Supply Chain Visibility Report 2020

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Disclaimer

Introduction

Visibility is more important than ever in the modern supply chain. This report highlights the technical, legislative and economic factors affecting visibility, including: the ELD mandate, data collaboration and disruptive technologies, as well as risk management and more.

Key Facts

Visibility

Visibility is a fundamental driver across the industry for 2020. Mounting consumer pressure as well as environmental legislation has placed pressure upon businesses to take advantage of new technologies and push for end-to-end transparancy across their supply chains.

Technology

Not all disruptive technologies have had the impact they promised, but emerging developments in IoT implementation along with 5G connectivity harbor great potential for the industry.
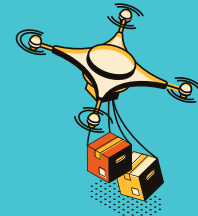
Risk Management

The modern supply chain is especially vulnerable to external shocks. Greater visibility over processes and suppliers makes managing risk and modelling shock scenarios for local and global disturbance easier and more effective.

Future

Industry 4.0 continues to accelerate transformations across all areas of the supply chain. Sustainability and ethical decision-making provide a framework and key objective going forward into the new decade.
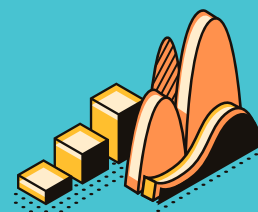
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Companies are facing a Catch-22 with economic pressures from Brexit, the COVID-19 coronavirus and tariff wars. All of which have set back growth and revenue goals for 2020. Not only have these factors compounded profitability but they will also pose constraints to the adoption of the differentiating technologies, which are needed to buffer against these increased pressures.

Visibility is top of mind as an enabler to better service delivery, profitability and mitigation of supply chain disruptions. The gap between Logistic Service Providers (LSPs) and Retailers & Manufacturers in the adoption of disruptive technology and having dedicated resources for the implementation and execution thereof is narrowing with the former still leading. This is most likely ascribed to greater margin pressures and labor and resource constraints. Currently LSPs have a small (15%) lead on retailers with their readiness for adoption of technology. Digitization is a key driver for the adoption of technology, driving the ingestion of data from IoT / Edge technology and heightened visibility from end-to-end. Also, 5G technology, RFID, advanced IoT and location devices have reduced the cost of adoption and enabled geospatial tracking at the next level. In addition, the drive for sustainability has become a key driver for the adoption of technology that will provide visibility on the status of supply chains and their carbon footprint.

Collaboration is a key tenet for a mature supply chain; however, in spite of more actionable insights that are now available, it is the lack of trust among players that is most prohibitive in establishing collaboration between vendors that may leave the dream of horizontal integration of supply chain visibility in the dust. From this report, 38% of respondents feel that the industry remains too fragmented and as many as 19% believe that end-to-end visibility is a bridge too far due to perceived complexity.

Blockchain, despite all the related hype, is still the stepchild of supply chain, battling to find its place in the family of functions. The lack of an agreed upon standard will most likely preclude the adoption thereof for some time and may result in it being surpassed by other technologies that are easier to digest and adopt.

A key element holding back the adoption of technology is the global lack of available resources to support these initiatives within enterprises. In this report you will find 34% of LSPs and 40% retailers report having resources dedicated to identifying applications for disruptive technologies, while 22% of LSPs

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reported no focus on identifying disruptive technologies and 10% dedicated for Retail & Manufacturers. Like the trends identified in 2019, the 2020 eft by Reuters Events report confirms the perpetuation of the lack of both investment and resources to support the adoption of new technology. If nothing else, this is a call-out for the need for simple and seamless applications that can be deployed in an agile manner. It is concerning that there is the apparent lack of perceived value to be derived from these disruptive technologies.

Geospatial location tracking has supported the drive for improved visibility but also extends into the realm of demand and supply planning. The true value of this visibility lies in the ability to balance inventory across the supply chain and to anticipate demand and supply shifts in time to respond, mitigating supply chain disruptions. LSP respondents report up to 58% improvement in customer satisfaction and, by default, 54% customer retention. Carriers reported up to 14% improvement in capacity utilization and planning.
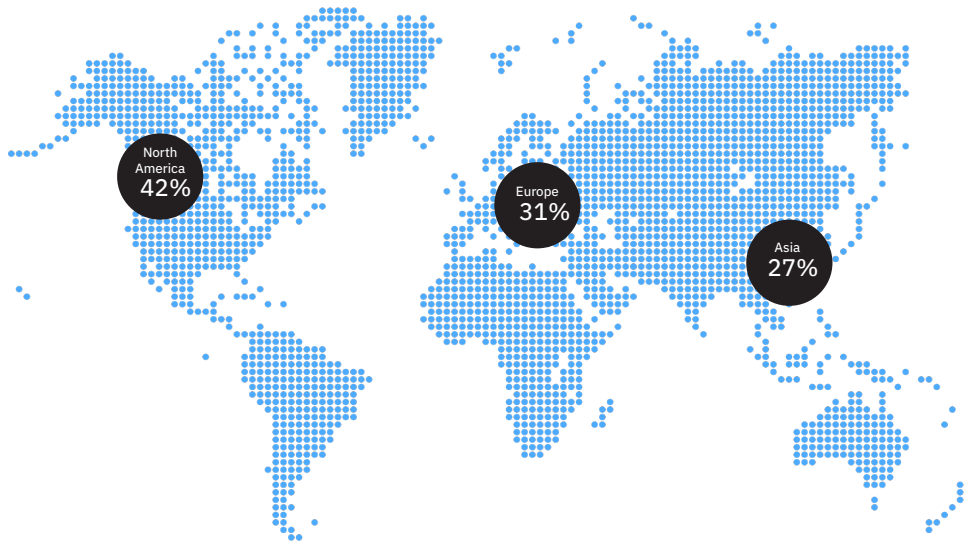
We believe that the most significant game changer for the supply chain function - in the next 5 to 10 years - will undoubtedly be the adoption of visibility tools complemented with machine learning and artificial intelligence. Add to this the expedited adoption of Digital Freight Matching (DFM) platforms and we expect to see a total transformation of the transportation and contract logistics industry as players leverage platform technology to match demand and supply with efficiency gains for both shippers and carriers.

The overall impact of Electronic Logging Devices (ELD) is regarded to have had a net zero impact; 22% of LSPs reported that it increased their cost to serve which may not be offset with improved visibility noted by these respondents. It is questionable if the long-term impact will have more benefit other than ensuring compliance. It could be argued that it impacted drivers negatively by reducing their earnable hours and compounded available hours to drive in the market.

Challenges posed by availability of labor, ecommerce-fulfillment and the adoption of disruptive technologies are ongoing. Additional extraneous factors, e.g., tariff wars, the COVID-19 coronavirus and the drive for sustainability has highlighted the fragile nature of supply chains. The supply chain's inherent inability to sustain longer term disruption with greater resilience is a call to action for supply chain professionals globally.

Methodology

A total of 442 supply chain professionals from around the world were surveyed for the **2020 Supply Chain Visibility** report. The majority of respondents are from North America (42%) and Europe (31%), while 27% are from Asia. Information was gathered from retailers, brands, manufacturers, logistics service providers, technology solutions providers, start-ups and media associations. Their responses represent a broad perspective of the concerns and challenges surrounding visibility in modern supply chains.

North America 42%

Europe 31%

Asia 27%

442
Industry Professionals

160
Logistics Providers

158
Retailers, Brands & Manufacturers

124
Solutions Providers & Third Parties

Visibility

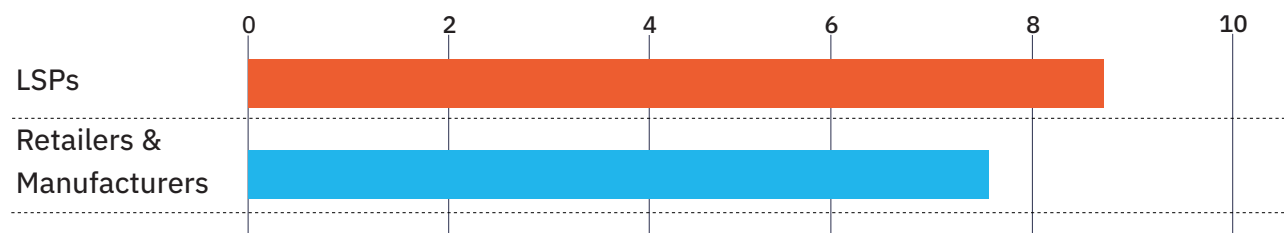**On a scale from 1-10, how much supply chain visibility can you currently offer your customers?**
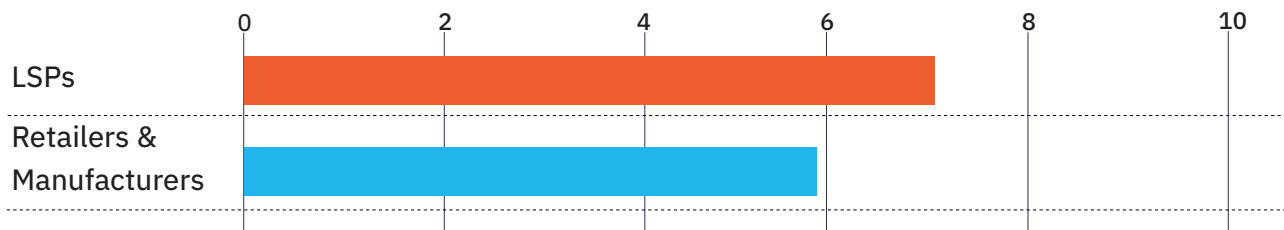
How confident are you that you will be able to provide end-to-end visibility to your customers within 5 years?


LSPs currently offer visibility to approximately 70% of the supply chain for their customers, while retailers and manufacturers can offer almost 60% visibility. Based on these responses, it is clear that LSPs, retailers and manufacturers are confident in their ability to provide end-to-end supply chain visibility to their customers within the next 5 years, with LSPs perhaps more confident given their current offering. With the rapid digitization of the supply chain from the warehouse to the boardroom, respondents appear more optimistic than ever that end-to-end visibility is on the horizon. The push to properly map supply chains has helped to increase visibility across each tier, with smaller stakeholders upstream accounted for by trusted proxies (e.g., artisanal food producers accounted for at the level of a farming cooperative). Improvements in traceability through Internet of Things (IoT) devices has heightened visibility in the last-mile and the warehouse, while a drive for sustainability has bolstered efforts to provide adequate traceability in all areas. However, there are still some barriers to achieving end-to-end visibility.

The greatest issue facing the logistics industry in achieving end-to-end visibility is the lack of collaboration. Over one-third of respondents (38%) felt that the industry is still far too siloed and lacks the flexibility required to achieve visibility across the entire supply chain. A further 19% of respondents felt that achieving end-to-end visibility is far too complicated a task to achieve.

Visibility

What is the biggest barrier to end-to-end visibility in logistics?
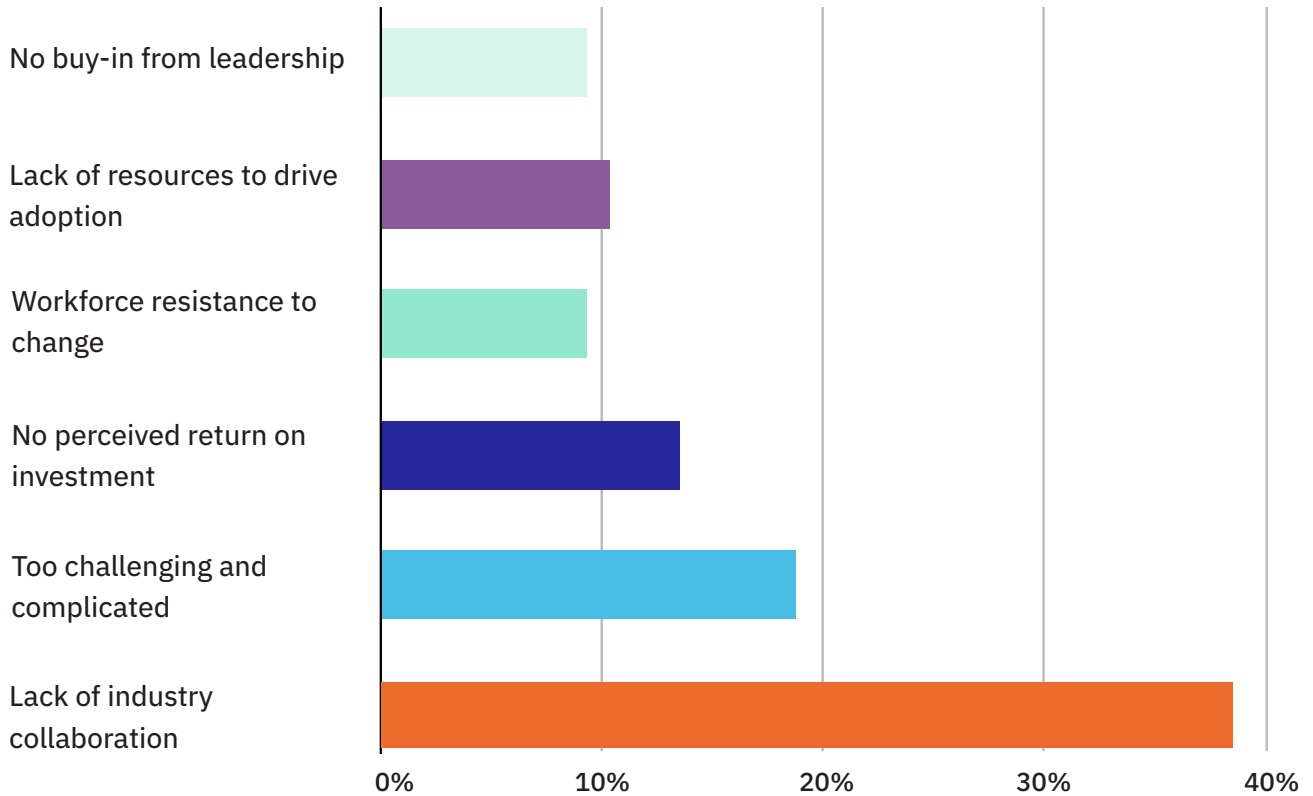
Fragmentation leads to disruption, which is why collaboration is a persistent theme for 2020 and beyond. Industry efforts to establish trust-based infrastructures such as blockchain technology using modern data-based practices have helped to prove that pallet-level visibility is no longer a pipedream. By moving away from segment architectures such as RFID, barcodes and NFC systems to IoT devices that leverage cellular networks to accurately pinpoint item locations, modern data-based methods have ensured that next-generation, cellular-based supply chain solutions offer a competitive advantage for businesses. This supports real-time visibility and proactive (rather than reactive) demand planning.

It is worth noting that traceability is not an individual affair. Cooperation between multiple firms across all supply chain tiers is required to ensure the transparency and accountability that consumers are now demanding in the delivery and production processes. While industry efforts to ensure this have thus far been unsuccessful, other initiatives have made some headway, such as Cotton LEADS: a supply chain program in the textile industry that dictates best practice sustainability guidelines such as improvement in farming practices and environmental stewardship throughout the world's cotton producing countries. Thus far, more than 30 of the world's leading textile suppliers have signed up, accounting for approximately 17% of global cotton production. Endeavors such as this can help to enshrine the standards that visibility works to verify, and assuage consumer concerns on sustainability.
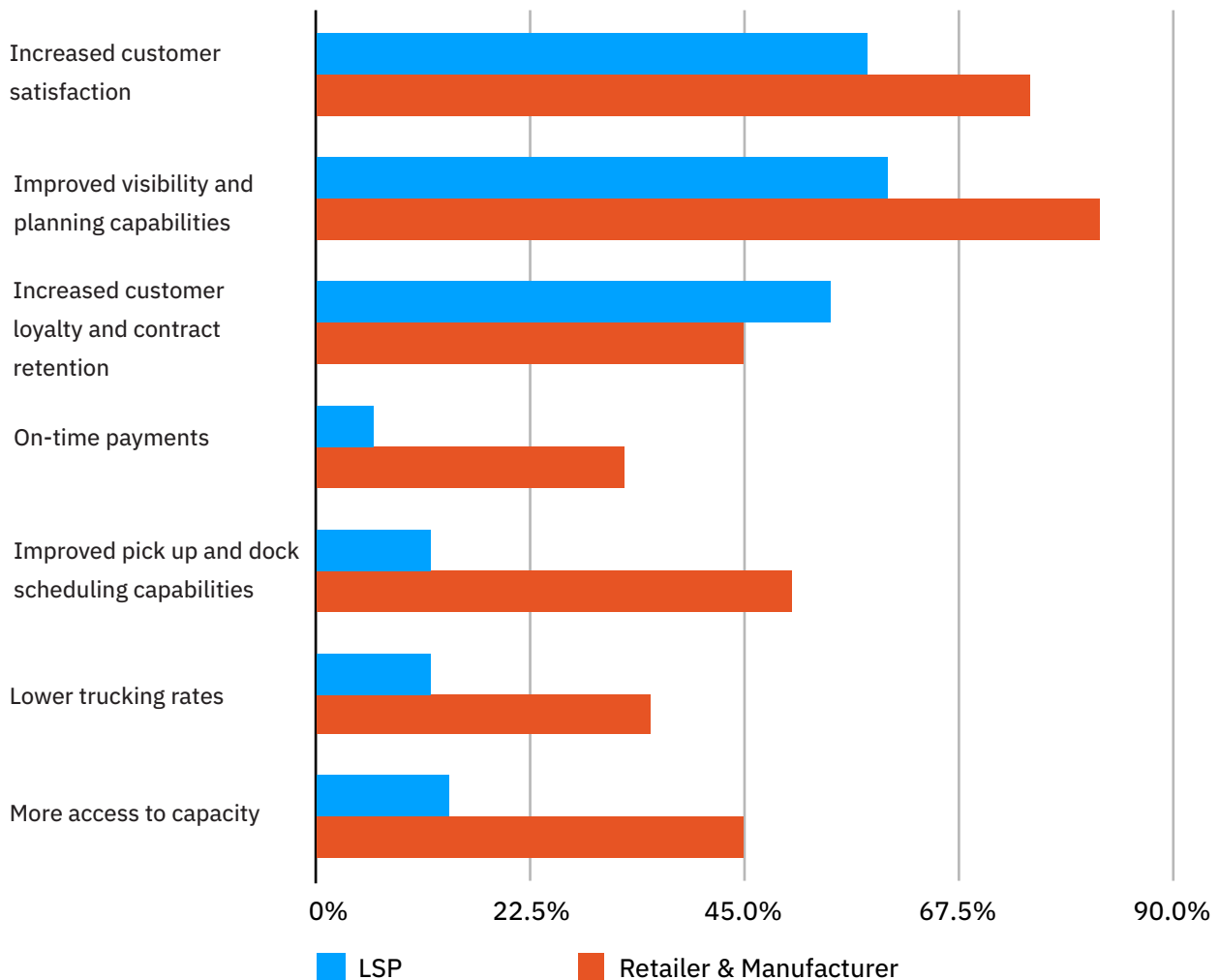
Visibility

Data Collaboration

Digitization has been an important enabler of collaboration between shippers and LSPs, as well as with the wider pool of solution providers. This is in broad part due to improvements in data sharing processes as the logistics industry has become more digital by default.
The latest wave of digitization is not a novel invention, however. Electronic Data Interchange (EDI) had already replaced paper-based business documents with digital counterparts.
The problem has been clumsy solutions incapable of delivering upon the potential benefits of digitization. Modern data-sharing and collaboration practices have helped to deconstruct the siloed links in the supply chain, enabling upstream and downstream information flows.
This provides a richer body of actionable insights and frees up time to work on higher value customer proposals as the business scales.

What are the benefits of improved data sharing collaboration?

LSP   Retailer & Manufacturer

Visibility

LSPs indicate they have benefited from data sharing collaboration, with 60% of respondents noting their improvements in visibility and planning capabilities as a result.

The heightened LSP visibility provided by multimodal transport solutions supports efficient utilization of excess capacity, allowing LSPs to improve customer satisfaction (58%) and customer retention rates (54%). For carriers, visibility of demand patterns using data from IoT devices can help to improve capacity utilization and planning (14%), as well as further optimize dynamic chain scheduling. Common data pools used across the industry to achieve this can build trust between operators, as 'neutral' real-time data promotes quick responses and reduces expenditure for all. Retailers and manufacturers also overwhelmingly reported improvements to visibility and planning capabilities (83%) as a result of data sharing.

Visibility provides customers more control over discrete processes such as shipments, as well as upstream and downstream processes such as order-to-cash. Cloud-based collaboration with IoT data allows stakeholders at various points to have visibility to critical inter-business information, accessing a single source of truth to ensure clarity in decision-making. Gone are the days of inaccurate RFID timestamping. Remnants of paper-based workflows within the production and shipment processes can now be swiftly integrated into the digital environment. For example, paper forms can be scanned and optically recognized with a smartphone, and uploaded instantly for automated verification or to trigger other actions.

Thus, from IoT sensor data in the warehouse through to last-mile solutions and route optimization, modern access to open data across the industry has served to expedite service and reduce inefficiencies, simplify infrastructure and lower the level of investment required to ensure regularity in cargo flow. Data sharing and collaboration has helped to enable the rise of new technologies for retailers and manufacturers, as well as improve upon customer retention rates for LSPs, thanks to increased visibility paving the way for a more demand-based supply chain.

Technology

## What is the biggest challenge within your organization in respect to the speed of adoption of new technology?

The biggest challenge for new technology adoption faced by LSPs is the lack of resources available to drive adoption (36%). While leadership might buy into the idea, the resources necessary to scale the product are not there. Respondents indicated this was in part due to a lack of perceived return on investment (30%), as management fails to allocate resources to non-critical problems, leaving solutions languishing in development or testing.

How much focus is there in your organization to identify the applications of disruptive technologies?

LSP
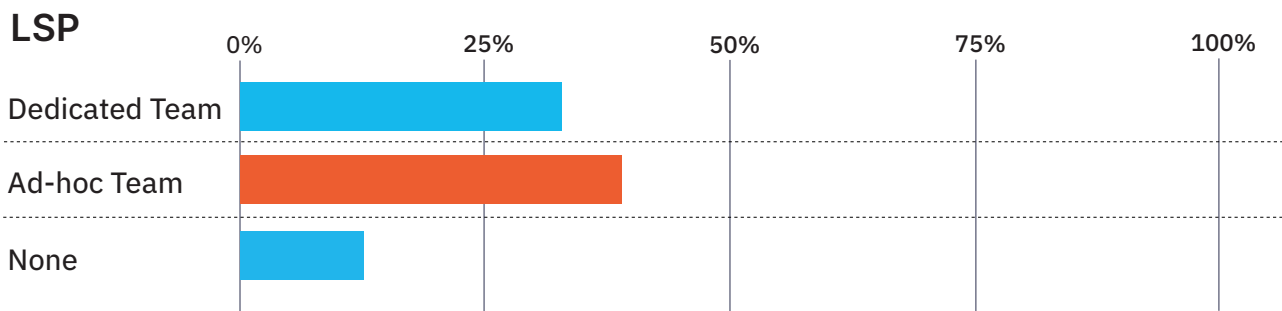
Retailer & Manufacturer
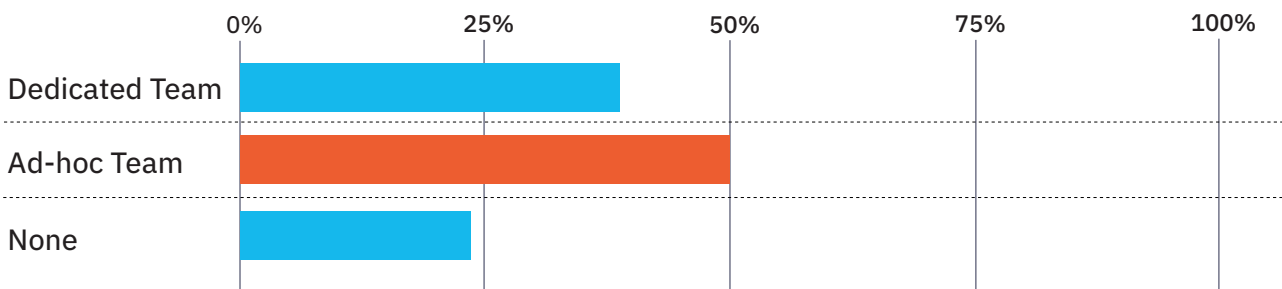
According to respondents, 34% of LSPs and 40% of retailers and manufacturers have a dedicated team working to identify the best application of disruptive technologies. A larger percentage of LSPs (40%) and retailers and manufacturers (50%) have ad-hoc teams researching these technologies for their business. However, 10% of LSPs have no focus whatsoever on identifying these technologies. The percentage was even more surprising for retailers and manufacturers, with 22% lacking any focused research into disruptive technologies.

Technology

What impact will blockchain have on logistics?

BLOCKCHAIN
Blockchain is a distributed ledger technology that creates an immutable and cryptographically signed record of transactions, facilitating interaction between participants in a network, without the need for intermediaries.

The logistics industry still has some way to go with blockchain adoption. There is a steep learning curve, not only in terms of technical application, but also inter-organizational trust. According to Simon Whitehouse, senior managing director for financial services, growth, and strategy at Accenture, most companies are yet to understand "how blockchain can work, how it can add value, and why they have to cooperate and compete with partners at the same time."[1] Various consortia have formed across the logistics industry but have found limited success, as a trust-based framework of cooperation fails to get off the ground.

Increased consumer expectations across ethical and environmental lines have also strengthened the case for blockchain. From food contamination to poor labor conditions, consumers are demanding ever greater transparency in the provenance of their goods. Issues with crops contaminated with E.coli or salmonella have heightened the need for a comprehensive picture of the trail of transactions in the supply chain and to establish ways to trace provenance and proactively rectify any problems. This traceability is especially pertinent for 2020 as government legislation across California and the United Kingdom has resulted in new regulations that require companies to investigate whether human slavery exists within their supply chains. End-to-end visibility is therefore becoming more important than ever, and one potential solution is a private blockchain.

Private, or 'permissioned,' blockchains are a secure offering, with users requiring verification before they can join the network. Both reading from and committing to the ledger is limited to a select group of individuals, leading to greater visibility and accountability for those involved. Since all participants are known, any malicious action should be deterred as it will result in actionable penalties. Permissioned blockchains typically allow for faster transactions due to a lower concentration of nodes participating in the ledger. Given the invitation-based nature, such blockchains are also more scalable. The ability to add nodes and services on demand can provide a great advantage to included enterprises and enable them to meet compliance and security regulations.

[1] MIT Sloan Supply Chain 2020 Special Report

Technology

What has been the impact of the ELD mandate on the industry?

> **ELECTRONIC LOGGING DEVICE (ELD) MANDATE**
> Passed in 2018, the electronic logging device mandate enforced the hours of service law by monitoring a vehicle's engine to record accurate working logs. The final deadline for implementing ELDs was December 2019.
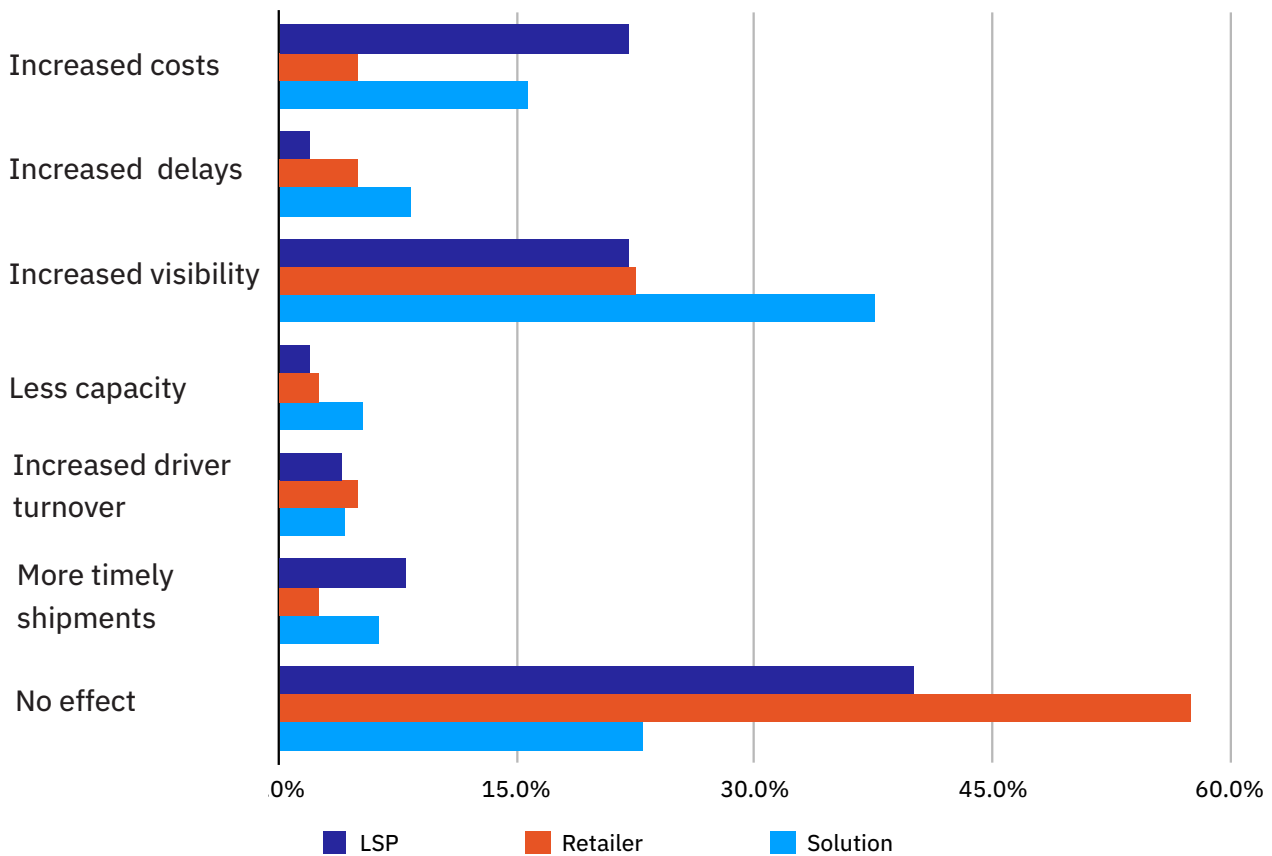
The good news is that the majority of retailers (almost 60%) and approximately 40% of LSPs reported that the implementation of the ELD mandate has had no impact on their costs over the last year. This is unsurprising as the hard enforcement deadline for those not grandfathered on to an AOBRD was April 2018. Those companies affected have had ample time to restructure operations around the use of ELDs and to solve any issues arising during the implementation period. Some LSPs have faced an increase in costs (22%), but note that these have increased in line with improved visibility over the course of the last few years (22%). Furthermore, simplification of both the administration and logging process has yielded an improvement in both inspection and dispatch times, with 8% of respondents reporting a decrease in shipment times. On the whole, our respondents felt that the short-term ramifications of the ELD mandate represented neither a net positive nor negative on the

Technology

industry, as advances made in visibility largely outweigh the initial costs associated with transformation.

Indeed, the implementation of Hours of Service (HOS) regulations in accordance to the ELD mandate has allowed drivers to take advantage of the emergence of digital freight matching platforms by securing further work transporting loads that match their remaining hours and vehicle specifications. These digital marketplaces emerge alongside the ELD system and, in conjunction with the development of 'drop-and-hook' services, leverage this newfound access to driver HOS to offer opportunities to maximize available hours and speed up cargo transfers. Such a system allows for existing truck pools to increase their capacity by simply attaching pre-loaded cargo trailers to be dropped at their destination.

DIGITAL FREIGHT MATCHING (DFM)
A growing part of the trucking-as-a-service sector, Digital Freight Matching (DFM) refers to a segment of the transportation market devoted to matching shipper demand to carrier capacity through mobile or web-based platforms.

Are LSPs looking at acquiring digital freight matching platforms or building their own?
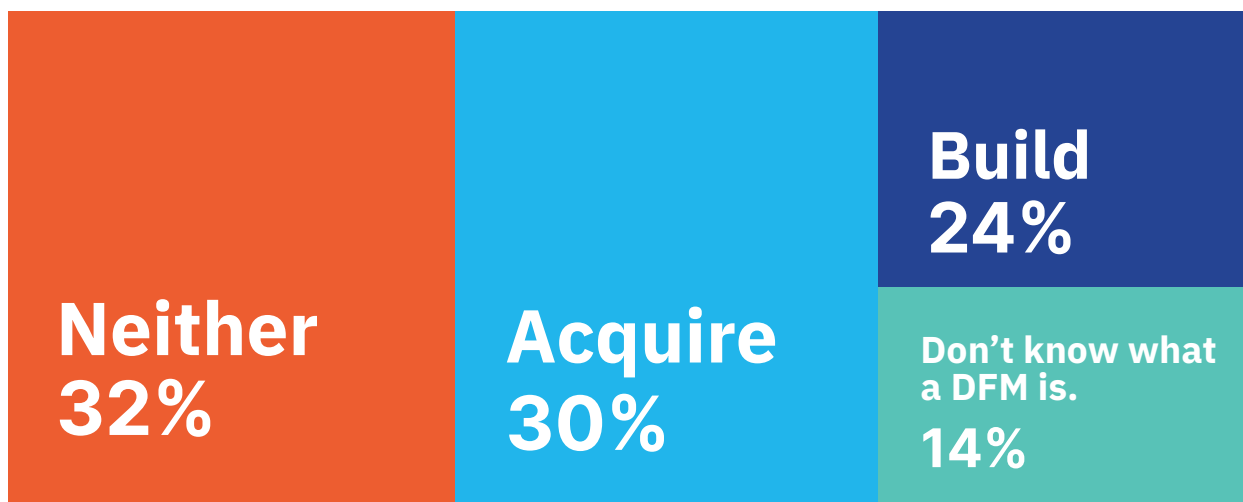
Build 24%

Neither 32%

Acquire 30%

Don't know what a DFM is. 14%

Digital Freight Matching (DFM) refers to a segment of the transportation market devoted to matching shipper demand to carrier capacity through mobile or web-based platforms. Incumbents in this space such as Uber Freight and Convoy offer price transparency, ease of use, and accessibility through online load boards and freight marketplaces. DFM allows shippers to quickly locate drivers with the capacity to support all variants of freight (full, partial and less-than truckload) on the routes and dates they require.

Technology

DFMs are part of the growing 'trucking-as-a-service' (TaaS) sector, which includes service segments such as telematics, business analytics and digital freight brokerage.

LSPs are split three ways on this issue, with one third expressing disinterest in both the acquisition and development of DFMs (32%), another third looking to acquire existing platforms (30%), and one fourth looking at building their own (24%). The remaining LSPs expressed uncertainty over both the nature and benefits of DFMs, suggesting that greater publicity is needed in certain sectors (14%).

Are you looking at utilizing digital freight matching platforms?

15%

43%

43%
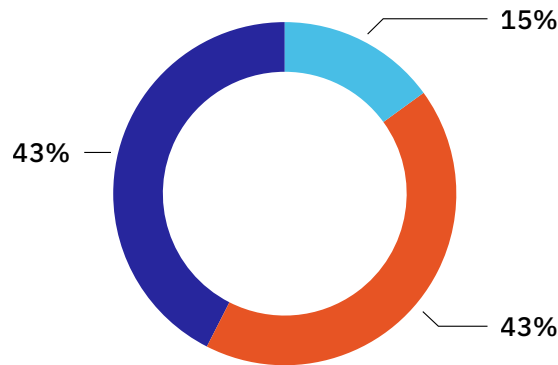
■ No

■ Already utilizing

■ Yes in the future

Trucking-as-a-service manifests as part of the industry-wide drive towards digitization, with truck OEMs at the helm. Almost half of LSPs (43%) and retailers look to utilize DFM platforms in the coming decade, with a further 15% already integrating them into their operations. The introduction of DFMs guarantees greater price transparency and capacity utilization - especially in the last-mile - as online load boards and freight marketplaces offer more granular oversight into availability via real-time data metrics.

Are you currently investing in the automation of your logistics facilities?

Yes
62%

No
38%

Technology

The majority of LSPs queried responded that they were currently investing in the automation of their logistics facilities (62%). A crucial part of any digital architecture, automation denotes a myriad of practices, ranging from the implementation of IoT sensors in warehouses to augmented intelligence in decision-making. Time-critical supply chain processes can be automated and supported by machine learning applications in order to predict and optimize potential outcomes. Such data-centric practices house the possibility to eventually eradicate ad-hoc human decisions based upon imperfect information, instead supporting decision-making through predictive data-based suggestions.

Investment in IoT infrastructure also marks an emphasis upon warehouse-first automation, where developing a smarter picking process through digital twinning and real-time analytics yields efficiency benefits further down the chain in the last-mile.

Are you looking to partner with or acquire start-ups?
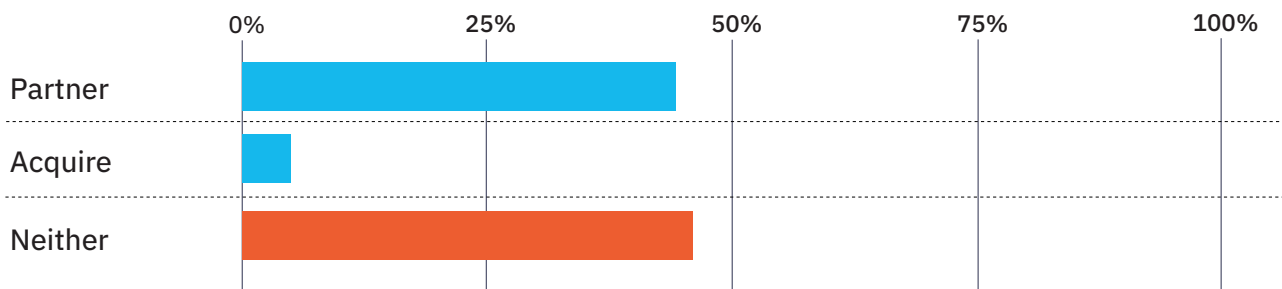
Given this investment in automation, solutions providers are split, with 47% of respondents indicating a preference for partnerships in order to kickstart development and 48% opting to avoid both going into 2020. Just 5% of solutions providers are actively looking to acquire start-ups going into the new decade. Favoring partnerships over purchasing, these responses indicate a level of apprehension towards younger, less proven solutions: an apposite sentiment given the aforementioned lack of industry collaboration that has seen blockchain implementation stagnate following its initial fanfare.

Labor

Both LSPs (56%) and retailers (58%) highlighted the shortage of labor over the past 24 months as an impediment upon their operations, indicating that they are now looking towards automation (30%) and training and retention programs (32.5%) to make up for talent shortfalls. According to 13% of retailers, increased investment into robotics such as follow-bots or drones is a crucial component of an improved automated approach.

Technology

However, structural change may yield a more fruitful approach than technical augmentation. Implementing a lean manufacturing solution, where work is carried out on a pull (demand based), rather than push, production schedule could help to improve efficiencies. Visibility is crucial in this regard, as both demand and supply-side forecasting, as well as workforce scheduling, can only be efficiently managed with accurate, data-driven, insights. The latter was noted by solutions providers, 13% of whom emphasized the importance of deploying a Workforce Management System that enabled flexible working hours to mitigate labor availability issues.

Will you be implementing a specific eCommerce fulfilment strategy in the next 2-5 years?

LSP
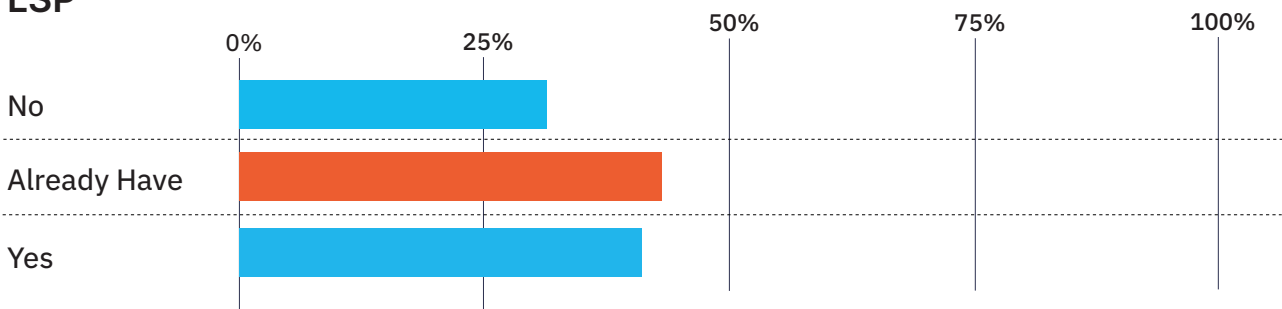
Retailer & Manufacturer
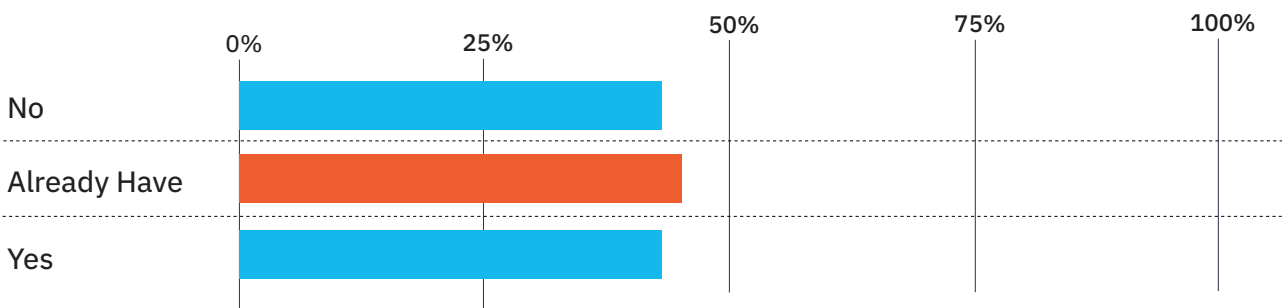
Almost three-quarters (72%) of LSPs have established plans for eCommerce over the coming 5 years, with 34% of respondents already implementing focused strategies to tackle order fulfilment. However, 28% of LSPs noted that they lacked any specific strategy going into the new decade. Retailers and manufacturers tell a similar story, with 37% stating that they have no intention to implement a specific fulfilment strategy in the next 5 years. However, while 40% of retailers and manufacturers assented to having a specific strategy that was yet to be implemented, just 23% are entering 2020 with an eCommerce fulfilment strategy already in operation.

Sustainability

Sustainable supply-chain practices have emerged as a constitutive force in the latter part of the decade, with a consumer-centric mantra of transparency and traceability impelling the industry's transformation. As companies look to Industry 4.0 as an opportunity to reinvigorate supply chains, sustainability has surfaced as a priority. Ethical decision-making is no longer troubled by asymmetric information, as increased data collaboration has opened up the possibilities for improvements across a range of sustainable practices such as low-carbon operation, material waste recycling and field efficiency. Furthermore, the United Nations' Sustainable Development goals stress not only the necessity of environmentally conscious supply chain practices, but also the eradication of education asymmetries and poverty, as well as low wage labor.

Almost three-quarters of LSPs, as well as retailers and manufacturers noted that sustainability (rather than mere responsibility) was a major business objective for them (70%). However, achieving this objective is not without difficulty as the complexity of ensuring upstream sustainability dependends upon a confluence of economic, environmental and socio-political factors. Improvements in traceability, whether blockchain-focused or otherwise, will be crucial in providing organizations with the ability to verify sustainability claims and meet objectives.

When it comes to sustainability, transparency across industry verticals goes a long way to ensuring ethically sustainable practices and mitigating risk later down the line.

Sustainability or Responsibility?

'Responsible' supply chains typically ensure operation within legal parameters, taking them to also be ethical criteria. However, an affirmation of sustainability operates in excess of what is merely responsible. The sustainable chain requires visibility across all partners, ensuring that processes and actions can be supported by nature and society over the long term, often invoking policy beyond that which is legally mandated.

Risk Management

How robust are your supply chain risk management processes?
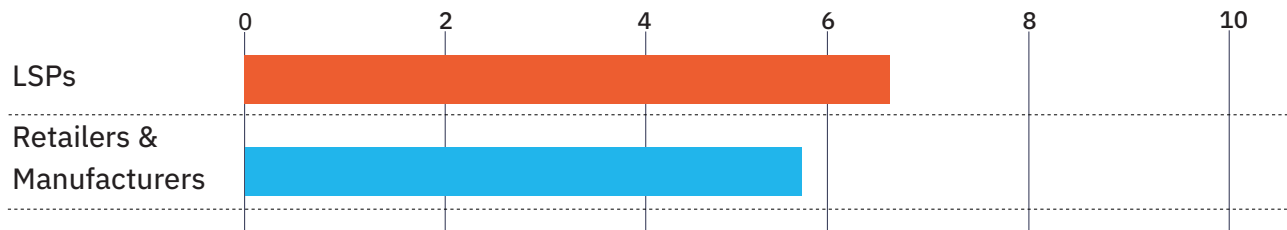
Risk management is a crucial part of supply chain operations. Over the past few years, the logistics industry has faced a series of particularly modern challenges, ranging from adversarial attacks upon newly digitized systems to virological outbreaks, all revealing the fragility of an interdependent globalized supply chain.

While businesses have begun to model risk strategies suited to the complexity of the modern supply chain, limited visibility over all facets of production hinder their ability to adequately address some of these risks. Taken as a whole, LSP, retailer, manufacturer and solution provider respondents felt that their supply chain risk management processes would score above average, but still had some way to go to becoming truly robust and capable of handling a variety of challenges. To some degree, the tiered structure of the modern supply chain hinders the ability at the purchaser or manufacturer level to properly account for risks, as Tier 1 and 2 organizations claim their supply chains as proprietary, exempting them from data-sharing and more rigorous vetting procedures. This has proved especially dangerous during the spread of the COVID-19 coronavirus, as the interdependency exhibited between Tier 1 and Tier 2 organizations has left supply chains susceptible to a bullwhip effect that has cascaded across industry verticals.

Risk Management

Trade Wars & Tariffs

Growing disagreements between the US and its global trading partners has led to an increase in new and retaliatory tariffs going into 2020, driving complexity and volatility across the logistics industry. In the midst of an ongoing trade war with China, US manufacturing has had to consider retooling supply chains, prioritising flexibility in selecting suppliers and manufacturing locations as well as shouldering the burden of tariffs. Greater visibility over the supply chain will help to temper the intertwined economic effects of global disturbances during trade wars. The outbreak has prompted some discussion over whether tariffs ought to be temporarily lifted to provide economic relief to those US firms dependent upon imported goods and parts, especially within the medical supply chain, which is dependent upon Chinese medical manufacturing. While the White House has responded that general tariff relief is not on the table, targeted measures for specific health products will be implemented.

Cybersecurity

Cybersecurity is a key vector for vulnerability in the supply chain. Failures on this front can ripple across the supply chain and supplier ecosystem. As researchers from McKinsey & Company note, the common thread tying together cyber risks and broader supplier risk is the paucity of sensible processes to target and manage growing supply chain risks.[3] Globalization has introduced complexity into the supply chain and exacerbated the effects of localized disasters, creating pivotal failure points that companies have been far too slow to address.

As previously emphasized, suppliers at Tier 1 or Tier 2 may believe their supply chains to be proprietary, locking down data access and making it more difficult for any partners to accurately model potential threats due to a lack of visibility. However, an effective due-diligence process prior to any agreement can allow businesses to ascertain whether partnerships will be vulnerable. Asking whether companies have a track record of poor security, or looking to industry audits to examine existing security practices can help to safeguard against introducing vulnerabilities into your supply chain.

Partnerships with start-ups are a case in point, as larger firms find themselves introducing vulnerabilities into their operations without adequately vetting the security and training policies of third-parties. Indeed, Stuart Madnick, a professor of information technologies at MIT Sloan, notes that organizations often fail to model attack vectors that originate in third-parties, such as contractors, who are authorized to access their systems.[3] Instead, they tend to focus on establishing a perimeter defense mechanism, which keeps unauthorized users out, but exposes digital infrastructure to insecure behavior from authorized operators.

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[3] MIT Sloan Supply Chain 2020 Special Report

Blue Yonder Conclusion

Visibility, technology and risk management are recurring themes that have become more prominent in 2020. Disruptive technology is seen as a key enabler of visibility and promotion of supply chains into the autonomous future state. Data management and regulatory impairments e.g, ELD, tariff disputes and Brexit, together with unforeseen disasters, e.g., COVID-19 coronavirus are most noteworthy in the 2020 evaluation of the status of supply chain.

Sustainability, risk mitigation and the drive for automation will continue to gain momentum as companies accelerate their race for differentiation through visibility and automation. The platform play is likely the most significant disruptor in both the planning and execution spaces. LSP, Manufacturers & Retailers and Software providers will differentiate through the adoption of platform solutions. Leadership will be defined by nimble adoption of "simple" tools that are transformative yet quick to deploy.

Call to Action

1 **Align with your customers' digitalization strategies**
Engage with your customers on their supply chain digitalization roadmap, collaborate with their supply chain strategy team and develop a roadmap for co-innovation. Without innovation and digitalization of your supply chain, you risk losing mindshare with your customers.

2 **Embrace the digital ecosystem**
Many players have ventured down the path of in-house developed solutions to enable visibility through the digitalized platform. The speed of adoption required in this accelerating environment will pressure LSPs to explore platforms that enable the seamless ingestion of multiple data sources, at the same time offering the predictive and prescriptive data analytics required to maintain relevance in the digitalized supply chain. A roadmap that defines the path to digitalization and innovation that enables an orchestrated supply chain is an invitation for a seat at the table in 2020.

3 **Engage your workforce**
The adoption of innovative technologies that will enhance the work environment must be a priority for every LSP. The ability to engage the labor pool into active participation in establishing labor standards and integrating robotics into the labor pool will define success.

Blue Yonder Conclusion

There are many examples of leading LSPs in the industry that have successfully developed a high-performance culture by effectively engaging their employees. Establishing performance standards, continuous improvement initiatives, coaching and mentoring, flexible work hours, self-service scheduling, and gamification programs are just a few examples of proven methods.

ElMarie Hugo

Senior Director, 3PL, Distribution & Logistics Industry Strategy
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For more on Blue Yonder, visit www.BlueYonder.com

ElMarie is an accomplished industry and supply chain leader with extensive experience in supply chain orchestration, contract logistics/3PL and 4PL. Prior to Blue Yonder (previously JDA Software, Inc.), ElMarie was the Director of Supply Chain Excellence at Johnson Controls and held many leadership roles at DSV/UTi Integrated Logistics and Barloworld Logistics.

She has extensive experience working across multiple regions with pharmaceutical, automotive and retail clients, supporting manufacturers to define their go-to-market strategies and advising both public and private sector how to secure product in market. Given her unique experience, she is well positioned to provide go-to market and thought leadership. She is focused on the 3PL, distribution and pharmaceutical / life sciences segments with a keen interest in Blue Yonder's Luminate Control Tower and the value this will unlock in supply chain orchestration.

She has received recognition for contribution to innovative supply chain solutions in highly complex environments. Included among these are: Platinum Logistics Achiever Award for the design and successful implementation of an international supply network solution for a CISCO partner operating from South Africa, Silver Logistic Achiever Award for a cold chain solution (pharma in Africa), Turnaround of a Government Pharmaceutical Central Distribution Centre, for the design and execution of a multinational Africa-centric pharma distribution network (into 25 counties) for one of the top four Pharma Manufacturers, and the Chairman's Award for leading a High-Performance Team. She was responsible for designing the blueprint for a GSK / AMREF vaccine distribution program in Africa and worked closely with Direct Relief International (DRI) to design a logistics delivery model for disaster struck areas (specifically providing relief to Haiti). She has been an associate lecturer at the University of Johannesburg and an ad hoc lecturer at the University of Wisconsin-Milwaukee.