OUTBOUND
TRANSPORTATION NEWS & INFO: CONNECT & SCALE

ABOVE AND BEYOND RFP SUCCESS

IN THIS ISSUE:
+ READY FOR AI? TECH EXPERTS SHARE THREE-STEP STRATEGY PAGE 6
+ MITIGATING THE RISKS OF EXTENDING VEHICLE LIFECYCLES PAGE 10
+ PANDEMIC CONTINUES TO RESHAPE STRATEGIES IN LAST-MILE LOGISTICS PAGE 14
Our Cover Story

What is on the horizon for savvy carriers and shippers? How do companies define success after the Request for Proposal is awarded and fulfilled? Think Strategic Partnerships. There are elements in play that can take businesses within the transportation and logistics space to wins above and beyond the traditional RFP. Trimble Transportation customer Challenger shares how it is leveraging technology to reduce deadhead miles by forming partnerships with shippers.

In addition, two experts with vast experience talk about what you can do today to help grow your business—via partnerships—profitably.

Ready for AI? Tech Experts Share Three-Step Strategy

In a recap from Trimble’s Supply Chain in.sights virtual event this Summer, learn how companies are connecting their data ecosystems with artificial intelligence (AI).

Tech experts, including IT Manager David Dunst of Paper Transport, cover a three-step strategy using AI that is helping companies plan and execute freight movements in unprecedented ways.

10 Mitigating the Risks of Extending Vehicle Lifecycles
12 Talking Telematics
14 Pandemic Continues to Reshape Strategies in Last-Mile Logistics
16 Washington Roundup: How Will Government Action Impact Drivers?
18 What’s Trending in Transportation on the State Level
20 For Business Acumen, Look to Cloud Services
22 Digital Transformation Means Accelerating Without Braking
“Why is digital transformation important?” was answered loud and clear in 2020, said Adrian Gonzalez, a leading industry analyst with more than 20 years of experience in transportation management, supply chain and logistics. “You can’t grow your business profitably, and you can’t meet the changing needs and expectations of your customers without it.

“The pace of change in technology continues to accelerate as it plays a greater role across all industries,” added the founder and president of Adelante SCM, a peer-to-peer learning and networking community for supply chain and logistics executives and professionals. “Digital technology is especially transforming and driving a new era in freight transportation and logistics and delivering business value in the process.”

Gonzalez, who also hosts Talking Logistics, an online video talk show and blog featuring interviews with supply chain and logistics industry thought leaders, went on to say that supply chain and logistics markets are heading toward network-based transportation management solutions because there are clear and measurable benefits. “Common platforms enable thousands of potential connections for shippers, carriers, brokers, 3PLs and others involved in transportation and logistics,” he stated. “They simplify and open opportunities to more efficiently collaborate, and to discover new potential partners.”

For shippers, Gonzalez noted, the old model was one-to-one connections with carriers using EDI and other legacy technologies. Today, through APIs, platform models enable shippers to connect with many carriers. For example, shippers who open a new distribution center or have freight on a new lane can use these solutions to discover which carriers offer the services they need and have available equipment.

Historically, aggregating data has been a hurdle to realizing the full potential of network-based solutions, Gonzalez pointed out. But that barrier is starting to come down because what evolved out of the Software-as-a-Service model is a recognition that there is true value in having common data available for all parties, and that these systems make it possible to change processes.
The benefit of having all the data you need in one platform is the ability to more efficiently work with and connect to new partners as needs arise,” Gonzalez said. “By aggregating data and applying machine learning algorithms and analytics, it is possible to understand performance at a granular level, take action from the knowledge you gain, and take advantage of opportunities.”

“The network platform-based approach does require a shift in thinking, an understanding that this is a better way to do things,” Gonzalez added. “But now that the technology has caught up with the vision, cloud computing capabilities and increased Internet bandwidth can help fulfill the promise of a network approach.”

A new and highly promising application for network-based solutions is being driven by some innovative thinking at Trimble. It reflects a vision that not only connects carriers and shippers on one platform for tendering, tracking and tracing loads but perhaps more importantly employs strategic procurement processes that consistently lead to greater success than traditional RFP solutions.

“Our Strategic Procurement Partnership approach is about leveraging technology to help carriers and shippers create a long-term, deeper engagement based on shipper goals and carrier capabilities,” said Pete Coumounduros, general manager of Trimble’s Kuebix Load Match Group. “It develops a roadmap for more strategic current and potential partnerships. It’s more holistic and granular at the same time because it sets longer-term goals, which are broken into smaller steps with success measures to achieve along the way.”

Carriers and shippers participating in the Kuebix Strategic Procurement Partnership program begin by identifying the current status of their transportation sourcing practices, including areas of strength and weakness in processes and people. They also address how sourcing and procurement are tied to their overall corporate strategy, including key objectives. Strategic Procurement Partnership is an engagement roadmap but not a technology roadmap,” Coumounduros advised. “It’s a strategy that defines the scope of engagement, phases and success measures over an actionable timeline that runs in parallel with leveraging platform technology for deeper engagement and executing results.”

As an example, Coumounduros pointed to one of the most common underplayed analyses among partners using the new process. “A carrier is looking to fill an empty leg in a new lane with revenue-generating freight,” he related. “With Strategic Procurement Partnership they can define legs and learn about shippers who have capacity needs that overlap the lanes they need to fill. The reverse is also true. Shippers with freight can find carriers with matching capacity.”

Through this connection, partners can also employ enhanced rating processes. For example, a shipper has the ability to rate a load and the system can automatically execute a transaction using a real-time rate that guarantees the price.

“Contracted rates are too often misaligned with the current market,” Coumounduros said. “In a business where every minute counts, a network-based, real-time integration between carriers, brokers and shippers addresses capacity needs and automates and expedites the entire process.

“By curating the capabilities of carriers and the needs of shippers, Strategic Procurement Partnership creates long-term relationships,” Coumounduros added. “It brings together stakeholders who can bank on stability and share cost and time savings so they can focus on their core businesses.”

The industry is at a critical juncture today because transportation service companies and shippers need a better approach to matching capacity with demand, Coumounduros stated. Along with rising and falling capacity levels and changing freight volumes, there are inefficiencies driven by detention time and empty miles, and economic factors such as e-commerce growth. There are also ongoing driver shortages and challenging Hours of Service issues.
Behind the scenes, Coumounduros added, a generational shift is having an impact as well. That shift places—in decision-making positions—younger, more tech-savvy people who want and expect technology that is user-friendly and intuitive. Another big change accelerating over the past few years is that logistics and transportation, which were traditionally viewed only as cost centers, are now seen as part of a company’s core competency and an advantage.

“Cost is still part of the equation but logistics and transportation are now seen more often as strategic, competitive differentiators,” Coumounduros said. “As a result, companies competing for a better customer experience are now leveraging network-based platforms and other digital technologies.”

**Connecting for Success**

At the heart of network-based TMS platforms is the ability for all parties to enable more intelligent, automated transactions. Designed for that exact purpose is Kuebix Community Load Match, which connects shippers with a rapidly growing carrier community from Trimble’s network of 1.3 million commercial trucks, digital freight matching services and brokers on one platform.

A case in point is the measurable success that has been realized by Challenger, one of Canada’s largest, privately owned transportation and logistics companies. Headquartered in Cambridge, Ontario, the company offers a full range of transportation, warehouse and distribution services throughout North America. For Challenger, the dynamic nature of freight made it difficult to identify target lanes, find new customers and meet their detailed requirements. The company’s objective was to leverage technology to reduce deadhead miles by forming partnerships with shippers.

While already using management solutions from Trimble Transportation, Challenger began using Kuebix technology in February 2020. By becoming a Community Load Match carrier, Challenger quickly connected with shippers whose capacity needs matched their asset utilization and operational requirements.

In addition to finding opportunities available in Community Load Match, the Kuebix Load Match Group (KLMG) learned about Challenger’s strengths, core competencies and demographics and leveraged the platform to help facilitate direct connections with shippers whose goals aligned with the carrier’s.

“Shippers in Community Load Match are able to match their needs up with what we offer, creating an entry point for us,” said James Brewer, sales logistics executive at Challenger. “Those conversations turned into Challenger becoming the dedicated carrier on lanes and getting consistent volume. From there, we’ve been able to provide solutions that evolve into long-term partnerships.”

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Tech Experts Share Three-Step Strategy

It’s time-honored and true: Shippers, third-party logistics (3PL) providers and motor carriers keep a protective layer on their data. In the near future, they will be using systems to connect their data ecosystems with artificial intelligence (AI) that will intelligently plan and execute freight movements.

As this new reality unfolds, technology experts believe that transportation companies will no longer have departments squabbling over freight.

The operating divisions of transportation companies, such as freight brokerage, over-the-road trucking, dedicated and intermodal, all try to get every profitable load. But as companies adopt systems with machine learning and other forms of AI, experts predict that internal friction will dissolve from computers determining what freight fits and does not fit in each division.

The result will be a newfound ability to more effectively utilize assets, resources and drivers, said David Dunst, IT manager for Paper Transport (PTI), a dry van truckload and intermodal carrier based in Green Bay, WI.

PTI operates more than 900 power units in regional, dedicated, local, and intermodal operations out of the Midwest and the Southern United States.

On a higher level, Dunst believes that AI will benefit shippers and 3PLs by connecting with motor carriers to select the right capacity at the right time. “It’s a huge difference in how we’ve thought about transportation historically,” he noted.

To make this and other visions become reality, the speakers in Trimble’s Supply Chain in sights Summer 2021 events discussed a three-step process to make the most of data today and prepare for the future.
Companies are gathering more data than ever before. The quantity that comes from transportation management software (TMS), telematics, electronic logging devices (ELDs) and other sources is not the problem, said Adrian Gonzalez, a leading transportation and logistics industry analyst and advisor.

The primary concern for companies, he said, is what should they be doing with all of the data they are collecting?

Gonzalez cited a recent survey on data management given to the Indigo research community, which he directs, with 100 members who are transportation and logistics executives. Two-thirds of the respondents agreed or strongly agreed to the question: “Are you drowning in data and starving for insights?”

The survey found the greatest challenge for companies to convert data to insights is having data scattered across many different systems that don’t talk with each other. The next challenge is not having enough data analysts on staff. Deploying business intelligence systems and processes to bring data together from different systems for analysis is not quick and easy, he said. The outcomes will be worth it by having insights that inform actions, fix problems, and help companies innovate, he added.

Getting data into a common platform for analysis is the first step, but the value comes from giving data context. To do this, companies need to set clearly defined goals and objectives for what they are trying to achieve, he said, such as reducing fuel, maintenance and detention costs or improving utilization and customer service.

Companies also need to establish baselines and key performance indicators (KPIs) to measure progress towards their goals, he added.

The top three areas where Gonzalez is seeing investments being made by shippers, transportation and logistics companies to harness their data and create insights are:

**CAPACITY PROCUREMENT**—Shippers and 3PLs are using data science to predict movement of rates and capacity in the market and to align shipment patterns with carrier networks.

**PERFORMANCE MANAGEMENT**—Carriers are using shipper scorecards to identify problem areas, such as detention times and drilling down to identify and address the root causes.

**NETWORK DESIGN**—Shippers and transportation providers are using data to strategically evolve their networks, adapt to changes and deliver more value to their customers.
Delivering insights to users will have limited value if they are bogged down with doing repetitive, mundane tasks. Covenant Transport, Inc., one of the largest truckload carriers and 3PLs in North America, is using robotic process automation (RPA) tools to automate labor-intensive tasks in tandem with a business intelligence platform from Domo.

The RPA tools have made it possible for Covenant to automate mundane tasks such as verifying past employment records of driver recruits and sending cash advances to drivers to cover over-the-road expenses.

Business intelligence and process automation tools are the core elements of continuous improvement programs. They also give companies, like Covenant, a foundation to build on and apply advanced technologies like predictive modeling, AI and machine learning to solve future challenges like planning freight movements, Mullins said. “These tools help us get there quicker, better and faster,” he said.

Before starting a project that involves the use of advanced technology to create data insights, David Dunst from PTI said the two most important questions to answer are:

- What are we trying to accomplish?
- What will the new data cause people to do differently?

One data project that PTI completed had safety as the goal. The company hired some consultants to help create a predictive model that would identify drivers with an elevated accident risk. The project required significant resources and knowledge from staff to complete, he said.

PTI has used the insights from this model to proactively engage drivers on a personal level who are at risk based on changes in behaviors. The company has seen a reduction in the number and severity of accidents and driver retention has improved, Dunst said.

More recently, PTI implemented Trimble Dispatch Advisor (TDA), configurable software that uses machine learning to give load planners recommendations for how to put the “right driver on the right load at the right time,” he said.

TDA gives load planners an explanation for each driver-load match recommendation. This transparency has helped speed adoption of the technology by creating trust with users in the information, he said. Results from using Trimble Dispatch Advisor include making the fleet more profitable and load planners more efficient as well as improving the company’s ability to meet driver home time commitments, he explained.

VP and Business Area Manager for Supply Chain Insight for Trimble Transportation, Chris Orban, believes there is potential for AI to improve both fleet efficiency and safety by giving drivers customized coaching sessions. The coaching is tailored to each driver by analyzing video and telematics data to identify both good and bad behaviors and can be coupled with human intervention as needed to maximize results.

“Human and computers working together is the true power in our industry right now,” Orban said.
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Orders for new trucks and trailers are backlogged into 2022. High demand for capacity and a global shortage of microchips has created a bottleneck for vehicle manufacturers. Faced with long lead times on equipment has many fleets making difficult, if not inevitable, decisions to extend the lifecycles of tractors and trailers. This decision has risks. Unplanned maintenance events could steamroll their budgets and increase the potential for downtime.

One of the unknowns in the decision is the number of deferred maintenance costs, explains Jim Coffren, a data-driven fleet maintenance expert and president of JC Consulting. Deferred costs, he said, are those that were covered by a factory or extended warranty.

When warranties expire, typically after 36 to 48 months, fleet maintenance costs will certainly go up. Some repairs will be expected but others will not.

If a fleet decides to extend its trade cycles, such as running tractors for an additional 80,000 miles, Coffren advises fleets to pay close attention to the wear rates for tires and other components. Use this information to create a budget, he said, and avoid making costly mistakes such as installing a new set of tires right before a truck is to be traded or sold.

Fleets can use technology to mitigate the risks of extended trade cycles. Fleet maintenance management software can help with predicting replacement cycles for wear items and more significant repairs. With this information, fleets can fine-tune their preventive maintenance (PM) schedules and plan budgets that account for changes in vehicle operating costs.

Starting Off Right

One of the first items on the checklist for extending trade cycles is to bring vehicles in for a PM service before their factory or extended warranties expire. This extra PM service is the time to inspect major components like the engine, transmission, clutch and differentials for any signs of premature failure, said Dave Walters, senior solutions engineer, Trimble Transportation, who is a former director of maintenance.

Coffren adds another item to the checklist: evaluate the inventory of wear items, like tires and brakes, and their wear rates on the vehicles with extended trade cycles. Next, create a maintenance budget for vehicles during their remaining life.

When extending trade cycles, the scenarios to avoid are those where items

Cowan Systems uses the TMT Fleet Maintenance software. When work is performed by external shops, the full repair details are entered into its system “as if we were doing the work,” Dennis Morgan said, to “know exactly what is being done to help find trends before they become problems.”

Dennis Morgan
President, Cowan Systems
like tires are replaced close to when the vehicle will be traded in or sold. In some cases, fleets will want to move higher-mileage equipment to freight lanes with lower utilization to save money on replacement items, he said.

Fleet maintenance software systems can keep a detailed repair history on different makes and models of equipment. This data can be augmented by real-time sensor data to accurately predict components failures.

The value of predictive maintenance increases for higher-mileage vehicles that have more probability of downtime, explains Renaldo Adler, head of software engineering, Connected Maintenance, for Trimble Transportation.

Fleets that use technology for predictive maintenance can schedule work pending items for vehicles to complete during the next PM service. In Trimble’s TMT Asset Maintenance software, this can be done using a Scheduler feature, Walters said.

Connecting All Repairs

A critical element in predictive fleet maintenance is to capture repair work that is performed on vehicles at both internal and external shop locations.

Historically, Cowan Systems, a Baltimore, MD-based fleet with more than 2,000 power units, has not had its own shops. The company—which has dedicated dry van, refrigerated truckload and intermodal operations—instead outsourced maintenance to its dealer network.

This model has changed due to a growing shortage of technicians, and trucks not being as reliable as they once were, said Dennis Morgan, president of Cowan. “We had to get independent,” he said. “We can’t get trucks into bays at dealers.”

Morgan and other leaders at Cowan decided to keep shops open from two fleets it acquired during the last five years. Previously, Cowan has closed the shops of companies it acquired. Even with two shops, “we are still heavily dependent on outside maintenance,” Morgan said.

Cowan Systems uses the TMT Fleet Maintenance software. When work is performed by external shops, the full repair details are entered into its system “as if we were doing the work,” he said, to “know exactly what is being done to help find trends before they become problems.”

Motor carriers that use TMT asset maintenance software can schedule work with outside service providers using a connected network of partners. Trimble has an integration with TravelCenters of America, for instance, that enables fleets to schedule work in TMT Service Center and share visibility of service events with their dispatch systems, like TruckMate, Innovative and TMWSuite, explained Adler.

The Broader Effects

The order backlog on new equipment has not created a need for all companies to extend trade cycles, but it has impacted them in other ways.

Ohio-based AIM Transportation Solutions operates a full-service equipment leasing business, AIM NationaLease, with more than 12,000 power units leased to fleet customers.

AIM has seen business increase from customers needing rental units and an extension on their leases to close the gap until new equipment becomes available. The long lead times have also impacted AIM’s used truck business, said Eric Samp, the company’s director of used trucks.

A year ago, AIM had 125 to 150 used trucks for sale on any given day. At present, it has about 25 trucks in inventory. Used trucks are now selling in 17 days, on average. Historically the company’s sales cycle was 50 days, he said.

The vast majority of used trucks that AIM sells come from within after leases expire, Samp said. With many customers extending their leases, AIM has had to purchase and recondition more used trucks from the market to sell.

Cowan Systems has not had to extend its trade cycles. The company has a trade cycle of 42 to 48 months, and all purchases for replacement vehicles in 2021 were ordered a year in advance.

One area where the company might be negatively impacted by long lead times is if a new business opportunity arises. If Cowan needed to buy more assets, “we would not have the ability to do that,” Morgan said.
There’s no shortage of reasons why telematics use in trucking and transportation operations has been on a steady upward trajectory. Enabled by the advent of a multitude of systems from vehicle and component manufacturers, and transportation management and maintenance system and other suppliers, these solutions are driving operations and asset service programs across many market segments. By all indications, their potential uses are unlimited.

In two recent reports, Work Truck magazine took up the subject of telematics, providing some interesting insights. When most fleet managers think of telematics, the publication noted, the first image that likely pops up is a digital map with dots showing where their vehicles are at any specific time. In reality, though, there are a ton of benefits of utilizing a telematics system beyond simple vehicle tracking.

In an article on the Top 14 Benefits of Telematics Beyond Tracking, Work Truck magazine lists enhanced safety as the Bottom of Form number-one advantage for fleets. Beyond vehicle tracking, it said, telematics can help improve safety by allowing fleet managers to monitor and manage driver behavior and identify risky events. With an integrated telematics platform, it added that fleets can deliver in-vehicle coaching and generate reports to identify when drivers need training.

Telematics is also essential for monitoring driver fatigue, Chris Orban, vice president and business area manager for Supply Chain Insight for Trimble’s Transportation division, told the magazine. “Beyond simple hours of service (HOS) compliance tracking, telematics data can be used to track drivers’ sleep cycles and optimize rest breaks to best suit their needs,” he said.

Orban noted the value of telematics in understanding vehicle health as well, and its role in ensuring proper and effective preventive maintenance. “Engine data collected by a telematics device helps identify issues we can’t see with our eyes,” he said. “Fleets can often access this data remotely as well, helping streamline maintenance activities at times that are most convenient and efficient, rather than dealing with repairs on the road.

“A telematics solution also provides insights into overall operations,” Orban related. “Telematics data from vehicles can help identify patterns that could affect a fleet’s profitability or scheduling, such as extended delays on certain routes or with certain customers, that could lead to opportunities for revenue.”

So with telematics you can track vehicles and plan routes, oversee driver behavior, and monitor diagnostics. What all that really means, Orban explained, is that you’re sitting on a wealth of information. The real question to be asking is what does all the data mean and what can you do with it?

“When telematics data is viewed and analyzed in context you can really start to use it to improve your operations,” Orban
TELEMATICS: A Wide Range of Capabilities

As telematics continue to evolve, Trimble Transportation is making extensive use of the wide range of capabilities of those systems and providing cost-effective technology that’s been designed by transportation industry professionals. Here are some of the solutions and benefits of connecting assets, people and enterprise systems:

Fleet and asset tracking capabilities provide near-global GPS visibility so you can easily monitor your assets wherever they happen to be. Learn when your shipments reach their destinations, how long they spend there and when they depart for better route and operations planning and improved asset utilization.

"With telematics, software can do the heavy lifting and enable better decision-making through the use of analytics and more informed reporting. Especially in the past 18 months, the stakes have never been higher," stated. "With telematics, software can do the heavy lifting and enable better decision-making through the use of analytics and more informed reporting. Especially in the past 18 months, the stakes have never been higher.

"Where the real value of telematics lies is in data science processes that let you not only be proactive but predictive as well," Orban continued. "Historically, linear reporting capabilities were used to take action on something that has already happened, and to try to predict the future. Today, the power of real-time telematics data is that it can be prescriptive; it can tell you that you are likely to have a problem and you can make choices based on what you believe will happen."

With a vast of amount of telematics information from vehicles, drivers, operations and a myriad of supply chain sources, Orban advised transportation services providers to adopt hardware and software agnostic solutions. "Telematics continues to evolve but its full value can’t be realized if you’re limited by your devices or applications," he stated.

"By implementing an open telematics solution, fleets can effectively turn data into actionable insights to help improve their operations," Orban continued. "They can improve key safety, planning and other factors by increasing efficiency, cost savings, and maximizing asset utilization.

"As telematics solutions continue expanding and become more robust, the significance of the data they provide becomes even more apparent," Orban added. "The future of telematics promises even more opportunities for transportation and logistics services providers to understand what’s happening across their operations and to make more informed decisions for their businesses."
Perhaps, in 25 or 30 years, economists, historians and social scientists will study the lasting effects of COVID-19 on global commerce. And, as they analyze the many consumer behaviors influenced by the pandemic, they will no doubt remark on the extraordinary agility demonstrated by last-mile logistics providers.

True, Amazon, eBay and other e-commerce giants were already reshaping the B2C category. Leading consumer brands, retailers and delivery providers had designed complex distribution networks capable of handling seasonal peaks and the unrelenting shift from brick-and-mortar stores to computer screens and handheld devices.

But then came April 2020, when nearly four billion consumers worldwide retreated to their homes. Suddenly, e-commerce and last-mile logistics were transformed from modern conveniences to societal lifelines. Order volumes jumped. The types of items delivered to doorsteps proliferated. Within days, it seemed, even the most tech-wary consumers were cheering the frequent arrivals of delivery vans.

Even as the world continues to fight the pandemic, it is clear that COVID-19 has secured the dominance of digital commerce. And in doing so, it has made the last mile the Holy Grail of the B2C value chain, according to Andrew Nowell, UK-based sales manager for Trimble MAPS, which provides last-mile routing, optimization, mapping, navigation and other technology solutions for shippers and logistics providers.

“The pandemic has increased parcel volumes. This is in line with what our major customers in the UK, Europe, the US as well as Australia and New Zealand would have predicted happening in two-to-three years’ time,” Nowell said. “What’s most interesting is that these volumes appear to be holding in a lot of theaters, even as (lockdown) restrictions are being eased and people are free to go back into physical retail locations.”

So, what’s next? How will major brands, retailers and parcel delivery operations adapt to the needs of an increasingly e-commerce-centric population—one that will be far more mobile than it has been for the past 16 months?

Retail Brands Fight Back

Nowell foresees leading brands and retailers redoubling their efforts to optimize the customer’s buying journey, from click to delivery. “The customer experience can be a powerful competitive differentiator,” he said. “It’s not enough, for example, to offer two delivery windows—morning or afternoon. You need
to offer ETAs that are accurate to within 30 minutes. If you’re delivering groceries, it might need to be within 10 or 15 minutes depending on what the consumer is willing to pay.”

Consistent with this trend, parcel carriers are being asked to provide more value through each delivery. This might be as simple as parking the delivery truck or van in a specified location or as complex as offering eco-friendly delivery and/or providing skilled installation of items such as refrigerators, washers/dryers and televisions.

“Even for a general parcel delivery van that makes 200 stops a day, the expectation is to provide 200 positive customer experiences,” Nowell explained. “There’s a lot of technology needed to meet that expectation.”

How shippers and parcel carriers address these and other challenges will likely vary by region, just as pre-pandemic delivery strategies were tied to local preferences and geographical realities.

In Scandinavian countries, for example, which have comparatively few urban areas, consumers generally spend more time out of their homes. As a result, many eCommerce shipments are directed to centrally located parcel lockers rather than recipients’ doorsteps. Parcel lockers are also common in many European nations, but not in the UK and Ireland.

One of Sweden’s leading parcel delivery providers operates a network of more than 1,600 out-of-home delivery points. The carrier uses Trimble MAPS solutions to continually flex this network up and down to ensure convenient local access for customers regardless of changes in volume. After they have received a text notification of the delivery, consumers can access a dashboard featuring detailed map visualizations and directions to the delivery location, determine other services available at the delivery point, and plan their pickup. The benefits for the carrier are simplicity, speed, accuracy, reduced cost and, above all, increased consumer satisfaction.

Also popular in Nordic countries is a “green” delivery option tied to reduced vehicle emissions. This trend, sure to spread to other regions, further complicates the design of last-mile networks. Fleets transitioning to electric vehicles might need to increase the number of network depots in a given area to address battery charging needs. Government-mandated low-emission zones, common in large European cities, add additional complexity and cost to last-mile networks.

The Miles Ahead

For all that’s not known about future changes in consumer purchasing behavior, one thing is certain, according to Nowell: the logistics community will find the necessary solutions. “These people are very savvy problem solvers,” he said. “Put them in a room and they will find an answer.”

Those answers are increasingly coming in the form of new technologies. Nowell says last-mile tech investments have evolved from proof-of-delivery to route planning and design to the ability to dynamically optimize routes, vehicles and loads to ensure the greatest possible productivity.

The sources of these technologies are also changing. Ten years ago, large parcel delivery providers typically developed proprietary solutions to support their unique processes, technology stacks and use cases. Today, even very large logistics operations are investing in best-of-breed solutions from outside providers.

“They’re now on their second or third generation (of technology),” Nowell explained. “They’ve brought it in, deployed it, learned lessons and run through that investment cycle one or two more times. With the increased popularity of SaaS and distributed networks, they are now able to configure many off-the-shelf solutions to meet their specific needs.”

But first, perhaps, a breather. Many last-mile logistics providers have been moving too fast in the past 18 months to focus on lessons learned and plan for the future. “Hopefully, when this all settles down, they can sit back to look at the future very strategically and solve anticipated problems technically,” Nowell said. “We would welcome the opportunity to be part of those discussions.”

“Even for a general parcel delivery van that makes 200 stops a day, the expectation is to provide 200 positive customer experiences. There’s a lot of technology needed to meet that expectation.”

Andrew Nowell
UK-based Sales Manager
for Trimble MAPS
The most important resource a trucking company has is its drivers. It’s a resource that is increasingly scarce and has created significant anxiety among fleet managers nationwide. Many have been taking to Capitol Hill, the courts and state houses around the country to lobby for action before it’s too late. Here are several emerging actions in state and federal government that may impact the availability of this critical resource.

The Hunt for Younger Drivers

Driver shortage has been the top issue facing the trucking industry now for four years running, as reported by the American Transportation Research Institute. Over the next decade the industry is projected to need around one million new drivers to meet the demand. Over the past year this problem has been exacerbated by the COVID-19 epidemic through limitations in processing new license applicants, as well as severely limited capacity of driver training schools. In addition, the new Drug and Alcohol Clearinghouse has resulted in nearly 73,000 drivers either being temporarily or permanently removed from the driver pool due. It also is well documented that the average driver age continues to rise (the average age is now 55) when drivers begin to retire. Compounding these challenges has been a sharp increase in freight volumes with no apparent end in sight.

One problem identified by the industry is that federal rules prohibit truck drivers under 21 years of age from operating in interstate commerce. FMCSA currently has a Pilot Program to study if younger drivers with military experience can safely operate a CMV. It also had plans to expand this pilot program to younger civilian drivers, but those plans were shelved when the Biden Administration walked into the Oval Office. There is also a legislative effort to solve the problem. The DRIVE-Save Act, a bipartisan bill that aims to allow younger drivers to drive interstate through a two-step apprenticeship program. This legislation was introduced in the last two Congresses, and a version currently resides in the Senate Commerce Committee’s Highway Bill which awaits Senate action.

With the notion of automated trucks on the horizon, it may continue to be difficult to recruit enough drivers to the industry and to keep them. The challenge is substantial, but the industry gained valuable currency during the COVID-19 pandemic as the nation saw how important the trucking industry was (and is) to the safety and economic well-being of our country. As momentum builds to allow younger drivers to operate in interstate commerce, congressional action may be necessary to break the logjam. The DRIVE-Safe Act, if it survives the highway bill, may be just the vehicle to do that.

Autonomous Vehicles and Technology

On June 29, NHTSA issued a Standing General Order requiring manufacturers and operators of vehicles equipped with Level 2-5 autonomous driving technology report crashes to the agency. In its announcement, NHTSA indicated that by mandating crash reporting, it will have access to critical data that will help quickly identify safety issues that could emerge in these automated systems.

In the Department of Transportation’s Spring 2021 Regulatory Agenda, FMCSA and NHTSA have eight rulemaking activities related to these technologies in the pipeline. Adding to this governmental push on technology, FMCSA’s “Tech-Celerate Now” program is focused on education and promotion of the safety benefits of these technologies and enjoys support from several major industry associations.
In addition, the NTSB’s “Most Wanted List” calls for collision-avoidance and connected-vehicle technologies on all vehicles. Finally, the states of Maryland, Maine and Virginia just implemented automated electronic roadside inspections, and CVSA is discussing this concept and its impact on roadside enforcement.

Clearly, technology is front and center in the industry and in the eyes of the regulators and enforcement. These technologies promise increased efficiency and improved safety if widespread adoption materializes.

The Independent Contractor Model

AB5, which became effective on Jan. 1, 2020, codified into state law a previous California Supreme Court decision setting forth an “ABC” test to determine if a worker is an employee or an independent contractor. The “B prong,” which requires a contractor to deliver services “outside the usual course” of a motor carrier’s business, makes passing the test very difficult.

The California Trucking Association has challenged AB5 on the grounds that it is preempted by the supremacy and commerce clauses of the U.S. Constitution but ultimately lost the case on appeal. (See related story, “What’s Trending in Transportation at the State Level,” page 18)

On June 23, the US Court of Appeals for the Ninth Circuit granted CTA’s request for a stay of the mandate while it awaits Supreme Court review. As a result, AB5 cannot be enforced until the Supreme Court decides CTA’s petition. Although the Supreme Court only reviews a very small percentage of cases, the Ninth Circuit’s stay suggests agreement that the case fits within the criteria for cases to be heard by the Supreme Court.

The outcome of this case may have lasting impacts on trucking as several other states are closely watching the outcome with an eye toward emulating the California law. ★

(Steve Keppler is co-director for Scopelitis Transportation Consulting based in Washington, DC.)

Have questions on these or other regulatory topics? Contact Dave Osiecki or Sean Garney of Scopelitis Transportation Consulting and Trimble’s Regulatory Consultant at dosiecki@scopelitisconsulting.com or sgarney@scopelitisconsulting.com
What’s Trending in Transportation on the State Level?

The past year and a half has brought unprecedented change and challenges to nearly every industry. As we look to what’s ahead, leaders at several trucking associations discuss issues important to their members as they steer toward 2022. While there are some new industry priorities, one longstanding industry challenge refuses to go away.

In transportation, long-standing industry problems remain at the forefront. Although summer headlines were full of stories about ransomware and infrastructure, the driver shortage remained a leading concern.

“If I’ve heard it once, I’ve heard it one hundred times: if only I had ten more drivers, I’d start them today,” said John Hausladen, President and CEO of Minnesota Trucking Association (MTA). “Carriers are hyper-focused on taking advantage of business opportunities today, and the workforce is the key factor in making all of that work.”

Hausladen also noted the shortage of technicians is also having an impact: “This is important for both return facilities and fleets, because we value uptime more than anything. Having a vehicle breakdown in transit causes a world of problems.” He acknowledged getting people to think about technical careers is a difficult task, despite the fact that the field offers “high paying jobs that have great stability and are continuing to evolve to meet new technology.” MTA is working with the state in efforts to address the challenge in new ways.

For Barbara (Hunt) Smithers, Vice President with Indiana Motor Truck Association (IMTA) since 2011, the driver shortage and retention has been a factor throughout her three-decade-plus career in the industry. “The pandemic and regulations just sped up what was already happening,” said Smithers before providing a stark portrait of the situation:

“If you ask any carrier in Indiana they will tell you they have at least one truck sitting. Depending on their size, many will tell you they can’t find drivers for at least 10 to 15 trucks. One of our larger members has 150 trucks sitting. We just talked to them last week. You can ask anyone, and they’ll tell you they’ve got the equipment, they’ve got the freight. They just don’t have drivers they can put behind the wheel.”

To make an impact on the now decades-long problem, both Smithers and MTA’s Hausladen said their members are strong supporters of the federal DRIVE-Safe Act, which would create a national apprenticeship program for drivers. “We can’t hire people under the age of twenty-one, and they aren’t sitting around waiting to turn...
As a positive step by Indiana toward the future, Smithers cited the recently launched CDL+ program for commercial truck drivers created by Conexus Indiana and Ivy Tech Community College in partnership with IMTA and Venture Logistics. The training program is the first of its kind in the nation offering eligibility for federal student loans, credit toward a logistics degree, and internships.

Sheri Call, Executive Vice President of the Washington Trucking Associations, also led with the driver shortage, by saying:

“Given the times and what society has experienced for the last 16 months, what is acute and emerging right now is the driver shortage. I’ve got state agencies calling me asking, ‘How can we solve the driver shortage?’ and I’m explaining to them that I’ve been with WTA for 20 years and this has always been an issue. Now we’re at the intersection of national disasters and a pandemic, making it seem much more acute.”

Smithers, Hausland, and Call named the shortage of parking spaces for trucks as another serious and growing problem. The city of Minneapolis is trying to ban all on-street parking of trucks bigger than 26,000 pounds, which could force truckers to choose between a home and a livelihood. Indiana’s Department of Transportation (INDOT) is adding 1,100 spaces to their facilities in addition to an existing 1,400, but the state has more than a million trucks a day on its roads and highways. Call noted how electronic logging devices (ELDs) have exacerbated the issue for drivers, giving them less time to find a suitable place to park their trucks.

Also important in Washington is the ongoing push to allow operation of triple trailer combinations. Call’s state is the only one along the I-90 corridor that doesn’t allow triple-trailers, forcing trucks entering Washington from Idaho and Oregon to stop and reconfigure their loads outside the state’s borders. The result is longer delivery times and more greenhouse gas emissions, in addition to exacerbating the driver shortage.

Meanwhile, California Trucking Association (CTA) CEO Shawn Yadon is focused on an issue he says could disrupt the livelihood of 70,000 independent owner-operators: California Assembly Bill 5 (AB5), which aims to define the difference in worker status between employees and independent contractors. As the bill is currently written, drivers who are owner-operators would be classified as employees, while workers in dozens of other fields would be allowed to remain independent contractors.

CTA has taken legal action, creating a case that’s gained nationwide attention, and seems destined to eventually end up before the US Supreme Court.

“More often than not, an individual who has purchased a truck and is out there operating independently [has] at some time in their career been an employee. They consciously chose to go out and strike out on their own and create their own business. That model for trucking has worked, and is vital to the future of this industry. We have to protect it, and that’s why the California Trucking Association has challenged AB5 in the courts,” concluded Yadon.
A Tale of Two Clients
As offices emptied out during March of 2020, remote workloads became a stress test for IT systems across the globe. It wasn’t just a case of having enough bandwidth to connect now-remote workers, but could business networks sustain the sudden challenges of doing business in uncharted territory? During a recent Transport Topics webinar on the benefits of the cloud for our industry, Trimble Transportation’s Keith Weitz, Vice President of Technology and Cloud Services, told the story of one client who found their business suddenly brought to a standstill by the pandemic:

“Our customer was unable to dispatch so they couldn’t process orders in a timely fashion. The system they were using was highly sensitive to latency, and connecting to it remotely was not cutting it. A large part of the problem was remote connections to their SQL Server. We quickly built an environment for them in our cloud utilizing Citrix technologies and migrated their data overnight. Now the client had a remote solution, and they were able to get their business back up and running. They could work from their home during the pandemic or anywhere else if they wanted to and not miss a beat.”

Weitz also discussed a client that was the victim of a ransomware attack, a real threat which has been growing in recent months. Ransomware exploits security flaws in unpatched systems, enters through exposed network ports, or arrives in phishing scams delivered via legitimate-looking emails. The cost to victims is climbing: last year the average cost of a ransomware attack went from $750,000 in 2020 to almost $2 million. Two high-profile cases this summer in the U.S. had significant impacts on supplies of gasoline and meat, costing the victimized suppliers $8 million and $11 million in ransoms to get decryption keys (and back to business).

In 2006, Amazon launched Amazon Web Services (AWS), originally conceived as an infrastructure-as-a-service platform (IaaS) from which companies could host their own applications. Microsoft joined the IaaS fray in 2008, launching Microsoft Azure, and upped the ante in 2011 with the introduction of Office 365, and more importantly, Exchange Online, giving businesses the opportunity to ditch their on-premises exchange servers for Microsoft’s “cloud.”

Multiple business tools followed email to the cloud: CRMs, databases, and an ever-increasing number of IT tools and applications. Capabilities expanded at a dizzying pace, and it became an integral part of every new tech product and innovation. Last year, as the world’s economy was whipsawed by the Covid-19 pandemic, Salesforce revenues were $17.1 billion, a 29% increase over 2019. AWS’s revenues were $45.3 billion. Microsoft made $50 billion. Covid-19 provided the ultimate use case for how the cloud can support businesses through unprecedented disasters and extended emergencies.

In 2019, a few former Oracle employees started Salesforce, becoming pioneers in the SaaS (software-as-a-service) industry. According to Keith Weitz, Trimble Transportation’s VP of Technology and Cloud Services, the early goal of Salesforce was “to get the servers and the software out of the client’s offices and into what would soon be known as ‘the cloud.’”

For Business Acumen, Look to Cloud Services
In 1999, a few former Oracle employees started Salesforce, becoming pioneers in the SaaS (software-as-a-service) industry. According to Keith Weitz, Trimble Transportation’s VP of Technology and Cloud Services, the early goal of Salesforce was “to get the servers and the software out of the client’s offices and into what would soon be known as ‘the cloud.’”
Is it Time to Migrate to the Cloud?

While these companies migrated their business to the cloud under extreme circumstances, cases like theirs are increasingly common. Every day more and more companies discover it doesn’t take an emergency to shift their workloads from on-premises systems to a cloud environment that provides them with security, efficiencies and cost-savings:

- In a cloud environment there are no more hardware requirements or server rooms to manage, which means your tech experts no longer have to support or spend money on cooling systems, spaces for server racks, or the miscellaneous equipment required to manage an IT infrastructure.
- Annual support contacts on hardware become a thing of the past.
- Capital expenditures and employee headcounts are reduced.
- Responsiveness and flexibility to business cycles: scale servers up or down as needed.
- Software licenses can be transferred to the cloud.
- Security is provided by hosts with expertise employing the latest technology.
- In a cloud environment there are no more hardware requirements or server rooms to manage, which means your tech experts no longer have to support or spend money on cooling systems, spaces for server racks, or the miscellaneous equipment required to manage an IT infrastructure.
- Annual support contacts on hardware become a thing of the past.
- The current state of your IT infrastructure and the costs to maintain or replace it.
- The strategic value of migrating to the cloud can save you over the next three-to-five years. Take advantage of your current Trimble team for advice on how to maximize efficiencies and increase functionality.
- The benefits of offloading or reducing IT responsibilities.
- Disaster recovery scenarios. Is your plan for maintaining your company’s ability to function during the next pandemic, natural disaster, ransomware attack, or terrorist attack a solid one that has been tested and validated?
- How vulnerable is your business to ever-increasing security threats? Make sure your infrastructure is safe, sound, and up-to-date. This should be a core competency for your IT people.

If recent headlines and your own experience has left you wondering if it’s time to move your IT to the cloud, consider your operations through these five vantage points:

- The current state of your IT infrastructure and the costs to maintain or replace it.
- The strategic value of migrating to the cloud can save you over the next three-to-five years. Take advantage of your current Trimble team for advice on how to maximize efficiencies and increase functionality.
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In 2020, Chief Financial Officer Anna Agafonova, of banking conglomerate SWIFT, published “Digital Transformation of Logistics and SCM (supply chain management),” and pointed out the significant digital transformation made in the last few decades including organizational forms, tools and technologies for managing the logistics of companies and supply chains.

“This is mainly a result of the paradigm of business digitalization,” Agafonova reported. “Companies switch to large-scale automation of corporate information systems, become participants of electronic trading platforms and e-commerce services and form their virtual clones.”

Agafonova said consumers are loving the advancements in information systems and faster responses to changes in demand. That enthusiasm is invading the business environment as well.

“Despite the existence of numerous research works in this area, there is uncertainty in understanding the goals, directions and technologies of the digitalization of logistics and SCM.”

Digital transformation raises a lot of questions across all industries. One of them is how to simplify the integration of digital transformation applications and processes into day-to-day operations. It’s always evolving, and at times it may be hard to keep up with all the new innovations and processes.

Three experts from academia and the transportation logistics and supply chain management industry shared the ins and outs of digital transformation, ideas of what’s in its future and suggestions on the end goal.

What is Digital Transformation, Really?

Marisa Brown, Senior Principal Research Lead of Supply Chain Management at APQC (American Productivity & Quality Center) in Houston, Texas, said her organization defines digital transformation as the strategic integration of multiple technologies, with its primary components being the digitization of data and information, automating processes, applying analytics, and enabling digital interactions to improve collaboration efforts.

“This definition is a good starting point for organizations to define what digital transformation means for them,” she said.

Brown said organizations often launch digital transformation initiatives without a clear and common understanding of what digital transformation means. She said the nature of each organization’s digital transformation is influenced by three design factors: scope, governance, and strategic intent.

“These three factors define the “what,” “who,” and “why” of digital transformation,” Brown said. “Moreover, technology is evolving so rapidly that today’s initiative can morph into something entirely different tomorrow.”

Brown said ambiguity around digital transformation creates stress across the organization, from the employees who are expected to adopt it to the leaders who are expected to measure its success.

Gary La Point, Syracuse University Co-Director of the Whitman School of Management H.H. Franklin Center for Supply Chain, said digital transformation is really about transparency, technology and data.

“It’s about capturing data in all aspects of the supply chain, and analyzing this data to make better predictions and smarter decisions,” La Point said. “Information is being collected everywhere from sales information, the demographics of the buyers, how and when materials are being transported, and warehoused, just to name a few examples.”
Why is Digital Transformation (DX) Important?

“In many ways in the supply chain, it drives greater efficiency in terms of removing manual processes which generally creates lag in information sharing, engagement, and decision making,” said Donnie F. Williams, Jr., Ph.D., executive director of the Supply Chain Management Research Center for the Sam M. Walton College of Business at the University of Arkansas.

Williams said, “Digital technology allows greater connectivity across all activities in the supply chain, which translates into real-time information sharing, which started back in the 80’s and 90’s through the application of Enterprise Resource Planning software technologies.”

Digital is not new, Williams said, but it has accelerated over the last 10 to 15 years. He said digital transformation is considered a buzzword among experienced industry experts, and there is no doubt that the growth in digital technologies to solve some of the supply chain inefficiencies is moving at an unprecedented rate.

Williams said many firms are entering the market with various tools that can “solve” supply chain issues and funding is being poured into these industries to finance start-ups with innovative platforms and tools. And, some of those firms are taking a shot at developing their own digital tools that can give them a competitive advantage in the market.

As for his reasoning behind the word “solve,” Williams said one of the downfalls of digital transformation is firms believing that digital applications will solve all of their problems.

“In reality, digital tools will only enhance our processes, whether good or bad,” he said. “If we have bad processes, digital technology will only make things worse, because the tools will not be applied properly. If we have 800 strong processes, then digital technologies can provide great benefits through capturing greater efficiencies, which allows the firm to move faster and have a great impact.”

What’s the Next Big DX Innovation?

La Point pointed to greater development and adoption of artificial intelligence tools (AI) in all modes of transportation when asked about the next big innovation for transportation and supply chain digital transformation. With the exception of pipelines, La Point sees the expansion of AI use with ships, trains, trucks, aircraft (planes and drones), and re-routing of freight to better optimize networks.

“AI will be used in places and do things we haven’t even thought of yet,” La Point said.

Williams said AI/ML, robotics, blockchain, electronic bills of lading, digital load matching, the Internet of Things (IoT), and supply chain digital control towers all accelerated in popularity during the COVID-19 pandemic. He said greater connectivity to customers through digital apps also has a consistent increase in interest, which leads to more investment in last-mile delivery options.

La Point said further down the road will be quantum transmission of data.

“I believe this technology will actually leapfrog Blockchain,” he said. “This technology is revolutionary in that data will automatically be encrypted and essentially makes it impossible to hack. This technology will eventually become a utility that we will pay for just like electricity because all information will be sent using this technology.”

What is the Ultimate Goal?

Brown said the real end goal is to get work done better, faster, and cheaper. She said technology should be an enabler in service to the organization’s overarching business strategy rather than being seen as an end goal on its own.

“There is too much data facing organizations today for them NOT to automate,” Brown said. “Employees need the tools to make sense of these vast amounts of data coming from internal and external sources, including social media, Internet of Things sensors, etc.”

Brown said, “However, in the face of all this automation, it’s important to not lose sight of the fact that people still matter, and employees will still be needed—albeit with different skills.”

La Point said this is a great time for transportation and logistics.

“For a long time transportation and distribution was not an appealing industry for many young people, but now these areas are “sexy,” he said. “Much of the latest technology in business is being developed for transportation and distribution industries. It has some of the greatest applications for artificial intelligence and augmented reality. The pandemic has really opened everyone’s eyes to the importance of transportation and distribution to the world. It was always there, but not as noticeable as this past year. Transportation is becoming a hotbed for jobs and technology development.”
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