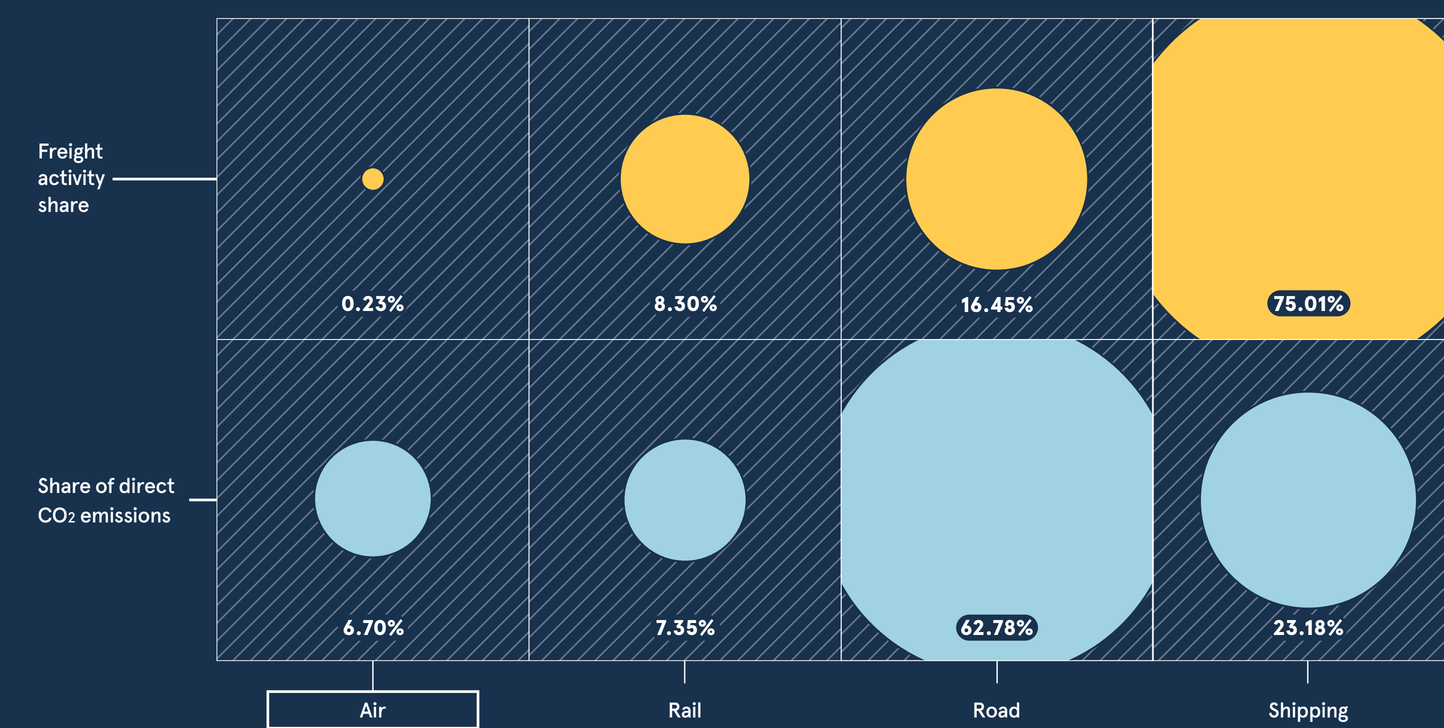
The world's largest cargo plane, the Antonov An-225 Mriya, was destroyed when Russian troops stormed an airport outside Kyiv in February. Ukraine's President Zelensky has pledged to rebuild it, and far from denting the pride of the air freight industry, it's a sign of bigger things to come. Indeed, the supply chain disruption brought by Covid-19 seems to have tipped the balance in favour of the major cargo airlines, as businesses seek to circumvent the problems experienced by surface transport networks. After all, sending goods by air is undoubtedly the fastest way to get them from A to B. Just don't ask about the CO_2 emissions...

PACKING AN OUTSIZED PUNCH

International Transport Forum, 2021 / International Maritime Organization, 2009

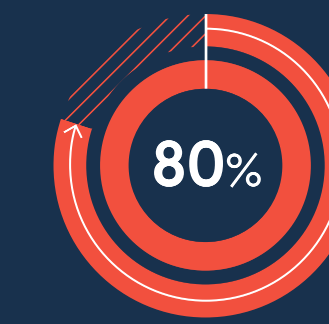
Freight activity share versus share of direct CO_2 emissions

(Based on: Air = Boeing 747, Road = 40-tonne truck, Rail = 3-4 hp per short-tonne, Shipping = Average of very large container)



By 2040...

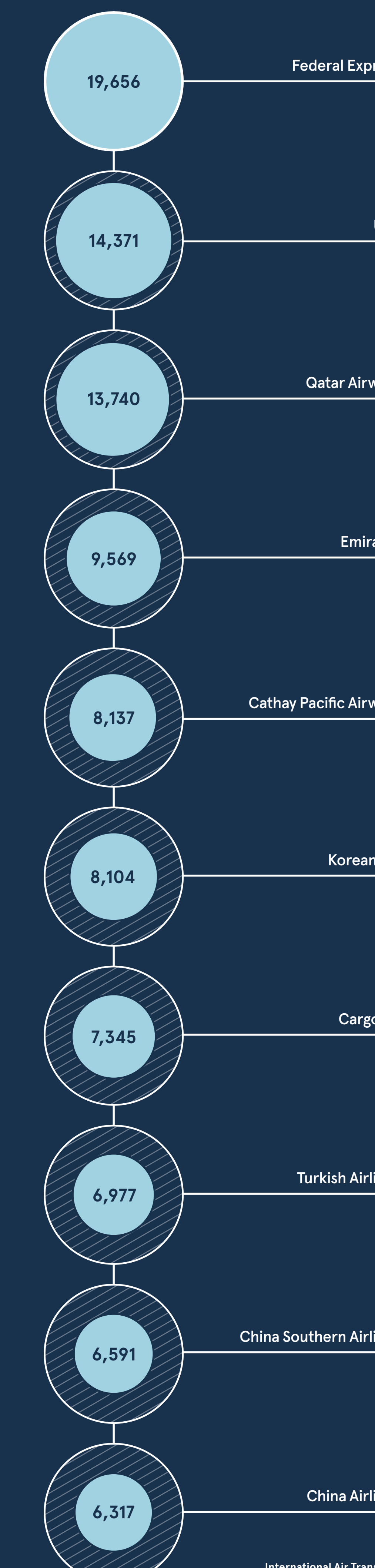
Boeing expects the global freighter fleet to grow by



And Airbus forecasts an increase of

THE HIGH-FLYERS

Cargo airlines by international and domestic freight tonne-kilometres in 2020 (in millions)

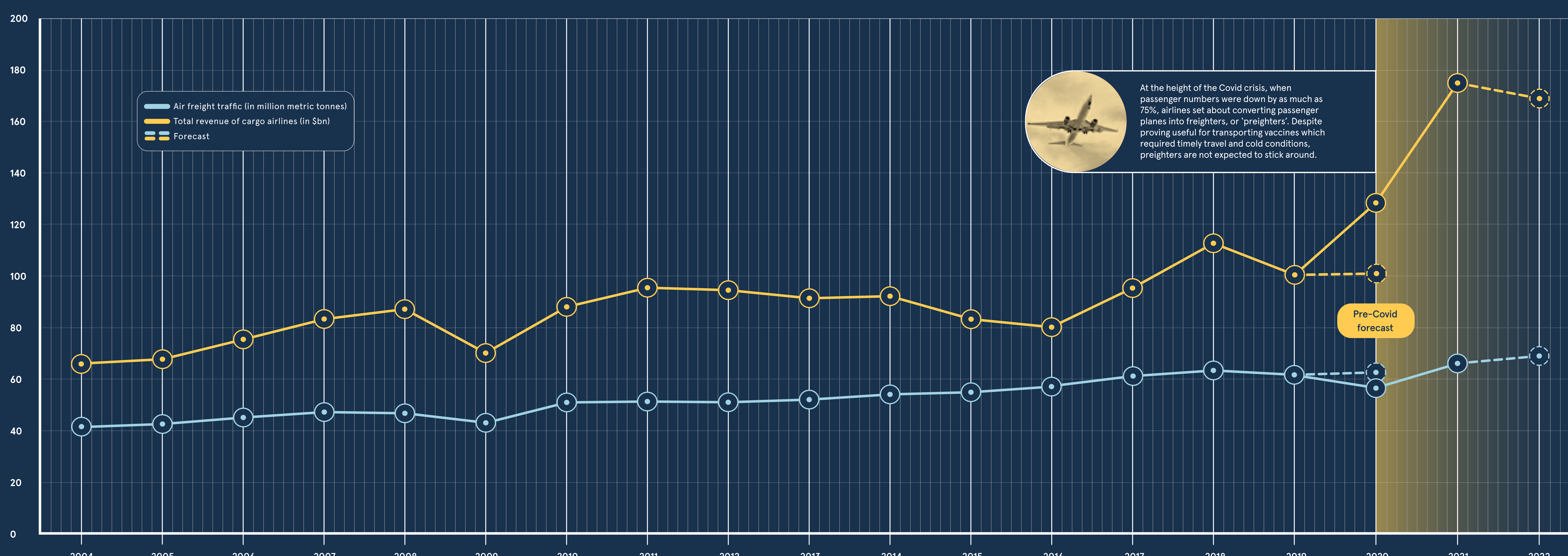


International Air Transport Association, July 2021

TAKING OFF: THE GROWTH OF THE AIR FREIGHT INDUSTRY

Air freight traffic and cargo airline revenue

International Air Transport Association, October 2021



PROCUREMENT

Back to basics

After years when procurement focused on the broader business agenda, the cost-of-doing-business crisis is now shifting attention back to what it does best: controlling costs

Nick Martindale

The cost of living, or doing business, is already dominating the political and economic landscape and is likely to for some time. Stemming largely from vast increases in energy and fuel bills, this is spreading into rising costs in almost every category, ranging from foodstuffs to clothing, household items and transport.

For procurement functions, this has brought about a renewed urgency and focus on what the function has always done best: reducing costs or at least mitigating price increases as much as possible. "It's given us another chance to shine," says Simon Geale, executive vice president, procurement, at consultancy firm Proxima. "Most functions are facing significant volatility and cost headwinds from all directions, and don't have the resources to address all the challenges they face. Where there is strong or visionary procurement leadership, procurement teams are getting the opportunity to do bigger and bolder things."

Mike Hales, partner procurement, at Kearney, observes that has combined old-style procurement basics, such as e-auctions, with strategic initiatives that include challenging specifications from the business and engaging with key suppliers to mitigate price increases. "There has been a clear shift from finding the lowest cost to the best cost, where cost optimisation is balanced with supply chain risk and resilience," he says.

This means costs are being examined from top to bottom, says Geale, to strip out any unnecessary elements. "You're looking for any lever that can improve the situation," he says. "Internally, there may be a big impact in recalibrating demand and reducing waste. Externally, in a seller's market, it's important to put yourselves in the shoes of the supplier and understand what they are looking for. A supplier might be looking to manage their own volatility and cost pressures, so simplicity of specification and predictability of demand will be valuable to them."

Some traditional procurement tactics are also being revisited. "Levers include economies of scale from combining volume across a company's many buyers and agreeing to multi-year contractual relationships with defined commercials, driving value for parties by reducing the complexity and increasing stability," says Hales. "Negotiation skills are still key, but they are often viewed purely as a means of securing additional price concessions at the end of the commercialisation process."

> Where there is strong or visionary procurement leadership, procurement teams are getting the opportunity to do bigger and bolder things

Technology can also help to mitigate cost increases, helping to drive collaboration internally, which can lead to fresh approaches, suggests Riccardo Drentin, a partner at McKinsey. "For example, early-warning systems detected by artificial intelligence can support timely renegotiations or capacity contracting, potentially saving millions to the company in shortages or overstock," he says. "Simple changes like carefully planning to place one big order rather than multiple small ones can help limit any surcharges for rushed delivery or less-than-minimum order quantities. This gives procurement the purchasing power to negotiate discounts on key items."

As well as immediate changes to specifications or purchases, procurement professionals are looking at longer-term measures that can help to provide some predictability. "Some are asking sourcing and engineering teams to reimagine the products most affected by inflation," says Drentin. "Others are investing in innovations, looking at everything from shipping with alternate carriers to sourcing from alternative regions or even adjusting product design using different materials, packaging or product features. The aim is to respond to elevated production costs while maintaining the functionality customers require."

Other initiatives involve working closely with internal teams and suppliers to reduce waste and encourage innovation. "Demand shipping involves working across key spend owners to test wants versus needs and identify areas to simplify specifications," says Hales. "For example, products can be value-engineered or restructured into reusable modules or platforms to improve performance and customer satisfaction while lowering costs."

Key supplier collaborative improvement, meanwhile, requires analysis and consideration of the suppliers who can drive and boost a firm's competitive advantage. "Teams will define strategic objectives and mutually beneficial outcomes, with both the buyer and supplier teams then investing their resources into a series of collaborative working sessions to identify, implement and track mutual value," adds Hales.

For buyers of commodities, such as those traded on markets, entering into a contract to buy at an agreed price and date in the future can be used to generate certainty around future pricing. This approach can also be taken with individual suppliers, essentially stockpiling items for future use.

"The advice is generally just not to do what you have always done but to think deeper about market dynamics and constraints, and how other buyers may be reacting," says Geale. "Some markets have naturally become spot markets but others are more volatile and the gains from creating business certainty may outweigh some pricing wins. You need to look at it on a case-by-case basis."

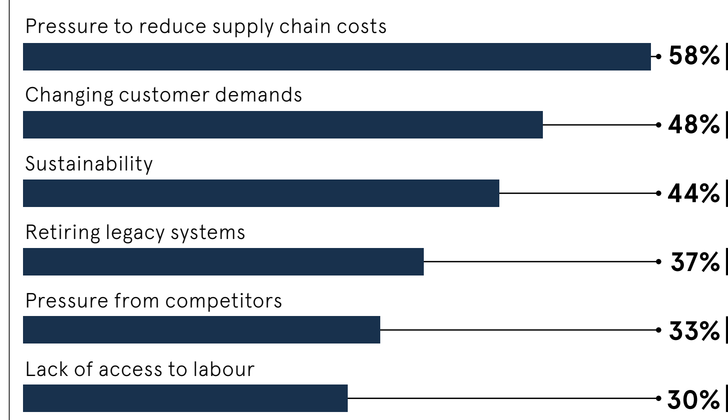
Many of the wider initiatives that procurement has been involved in over recent years – such as reducing risk, sustainability and the move to net zero – will remain important, but the current situation is a chance for the function to remind the business of just how much value it can bring. "It creates opportunities," says Drentin. "The first is to maintain margins and rectify past pricing mistakes.

"The second area is making operations more resilient to ongoing disruption. With a deep expertise of supplier markets and an ability to lead cross-functional reaction teams, procurement's role is elevated from managing enterprise costs to being a strategic partner with other business leaders to achieve profitable growth."

Geale is also pleased by the prospect of a return to a more cost-focused mandate. "In the last few years, procurement has been thrust into the spotlight and as a profession I think we've been grateful to be recognised for our impact beyond cost," he says. "But now is the time to step forward and remind everyone that we are the commercial architects in a business and uniquely positioned to help our customers face these cost challenges. Our job is to find any and every means to help the business outperform the competition and emerge stronger." ●

COST REDUCTION DRIVING INVESTMENT IN SUPPLY CHAIN TECH

Percentage of global logistics service providers who say they are investing in technology for the following reasons



Reuters and Blue Yonder, 2021

Reimagining supply chains to power sustainable commerce

Supply chains must be efficient to be sustainable, but they also need to be serving consumers who are empowered to make greener decisions. Both require a smarter approach to distribution

Global supply chains have faced something of a baptism of fire since the Covid pandemic first started exposing various flaws and efficiency gaps in 2020. When economies were unleashed after lockdown, parts of the economy struggled to keep pace with demand. Subsequent supply shortages have contributed to rising inflation, which has triggered a stinging cost-of-living crisis.

The events of the past two years have illustrated the far-reaching ramifications of inefficient supply chains, hitting the pockets of retailers, brands and consumers and causing havoc across the economy. And yet there is another hugely significant consequence of unreliable supply chains which is still often overlooked – the damaging impact on environmental sustainability.

Research by KPMG found that 96% of the world's largest 250 companies and 80% of large firms worldwide reported on their sustainability performance in 2020. More than a third of the world's largest publicly traded companies have gone so far as publicly setting net zero targets, according to Net Zero Tracker. Yet reducing their environmental impact to the satisfaction of customers, staff and investors will require more than making their own practices sustainable.

"Supply chains are probably responsible for 25% of the carbon emissions on the planet, so reducing the environmental impact of all of the processes adopted in your partner, distribution and transportation network is just as important to achieving your sustainability objectives," says Henri Seroux, senior vice-president for EMEA at Manhattan Associates, whose solutions solve the most complex business problems in supply chain, inventory, ecommerce and omnichannel.

"Often when people think of supply chains, they think of manufacturing and sourcing – where a product is made, what it's made of and how it gets to you. But a supply chain is more than just the linear journey from production to your home. It's a complex web of components involved in making a single product and the various partners involved in its movement and lifecycle. For instance, are products transported on a half-empty plane or a more reasonable means of transportation like train or ship? And do your partners understand their impact on the planet?"

A reliable supply chain is a more sustainable one, and thankfully the widespread disruptions in recent years have been a catalyst for heavier investment in more robust, efficient processes. Small efficiencies across lots of different areas drive marginal gains which ultimately add up to huge improvements in customer satisfaction, business bottom lines and environmental impact.

However, true sustainability relies not just on efficient processes within a supply chain, but consumer behaviour too. All retailers have seen a growing mentality among consumers of wanting to be more responsible in their choices. Yet that mentality isn't quite enough when consumers also face headwinds that threaten to sway their conscience in the other direction.

The cost-of-living pressures which have been partly caused by supply chain disruption are also causing many consumers to prioritise cost over sustainability. Sales of organic food rose by less than 2% in 2021, the slowest growth rate in more than a decade, according to the Organic Trade Association. In tough times, financial survival instincts can hit sustainable consumption.

"Impatience is another barrier," says Seroux. "When you are offered to have almost anything delivered quickly, often even in a matter of hours and for free, you can sometimes forget to ask yourself whether that is really the right thing to do. Is that really sustainable? With digital consumption rising to new levels of popularity with Gen Z, we need to find ways to empower consumers to make greener decisions even if it means a product takes longer to reach them.

"We've all experienced those moments when you order several products from the same retailer or brand and yet they are all delivered separately at different times. That's because traditional ecommerce systems are set up to ship a product to you as quickly as possible, which mostly means pushing them through fulfilment individually. If you just added a couple of days to see if the consumer orders more products, as well as other people in a similar location, those items could all be grouped and transported together. The environmental impact is drastically reduced."

> True sustainability relies not just on efficient processes within a supply chain, but consumer behaviour too

Manhattan Associates has developed intelligent technology solutions which make supply chains more efficient and empower consumers to make more sustainable choices. Its innovative, cloud-native systems give retailers and brands real-time visibility of their inventory and orders, as well as the ability to link the insights to more efficient, greener supply chain execution.

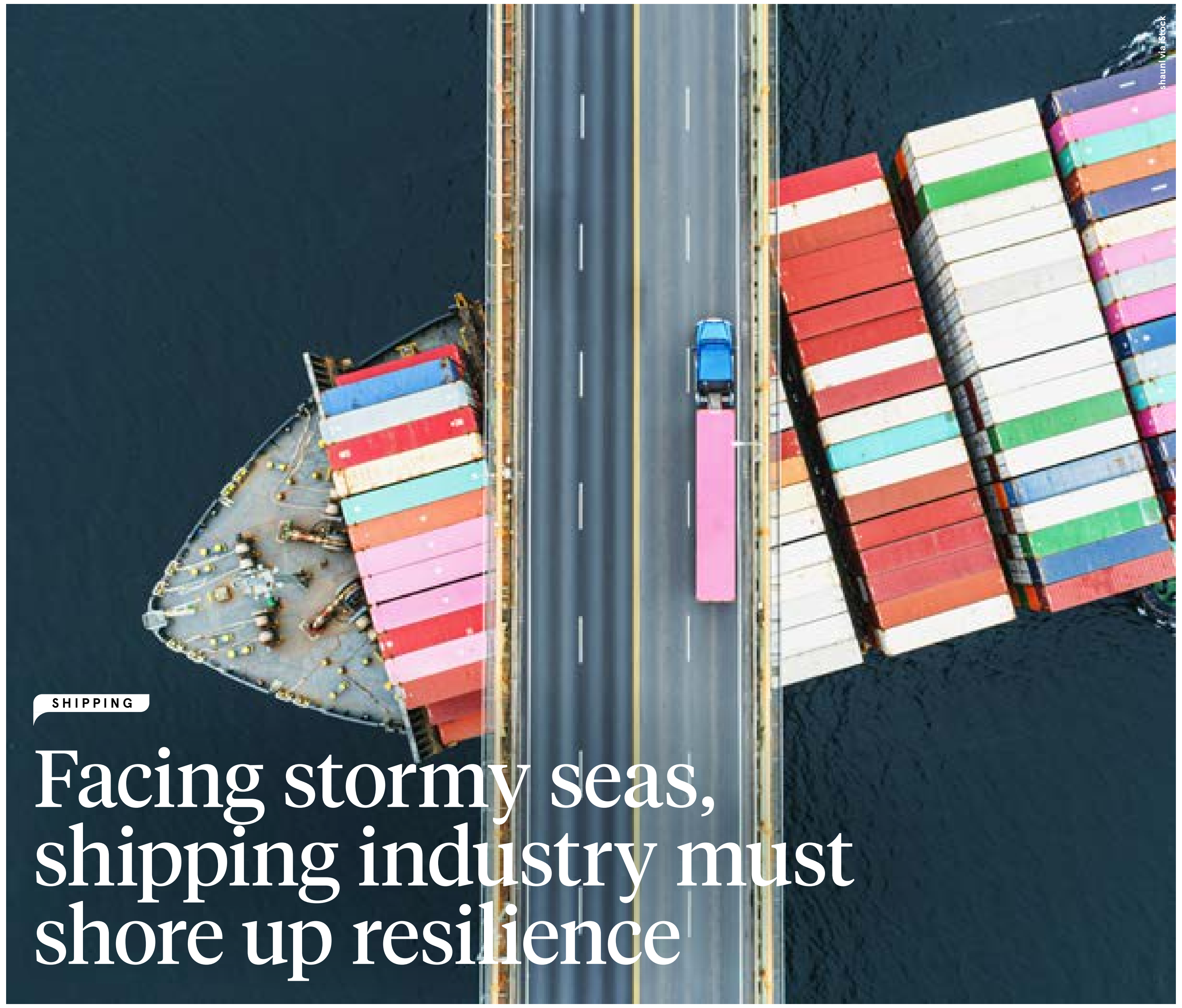
The company works closely with retailers, wholesalers and manufacturers and gives them the opportunity to decide on the choices they want to give to their customers. Manhattan Associates also benefits from working with environmentally aware partners such as Google Cloud – a crucial piece of the puzzle when considering how to make any supply chain more sustainable.

"We give companies and logisticians a system in which they stream the orders instead of working in batches, and through real-time assessments, release orders in a more intelligent way," Seroux adds. "It's a mix of evaluating in real-time the whole demand in a region and then reorganising fulfilment and transportation to be far more efficient and sustainable. We remove trucks from the road, planes form the air, and air from the boxes, by being smarter about distribution networks and transportation systems.

"There is undoubtedly increasing complexity in supply chains which, along with the need for speed and reliability in the ecommerce ecosystem, will put them under quite some level of stress. Our solutions are built by a 1,000-strong engineering team, with the input of over 1,000 customers, and we are actively investing to ensure we can advise our customers on how to use our solutions to maximise supply chain efficiencies and empower consumers to make more sustainable decisions."

For more information, visit manh.com

Manhattan Associates



SHIPPING

Facing stormy seas, shipping industry must shore up resilience

As the peak shipping season gets under way, the industry is plotting a route through supply chain challenges from rising costs to climate disruption

Jonathan Weinberg

The shipping industry is worth trillions of dollars, carrying 90% of globally traded goods, according to OECD data. But as it nears its busiest time of the year, the forecast doesn't look good.

Having weathered the storms of Covid and the Ever Given blockage in the Suez Canal, shipping has been impacted by an unprecedented heatwave in China, which disrupted vital logistical routes. At the UK port of Felixstowe – which handles almost half of container freight entering the UK – ships have been unable to dock due to worker strikes.

Several ongoing problems continue to bite hard, such as the soaring costs of fuel, the rocketing prices of containers, and staff demands for wage increases.

Enda Breslin is general manager for EMEA at global fulfilment provider ShipBob. He expects UK retailers to brace for supply chain chaos as manufacturers and retailers await parts and products ahead of Halloween, Bonfire Night, Christmas and the January sales.

"As we saw during the last supply chain crisis, one stone dropping into the ocean can have huge ripple effects. The strikes will inevitably lead to cargo ships being unable to unload – and this could have ramifications as we rapidly approach peak season," he says.

Danilo Promotions is already impacted. It supplies Christmas cards, gift wrap, gift bags and calendars to major UK high street stores and has seen some container loads delayed by two to three months.

Founder Laurence Prince believes this could cost the business hundreds of thousands of pounds. He suggests the government has a role to play in boosting shipping's resilience, including working with the ports to find agreement with striking workers.

"The government could get involved and limit the cost of containers or put a cap on what we can be charged. It's not only our Christmas products. It's food and grain and everything else," he says, acknowledging the impact on "vital necessities coming into the country".

Like many other manufacturers, a switch to air freight for Danilo is impossible because of the expense and space needed for such a heavy weight of products. That inability to find other options is why many fear shipping's current pressures will continue for the long term.

Heath Zarin is founder of EV Cargo, which carries for Sainsbury's and Asda. He told Bloomberg earlier in the year that the world "needs to be prepared for more volatile and expensive global supply chains".

Boosting resilience within shipping is seen as tough due to the lack of alternatives and because its operations rely on many independent factors going right. This has forced some global manufacturers to source parts and raw materials from two countries at the same time, just in case one delivery is delayed at sea. This is not affordable, though, for most. ShipBob research – conducted with Censuswide among 750 founders of UK brands that sell consumer goods online – found 45% said expensive shipping was their biggest challenge to international expansion.

> The whole system is reliant on each of its constituent parts to keep an uninterrupted flow of goods moving, particularly during peak seasons

The cost of shipping a shoebox-sized parcel from the UK to America has risen by nearly a third in just 12 months, the study found, from £15.73 to £20.56. This is due to a combination of currency fluctuations, international fuel surcharges and inflation.

Other manufacturers are choosing to 'reshore' where they can. ShipBob found nearly four in 10 (38%) of businesses it spoke to planned to manufacture domestically in the next 12 months.

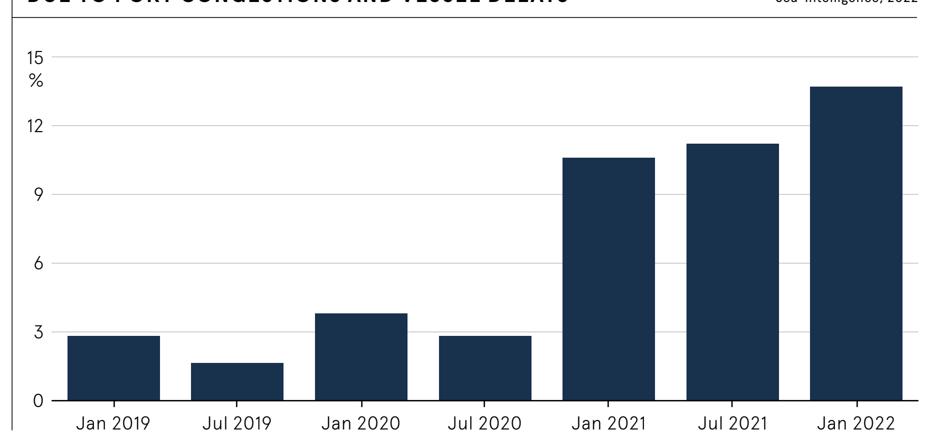
Technology can have a positive role to play in building greater shipping resilience. Bart Coppelmans, head of global supply chain & logistics industry solutions at HERE Technologies, points to several options: for example, a mix of 5G networks and sensors relaying information faster and RFID tags providing location-based data for remote tracking and monitoring.

"With an industry process as complex and time-reliant as the supply chain, it is important to have clarity on each component to address potential problems as they come," he says. "Real-time location data can improve the efficiency, aiding visibility of arrival times and enabling them to recalculate loading and unloading points on time."

At Solent Gateway port in Southampton, head of business development Chris Anderson says pressure has built as the volume of goods increases in the run-up to Christmas.

SHARE OF THE GLOBAL CONTAINER FLEET CAPACITY LOST DUE TO PORT CONGESTIONS AND VESSEL DELAYS

Sea-Intelligence, 2022



How climate change threatens shipping

The recent spell of unprecedented hot weather and droughts across Europe poses challenges for shipping resilience. For example, shallow water levels mean commercial barges could be unable to use the Danube and Rhine rivers as cargo routes.

Climate change is a complicated issue for the shipping industry, which itself accounts for around 3% of global emissions. The Environmental Defense Fund (EDF) attributes "roughly 20% of global emissions from transportation" to the sector.

Earlier this year, the non-profit EDF warned: "Without ambitious action to reduce emissions, climate change impacts could cost the shipping industry up to $25bn (£21bn) every year by the end of the century."

This is one reason why the Digital Container Shipping Association (DCSA) has called for better use of real-time and interoperable data to help reduce emissions. It points to container shipping's current reliance on manual and paper-based processes, which "creates delays and blind spots in the supply chain". This prevents wider visibility for proactive, data-driven decision-making, says the DCSA's Ellen Sun.

The neutral, non-profit group was founded by ocean carriers to digitise and standardise the container shipping industry. It cites International Maritime Organization estimates showing that between 4% and 14% of the fuel used per voyage can be saved by improving port call efficiency, such as the time spent docking and more economical routing.

To achieve this, the DCSA supports a Just-in-Time port call process, so container ships optimise speeds to lower fuel consumption and reduce greenhouse gas emissions. It estimates this could save 6 to 19 million tons of CO_2 per year through better port call efficiency, comparable to the total annual CO_2 emission of a smaller EU member state.

Part of its resilience plans include an off-dock storage solution to unlock additional capacity.

Some experts advocate greater use of robotics to offload and load goods into warehouses, enabling the space to be used more efficiently with more packed in.

For Anderson, however, the HGV driver shortage is still impacting shipping resilience. Ports are well equipped to handle container volumes if the rest of the supply chain works as it should, he explains. "The whole system is reliant on each of its constituent parts to keep an uninterrupted flow of goods moving, particularly during peak seasons," Anderson adds.

The biggest challenge here is getting containers to off-dock sites when there aren't enough drivers. If a port is congested with cargo, which can happen "surprisingly quickly", then the ship cannot wait. "It will have to sail for the next port with the cargo destined for the UK still on board – this is how shortages on the shelves happen," Anderson says.

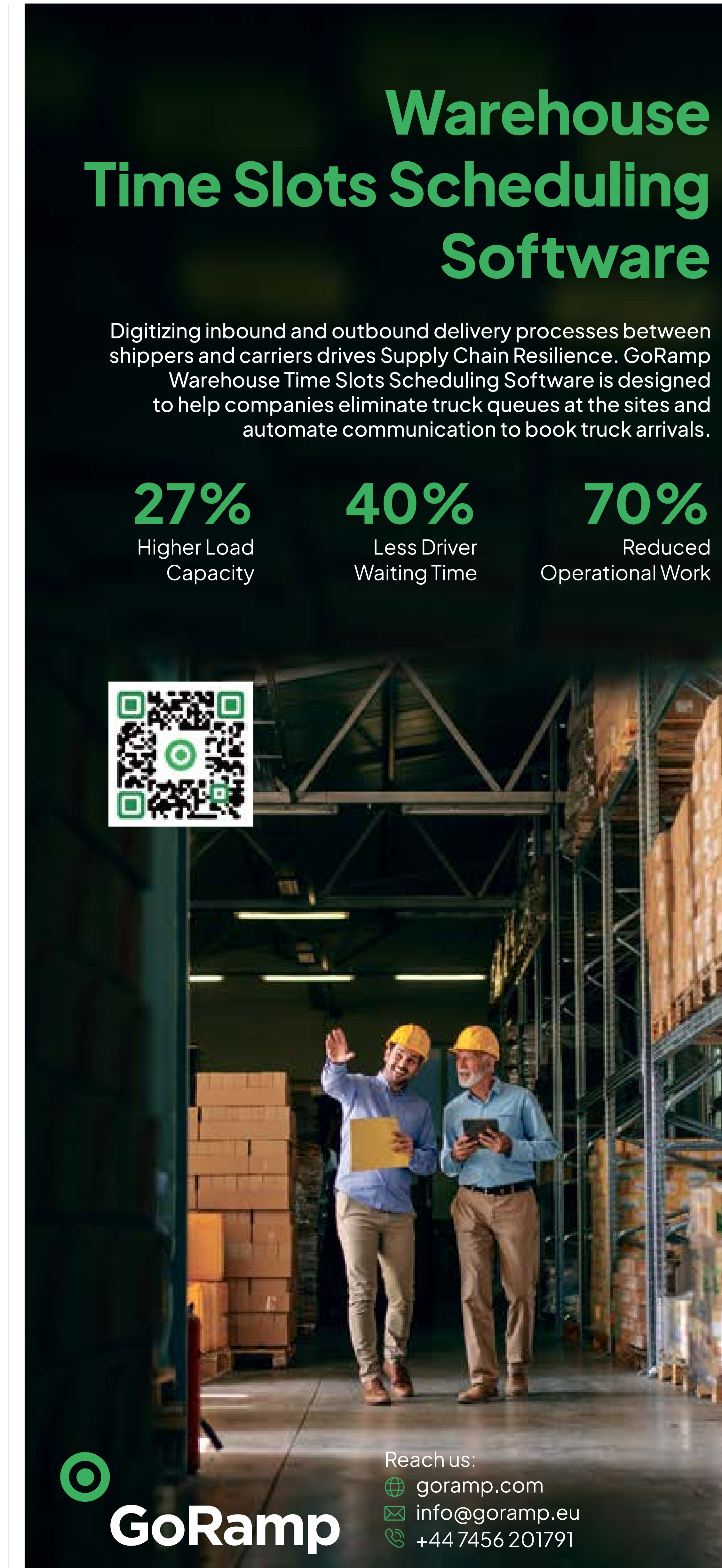
The government could support industry resilience by expediting permit approvals for the storage of bonded goods, Anderson believes, fast-tracking planning for new storage sites and providing targeted support to encourage more people to train as HGV drivers.

Larger retailers are expected to feel the greatest impact. ShipBob's Breslin suggests they will need to partner with multiple carriers ahead of time to ensure contingency options that would let them switch deliveries in the case of strikes or extreme weather. Smaller ecommerce brands, he explains, have built resilience in the past few years through direct-to-consumer channels.

> As we saw during the last supply chain crisis, one stone dropping into the ocean can have huge ripple effects

Industry-wide, there is a small piece of good news. The latest data from Sea-Intelligence shows that schedule reliability has increased to 40.5% in July 2022, up from 40% in June.

But in the meantime, Danilo must play a waiting game. Some shipping timescales have moved from 10 to 12 weeks, to 18 to 20 weeks. Prince accepts that Covid-19 and Brexit have had an impact but says the company now faces continual changes and updates to its logistical planning and financial forecasting. He reflects: "Everybody blames everybody else – but nobody actually takes the blame." ●



DATA MANAGEMENT

What Waterstones can teach us about warehouse digital migration

The bookseller's digital migration went catastrophically wrong. What lessons can be learnt?

Adrian Dennis via Gettyimages

Chris Stokel-Walker

Delivering a digital migration is a trying experience, at the best of times. And upgrading can make the process even more challenging.

That was the issue facing book retailer Waterstones in the summer, when the company's 300 stores shifted to a new system to handle its stock from centralised warehouses. The migration was less than smooth, contributing to stock shortages, while frustrated front-line employees were unable to locate books or order new ones for customers eager for the latest titles.

Waterstones did not respond to a request to comment for this article, but the firm issued a statement acknowledging that it had suffered "a backlog of orders" when it upgraded to new stock distribution software, by US software and consultancy firm Blue Yonder. Waterstones was confident that it would be able to clear its backlog of orders during the quieter month of August and then take advantage of what it calls a "much more sophisticated platform" by September.

A spokesperson for Blue Yonder said the company had been brought in to help Waterstones manage stock distribution from its warehouse. "While complexities arose, all parties involved in the implementation are working diligently and cooperatively to resolve the issue as quickly as possible," the spokesperson said.

For many businesses, Waterstones' experience is a useful one. "Technology will be a mainstay and a larger piece of the logistics supply chain function of any business now," says Neil Jordan, vice president of logistics and supply chains at Proxima. "But with that comes greater risk."

Waterstones is not by any means the only retailer to face challenges and hiccups in efforts to improve its stock-management systems. In 2019, online clothing retailer Asos decided to update its warehouse tech stack. Algorithms designed to inform staff when to pick items for orders misfired, meaning those orders had to be cancelled when they were incomplete. In all, the cost to the company amounted to £25m in disruption costs and lost sales across its European markets.

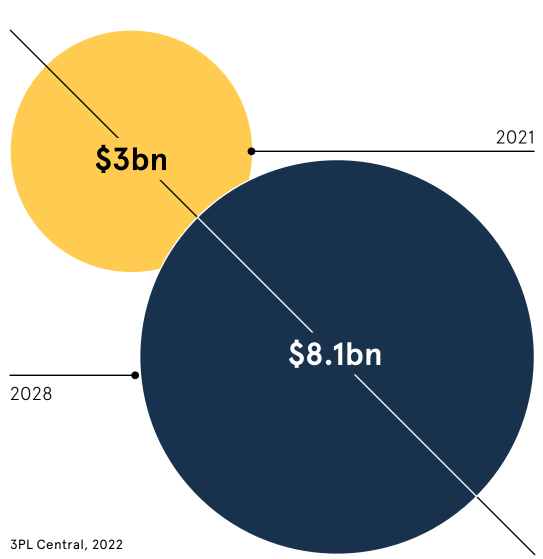
Neither Asos nor Waterstones anticipated such bumps in the road. Both companies had elected to start their warehouse digital upgrades during a period when their business was comparatively quiet, to make the transition easier.

But, upgrading presents many and varied challenges, explains Heico Sandee, chief technology officer and founder at Smart Robotics, a warehouse robotics system.

"Upgrading a warehouse to become a smart warehouse has many rewards, as well as unique challenges – namely, issues related to digital migration," he observes. There are, though, common pitfalls that can be avoided. "Maintaining the unchanged content, context and structure of the data is absolutely critical," says Sandee. "Smart warehouses rely on accuracy in data to maintain a smooth flow in operations. If disturbed, huge capital losses are certain to follow."

DEMAND FOR WAREHOUSE MANAGEMENT IS SET TO BOOM

Market forecast for warehouse management systems



3PL Central, 2022

Jordan thinks that the issues with the Waterstones upgrade could have stemmed from something simple. "If something goes slightly wrong in the processes and the mapping hasn't been done, it can have a significant impact," he says. Practice makes perfect, he says, and preparation is always key.

He advises businesses to robustly test environments that will be used in warehouses, to verify that every scenario which might occur in a normal business day has been trialled and the system shown to handle it.

"Companies I know who have done this very well take a lot of time and invest a lot of money in this process," he says. They will often run the two systems in parallel – old and new – to check that there are no hiccups in the new one that could take the whole system offline. The old system is left running as a failsafe, useful to fall back on in the event of a catastrophic error.

Sandee also thinks that this is an important part of the process. "A migration with all content, users and integrations moving en masse to the new system is never a good idea," he says. Best practices involve planning for a gradual, hybrid or rolling migration, where small parts of the entire process and system are moved gradually to the new software to ensure that nothing goes wrong.

The ability to go backwards as well as forwards when implementing a warehouse digital migration is essential, cautions Sandee.

"Easing into relocating data is key," he says. "It doesn't matter if you are moving data from one application to another or from hardware to the cloud: warehouse optimisation relies on the safekeeping of the original data sets." Not doing so is foolhardy, he says. "If the new system fails, be sure you can fall back on your original system. As long as data can be retrieved, you can roll back without any disruptions."

It is not a failure of a migration if you need to revert to what you had so that you can iron out issues. But it is a failure if you have pursued a migration so wholeheartedly that there is no way to reverse a change without losing all your systems and the good running of your business.

And be aware: there will be disruptions. "I've never seen a system launch without issues," says Jordan. "There will always be issues. It's the magnitude of the issue that causes the challenges."

It is about how companies respond to those problems, and whether they are able to swiftly solve them which will make the difference between viable stocking and shelves standing empty – with the resulting effect on the bottom line. ●

> "It is a failure if you've pursued a migration so wholeheartedly that there's no way to reverse a change without losing all your systems

Commercial feature

Knowing your partners: Why ESG compliance matters across supply chains

As environmental, social and governance concerns climb the corporate agenda, businesses must rely on their supply chain to meet their short and long-term commitments. ISN, which helps companies to navigate this global challenge, explains how organisations can achieve the best results

An industry-leading company may have to rely on thousands of third-party contractors and suppliers around the world. But how can it be sure its partners meet the highest standards when it comes to key issues such as health and safety, sustainability, compliance and human rights?

As corporate responsibility rises up the agenda, consumers and shareholders around the world increasingly expect companies to track, disclose and improve the social impact of their supply chains.

This has put the onus on hiring clients to vet who they work with, and on contractors and suppliers to improve their environmental, social and governance (ESG) performance. Yet making sure everyone is singing from the same hymn sheet isn't easy.

Hiring organisations must gather large amounts of ESG data from partners around the world; conduct risk assessments based on company geography; integrate ESG clauses into their contracts; and educate global partners on their internal ESG initiatives. Contractors and suppliers meanwhile must conduct their own assessments and invest substantially in improving their policies and processes. Communication between both sides is key, but all too often lacking.

Benchmarking quality

ISN has been helping companies around the world to navigate these challenges for over 20 years. Through its ISNetworld platform, it connects 700 hiring organisations and more than 75,000 contractors and suppliers across the globe.

ISN's suite of tools helps to track ESG information throughout global supply chains, survey employees and third-party vendors, verify ESG policies and documents, and provide actionable feedback for hiring clients and partners alike. Crucially, its grading system allows companies to benchmark their contractors, identify areas in need of improvement and track progress.

"Understanding how ESG affects both enterprise value and social impact helps an organisation to prioritise initiatives that employees, consumers and suppliers identify as critical," says ISN vice-president Joe Schloesser. "Our focus is on helping hiring clients to maintain the most effective working relationships with their partners, so they truly become better businesses."

The climate challenge

By far the most pressing ESG concern for companies today is climate change. By 2025, it is expected that around one-third of all global assets under management will have ESG mandates, with companies under growing pressure from shareholders to show how they have reduced their impact on the climate.

Regulations are also getting tougher, with both the United States and Europe planning rules that would require companies to disclose risks related to climate change and their greenhouse gas emissions.

According to ISN's research*, nearly 60% of contractors and suppliers have implemented an Environmental Management System (EMS) to help improve their environmental performance, identify their most significant environmental risks and develop a mitigation plan. Yet, the uptake is greater among larger firms and varies by industry.

"Not all companies are moving with the times and that is concerning," says Schloesser. "Consumers increasingly demand transparency and allegations of greenwashing can be highly damaging."

Diversity and human rights

Businesses are also expected to have credible plans to tackle ESG concerns such as workplace safety, cybersecurity, human rights, diversity and bribery. Yet again, performance in these areas varies.

According to ISN's research*, anti-discrimination policies are in place for a large majority (75%) of contractors and suppliers. But not all have policies on protecting human rights (46%), diversity and inclusion (47%) and forced labour (44%).

In addition, only 27%** of contractors and suppliers have defined criteria for notifying a hiring client of a cybersecurity incident – a clear blind spot that must be addressed.

To change this, Schloesser believes companies should first improve ESG education across their supply chain. Without basic understanding of commonly used terms, the ESG space can be difficult to navigate. Providing training opportunities for internal employees and value chain partners ensures everyone understands the organisation's ESG expectations and what data needs to be collected and reported.

Industry-leading organisations must also establish a baseline for the current status of ESG data availability in their value chain. This makes it easier to develop strategies for improvement and integrate ESG goals into every step of the procurement process.

"Without the right information it is impossible to have proper oversight of your business, know your strengths and weaknesses and devise strategies for change," says Schloesser.

'Invaluable partner'

A major European chemicals company that has been an ISN customer since 2015 has numerous targets and focusses for its supply chain that vary from country to country. It uses ISN to achieve higher standards of safety and wellbeing for employees across its supply chain, reduce its overall environmental impact, support food security in the communities it operates in, and boost the long-term performance and ESG compliance of its business.

"Our implementation of the ISNetworld qualification system has delivered centralised access to up-to-date supplier information," says a senior buyer for the company. "In addition, it has reduced our administrative burden and provided us with the platform to maintain and drive improvements in supplier standards and compliance."

Similarly, one of ISN's UK-based luxury retailers uses ISNetworld to support its ESG ethos at a global level, helping it to understand, measure and improve ESG impacts throughout its supply chain.

Due to its global footprint and diverse supply chain, it relies on the ISNetworld platform to measure emissions and ensure that suppliers are trading ethically and have required certifications and assurances. This provides the assurance necessary in today's current ESG-focused market that the products it makes and sells on the high street are ethically sound, and that its suppliers are working to reduce the carbon impact of their operations.

As major brands have discovered, supply chain failures can be hugely damaging to their reputation, especially if a company fails to remedy long-standing issues. In addition, companies with high levels of ESG compliance across their operations tend to enjoy higher levels of consumer and stakeholder trust – all of which feeds back into the overall value of the business.

"Even as the economy comes under pressure in many countries, customers and shareholders still expect companies to take the lead on ESG, and compliance really matters," says Schloesser. "Part of this is ensuring that your partners are on board, and companies need to have a clear view of what's happening in their supply chain and how it can be improved."

> "Consumers and shareholders around the world increasingly expect companies to track, disclose and improve the social impact of their supply chains

For more information visit isn.com

ISN®

* ISN's Environmental, Social & Governance White Paper 2021 – pages 8, 14 and 21

**ISN's The Orange Book 2022 – page 8

LOGISTICS PLANNING

How supply chains can learn from Covid-19

Dr Shereen Nassar outlines the complex drivers of global supply chain challenges and how companies can adapt for the future

Georgia Lewis

Before Covid-19, most of us paid little attention to supply chains. Consumers in developed economies took well-stocked shelves for granted. Those in the developing world endured poor availability for many products, but that was due to many factors that were beyond supply chain issues.

That all changed with the pandemic. When government-mandated movement restrictions were put in place to curb the spread of the virus, supply chains made headlines. Consumers soon noticed shortages with bricks-and-mortar and ecommerce retailers, while manufacturers reported supply chain disruptions for components and distribution to customers.

$184m

estimated annual cost of supply chain disruption to organisations worldwide in 2021

36%

of companies who experienced supply disruptions lost revenue

3PL Central, 2022

Supply chains have not fully recovered from the "global ripple effect" caused by the pandemic, according to Dr Shereen Nassar, who is global director of logistics studies at Heriot-Watt University Dubai. Coupled with other worldwide disruptions, supply chains remain under pressure, she says.

"In the short term," she adds, "Experts predict that continued disruptions with pressing operations include supply-and-demand mismatch, labour shortages, cargo ships and ocean freight bottlenecks."

Nassar describes the conflict between Russia and Ukraine as a "manmade crisis" that has created serious problems for supply chains, especially across Europe. She says the war forced production to shut down in the affected regions, created energy-price rises that challenge many industries – especially in areas that rely on Russian gas – and diverted ships and aircraft that transport goods in and out of Ukraine.

Against a backdrop of geopolitical and trade tensions, including headwinds in China-US relations and rising inflation on a global level, many businesses are struggling to keep up with consumer demand while controlling operating costs, says Nassar.

She points to the *Retail Supply Chain & Logistics Planning Report 2021*, from Delmia and Reuters Events, which shows that reducing logistics costs is the top business goal for most retailers.

"The pandemic has highlighted the need to have a logistics plan in case of global emergencies," Nassar says. "While retailers are prioritising this, most have mentioned service requirements, automated warehouses, and infrastructure problems as the main concerns for logistics planning."

For individual countries, supply chain pressures are exacerbated by domestic factors, along with the impact of extreme weather events, such as the heatwaves in western parts of the US and Canada and flooding in Western Europe. "These events added more pressure on logistics networks and ports that are already stressed by high demand."

It is challenging to separate ongoing and foreseeable challenges "as they are closely interlinked and an extension of one another," says Nassar. "If, though, we consider this from a long-term and strategic angle, focusing on the known and controllable sources of risks, we can identify a number of potential pressures if risk mitigation plans are not in place."

It is important to ensure supply chain sustainability, which is mandatory in many markets across the world. But making these changes increases pressure on businesses, especially those struggling to rebuild after the pandemic.

With customers, investors and regulators expecting sustainability improvements along entire value chains, Nassar says that many businesses are lagging. "Although many businesses include sustainability as part of their mission statement – and list it as one of their business goals – there is a gap in the actual implementation itself."

This was confirmed by an Oxford Economics survey, she notes, which showed that 88% of global supply chain decision-makers have either created a clear mission statement around sustainability or are in the process of writing one. But only 52% of these industry leaders have developed action plans to reduce their environmental impact.

> **The pandemic has highlighted the need to have a logistics plan in case of global emergencies**

In addition, Nassar cites research by Celonis and IBM which revealed that more than half of chief supply chain officers would be willing to sacrifice up to 5% of profit to become more sustainable.

"If this is put into action, it would mean that freight transportation and supply chain processes will continue to change, as more environmentally sustainable practices are adopted," says Nassar.

"Another potential related pressure is about introducing new global laws and regulations to govern logistics and supply chain sustainable practices that incur high non-compliance penalties," she notes.

Digital transformation is more than a buzzword for supply chain managers. Technology is increasingly important for such functions as transparency, tracking goods and monitoring carbon emissions, but this increases the risk of cybercrime, Nassar cautions.

Finally, Nassar observes that worldwide water instability, an outcome of climate change, is a potential threat to smooth supply chains, with five of 11 global regions deemed by the United Nations to be water-stressed, meaning that 25% or more of renewable freshwater resources have been withdrawn.

"Water is a main component of most production industries. This threat is growing, due to accelerated urban and industrial expansion, population growth and the rise in extreme weather events, including floods and droughts," Nassar says.

"Major waterways such as the Rhine in Europe and the Chagres river in the Panama Canal experienced significant low-water levels that affect the transportation of goods and materials, can cause price surges and threaten production."

The first response to a major crisis always comes from governments, Nassar says. "The rapid change and continued disruptions to supply chains require governments to further enhance their preparedness and response, not only during the crisis but in the recovery process."

Collaboration between governments and all stakeholders, including businesses, is important to smooth out the bumps that have affected supply chains globally. The pandemic holds several lessons, observes Nassar.

"The pandemic has highlighted the importance of collaboration between business and governments. This is especially evident considering the development and distribution of Covid-19 vaccines in a speedy manner," she says. "Continuous dialogue between governments, businesses and other stakeholders allows better understanding of the business challenges and the support needed to address them."

According to Nassar, government priorities should include working with other countries with the aim to improve efficiencies in cross-border supply chains, in addition to dealing with labour shortages.

"Combined with economic shocks, cost increases and logistical challenges, labour shortages have been a challenge and [labour force numbers] have not yet recovered to pre-pandemic levels," she says.

While it is of course important to manage the cybersecurity risks associated with digital transformation of supply chains, Nassar thinks that digitising information exchange and "ensuring a seamless flow of information between businesses and governments will make cross-border trade simple and safer for businesses."

Another advantage of digital transformation is the acceleration of processes along supply chains, which Nassar says is very important in competitive markets. Part of this process is in order to leverage data with the aim to "improve visibility of inventory capacity, supply and finances", resulting in better organised workflows, greater agility, better supply-and-demand balance for stock levels, and faster responses to avoid crises.

For companies, the "inevitable transition" from just-in-time to just-in-case manufacturing business models requires a foundation of resilience.

"To successfully navigate the current challenges, it is important for supply chain leaders to focus on what they can control and simulate future scenarios for uncontrollable and unknown elements," Nassar explains. "With labour shortages currently being a major challenge, keeping the current workforce both healthy and productive, as well as prioritising agile ways of working, can greatly counter this challenge."

> **Supply chain leaders and companies are now more resilient and better prepared to tackle future challenges**

It is important for companies to run simulations and scenario-planning models to predict any excesses and shortages that might occur, leveraging technology "to get actionable insights and optimise performance" Nassar advises.

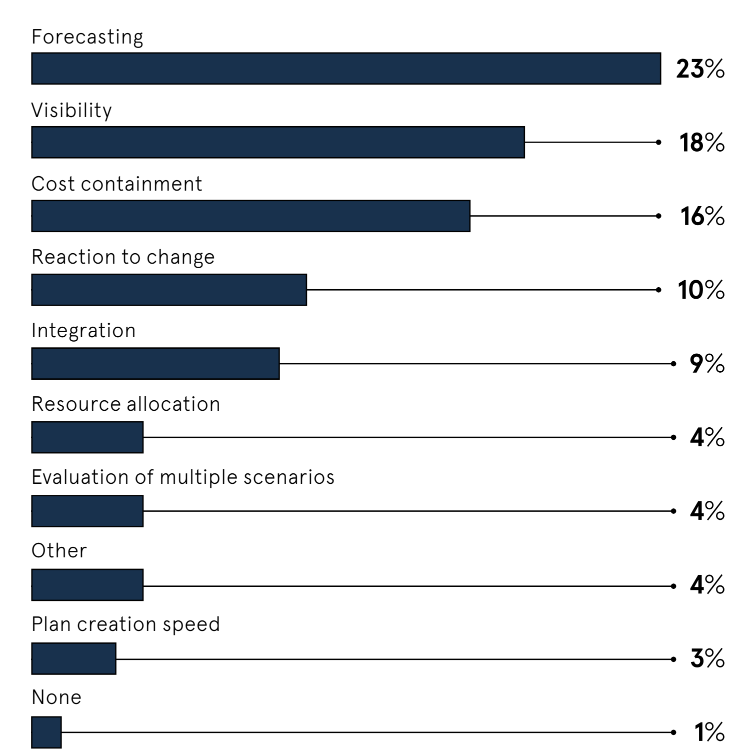
She thinks that there are reasons to be optimistic about the future of supply chains. During the pandemic, the importance of supply chains and logistics gained global attention, serving as a wake-up call for rethinking supply chain management and strengthening vulnerabilities, she says.

Reskilling and upskilling programmes to improve the quality of supply chain workforces should help address talent gaps and labour shortages, while freight capacity for sea and air has reduced delays.

"Overall, with improvements in technology, upskilling, good back-up plans, and lessons learnt from supply chain disruption, I do believe that supply chain leaders and companies are now more resilient – and better prepared – to tackle future challenges." ●

WHAT'S SNARLING UP SUPPLY CHAINS?

Percentage of global supply chain executives who say the following places are the parts in their customer's logistics planning where they encounter the most challenges



Reuters and Dassault Systèmes, 2021

Commercial feature

Big things are happening in small spaces

Demand for small-to-medium box-style warehouses has never been greater, despite economic headwinds, explains **Jason Rockett**, MD of Potter Space

SMEs across the UK have never been under more pressure; rising inflation, increasing interest rates and soaring fuel prices are challenging those who form the bedrock of our economy.

However, demand for small-to-medium warehousing has never been higher.

These units vary from 20,000 to 100,000 square feet and our own Potter Space parks are currently at 99% capacity; clients are continually asking for more space due to customer demand.

Media headlines may focus on the growth of the 'big box' warehouse market (one million square feet and over), which are dominated by global logistics and ecommerce giants. But a bigger story has been hiding in plain sight: continued growth and resilience in the small-to-medium box sector.

The opportunity for this market is incredibly attractive. UK industrial and logistics (I&L) property is critical to all sorts of industries, whether it's new locations to expand their geographical footprint or additional storage to support growth.

Our research, conducted in partnership with Savills, confirms how properties under 100,000 square feet represent 95% of the I&L property market in England, accounting for more than half (56%) of the sector's entire floorspace.

Demand for I&L jobs has also increased by a quarter (26%) over the past decade, compared to 14% for the overall economy. This is fuelled not only by the giants, but by thousands of SMEs in England.

£480m

of gross value added is lost annually due to suppressed demand in the segment of properties under 100,000 square feet

Potter Space/Savills, 2022

An opportunity to grasp right now

A surge in global ecommerce undoubtedly underpins these figures, but the continued growth of local businesses producing goods and services is significant as to why many of our customers are crying out for more space.

Reshoring by manufacturers struggling with volatile global supply chains has also played a role, as has a desire to store goods closer to customers across all UK regions for 'last-mile delivery'.

Investors in I&L property portfolios, as well as local and national government, are now taking more notice of the small-to-medium box sector. It provides the platform for economic growth in turbulent times. We must ensure it continues to support our home-grown economy.

Potter Space has more than 400,000 square feet of consented land and 2.8 million square feet in strategic planning across our five sites, used by local hero businesses, national ecommerce players, and global logistics brands such as Clipper. All are looking for more space nationally.

A new calculation methodology developed by Savills has identified huge but suppressed demand in the segment of properties under 100,000 square feet; the research demonstrated how the UK economy could be missing out annually on around £480m of Gross Value Added, as well as 8,600 direct jobs and 7,300 indirect jobs.

With a little vision, the economic relevance and importance of smaller sized warehousing can grow at an even faster pace.

A UK-wide prospect for growth

It's not just big cities like London, Birmingham, Bristol, Liverpool, and Manchester that are ripe for development. Other areas now of interest include Norwich, Southampton, Portsmouth, Leicester, Reading and Crawley.

The best sites of the future may not predominantly be served by road. Instead, they will have access nearby to railways, airways and – crucially – waterways, which enable a more sustainable way of moving goods around the UK. Our sites in Ripon, Ely, Selby, Droitwich and Knowsley are all well-served by road, three by rail and two by inland waterways.

However, we need more land; that is where the blockage exists and with more recognition of the significance and importance of this sector to the UK economy, the hope is that will soon change.

There will be big economic headwinds in the coming months and years, but ecommerce will still require greater and more local and regional storage. Forrester Research predicts online retail will account for 37% of all purchases by 2025.

Building more small and medium-sized warehousing will boost employment and fuel economic activity. 'Pick and Pack' jobs will still be needed, but the I&L jobs market will diversify to include those developing and managing new technologies to propel the sector forward.

Big things happen in these small spaces – they give businesses room to grow. By addressing the huge pent-up demand for such space, we believe there will be even more opportunity for everyone in the future.

To read Potter Space's report, Big things in small boxes, visit potterspace.co.uk/big-things-small-boxes

Potter SPACE

SHORTAGES

Supply chain disruption demands increased resilience

Global supply chains have been rocked by climate change, geopolitical instability and more. How are industries adapting to these challenges?

Sally Whittle

One of the first emails Rachel Watkyn opened in 2022 was from an overseas supplier, advising her that prices were increasing by 40%, immediately.

Over the past 18 months, Watkyn's packaging business, Tiny Box Company, has seen a massive increase in supply chain costs. The cost of a single shipment of boxes from East Asia has increased from £2,500 to £18,000, while the cost of sourcing raw materials in the UK has risen by more than a quarter.

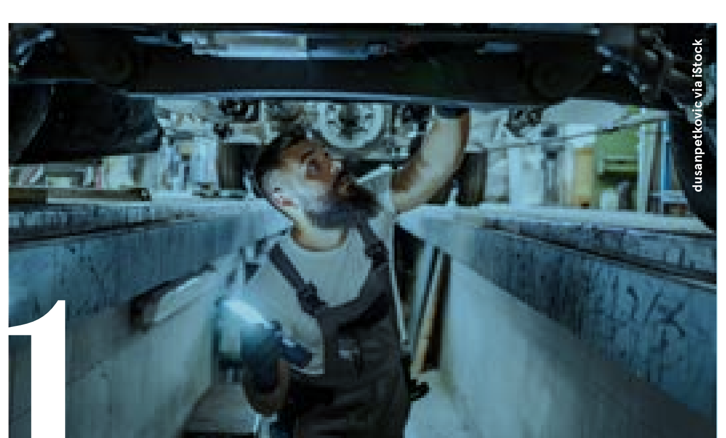
"Supply chain costs used to account for 10% of our costs but that's increased to 40%. It's a huge challenge and we can't pass on all those costs to customers and remain competitive," says Watkyn.

Packaging is just one industry sector that is facing huge supply chain issues in 2022, says Simon Geale, executive vice-president at supply chain consultancy Proxima. "Every company with a supply chain is grappling with supply chain cost management," he says.

At Tiny Box Co, Watkyn is building resilience into her own supply chain. The firm is negotiating to create a joint venture manufacturing site in Europe. And 20% of its production has been moved to a previously disused factory in Cornwall, which has offset the higher price of sourcing materials overseas.

"We're really focusing on building more efficiency and investing in technology to drive internal efficiency," says Watkyn. "There's only so much cost we can pass on to our customers, so we have to think smarter when it comes to supply chain strategy."

Here, we round up six industries facing supply chain challenges in 2022 and examine how they are building resilience to mitigate the impact of future disruption.



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Automotive

The automotive sector has experienced supply chain disruption due to a combination of the pandemic, the drought in Southwest China, the war in Ukraine and a shortage of chips. "The automotive sector illustrates how hard it is to manage risk in supply chains because you're dealing with so many factors, from materials to weather to political events," explains Geale.

Companies like Volkswagen have invested heavily in partnerships that reshaped its global supply chain, sourcing new suppliers for important components such as nickel and batteries, while adopting a nearshoring strategy for some manufacturing. "Although the company sold 2 million cars less than expected, it still made a strong profit last year, which shows the importance of their supply chain strategy to the company's health," he adds.

Fashion

The world of fast fashion slowed in the past three years. Garment companies in Asia have been hit by a series of lockdown orders, while global freight shipping costs have rocketed due to pent-up demand after the pandemic. And global water shortages have impacted the water-intensive process of making new clothes.

Further disruption is on the horizon with new EU legislation that could hold supply chain managers responsible for abuses of workers' rights and poor working conditions in overseas factories. "All of these things increase the cost of production and the time taken to get new clothing to market. The fashion industry needs to find ways to reduce costs in other parts of the supply chain," observes Professor Richard Wilding, a former professor of supply chain risk at Cranfield School of Management.

One of the biggest moves to build resilience into fashion supply chains, suggests Wilding, is the increase of nearshoring and late configuration. Companies like Benetton will create a skirt in Asia and ship it to Europe, where it is dyed and customised locally. This allows the manufacturer to benefit from lower material and manufacturing costs in Asia and respond quickly to local demand.

"Maybe you have a skirt that could be red or green but suddenly the Duchess of Cambridge wears a green skirt and demand for green skirts goes through the roof. With late configuration, you can get those green skirts to market in a week or two, rather than waiting eight or 10 weeks for them to get to Europe on freight ships," says Wilding.

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Retail

The retail industry was hit by supply chain delays throughout 2020 and 2021. These were caused by problems with sourcing materials and logistics challenges getting products from manufacturing sites in East Asia to customers in Europe.

With peak trading season nearing, the sector has taken steps to reduce the risk of shortages this Christmas. "The retail sector has shortened planning cycles dramatically and is looking to build far more agile supply chains," says Geale. "Many retailers of smaller items in sectors like home goods or toys moved their buying cycles earlier and are building up inventory to minimise the risk of shortages during that peak trading period. It isn't unusual to see retailers that have tripled their warehouse space in the last year."

The flipside of this approach is that many retailers have large amounts of working capital tied up in inventory; if there is a slowdown in consumer spending at Christmas, Geale says we will likely see steep discounting as retailers look to clear that stock in 2023.

JamesBrey via iStock

Farming/Agriculture

The global agriculture sector is facing unprecedented pressure from climate change, geopolitical instability, and the after-effects of the pandemic. Any one of these challenges has serious implications for agriculture, says Simon Davis, agricultural practice lead with sustainability consultancy Anthesis. "We're in uncharted territory," says Davis. "Because it's such a just-in-time industry, it's very easy to tip into food insecurity when supply chains fail."

The latest challenge to farmers has been a rapid rise in energy costs. This has had a knock-on effect on the price of fertiliser, which rose by 80% in 2021 and by a further 30% in 2022. Add to that a global heatwave leading to water shortages for crops and livestock and it's a perfect storm.

In response, the farming industry is likely to see consolidation, as smaller farmers exit the sector. Those that remain may adapt the crops they grow, says Davis, focusing on increasing the number of hardy crops grown, increasing yields during hotter, drier seasons. "In the mid-term, I expect to see farmers adopting more regenerative practices that improve soil quality and yields, alongside crop diversification, with innovation funded in part by retailers who want to secure their own supplies," Davis says.

Food

The food industry has been hit by all the challenges that have affected farming and agriculture. As a result, many food businesses are starting to see stress on their supplies, which could easily worsen, says Geale.

"We have just seen a drought in China just before harvest season starts, in a country that relies heavily on hydro-electric power," he notes. "The result could be that there is less food available to export from China, but also that China will need to import food that previously would have been bought by other countries in Europe or Africa."

The first impact is likely to be product rationalisation, where food manufacturers reduce the number of product lines to cut manufacturing costs. Geale also expects to see food companies paying more to secure supplies or switching to near- or onshore alternatives, which may cost more.

To offset these price increases, Geale says the food industry is investing heavily in innovation and structural changes to reduce supply chain and operating costs. "We'll see big structural changes, increased automation and smarter supply chains as they struggle to maintain what are already quite fine margins."

kasto80 via iStock

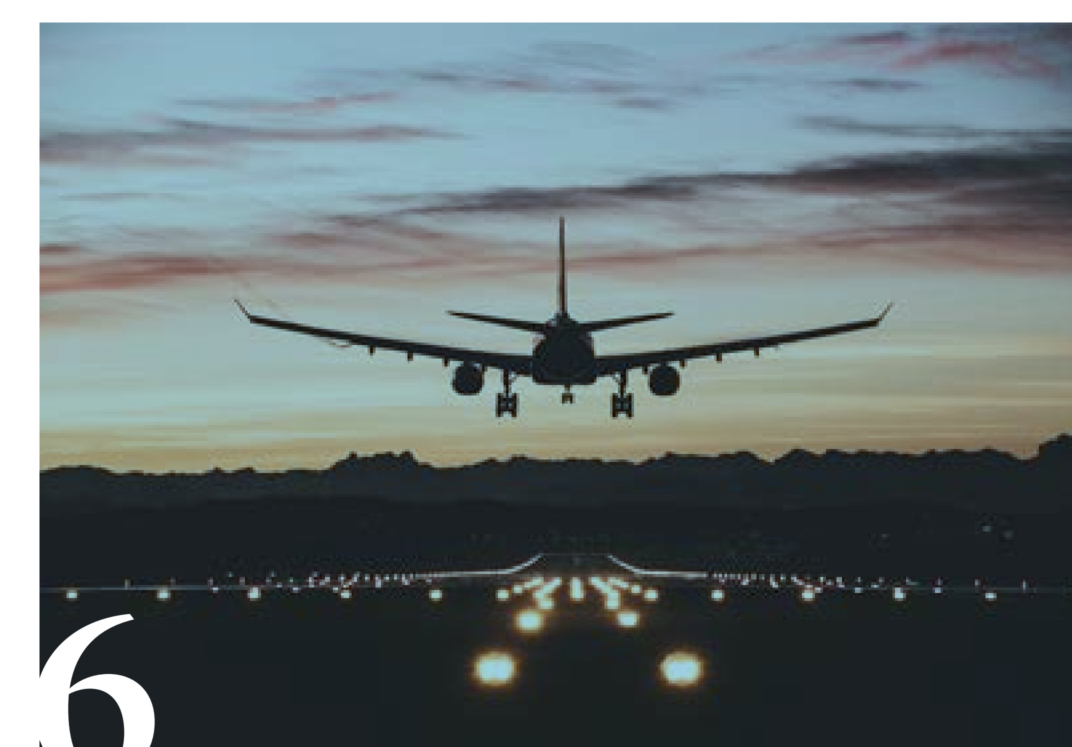
Airlines

This summer, budget airline Ryanair flew 15% more passengers than it did in the summer of 2019. Few in the airline industry expected demand for air travel to bounce back so quickly after the pandemic.

The most visible challenge for the airline industry has been a staff shortage. Employees who were furloughed during the pandemic have not returned to their jobs, especially where many are facing less attractive working conditions that have been imposed by airlines looking to recoup costs.

A less visible issue is a huge shortage of materials and spare parts to build planes and keep existing ones running. When the pandemic hit and the airline industry shut down, a lot of the sites that produced fibreglass and carbon fibre for planes ceased operations. "The furnaces closed down and airlines stored new planes in the desert because they didn't know what to do with them," Wilding says. "When demand for all those materials bounced back, the furnaces had been destroyed and needed to be rebuilt. That's going to take some time."

Building resilience into airlines will need a shift in supply chain strategy. Wilding expects to see a move towards "buying for resilience" over "buying for cost". There will be "A massive increase in scenario planning, because the airlines that had done better scenario planning were much better able to respond to the last two years than those that focused on 'respond and recover' as a strategy," he says. ●



JetlinerImages via iStock

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