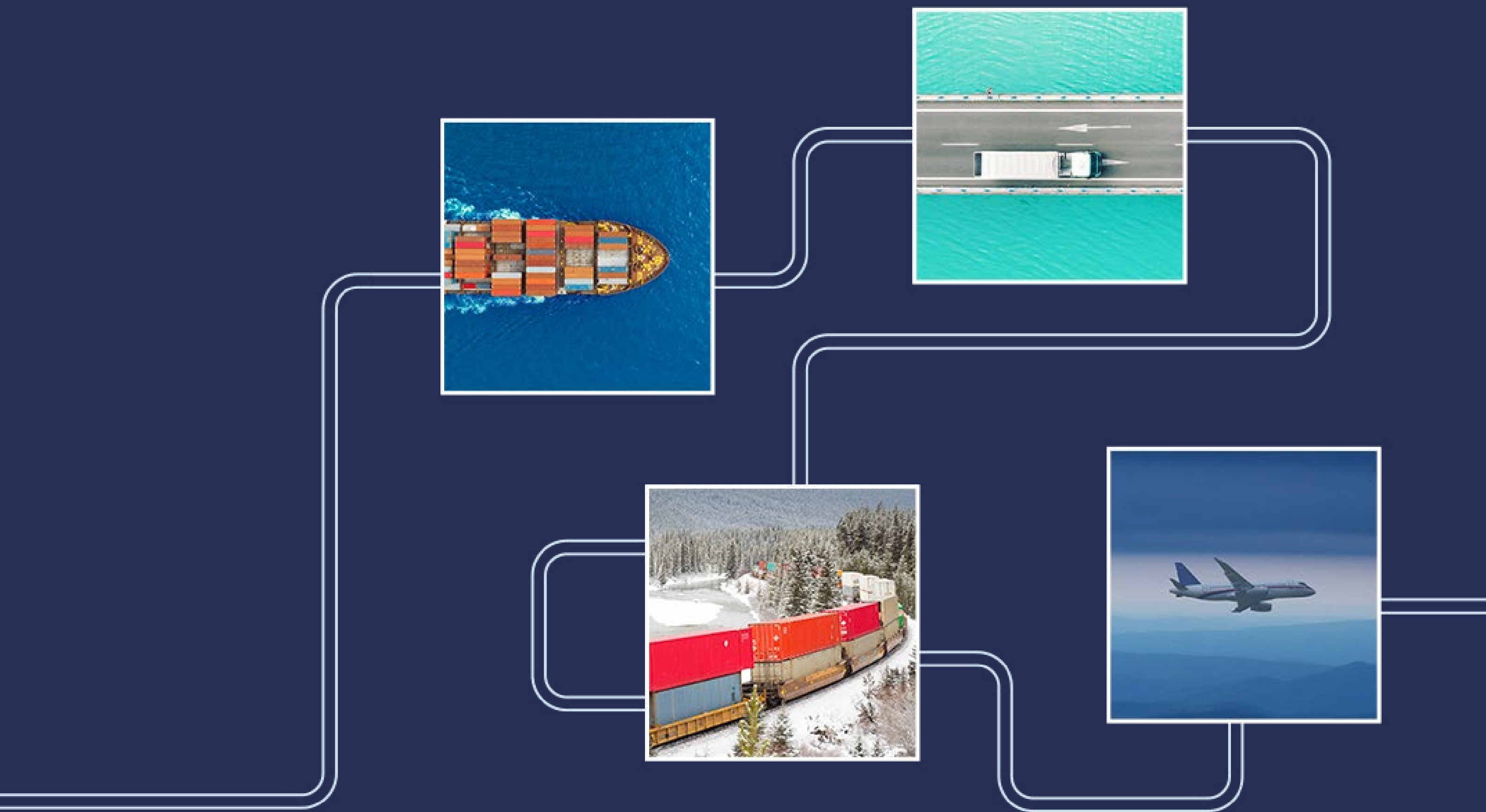
LLOYD'S | wtw

On the move:

Rethinking transportation and logistics supply chains

Part 3: Insurance innovation opportunities



Lloyd's Futureset

Key:

- Client quotes
- Insurance case studies
- Acceleration opportunity with industry partners
- General sector insights

Introduction and key findings

Introduction and key findings

In March 2023, Lloyd's and WTW published a joint report "Loose connections: rethinking semiconductor supply chains", the second in a series of three reports exploring supply chain risk. The report examined the semiconductor sector's risk challenges and aimed to spark product innovation through outlining the opportunities to develop new supply chain solutions. Our final report in the series explores the transportation and logistics industry and its response to supply chain risks as the key mover of the world's goods.

As highlighted in section two of this report, the research shows that while there is a range of risk maturity, all transportation and logistics companies take risk very seriously given the impacts of disruption on their ability to keep goods on the move. There is also clear understanding of forward-looking trends and growing complexity as companies acquire different modes to gain greater control over delivery and in turn inherit their risk landscape and regulatory responsibilities. There were varying levels of understanding of supplier resilience, ranging from high level information only to progressive part sharing warehouses with competitors to pool resources.

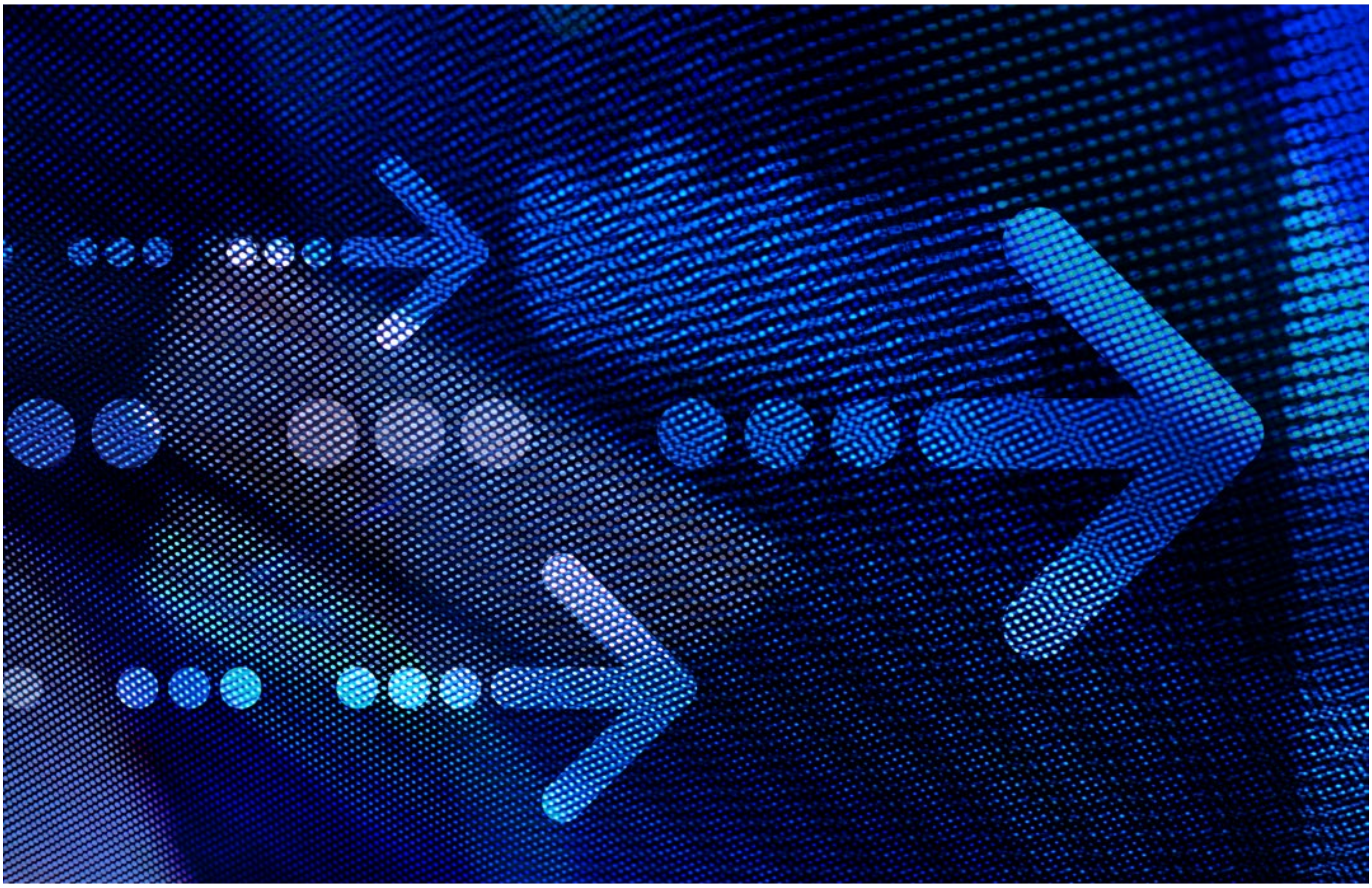
The third and final part of this report, 'Insurance innovation opportunities', aims to provide the insurance industry with a greater understanding of customer needs, protection gaps and potential insurance solutions for transportation and logistics supply chain risks.

- Over 120 transportation and logistics business have been surveyed and interviewed for their insights
- The insurance industry has an opportunity to deepen its long partnership with an industry proactively challenging its supply chain risks to enable global resilience

Building on the findings of our first two reports, we see significant scope for increased collaboration between the transportation and logistics industry and their insurers to consider product development. Importantly, many insurance solutions already exist that transportation and logistics companies are currently unaware of, highlighting a clear opportunity to better communicate the existing supply chain insurance proposition to customers. There are also several areas highlighted by transportation and logistics businesses that represent opportunities for insurers to innovate and grow alongside their clients. This part of the report focuses on exploring these innovation opportunities.

Key findings include:

- **The transportation and logistics industry deal with supply chain risks every day.** There was a range of risk maturity seen across the companies we spoke with – some very advanced in their journeys and others knowing they need to catch up. Interestingly the majority of conversations started with "I'm not an expert on supply chain" and yet these same companies demonstrated deep understanding of their risks. Companies are increasingly realising that supply chains create a competitive advantage and shouldn't be seen as simply opportunities to reduce costs. There is also recognition they can always do more, and transportation and logistics businesses are interested in exploring where they can work with insurers – both on products and risk management
- **There is room for expert, data driven dialogue between the transportation and logistics industry's technical stakeholders and the insurance market** to ensure more effective knowledge transfer that can support innovation and transportation and logistics companies' desires to purchase solutions that better meet their needs. Importantly, solutions already exist for supply risks that transportation and logistics companies were not aware off, but also clear gaps where insurers could look to innovate
- **Enhancing supply chain data is the biggest opportunity for progress and risk and insurance related innovation,** with more information available than ever before to build a view on supply chains, model scenarios, and consider building new insurance solutions. This is where partnerships with third party providers responding to operational efficiencies and market tools and services, such as risk management and supply chain diagnostic tools, can support translation and transmission – therefore accelerating the opportunities for insurers to innovate. Section 3 of this report series also outlines areas where new data is being surfaced and created by industry associations and regulators, where standards are being shaped, and examples of where governments are investing in transportation infrastructure to support national and global resilience



Supply chain insurance awareness and product innovation opportunities in the transportation and logistics industry

Supply chain insurance awareness and product innovation opportunities in the transportation and logistics industry

The global logistics insurance market alone is predicted to hit $70.5bn by 2030, expanding at a compound annual growth rate of 2.8% between 2023 and 2030[1]. To move forwards in supporting the transportation and logistics industry in transferring their risks, it is important to understand the current state of supply chain insurance for the industry and the challenges that have prevented further progress (see **Box 1**).

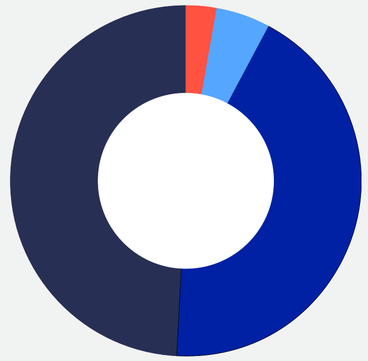
Across our interviews with transportation and logistics companies there was a range of knowledge of the insurance covers available for industry supply chain specific risks – with some companies very familiar with insurance solutions that would meet their needs and others describing perceived 'gaps' where solutions already exist. This has been a common feature across the topic of supply chain – it means different things to every company, and there is a need for all insurers and brokers to reopen conversations specifically on supply chain risks.

All transportation and logistics companies agreed that insurance had an important role to play in helping the sector respond to and manage their risks. In the WTW Global Supply Chain Survey, 92% of transportation and logistics companies said that insurance for supply chain risks was either mission critical or necessary, and 60% shared they felt supply chain risks were covered by specific supply chain insurance. However, this figure was only 17% for business interruption (BI) insurance with 57% sharing they felt they had no specific BI insurance but the risks were covered by other insurance. As well as building greater awareness of solutions there is a clear need for insurers and insureds to clarify what is and isn't covered for supply chain risks, losses and consequences. This is where business interruption reviews and specific supply chain risk assessments will be key cornerstones to establishing clarity.

This is critical, as in the next 3-5 years, 77% said a lack of insurance solutions was among the greatest challenges to addressing their risks and represents a clear signal to the insurance industry that they are a willing industry looking to explore new solutions to meet future challenges with risk transfer.

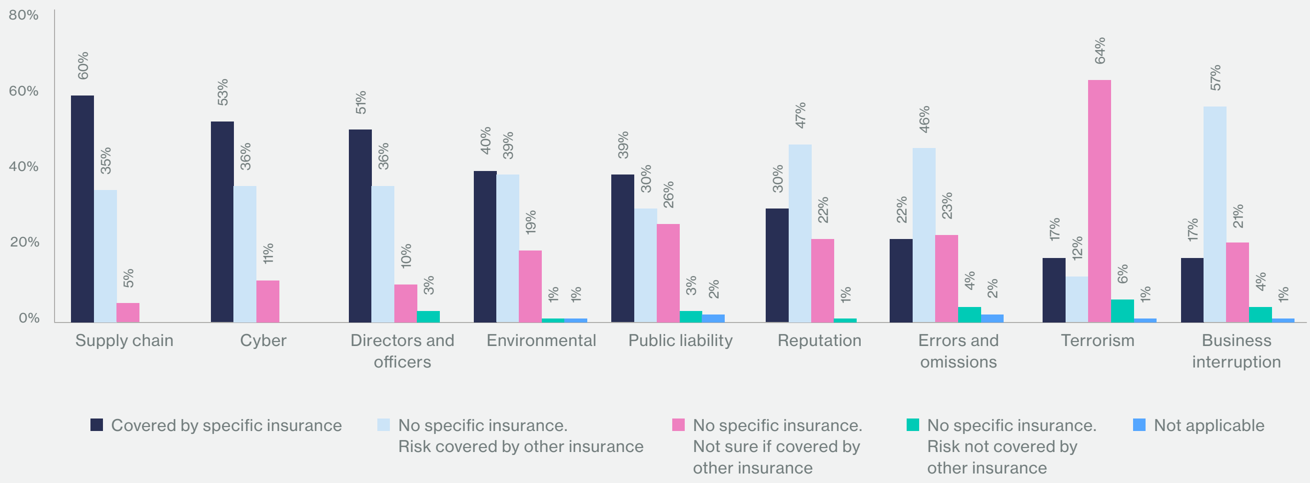
Figure 1: WTW Global Supply Chain Survey 2023 – transportation and logistics companies

What level of priority does your organisation give to insurance for supply chain risks?

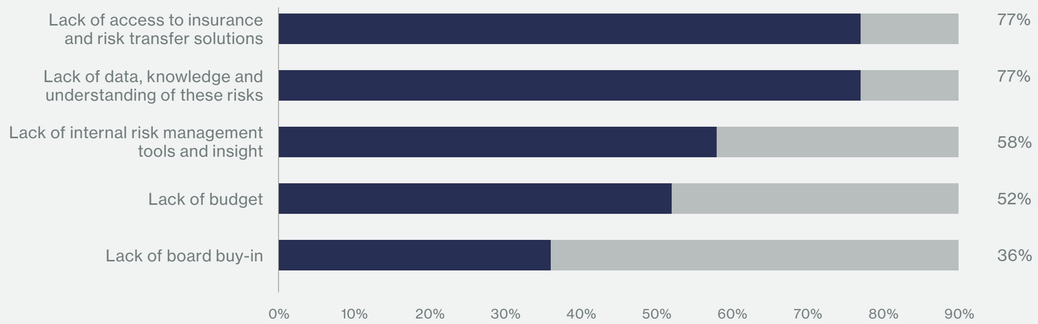


Mission critical; it's must-have cover	49%
Some cover is necessary	43%
Cover is good to have, but not essential	5%
Would not buy specific cover	3%

Transportation and logistics insurance approach



What are the three greatest challenges to addressing your risks over the next 3 to 5 years?



Source: WTW Global Supply Chain Survey 2023, transportation and logistics companies[2]

The transportation and logistics industry are very aware of their supply chain risks and deal with them on an ongoing operational basis. While risk maturity varied at the more strategic level, every company is working on multiple solutions to track, monitor, and surface additional data that will allow them to respond to delays and interruptions. There is a strong interest in working with insurers, with one company commenting:

"We don't want the $200m dollar limit, we want their knowledge and risk understanding."

For many companies, the knowledge insurers hold on risk-based thinking is as valuable as the risk transfer solution.

Current state of the market for transportation and logistics

Box 1: Current state of the supply chain insurance for the transportation and logistics industry

Several products exist in the global insurance market affording some cover for supply chain risks, including business interruption (BI), with suppliers' extensions typically included by endorsement to provide contingent business interruption (CBI) cover, and extending to other policies such as political violence, marine cargo (including Stock Throughput), or cyber can also be purchased to address specific supply chain risks. Within the food and drink industry report it was suggested supply chain risks could be covered under an end-to-end policy given greater sharing of information, and in comparison, the transportation and logistics industry is even broader.

Transportation and logistics supply chains revolve around key routes and large aggregations in the case of large containerships and ports, so insurers are mindful of accumulations and their risk appetites when considering supply chain cover for these key suppliers. In the marine industry alone the combined value of the global merchant fleet increased 26% to $1.2trn in 2021, while the average value of container shipments has also been rising with more high-value goods such as electronics and pharmaceuticals. It is not unusual to see one container valued at $50m or more for high-value pharmaceuticals[3]. The supply chain goes beyond Tier 2 and 3 suppliers which are not always fully known to those in the process but an area where insurers are exposed and where more focus is required to enable insurers to underwrite and provide the policy coverage required where exclusions (such as the exclusions in respect of delay) are limited and at a premium that remains affordable – margins within the supply chain are limited.

Looking forwards, the threat of global sanctions, ESG, inflationary costs, reputational risks and continued supply chain disruptions are all key considerations for insurers. As a result unspecified suppliers limits have been slowly reducing, and currently normal levels are typically around about £5m. Any supplier limit in excess of that would require a bespoke conversation between insurer and insured; however, many markets are prepared to provide limits, with this decision typically driven by robust business resilience arrangements. Insurers are keen to understand how the clients' business actually works, what plans are in place to protect it, and how they can support (and ultimately reduce their exposure) with risk management, broker intervention, or insurance products.

Some insurers are now looking to survey key suppliers in order to maintain a level of cover previously provided, with the demand for information around primary and secondary suppliers intensifying as a result of significant losses. When conducting BI reviews, increasing scrutiny is being placed on supply chain resilience with particular attention paid to extending indemnity periods. Where insurers want to see Construction Occupancy Protection Exposure (COPE) information and this results in additional requirements (i.e. fire detection, sprinkler systems) the company is not always able to meet demands due to landlord and/or CAPEX restrictions. Companies must work with their broker and insurer to agree other methods (warehouse location, layout, activities) that could reduce risk to ensure coverage.

A partnership between insurers and brokers and their mutual clients can facilitate clear information sharing. This can provide a greater understanding of the clients business and needs and can help to ensure values are declared and replacement costs calculated, with added costs accounted for, like labour, property costs) and inflation to provide an insurance solution that the client needs at a competitive and sustainable premium. Additionally, the availability of new locations and/or replacement machinery/ equipment lead in times must be considered. All parties need a common understanding of risk, exposure and coverage needs.

Barriers and opportunities

This research identifies several key barriers to solve that could help to address current protection gaps in transportation and logistics supply chains:

- There is a diverse range of supply chain risk maturity across the transport and logistics industry, with leaders taking a more strategic approach while others focus on operational aspects. However, all companies are working on digitalisation of their operations and have a strong desire to do more to manage their risks. Insurers are seen as key sources of information and transportation and logistics companies would like to work with them – in turn they hold a wealth of insights that can support risk understanding
- Awareness of insurance solutions varied across the industry, with many companies describing supply chain gaps where products already exist. Having an insurance-based conversation on supply chain as part of our interviews allowed new areas of interest to surface and this represents a key opportunity
- Following on this theme, awareness of Alternative Risk Transfer (ART) solutions ranges across the industry transportation modes. They are still relatively new to the market and depend on several data factors which can be difficult to articulate or quantify. In addition, where ART solutions are structured, the cost may be prohibitive for customers with one airline highlighting a lack of perceived value for the expense. However, gaps were described where solutions are being structured and could be supported by various industry data gathering initiatives
- Similar to the semiconductor industry, the transportation and logistics companies we spoke with feel that an end-to-end supply chain solution doesn't exist or is seen as too difficult to procure – although they also highlighted the value of other standard insurance coverage they purchase. At the same time, risk mature transportation and logistics companies mirrored semiconductor company commentary around a lack of understanding of the extensive supply chain risk management practices undertaken by businesses in the sector and felt that insurers have been slow to the needs of the sector and its robust management
- In many instances, insurance solutions are already available but not fully understood or valued by customers. Building on this, when asked to provide the type of coverage, gap fillers or extensions that transportation and logistics companies typically seek, insurers often ask for significant volumes of information to enable a full consideration of their risk appetite and availability of capacity. As seen across the other industries explored in this series, a factor behind this appears to stem from legacy concerns around historic supply chain losses. A thorough assessment of existing pre-conceptions is therefore important to enable progress around supply chain insurance

To help ensure they are able to receive the cover they are seeking, companies should work with their insurers to understand their business and associated risks, and any risk mitigation activities undertaken such as business interruptions reviews, supply chain mapping beyond Tier 2, and risk consultancy. These activities and the subsequent discussions with insurers can be fully supported by their brokers. Indeed, there is already expectation from clients that their brokers and insurers need to work together more closely to support mutual clients' needs and reduce doubt when claims occur.

Where do transportation and logistics companies indicate they would like support?

The transportation and logistics companies we spoke with recognise supply chain visibility and understanding is an issue, but also want greater support from the insurance market to fill some of the gaps they see in the existing coverage and at a premium that is sustainable. One key comment centred around the fact that insurers often break risks down into lines of business and individual products, which can result in gaps in their coverage. This raises a question for insurers around the way they face off to clients' increasingly complex businesses. Digital platforms could potentially offer an opportunity to assess a company in its totality and offer a holistic response. In the short term, there is clear interest from businesses in the sector in risk transfer products that can meet the challenges that stretch beyond the capacity of their own risk management, a strong desire to work with insurers on risk management, and brokers on being the link translator between them and insurers.

There is an opportunity for the industry to develop new defined solutions and end-to-end supply chain insurance solutions specific to the transportation and logistics industry to give businesses more confidence in navigating the uncertain landscape. One of the more readily apparent opportunities could be an A to B Stock Throughput solution. While Stock Throughput policies do exist, the complexity of the supply chain denies the ability of a sole insurer to provide the A to B solution companies may require. There is deep expertise in the market that can be used to increase knowledge and support innovation, and there is clear interest from transportation and logistics businesses in solutions that meet their needs.

The following risks faced by the business in the transportation and logistics industry are currently not fully addressed by the insurance industry, and could represent a development opportunity for the insurance industry:

Scale of innovation required for each risk

Least → Most

Wording improvements, further specified cover

Opportunity for insurers to produce specific wordings that cover supply chain risks. Examples mentioned included:

- **Cyber:** this was also an area raised by semiconductor companies, with an opportunity to develop specific supply chain cyber wording relating to interdependencies and to introduce common ransomware definitions, including menu of coverage options. Mature companies also highlighted the desire for a cyber coverage for their contractual liabilities
- **Denial of access:** opportunity to clarify wording around access denial restrictions to reflect supply chain considerations e.g. transport access to manage what happens in the event of denial of access, with examples of being able to remove PPE from a warehouse during COVID-19
- **Stock throughput:** opportunity to create transport and logistics industry wording into stock throughput and property policies to reduce grey areas whilst goods are in transit and storage

Supply chain insurance

Transportation and logistics companies would like a mainstream, global supply chain product or A-Z journey policy. Currently there is no single solution, although stock throughput solutions could form the foundation point to review supply chain risks and expand coverage. Further specific areas where gaps were highlighted along the transportation chain included:

Tier 2 and below suppliers

As with food and drink and semiconductor companies, transportation and logistics companies highlighted existing gaps around Tier 2 suppliers and below. There remains unknown risks for these suppliers, with need to be assessed and managed to provide comfort to insurers. Partnerships with technology providers could help to solve this challenge by bringing greater visibility to the supply chain.

Mode change

Specific to transportation and logistics companies, the potential gaps in coverage when cargo enters or exits different modes in the supply chain were highlighted as opportunity areas for insurance innovation. For example, when cargo is being loaded or unloaded from trucks or when trucks are entering or leaving facilities, and when cargo stops in transit from warehouse to warehouse. As digitalisation advances the ability to electronically ringfence where accident occurs/where goods are will grow. Greater visibility of risk across insurance policies through e-broking solutions could also reduce grey areas.

Trade disruption insurance for freight forwarders

Within the industry, freight forwarders we spoke with raised "there is no one trade disruption insurance policy specifically designed for freight forwarding risks/trade". This is a gap insurers may want to explore alongside data partnerships through the Lloyd's Lab and other market incubation centres.

New technology

Looking forwards, detailed understanding of changing risks profiles will be needed to understand a series of new technologies: autonomous vehicle risks, electric vehicle (EV) charging points as a potential handoff point between stakeholders, and intellectual property risks as more data and IP is created from digitalisation and automation. This will require a combination of risk management and insurance.

Business interruption innovation

As seen with food and drink companies, a number of transportation and logistics companies we spoke with mentioned decisions to not pursue business interruption cover, as the source of interruption was felt to be too remote for insurance cover and there was a high burden of time and information required. There is a desire from customers for insurers and brokers to work together to simplify questions and innovate product offerings, including non contingent BI cover.

Public private partnerships and pooling for route blockages

The blockage of the Suez Canal and the need for a clearly needed predetermined plan of action in the event of similar events in future was mentioned by many interviewed during the research. There are already a number of successful public-private partnerships, at both a country and regional level, seeking to improve societal resilience to climate shocks and offering innovative mechanisms to transfer more of the peak risks to the re/insurance and capital markets – these could serve as a model for supply chain risks.

Total cost of risk understanding to provide balance sheet protection

As heard with semiconductor companies, mature transportation and logistics companies would welcome the opportunity to explore solutions with insurers and wider capital markets. Having the ability to smooth balance sheet drains would be highly valued, with concerns around business resilience mentioned if an event happened at a weak time of year. This is where insurers and brokers can work together to support total cost of risk analysis to help companies assess their appetite, ability to retain risk, and estimate the most efficient use of capital to manage supply chain shock events.

Existing solutions that keep transportation and logistics company supply chains on the move

Lloyd's has a unique position and opportunity to bring together communities, businesses, insurers and governments to find solutions to the systemic risks that threaten our shared future. A number of solutions already exist in the Lloyd's market and broader insurance industry that help to meet transportation and logistics supply chain risks.

Data-driven freight protection with Loadsure

Freight booking is increasingly digitized, post-pandemic - more than 63% of global freight is now booked via digital workflows and yet Loadsure estimate that more than 60% of freight in transit is under or uninsured, owing to traditional insurance processes being unable to profitably serve supply chain SMEs. Loadsure identified a gap to leverage industry data and industry-leading tech to seamlessly integrate insurance into everyday supply chain processes, ensuring freight - and ultimately, balance sheet - protection.

Loadsure is a UK-based InsurTech MGA and Lloyd's coverholder that offers data-powered, AI priced risk management to the freight community. This is achieved by integrating Loadsure insurance intermediary workflows (through a white-label portal) or into any transportation platform, from Transportation Management Systems (TMS) and load boards to freight marketplaces and booking systems.

Established in 2018 by a number of industry experts in the transportation and insurance market, Loadsure uses machine learning, historic and real-time customer data to accurately underwrite risk and deliver dynamic pricing. A premium can be generated based on a specific shipment on a specific day for a specific transit in under a minute, which levels the playing field in terms of access to quality cover for organisations of all sizes – something SMEs were struggling to access.

> *"We used decades of industry data to build the foundations of our model. Now – as data continues to flood in – we leverage it to inform our rating model, running real-time adjustment to optimise accuracy and make freight insurance sustainably profitable for the first time. High-resolution data is the key to accurately pricing any risk."*
>
> **Johnny McCord**
> CEO and Founder, Loadsure

Risk mitigation is at the core of Loadsure - as long as there is risk, insurance is an essential balance sheet protector. Loadsure's data-driven approach enables much more; bringing "holistic freight protection" to the supply chain. Clients have access to valuable dashboards that give insights on where they are struggling and areas to improve – enabling them to make informed business decisions that reduce the risk of losses occurring in the first place.

Loadsure is developing its technology at rapid pace and will soon offer loss run reports, where brokers will be able to review account performance 60 days in advance of a renewal, enter exposure data, generate custom quotes tied to account-specific performance, and bind coverage in seconds. Loadsure will also provide customers with direct portal access, so certificates, policy documents and claims are available.

[1] Non-Vessel Operating Common Carrier

Brokers	Freight	
✓	✓	**Thames:** On demand cargo insurance that supports per-shipment quotes and is targeted at meeting the product gaps of owners, distributors of goods, freight brokers, NVOCCs[1], freight boards, manufacturers, logistics providers, freight forwarders, and shippers
	✓	**Orinoco:** Shippers interest insurance with limits of up to $2m streamlines time-consuming policies and is targeted at meeting the product gaps of freight forwarders, NVOCCs, logistics companies, shippers and freight boards
✓		**Danube:** enables insurers to generate instant ocean cargo insurance quotes for their small to mid-size enterprise customers, including: manufacturers, retailers, distributors and wholesalers
✓		**Huron:** is an add-on product for ocean cargo and stock throughput insurance that offers coverages of up to $10m per locations and for goods in transit and is targeted at meeting the product gap needs of small to mid-size enterprise customers, including: manufacturers, retailers, distributors and wholesalers

Risk insights as a bridge across insured and insurer from ClearConnect Solutions

Transportation company leaders are faced with a myriad of challenges, not the least of which is managing all aspects of insurance and regulatory compliance. Scott Grandys, Co-founder and President at ClearConnect Solutions had a long history in the transportation, freight, and final mile industries and witnessed first-hand an inevitable lack of transparency in the transportation insurance space “when underwriters in the U.S. have been tasked with assessing risk, the process is often lengthy, muddled, and overtly manual in a digital world”. Through its proprietary technology, ClearTrac, Grandys aims to give stakeholders in the transportation and insurance industries a real-time view into the risk associated with drivers and fleets out on the road.

For fleet owners this includes risk and compliance monitoring by integrating data across: monitoring services, telematics, and regulatory data surrounding safety management systems, inspections, crash and fitness performance. These data points can be used to manage initial and ongoing risk mitigation strategies. After taking part in cohort 8 in the Lloyd’s Lab, ClearConnect Solutions is continuing to build out services to allow the transportation insurance market to recalibrate the risk scoring process – giving all stakeholders the ability to monitor risk with quality data in real-time against the underwriting requirements throughout the term of coverage.

In April 2023, ClearConnect Solutions announced a partnership with TruckSpy to combine its risk management and compliance technologies with TruckSpy’s driver dash cam. Together, their solutions will make a real impact on the safety of your fleet. Federal Motor Carrier Safety Administration estimate the average cost of a commercial truck accident (with one person who is injured) to be $148,279[4]. By capturing positive and negative driving events through the dash cam and sending audible safety alerts to drivers in real-time, there are immediate risk mitigation actions and fleet owners and safety managers are able to leverage the insights into their safety programs.

Simplifying insurance quotation with eCargo, Travelers

Travelers eTrade Cargo Insurance has been designed to meet the needs of UK domiciled groups who trade or ship goods internationally and domestically by streamlining the quotation process. eCargo is an evolution of Travelers traditional cargo placements designed to start conversations with a reduced online question set, cutting back on labour-intensive paperwork, as documentation is issued at the point of quote and immediately upon receipt of hold covered instructions.

eTrade Cargo policies can also be bespoke if needed, with clients able to tailor their cover to suit their particular needs including facultative, annual and stock throughput risks and is targeted at meeting the product gaps of: importers, exporters, manufacturers, retailers, wholesalers, suppliers, sporting associations/teams, media and entertainment industries.

Stephen Smyth, managing senior underwriter at Travelers Europe estimated that “62% of requests can be quoted directly, saving time and allowing bespoke conversations with clients where more information is needed to evaluate and bind a risk”. This might also include conversations offering risk mitigation advice where in one case an insured was advised in ways to package and label their complex machinery to prevent the risk of forklifts being used in places that likely would have resulted in it tipping over.

Cover is designed for businesses who import, export, retail or wholesale goods to protect their goods from loss or damage to a consignment during transit while being carried by land, sea or air. Coverage includes:

- Up to £5m with a minimum level of cover of £1m per any one conveyance, providing clients with peace of mind
- Cover for “All Risks” perils, such as fire, theft, sinking, washing overboard and road traffic accident
- The following covers can also be selected if required:
  - Exhibition and Demonstration Risks
  - Engineers’ Tools, Stock, Equipment and Salesman Samples
  - Ability to add stock throughput coverage

Building on deep industry expertise, Beazley Cargo

The global logistics market has been affected in various ways in recent years, from disruption to supply chains to the challenge of meeting the growing consumer demands of online shopping and home delivery. Through their marine insurance Beazley have been responding to understand and meet the numerous challenges faced by the industry. This includes insurance, advice, risk management, underwriting and claims expertise that the maritime industry needs as it adapts to the rapidly changing geopolitical landscape.

Examples across transportation and logistics includes:

- **Ports and Terminals Liability:** Protection for companies involved in the carriage, handling or storage of cargo against legal liabilities arising out of the conduct of their business, shore-side operations for the handling and storage of cargo up to $50m. Cover will normally include: liabilities for loss or damage to cargo; vessel and equipment liability; removal of wreck and pollution; errors and omissions; fines and penalties; third party liability; loss or damage to owned equipment; real property; legal and defence costs; and business interruption
- **Transport & Logistics Operator insurance:** protects companies involved in the movement of cargo against legal liabilities arising out of the conduct of their business. Cover will normally include: loss or damage to cargo; errors and omissions, third party liabilities; fines, penalties and duty; general average and salvage guarantees and contributions; on-forwarding costs; consequential losses; pollution; legal costs and defence expenses; up to $20m
- **Cargo insurance:** general cargoes and specie from both London and Singapore, offering protection for goods while in transit (by land, sea or air) and in store during the ordinary course of transit or long-term storage. Coverage and losses are subject to the terms and conditions of the actual policy up to $75m, for a wide range of general cargoes with emphasis on oil, general commodities and general machinery

Alongside this Beazley also works with dedicated in-house marine engineers to advise and respond to events as they unfold:

> *"On hearing that a client's vessel was listing we immediately deployed our in-house marine engineers to assist. With the support and technical guidance of our engineer the vessel was stabilised (she had been listing heavily from a grounding and was close to being a total loss) and the cargo on board was saved from further damage. Towage was organised whichallowed the vessel to successfully reach her destination. With the benefit of having our engineer 'on the ground' for more than 16 days, Beazley's claims managers were able to directly understand the client's needs, resulting in prompt payments of funds."*
>
> **Tim Garrett**
> Head of Cargo & Specie

Looking forwards, moving to new technologies will undoubtedly bring significant opportunities but will also present new risks. During the fuel transition phase and in the exposure the industry is increasingly facing to cyber attack, the need for risk management and mitigation will become increasingly important. Whilst the current economic and geopolitical uncertainties create pressures that need constant vigilance and adaptability.

Responding to gaps with Chaucer CyberLink Marine Consortium

Cyber is one of the most complex and critical risks threatening national security and businesses today. Tackling this ever-evolving threat requires continued action and collaboration. In 2018, Chaucer collaborated with the Lloyd's market to clarify and better cover the gap from silent cyber. In 2019, Chaucer launched the CyberLink Marine Consortium provides marine businesses with coverage for up to $60m for their cyber risks, including physical damage costs to their vessels caused by a cyber-attack.

The impact of cyber events on transportation and logistics companies can have knock-on consequences along the supply chain:

> *"A ransomware event impacted a third party partner responsible for conveyance of goods. The lack of basic business function led to a significant period of 'darkness' in terms of the current state and whereabouts of cargo"*
>
> **Alex Stubbs,**
> Deputy Class Underwriter, Chaucer

Alongside the policy, post-binder risk services include a cyber security risk assessment with a third-party services company to highlight risk understanding, support resources prioritisation and investment, and provide a view on peer benchmarking. Following a security compromise or cyber-attack, CyberLink also responds with:

- Risk management services, to understand gaps in the cyber defences and how best to prepare the Insured against the current cyber threats
- Physical Damage cover, to repair vessels and assets on board following a cyber-attack
- Data breach and Incident Response, providing sector specific cyber specialists, to investigate and control the cyber-attack
- Business interruption, with coverage extending to key service providers, CyberLink provides indemnity when a cyber event halts the business or a business dependent party
- First and Third Party Legal and Professional Services, to navigate relevant legal or regulatory frameworks, including expenses to notify any affected or potentially affected third parties
- Social Engineering, coverage to protect the Insured when employees are targeted, leading to unlawful access to systems and transfer of money
- Cyber Extortion cover, quick response and coverage when a ransomware event drives business to a halt

Further coverages include; system failure, reputation management, media liabilities, PCI DSS and digital asset restoration.

Meeting ship owner, ports and terminals needs with WTW CyNav

CyNav is a cyber solution specifically designed by WTW cyber and marine experts to provide a tailored cyber cover for shipowners and ports and terminals. It addresses the growing need for an explicit marine cyber solution. This means, insureds do not need to resort to pre-existing cyber products, which may be too generic for their specific requirements.

Shipowners are increasingly reliant on technology for all aspects of a vessel's operation and their shore-side activities and ports and terminals are increasingly dependent on technology across all aspects of their operations. This dependency can leave ports and terminals exposed to financial loss should that technology become unavailable, whether due to malfunctions, human error or cyber-attacks.

As inter-connectivity of that technology increases, cyber security has become a concern. The data protection and cyber security regulatory landscapes affecting shipowners are developing at pace. The shipping industry is therefore under greater obligation to comply with regulations or suffer potential financial consequences. As the financial impact of cyber incidents continues to increase, and the 'silent cyber' cover in traditional marine cover is being reduced, CyNav's clear and affirmative cyber solution is designed to plug any cyber gaps left behind.

CyNav for ship owners provides cover for:

- Loss of income due to business interruption (including any interruption to third-party IT service providers)
- Crisis management expenses (including IT forensics, legal and PR fees)
- Hull and machinery damage
- Loss of hire due to hull and machinery damage
- Loss of hire due to vessel detainment

CyNav for Ports and Terminals provides cover for:

- Business interruption loss
- Business interruption loss due to IT supply chain vulnerabilities
- Property damage
- Crisis management expenses
- Property damage liability
- Wrongful delivery of cargo
- Regulatory actions (where insurable)

There is also interest from customers in Alternative Risk Transfer (ART) solutions, including parametric products, which offer an opportunity to design bespoke solutions for businesses' supply chain risks, subject to a relevant, reliable and impartial index. In the food and drink industry report we covered Parsyl who have been innovating in cold chain cargo policies to offer insurance alongside accessible and shareable insights across all modes of transit and storage improves accountability with customers and partners.

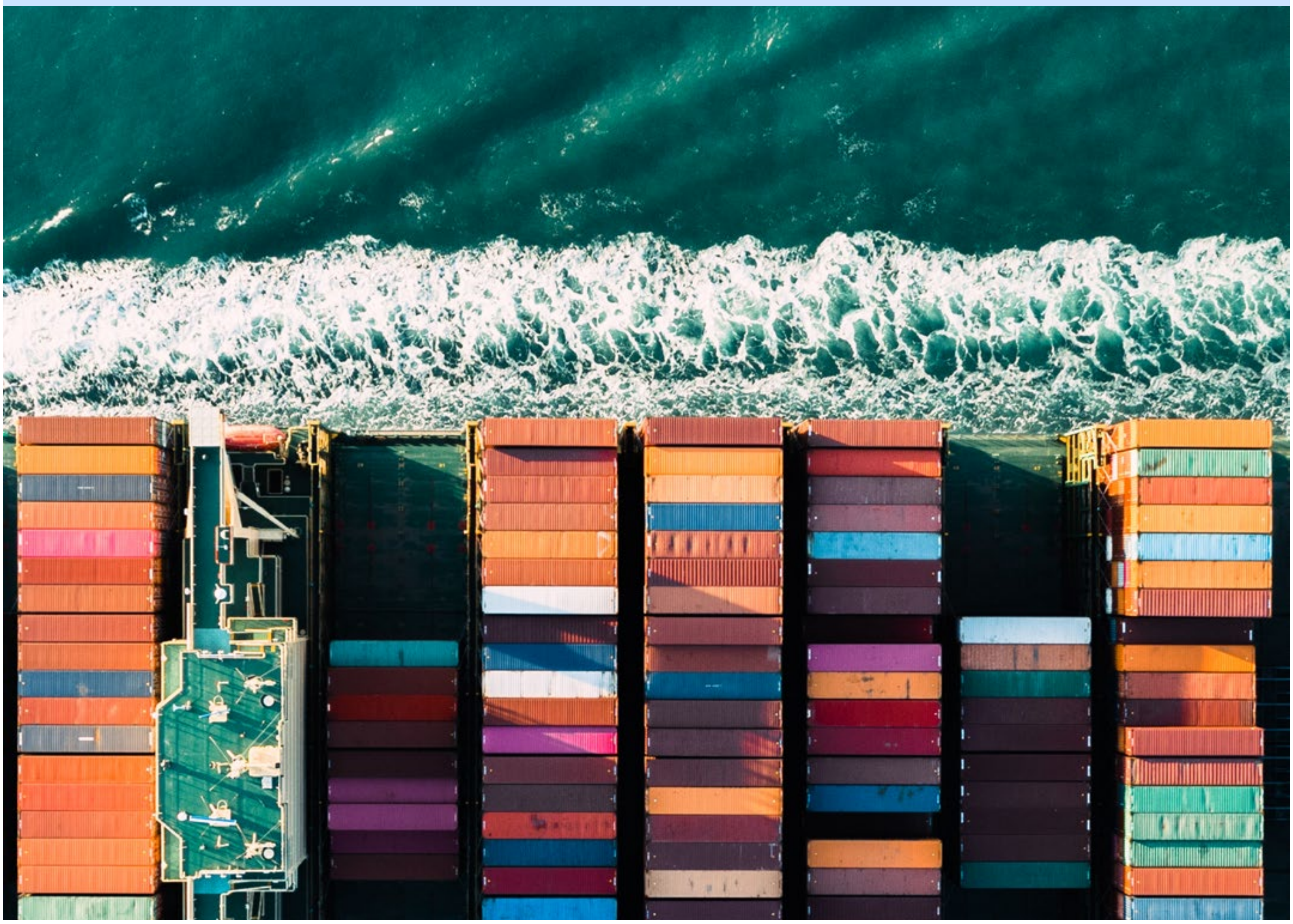
Innovation cold storage with Parsyl

Parsyl is the only combined cargo insurance and supply chain monitoring solution on the market, leveraging granular supply chain data to deliver more comprehensive insurance coverage.

In April 2023, Parsyl launched the Essential Consortium led by Parsyl Syndicate 1796[6], the first mission-driven syndicate created in Lloyd's 330-year history. Essential is the first cargo consortium focused specifically on essential goods, including the foods we eat and the medicines we need. Essential also serves as supporting capacity for the Global Health Risk Facility (GHRF), an alliance of insurance and technology partners providing cost effective insurance coverage and risk mitigation solutions for vaccines and global health commodities across the globe.

Parsyl's insurance solutions include ColdCover, GHRF, Syndicate 1796 and Essential. Coverages are designed to meet gaps across a range of cargo and supply chain coverages, including stock throughput, transit, stock, excess stock, freight liability shipper's interest, cargo legal liability and warehouse legal liability.

Parsyl insures goods in foods, pharmaceuticals and life sciences industries as well as logistics participants within the perishable supply chain. The Essential Consortium is supported by Lloyd's syndicates including SCOR 2015, RenaissanceRe Syndicate 1458, and other leading smart trackers[7]. Parsyl graduated from the inaugural Lloyd's Lab in 2018.



Designing for the gap in delays and interruptions with Otonomi

Otonomi is a specialised platform for parametric cargo insurance designed to address the limitations and exclusions found in traditional cargo policies. Traditional policies fail to provide coverage for the business interruptions and economic losses caused by delays in the supply chain. These delays can be unpredictable and arise from factors like adverse weather conditions, air traffic congestion, equipment malfunctions, and labour shortages. The potential economic losses resulting from such delays can include loss of use, decreased sales, reduced value, expenses for alternative routes, penalties, fees, and other consequential damages. Otonomi's innovative approach aims to bridge these gaps and provide comprehensive coverage for these specific risks.

Every year, an average of 61% of cargo flights suffer shipment delays. Otonomi's Cargo Delay Insurance compensates shippers of any critical cargo, for delays and loss of use for any delay greater than 12 hours with limits of up to $100,000 per conveyance.

> *"Each time there's a shipment or a cargo delay, our blockchain infrastructure detects the delay of shipment, communicates with a smart contract which automatically adjudicates in 45 minutes – instead of 45 days – and processes the digital payments directly to the customer in minutes,"*
>
> **Yann Barbarroux,**
> CEO of Otonomi

Policies are provided as an embedded insurance offering which can be administered per shipment, with API-based infrastructure to both bind and trigger pay-out policies. Each policyholder has a digital wallet which is used to resolve and pay-out claims quickly. Claim payments can be used to cover increased costs of delays, loss of use, diminished value, property damage deductible, applied to underinsured property, and cover any contractual/penalty obligations. Initially, coverage for is available for air shipments with planned expansions into Ocean and Ground transport in the near future.

In March 2023, Otonomi announced the partnership with Greenlight Innovation Syndicate 3456 to act as a platform provider for a Parametric Cargo Insurance Program. The programme is aimed at bridging the $10bn gap left by global supply chain delays across sectors.

> *"At Otonomi, we are firming up our footprints in unchartered territories when it comes to providing a complete overhaul of the autonomous provision of insurance, in addressing the problems of an industry screaming for innovation. It is an amazing opportunity for the logistics customers as they are leveraging aggressive tech and predictive analytics to recoup vital capital and protect their liability risks."*
>
> **Yann Barbarroux,**
> CEO, Otonomi

Acceleration opportunities

As well as insurance industry acceleration opportunities, there are technology companies innovating with the sector in business resilience that could serve as partnership opportunities to fill data gaps.

Many transportation and logistics companies mitigate supply chain risk as far as reasonably practicable, but there will be elements of risk they cannot totally control, e.g. will a supplier of a supplier suffer a property damage loss the aggregate effect of which is a carrier disruption? Many transportation and logistics companies will lease premises and vehicles with increasing costs from the lease providers and landlords being passed onto the transportation and logistics companies. Most businesses do their best to reduce this Tier 2 and deeper risk as far as possible by identifying and qualifying secondary suppliers. In the transport sector, contingencies could include measures such as placing alternative carriers on call off contracts, (either formally or by way of reciprocal agreement), introducing additional buffer stocks e.g. fuel or simply identifying alternative routing options.

Building confidence with a transparent supply chain picture

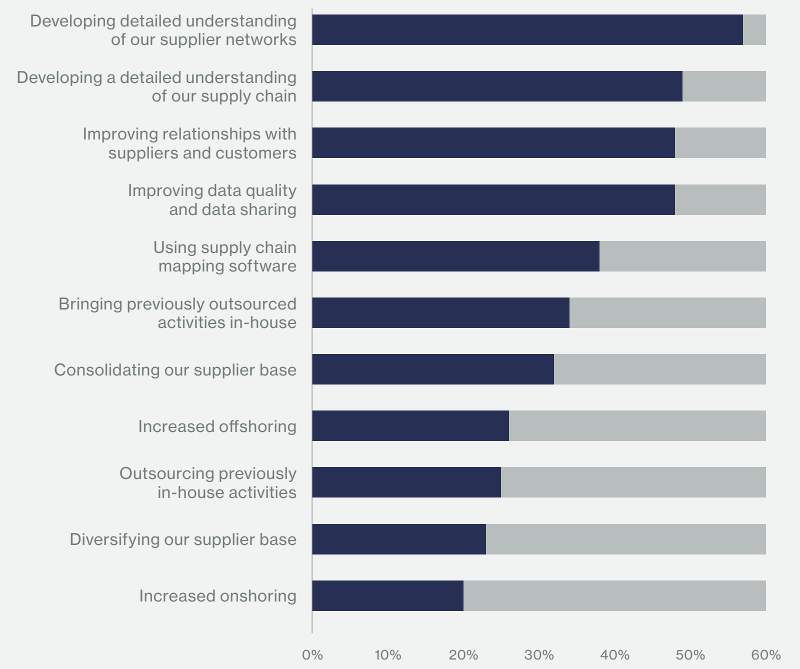
Access to reliable, quality data underpins underwriters' ability to quote for a risk and has long been a barrier for both clients and insurers. But that is changing and action is concentrating in key areas. The WTW Supply Chain Survey (2023) found that 81% of transportation and logistics companies have either identified all the data they require and have robust processes in place to gather it or are establishing those processes now – 11% higher than semiconductor companies. 57% of those surveyed are developing detailed understanding of their supplier networks and 48% are improving relationships with suppliers and customers to do that. When asked about where they were investing focus in their supply chain management, 30% said they were focusing on their facilities infrastructure, loss control and security (30%), freight costs (23%), and insurance risk transfer (17%).

> We have created an in-house product to track shipments for our customers while in transit. We also work with outside consultants/technology companies on supply chain and compliance advice.
>
> **Global end-to-end transportation company**

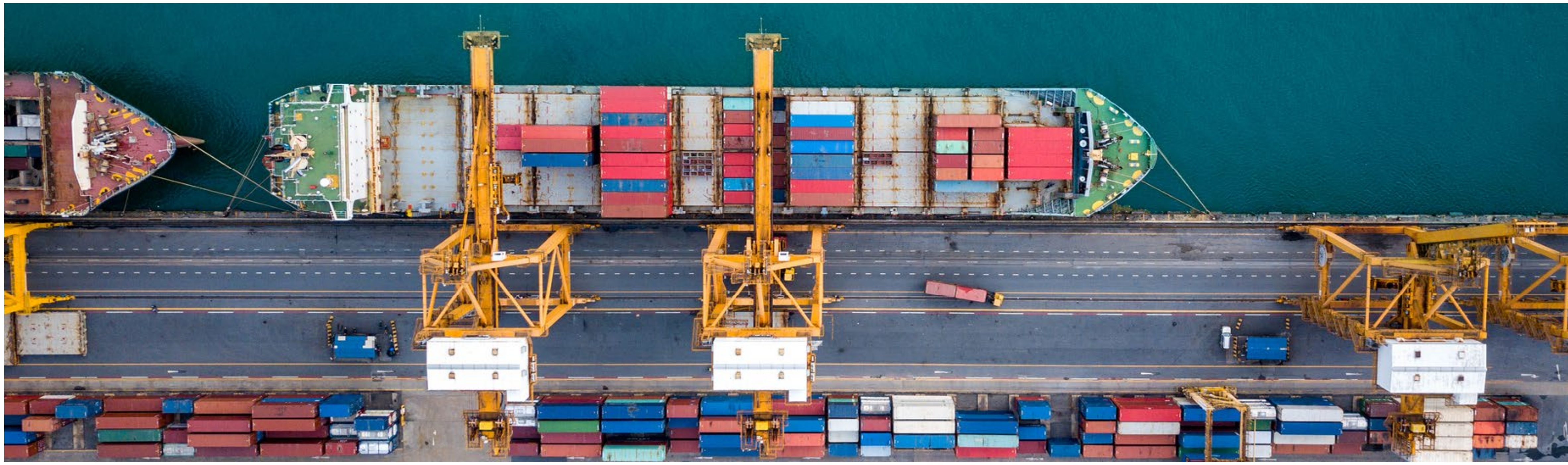
> We've built an internal tool showing every truck loading and unloading in our network.
>
> **Regional trucking company**

> The only visibility in Tier 2 is from the press. But we also try build relationships from direct communication at conferences or at company updates.
>
> **Mode specialist, Global transportation company**

Figure 2: Measures with greatest impact on managing supply chain risks



Source: WTW Global Supply Chain Survey 2023, transportation and logistics companies

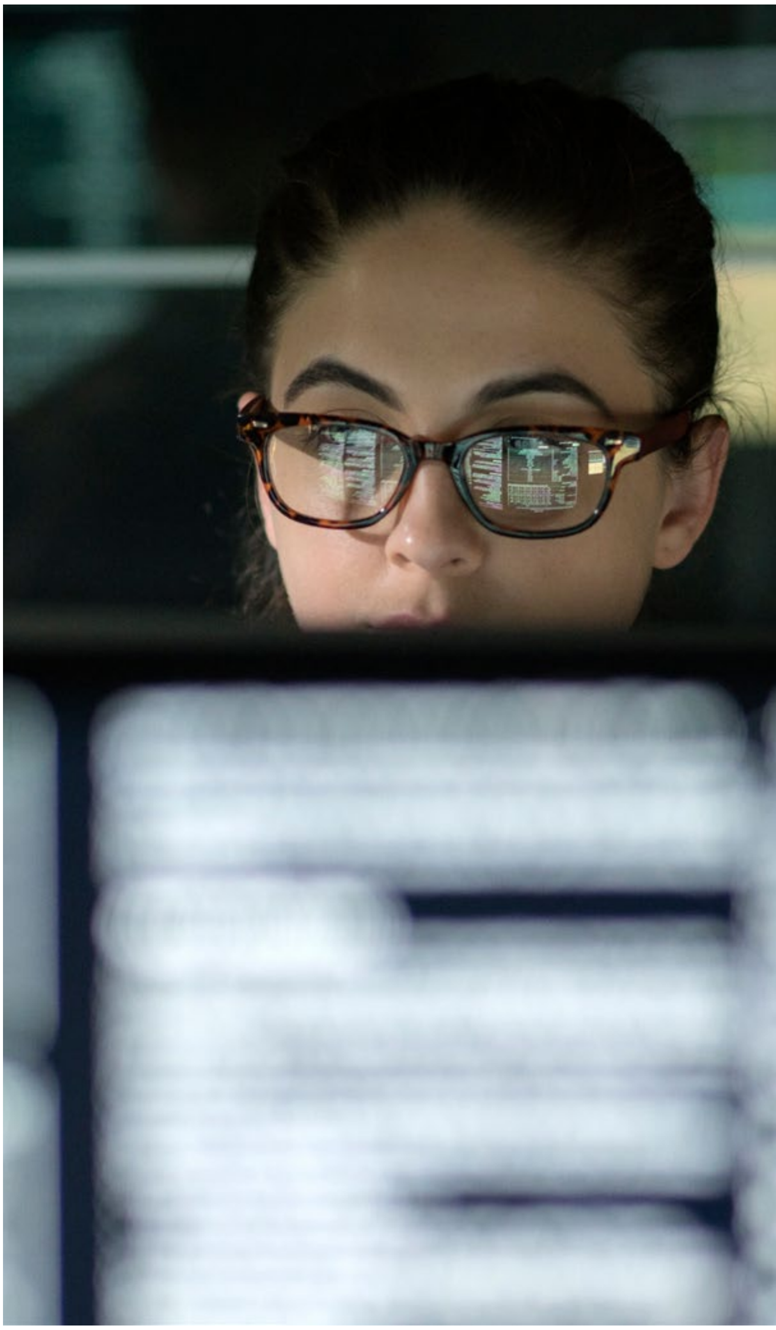


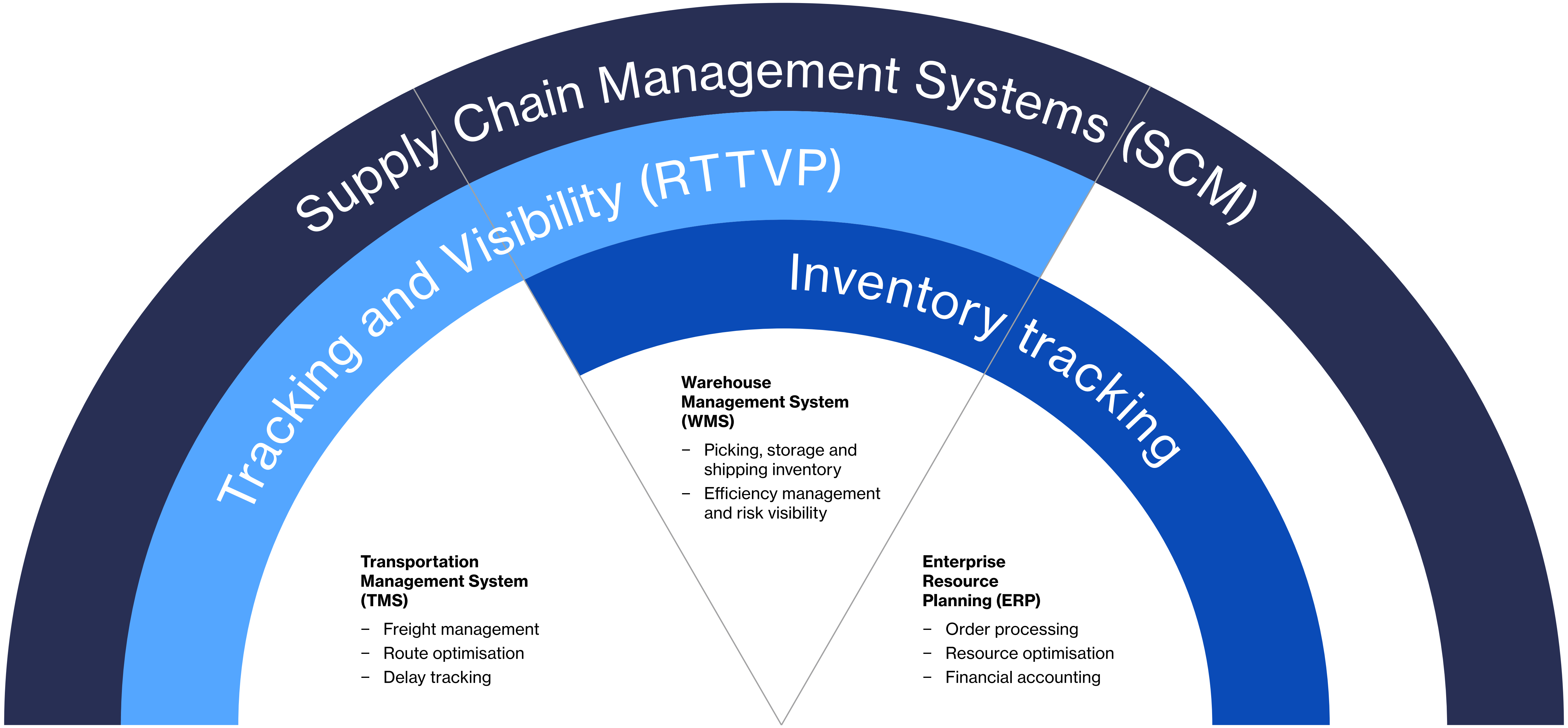
As digitisation advances, transportation and logistics companies have responded to supply chain events by investing in tools and technology methods, most notably enterprise resource planning (ERP), electronic data interchange (EDI), and application programming interface (API) systems to improve operational efficiency and enhance customer relationships across the entire value chain. These new sources of data could be used by insurers to consider product innovation – whether that's designing new products, tailoring existing offerings, or rethinking areas where capacity has been scaled back due to lack of information.

As data proliferation continues and these service providers take advantage of integration through APIs, core elements of addressing supply chain risk are coming together to increase tracking and visibility, support documentation and analytics, and enable inventory tracking across the supply chain. Priority areas where acceleration opportunities have been identified, include:

- **Supply chain management systems (SCM):** SCMs manage the flow of goods, data, disruptions events, and finance from beginning to end. Included in this are warehouse management systems (WMS) that offer visibility of a business's entire inventory from distribution to end consumer. As third parties continue to support transportation and logistics companies in identifying and mapping their supply chains, insurers and brokers can gain greater visibility into industries and their global interconnections
- **Transportation management systems (TMS):** TMS platforms assist in the planning and execution of the physical movement of goods. As companies continue to build data in transportation and logistics planning, insights can be harvested on loss history and route resiliency, as well as identifying vulnerability characteristics and prompting risk-based decision making. ClearConnect Solutions is an example of a company working between TMS and insureds to bring risk clarity to insurers
- **Real-time transportation visibility platforms (RTTVP):** RTTVPs provide visibility of orders and shipments of commercial customers and consumers once they have left the warehouse. As insurers and brokers continue to invest in integrated systems and service offerings, partnering with RTTVPs could be used to track live aggregations and alert-based actions as events unfold

From an insurer perspective, supporting or incentivising organisations to take such actions could ultimately result in greater mitigation of risk and exposure, and there is an opportunity to partner with transportation and logistics companies to map supply chains through their journeys. Third party companies like Oracle, SAP, Blue Yonder's Luminate Logistics, CH Robinson's Navisphere, project44, and Shippeo are examples where insurers and brokers could use technology, risk engineering expertise and insurance to help clients identify, assess, mitigate, and transfer supply chain risks.





Supply Chain Management (SCM) System

- Blue Yonder's Luminate Logistics
- Oracle SCM
- SAP SCM

Real-Time Transportation Visibility Platform (RTTVP)

- Blue Yonder's Luminate Logistics
- *e2open (see semiconductors report)*
- *FourKites (see food and drink report)*
- project44
- Shippeo

Transportation Management System (TMS)

- Blue Yonder's Luminate Logistics
- CH Robinson Navisphere
- *e2open TMS (see semiconductors report)*
- SAP TMS

Warehouse Management System (WMS)

- Blue Yonder's Luminate Logistics
- Oracle Warehouse Management
- SAP WMS

Note: Examples in italics can be found in our previous industry reports, and are also examples relevant to transportation and logistics.
Source: Adapted from Euristiq[8]

A collection of industry partnerships and acceleration opportunities:

Oracle Supply Chain Management

SCM **TMS** **WMS** RTTVP

As well as semiconductor companies, **Oracle** are also working with transportation and logistics companies to respond to their supply chain challenges. Oracle Supply Chain Management (SCM), Transportation Management, and Warehouse Management System (WMS) are modular systems that span overall supply chain planning, warehouse resource management, transportation planning, through to the end delivery. Most importantly these systems can be integrated with transportation and logistics customers and partners to create a shared view that allows:

- **Transportation management and optimisation:** route planning across multiple modes of transportation to find the most efficient options, including predicting transit times with machine learning capabilities
- **Logistics Network Modelling:** allowing what-if scenario modelling to optimise the transportation network and determine the best option considering the time and cost impact of the proposed changes and execute them
- New sustainability collaborations with groups such as Global Logistics Emissions Council (GLEC) to create a uniform template of calculating emissions across the multimodal transport supply chain[9]
- **Cross-border compliance:** surfacing accurate data and mitigating financial risk related to custom fines, penalties, and storage fees
- Many retailers are creating a network of smaller delivery depots—including their own brick-and-mortar stores—to shorten the distance between inventory and customers' homes. Being able to integrate warehouse management systems into supply chain management systems supports a more complete view of risk

Blue Yonder's Luminate Logistics

SCM TMS WMS RTTVP

Blue Yonder is supporting transportation and logistics companies through a predictive supply chain and execution platform that can integrate:

- **Supply chain modelling:** through integrating the below capabilities, Luminate Control Tower surfaces value chain insights from the entire digital ecosystem to predict and resolve potential supply chain disruptions. Luminate Control Tower was used during pandemic lockdowns to divert critical materials for Blue Yonder's customers and tracking over 200 containers across 40 vessels with $500m worth of products during the Suez Canal blockage[10]
- **Warehouse management and robotics integration:** operational and real-time visibility of supply, inventory, distribution, and customer order fulfilment
- **Transportation and logistics network planning:** managing both inbound and outbound freight, and by integrating supplier and carrier collaboration for capacity, pricing, and last-mile providers, as well as resource optimisation, movement planning and inventory tracking. With the passing of the United States-Mexico-Canada Agreement (USMCA) linking the Mexican, American, and Canadian markets, Blue Yonder partners with project44 and Forager Group's (now Arrive Logistics[11]) SCOUT platform to help companies gain greater visibility into their shipments when traveling from domestic to international jurisdictions with the aim to serve as a potential framework for future cross-border shipping integrations in the rest of the world[12]

Blue Yonder accelerated its collaborations during COVID-19, with a particular emphasis on harmonising freight, net-zero carbon sustainability, automation, and on-time delivery (OTD) for freight forwarding operations. Recent cross-industry partnerships include:

- DHL Supply Chain's "plug and play" robotics platform powered by Microsoft and Blue Yonder in June 2020 to give customers greater flexibility in selecting and integrating different robot vendors into a single solution. The first implementation at a DHL warehouse in Madrid has already reduced robotics integration times into existing platforms by 60%, with DHL seeing further improvements of up to 90%[13]
- Onboarding of nineteen TMS and ERP systems onto Navisphere®, including Blue Yonder, for increased Full Truckload (FTL) and Less than Truckload (LTL) integration[14]
- Joining the Scheduling Standards Consortium (SSC) in May 2023, an industry-led collaboration focused on the development and promotion of an open API standard for scheduling in the logistics and transportation industry[15]

SAP

SCM **TMS** **WMS** RTTVP

SAP are supporting transportation and logistics companies to manage their supply chains and communicate with their end customers. SAP's cargo, transportation, and logistics solutions are powered by SAP S/4HANA Cloud, SAP's primary ERP system that, amongst other offerings, incorporates the company's Extended Warehouse Management, available-to-promise (ATP) functionality for selection of alternatives and efficient stock management[16], and a Global Track and Trace solution for predictive modelling of milestones and alerts for delays and impacts to customer shipments into one platform.

Wider capabilities include:

- **Supply Chain Management (SCM):** combines digital services for supply chain planning and logistics, manufacturing, product lifecycle management, and enterprise asset management
- **Cogniac Visual Operations Intelligence:** uses artificial intelligence (AI) to visually detect and identify supply chain-based information. Current use cases include reading packaging labelling and detecting wheel defects on trains[17]
- **SAP Integrated Business Planning (SAP IBP) for Supply Chain:** integrates key aspects of the planning process, combining sales and operations, forecasting and demand, response and supply, demand-driven replenishment, and inventory planning[18]
- **SAP Business Network Supply Chain Collaboration:** allows transportation and logistics companies to collaborate with trading partners on a single, networked platform via inventory visibility and automation. This allows tracking of goods in-transit and supports quality control inspections to achieve on-time customer deliveries[19]
- **SAP Sustainability Footprint Management:** calculates the climate impact at the product, corporate, and value chain level to meet carbon accounting needs for Scope 1, 2, and 3 emissions[20]

CH Robinson's Navisphere

SCM **TMS** WMS **RTTVP**

CH Robinson is an end-to-end transportation company that has been investing in their own transportation management system (TMS) alongside moving goods to support their customers to increase supply chain visibility through an online platform. Introduced in 2012, Navisphere® allows customers to access a network of 200,000 shippers and carriers covering: inbound, outbound, customer pickup, full truckload (FTL), less than truckload (LTL), barge, parcel, and flatbed across air, sea, land, and rail transport domains.

CH Robinson operate their own in-house innovation team and technology incubator, CH Robinson Labs, which partners with Microsoft Azure and Azure IoT Central to integrate monitoring factors such as temperature shock, tilt, humidity, light, and pressure in shipments to provide customers a more complete and detailed level of intelligence of goods in transit[21].

Capabilities include:

- **Emissions IQ™ through Navisphere Insight:** a benchmarking tool which supports their users to measure and reduce carbon output by mode, location, and retailer
- **Procure IQ®:** utilises an individual company's shipping data to determine the most optimal manner of purchasing transportation
- **Market Rate IQ™:** helps deconstruct shipping rates against neutral market data provided by DAT, a freight and analytics company whose spot rate benchmark is based on $110bn in shipment data across 68,000 shipping lanes[22]

Looking forwards, CH Robinson are expanding their services and platform to integrate future transportation developments by partnering with autonomous driving technology company Waymo[23] To demonstrate the practical applicability of transporting long-haul customer freight, Waymo Via recently conducted and completed a series of pilot programs for Constellation Brands, an American producer and marketer of beer, wine, and spirits. To date, Navisphere and Waymo Via's partnership has helped Constellation deliver more than 1 million pounds of freight with a 100% on-time delivery rate and zero damage to loads[24].

project44

SCM TMS WMS **RTTVP**

project44 is a platform to improve supply chain visibility, reporting and analytics for shippers, carriers, and 3PL (third party logistics) providers – enabling companies to track shipments across the global supply chain. Integrating 1,000+ APIs across ocean, air, rail, LTL (Less Than Truckload), volume LTL, truckload, and parcel through a network of over 220,000 carriers spanning 170 countries, project44 provides real-time, multimodal visibility into current shipment location, as well as insights for accurate ETAs (Estimated Time of Arrival) and carrier performance, which can then be used to provide end customers and internal stakeholders more transparency into parts and goods[25].

Current developments have been focused in two key areas: expanding their partner ecosystem with new agreements with companies such as SAP, Blue Yonder, Oracle, Manhattan Associates, and IBM, and engaging in a series of strategic acquisitions of key businesses crucial to increasing its visibility of international value chains. These include:

- Deepening its already extensive partnership with Oracle to extend mapping coverage to air shipments as part of Oracle Transportation Management (OTM) Cloud[26]. Before the implementation of this integration, mutual customers of Oracle and project44 would have had to use two separate platforms, OTM and project44's Visibility Operations Center. This modality integration will allow users to initialise shipments for tracking via an API that connects Oracle's TMS to project44 – this information will provide ETAs, location updates, and shipment status on a single platform without the need for platform redundancies
- Acquiring Ocean Insights, a solutions provider for ocean freight intelligence. As companies and 3PL's have been keen to map in-transit movements and delays of their goods, project44's Ocean Terminal Visibility is designed to retrieve data on goods and shipments while stationary at ports via container discharges, locations in terminal, status holds, customs clearance, and availability for pickups, providing visibility into at least 62 terminals and 26 ports, covering 95% of US containerized freight[27]
- The ability to track over 350,000 containers and 5,000 vessels daily due to significant investments from the investment arm of A.P. Moller Maersk, the parent of container shipping company Maersk Line[28], as well as an extended partnership with CEVA logistics for track and trace functionality. Coupling Automatic Identification System (AIS) vessel tracking with project44's ocean and port visibility solutions, CEVA's customers will be able to closely monitor shipment location, receive shipping notifications, and be informed of carrier transfers and dwell times[29]

To consolidate processes and mitigate cargo risk, project44 has partnered with Reliance Partners to insure freight via a streamlined API integration into a user's dispatch workflow, saving time and eliminating redundant paperwork and costly manual processes[30].

Shippeo

SCM TMS WMS **RTTVP**

Shippeo is a real-time multimodal shipment visibility platform with tailored solutions for shippers, carriers, and logistics providers. With a footprint in 75 countries, Shippeo's network connects over 140,000 carriers via carrier onboarding, compliance, and scorecards through the use of carrier, supplier, or delivery site performance records. Shippeo provides insights into transportation operations through online dashboards and reporting, to enhance key performance indicators (KPIs) on transport volumes, on-time deliveries, and dwell time[31].

Shippeo's platform is divided into three key views:

- **Shipper visibility:** instant tracking and shipment visibility are enhanced with enhanced GPS tracking and 100% localised data servers for data transfers, storage, and compliance for regulatory frameworks such as General Data Protection Regulation (GDPR)[32]
- **Ocean visibility:** provides customers with ocean transport data on more than 3,000 ports worldwide. With the addition of New Lane Insights to the company's Port Insights, ocean freight visibility's network is fed by multiple tracing inputs such as real-time tracking, lead times, and transhipment duration through geofencing technology and live AIS satellite data[33]
- **Carbon visibility:** a consolidated carbon emissions platform that provides a consistent framework for comparing performance across carriers, utilising carbon emission calculations based on the GLEC framework[34]. With a new platform integration with carbon emissions estimating company Searoutes, CO_2 emissions for upstream and downstream transport and distribution activities can be determined by origin, destination, or carrier, and calculated using tracking data, container type, weight, truck type, engine type, and vessel IMO number[35]

Shippeo is also investing in smart tracking through a collaboration with e2open, using their supply chain planning and execution capabilities. This includes a new offering that aims to enable users to virtually 'look inside' trucks or containers to see what specific goods are being moved and what – if any – corrective measures are needed to increase operational efficiency and avoid delays[36].

Across all three industries explored in this series there was recognition that resiliency is impossible unless buyers, suppliers and other parties along a value chain are willing to share data and collaborate. This will require trust and new ways of sharing data securely. As Reuters noted in a recent report, "With the benefits of increasing collaboration through data sharing and visibility into deeper tiers becoming more obvious, addressing mistrust becomes a key objective and will require concerted and directed efforts… organisations will need to move closer to their suppliers and build relationships and trust, but they can also use smart approaches to data sharing to make progress"[37].

Potential opportunities to accelerate this further include:

01 Transportation and logistics company data collation has been mentioned above, but this could be enhanced through the creation of industry supply chain risk standards and subsequent data sharing with insurers. This could be provided by the insured as a pre-requisite to conversations about cover availability and cost (i.e. to demonstrate whether they are a well-managed enough risk for insurers to want to engage with). In time, these developments could feed into 'digital twins', mapping out supply chains and risk resilience plans to provide a greater view of risk and enable more sophisticated modelling

02 Establishing unique supplier identifiers for every company to generate a granular view of networks, supplier tiers, routings etc. Unique identifiers can also support insurers in understanding aggregations. Progress in this area is already underway with some technology companies offering dedicated data processing platforms – this could be complemented in the semiconductor industry by transportation and logistics providers whose data could augment the view of connections between nodes to map greater levels of supplier tiers

03 Availability of 'real time' data on events affecting the supply chain is growing within the transportation and logistics industry, but wider adoption of this capability would enable proactive and faster reactive responses and reduce impacts of loss. Insurers could play a role in incentivising greater uptake of this data through partnerships with the accelerators listed in this section

To support these opportunities, brokers and risk advisory partners, in partnerships with technology solutions providers – some of which have been highlighted throughout this report – can explore how to fill data gaps and connect organisational resilience proactivity to risk transfer solutions. The transportation and logistics companies we spoke with as part of this research would welcome such discussions with their insurance and broker partners. Notably we see that the transport and logistics industry would welcome discussions around risk management expertise to offer more insight on their individual risks.

Data standards and industry engagement opportunities

Transportation and logistics companies are already undertaking steps with third parties, and the insurance industry can join those efforts to further incentivise changes and support the development of new risk sharing solutions.

Supply chain data sources

- **The Global Supply Chain Pressure Index** (GSCPI)[38] uses metrics like transportation costs, Purchasing Managers' Index (PMI) surveys, and manufacturing firms across seven interconnected economies to predict potential supply chain disruptions. It uses data from the Baltic Dry Index, Harpex index, U.S. Bureau of Labor Statistics, and PMI surveys to assess potential disruptions in the global supply chain
- The World Bank's **Logistics Performance Index** is an interactive benchmarking tool created to help countries identify the challenges and opportunities they face in their performance on trade logistics and what they can do to improve their performance[39]
- **resourcetrade.earth** has been developed by Chatham House to enable users to explore the fast-evolving dynamics of international trade in natural resources, the sustainability implications of such trade, and the related interdependencies that emerge between importing and exporting countries and regions[40]
- **Scheduling Standards Consortium (SSC)**: A collaboration amongst the transportation & logistics industry's key freight, B2B, and cloud-based companies to establish freight appointment scheduling standards that provide visibility into the supply chain. Key goals will be to provide a number of standard releases in 2023, introduce a System Interaction Model, application programming interface (API) design and create a common freight transportation language

Transportation mode data

- Import and export delays: With TradeLens discontinued in 2023, new innovation opportunities are opening for service providers. CargoX is an example of an organisation to watch where momentum is gathering
- Container shipping indicators, based on ship tracking data from Marine Traffic[41], MDS Transmodal[42]
- Aviation logistics, based on tracking data from Cargo iQ[43], which is supported by IATA (International Air Transport Association)
- 9 ocean carrier members of the Digital Container Shipping Association (DCSA)[44] recently committed to achieving 100% electronic Bills of Lading (eBL) adoption by 2030

Standardisation

Transportation and logistics companies and standards bodies are engaged in industry initiatives designed to 1) standardise data across multimodal methods of transportation and 2) standardise data to support quantification and reduction of GHG emissions.

From a supply chain perspective, ISO 22301 is a key risk management standard and establishes a code for implementing Business Continuity Management Systems (BCMS) to protect against, reduce the likelihood of the occurrence of, prepare for, respond to and recover from disruptions when they arise.

Multimodal data

ISO 23354 aims to improve data interchange efficiencies amongst the multiple intermodal networks that make up the various facets of transportation modes[45].

Three key committees responsible for driving standards and actions across transportation and logistics include: ISO/TC 22: Road vehicles, ISO/TC 104: Freight containers, and ISO/TC 204: Intelligent transport systems.

Sustainable supply chain data

ISO 14083 is a new standard focusing on quantification and reporting of GHG emissions to support the sector's carbon reduction efforts by providing the first universal method for logistics emissions accounting[46].
The standard embeds the principles of the Global Logistics Emissions Council (see report section 2) into a formalised ISO compliant methodology[47].

PAS 2060 provides guidance on how to quantify and reduce GHG emissions in specified business areas such as products, services, and infrastructure. As the only internationally recognised certification for organisational carbon neutrality, PAS 2060 provides a verifiable method to support ESG and net-zero goals and requires the total amount of residual carbon emissions to be offset by certified carbon credits[48]. See section 2 for a deep dive on sustainability initiatives.

Transition technologies

- **IEA's ETP Clean Energy Technology Guide**[49] contains information for over 500 individual technology designs and components across the whole energy system, of which 70 relate to transportation. For each of these technologies, it includes information on the level of maturity and a compilation of development and deployment plans
- The International Maritime Organisation (IMO) has launched **CARES** to accelerate green technology demonstration and deployment in the maritime industry, promoting a "blue economy" growth. The program links international initiatives, research and development centers, and green financing with financial institutions and transportation companies[50]
- **Towards Zero Carbon Aviation** (TOZCA) is a project led by Professor Andreas Schäfer at the Air Transportation Systems Lab, University College London and supported by WTW that is examining how the sector can realistically move towards a net zero climate impact global aviation system. The project will develop a comprehensive tool suite to simulate the most cost-effective transition toward a net zero-carbon aviation system by 2050 and a later 2070 date, as well as the costs and emissions trajectories associated with such transitions, looking at changes in technology, fuels, operations, competition, and consumer behaviour that can lead to drastic CO_2 emission reductions[51]

Policy and finance engagement

- The World Bank is the largest global provider of development financing for transport, focusing on climate-smart systems. With 172 active projects and $34.1bn in commitments[52], the bank's **Global Facility to Decarbonise Transport (GFDT)** aims to accelerate innovation and investment in climate-smart mobility solutions. In February 2023, the bank announced a $50m project to repair Ukraine's transport network, supporting humanitarian relief and increasing import and export corridor capacity[53]
- The **EU's TEN-T policy** focuses on developing efficient, multimodal, and high-quality transport infrastructure across the EU. €25.8bn will be allocated for projects aiming to remove bottlenecks, ensure sustainable transport systems, and optimise interconnection and interoperability[54]
- The **Freight Energy Forum**[55] is a new UK initiative to bring government and industry together to support the sector across all modes – including rail, road, air, maritime and warehousing – reach net zero by 2050. The forum will discuss potential solutions that the sector could take to start reducing emissions now and, for the longer term, will look to create a plan or roadmap to roll out future clean energy infrastructure for the industry
- The **Inflation Reduction Act and Airport Infrastructure Resilience Act** of 2023 aim to legislate $300m annually between 2024 and 2028[56]. Separately, the US Department of Transportation has allocated $703m to fund 41 projects to enhance port facilities, including enhancing supply chain reliability, efficiency, reduced emissions, and workforce opportunities
- UNCTAD and Barbados will host the first **Global Supply Chain Forum in March 2024** to address supply chain challenges, food security, and trade facilitation. The forum will focus on climate change adaptation and mitigation strategies, sustainable transport networks, international trade financing mechanisms, and stress-testing exercises using the Federal Reserve Bank of New York's Global Supply Chain Pressure Index[57] using data from the transportation and manufacturing sectors[58]

Regulation

- **EU Supply Chain Law:** the draft Act requires EU companies to audit suppliers along the entire global supply chain, including all direct and indirect business relationships with the aim to ensure compliance with applicable human rights standards and environmental protection. The directive could affect around 12,800 companies
- **EU Data Act 2023:** The European Parliament has adopted its position on the Data Act, the first EU industrial data rulebook, setting harmonised rules on accessing, sharing and using data generated by connected products. The Data Act is specifically relevant for operators transporting people and goods, considering the amount of data generated by road transport vehicles[59]
- In February 2021, Executive Order 14017, "**America's Supply Chains**,"[60] directed a whole-of-government approach to assessing vulnerabilities and strengthening the resilience of critical supply chains[61] through two interagency supply chain task forces (the **Supply Chain Disruptions Task Force** and the **Supply Chain Trade Task Force**). The US Department of Transportation's **recent Freight Logistics Optimisation Works (FLOW) initiative** will serve as an independent data steward for participants to exchange supply and demand information to be aggregated, anonymised, and returned for a holistic view of freight[62]

Cyber: The European Union Agency for Cybersecurity (ENISA) is the Union's agency dedicated to achieving a high common level of cybersecurity across Europe. The revised Directive on measures for a high common level of cybersecurity across the EU (NIS2)[63] and the additional notification provisions for security incidents aim to support a better mapping and understanding of relevant incidents. Transportation is one of the key sectors this directive aims to support data provision for.

Conclusions - The role for the global insurance industry

The supply chain disruption experienced during the COVID-19 pandemic, and more recently following the outbreak of conflict in Ukraine, has highlighted both the importance of the transportation and logistics industry and the fragility of global food security and supply chains. Across all three industries we have explored through this series there is clear value to be gained from having deeper, specific conversations on supply chain risks and resilience – the industry must play a proactive role in helping customers understand both their exposure and their coverage to ensure the right solutions are put in place.

This research outlines tangible steps that insurance and reinsurance organisations can take to support transportation and logistics companies and their needs; but it is only as effective as its application.

The real work is in converting those insights into action.

An opportunity for the (re)insurance industry to respond

Innovative solutions:

The (re)insurance industry can help to build long-term resilience by deploying its capital to remove risks from customers' balance sheets and reduce their exposure to supply chain risks. The increasing turbulence of the risk landscape and the demand for more bespoke coverages raises expectations of the insurance industry to innovate in the way that it provides services and improve its communication around how existing products can respond to supply chain risks. In some cases those interviewed for this research described perceived product gaps where solutions already existed; however, a series of protection gaps have been identified which insurers could look to address. In some cases further modelling, data partnerships and in-depth conversations with the transportations and logistics industry may be required.

Opportunities for insurance

Raise awareness of existing products	Consider new products in the 'gaps' highlighted by transportation and logistics companies	Identify and share modelling needs

Collaborative action:

Insurers, brokers and risk management service providers have a unique opportunity to support conversations between insurers and insureds. As an industry built on the principle of bringing teams together to discuss and share risk, opening the dialogue on supply chains and forming new partnerships will allow insurance to respond to a fast-moving landscape. Transportation and logistics companies are acting now, and brave and agile insurers can harness this opportunity. This also extends to exploring public private partnerships as governments around the world look to secure national supply chain resilience and critical transportation and logistics infrastructure.

Opportunities for insurance

Work closely with customers to obtain detailed exposure data and develop capabilities to better quantify supply chain risk	Support governments supply chain resilience efforts through public private partnerships and knowledge sharing

Explore new data sources and partnerships:

The improved visibility of supply chain related exposures from new data sources will be a key factor in helping insurance play a meaningful role. The transportation and logistics industry recognises that providing insurers with better data and having a more bespoke conversation with insurance partners will be critical to ensuring that their capacity and coverage requirements can be met. This report provides a number of case studies to highlight the type of partnerships which could be brought to bear. In addition, there are further opportunities for the industry to respond to changing customer needs, such as providing business interruption reviews as part of a risk advisory proposition, or geopolitical wargaming scenarios to stress test potential blockages in supply chains.

Opportunities for insurance

Consider how the acceleration case studies outlined in this report could help grow supply chain knowledge, harness customers' existing digitalisation efforts, and complement modelling	Consider investing in capabilities to link supply chain exposure to business interruption modelling	Continued development of proactive risk management solutions

Provide expert advice:

The insurance industry has an opportunity to actively help customers reduce their supply chain risk. Insurers have a unique opportunity to partner with an industry in that is already exploring its supply chain risks by supporting their risk management planning, mapping and modelling efforts. Entering into dialogue with businesses operating across the transportation and logistics industry can help both insurers and customers better understand the challenges around obtaining specialist insurance cover, and whether cover could be restructured, segmented or consolidated to make it more effective and sustainable.

Opportunities for insurance

Engage with the transportation and logistics industry on risk understanding	Consider new products to address the 'gaps' highlighted by transportation and logistics companies

Actions that Lloyd's will take

Lloyd's will continue to support innovation around transportation and logistics supply chain protection gaps through convening platforms such as Lloyd's Futureset and the Lloyd's Lab. Through this research, we hope to help businesses and the insurance industry understand how specific risks across transportation and logistics supply chains can be managed, where existing support from the insurance industry is currently available, and where new specialist coverage could be introduced.

Lloyd's is committed to supporting innovation across the market and has set up a number of facilities to ensure that the market has the space needed to innovate or commit capacity to new ventures, including:

- **Lloyd's Lab:** an award-winning space dedicated to accelerating and fostering new products and solutions fit for the needs of our customers around the world
- **Lloyd's Product Launchpad:** providing £150m of capacity, the Lloyd's Product Launchpad is committed to providing a safe space for underwriters to experiment with new ideas in a controlled way, which balances the need for appropriate oversight with the risk of not innovating fast enough
- **Innovation class of business GWP targets:** allowing syndicates to commit an additional 2% of their Gross Written Premium (GWP) from their business as-usual plan to a dedicated innovation class of business

> **Supply chain cover does exist today, but it can often be complex to underwrite and costly to buy. Additionally, these products will need significant development to support supply chain resilience against future systemic risks. Having affordable and accessible product and service solutions will be key to instilling confidence in businesses when facing the future. As an industry we need to develop a wider range of solutions that can fulfil this growing need, but to do this we will need the data to understand the complex supply chain networks that exist and the risks to which they are exposed. I see this as a great opportunity for our industry to work with all stakeholders, businesses, and governments around the world, to develop a greater level of certainty on supply chain resilience amid a world filled with challenges.**
>
> **John Ludlow, Former Airmic CEO, Lloyd's Futureset supply chain masterclass, March 2021[2]**

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