The ability to capture and take action on massive amounts of data is radically transforming the entire supply chain ecosystem.

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In Uncertain Future for Logistics Technology, Partners Needed

By Helen Atkinson

THE LATE JULY ANNOUNCEMENT by Uber that it will end its self-driving truck program, after determining that "developing autonomous trucks was not necessary to stay competitive in the freight logistics industry," is just the latest sign that the future of logistics technology remains hard to predict.

Trucks that drive themselves may not, after all, be the slam-dunk solution to a raft of industry problems. These include the growing truck driver shortage and zero-tolerance enforcement of driver hours of service regulations represented by the introduction of mandatory electronic logging devices (ELDs). But Uber, like others, is still confident that electronic marketplaces for freight services will be a boon to the industry.

Though featured prominently in the news for the last year or so, the manner in which blockchain's promise will be realized in logistics and supply chain operations remains unclear. The same goes for artificial intelligence (AI), which theoretically could revolutionize the industry, but is still a minor factor in day-to-day operations. The Internet of Things (IoT) brings another intriguing possibility to the business of cheaply and easily keeping track of inventory in motion (or at rest). Big Data could be utilized to arrive at amazingly accurate predictions of future consumer and freight demand.

"Artificial intelligence, machine learning, Big Data — and specifically the ability to capture and make sense of, and take action on, massive amounts of data — is radically transforming freight logistics and the entire supply chain ecosystem," said Pervinder Johar, chief executive of REZ-1, a real-time digital supply chain platform and a suite of software solutions. "What was built as a human-centric endeavor, and the many manual processes, interactions, touch points, hand-offs and even the physical assets inherent in this, has the potential to become entirely orchestrated and managed by software systems and machines with minimal human intervention. We have been talking for a long time about visibility and efficiencies across the supply chain, but technology innovation and indeed recent technological disruptions, enable us to be much more aspirational in thinking about an open, real-

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Pressure to improve last-mile delivery performance is resulting in an increase in more costly parcel shipments, in turn driving interest in freight payment audit and other tools to unlock working capital.

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time learning and improving ecosystem, powered by technology."

Exciting times, yet the average logistics manager, busy dealing with everyday challenges in supply chain operations, is faced with a constant barrage of near-magical possibilities when it comes to logistics technology, but almost none of the knowledge and expertise required to assess with a clear eye what to explore, adopt, and implement. Technology simply isn't in the core capabilities of most shipper companies. As the technology picture gets more and more complex, the wisest choice is to find a partner who has new developments and innovations firmly in their domain.

"3PLs are the first adopters of new technology. A huge part of their value proposition to their clients is their ability to utilize advanced technology to solve supply chain challenges," said Brian Thompson, chief commercial officer at SMC³, a technology provider and trucking association that offers an industry platform that uses application program interfaces, or APIs, to form an LTL online marketplace. "These logistics providers constantly keep their ears to the ground, attending conferences and researching the latest technologies, seeking new capabilities. 3PLs can make a single investment in technology and leverage that capability across many shippers."

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Most providers of technology solutions, along with those offering tech-driven services, recognize that an important role they play is in education and forming communities of understanding.

Every year, U.S. Bank brings its freight customers together — both shippers and carriers — to discuss the innovations impacting their business, said Jeff Pape, senior vice president, head of product & marketing, global transportation.

DCLI is the largest provider of marine and domestic chassis to the intermodal industry — a traditionally asset-based business that is beginning to take a more tech-forward approach to its markets. "We want to lead this transformation in a way that considers all aspects — the tremendous potential of a digital supply chain for businesses, the potential to create a more purpose-driven approach in reducing waste, pollution, and so on, and the education, training, and 're-skilling' that need to happen in the industry," CEO Bill Shea said.

When it comes to actual changes in logistics and supply chain operations, technological innovation has affected every business practice in some way, Johar said. "Technology by nature is disruptive. It enables us to do new things, to design new things, to deliver products or services in new ways, to communicate in new ways, and so on. It also displaces or replaces in many cases. In the future, the disruption will be more significant — driverless trucks may be one first step, but the ability to 3-D print locally will upend entire industries. Business practices will continue to change with each major disruption, as they always have."

Driven by customer demand for more insight from data collected, U.S. Bank has made a significant investment in data science tools and techniques coupled with personal consulting to deliver freight optimization and predictive and prescriptive analytics.

"Technology is changing the way businesses use their data," Pape said. "Standard reporting is no longer enough, customers need data analytics. Customers want to dive deeper into causes and effects and model options to further improve their supply chain."

Shippers are pairing those analytics with real-time visibility data to identify bottlenecks within their own processes and their providers' networks. "This visibility allows them to estimate when shipments will arrive at the intended destination with greater certainty," Thompson explained. "Combine that capability with advanced planning and forecasting tools, and they can suddenly reduce inventory storage and management costs. Supply chain managers are just beginning to reap the benefits of these new technologies. The future is very bright in this area due to improving visibility technology, more advanced analytics, and integrated collaboration tools.

"The vast amounts of big data in the supply chain allow shippers to optimize their shipments and do deep-dive analysis on their transportation spend," he continued. "Companies need to partner with technology firms that know how to analyze and present the data so it's digestible and can be used to further the shipper's business goals."

Certainly, it seems the opportunities presented by technological advancement to facilitate real-time transactions — both in terms of securing freight services and dealing with payments — are attractive.

"The notion of marketplaces in the logistics space is very familiar to us, as we have been enabling this for 25 years in the container space," Johar said. He argued that the role of marketplaces will only strengthen as people and businesses become more familiar and comfortable with the power of technology to enable their supply chain aspirations. "There are certainly other functions within the logistics space that are conducive to online marketplaces in the procurement of transportation services that can be further enabled by digitization," Shea added. "Industry challenges and seasonal volume fluctuations require a more dynamic methodology to secure spot rates or to support variable demand pricing. The future success and adoption of marketplaces requires a platform neutrality, data quality, and security, which enhances the ease of doing business to support both upstream and downstream events from booking through freight audit and settlement."

At the root, technology can help shippers stay on top of their supply chains, recognize opportunities to respond to industry trends, save money, and bypass potential crises.

"The shift in direct-to-consumer shipping and the resulting rise in costs is driving change in the industry," Pape said. Pressure to improve last-mile delivery performance is moving more warehouses and distribution centers closer to the customer. However, this trend is pushing capacity limits and utilizing more segments of transportation, resulting in an increase in parcel shipments, a sector that continues to outpace other modes of transportation, with a 7.9 percent five-year compound annual growth rate (CAGR) and strong growth forecasted due to e-commerce, according to the ***2018 CSCMP Annual State of Logistics Report.***

"Since small parcel is significantly more expensive than bulk freight, our customers are looking for a way to avoid an unfavorable hit to their bottom line, and they are turning to their freight audit payment process to find innovative ways to unlock working capital either through improved operational efficiencies or improved cash-flow," Pape said.

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technology provides, blockchain holds exciting potential for supply chain finance and the transportation space overall, but its strength contains its limitations. "Blockchain works because of the validation of data points by the collective data miners. The more data points on a transaction, the more points that need to be validated, making it not as instantaneous as you may see in less complex transactions," Pape explained.

Again, the challenge is to remain at the forefront of technological innovation, carefully filtering what will be most useful for customers doing the day-to-day work of logistics operations. "As a financial institution, U.S. Bank is very excited and interested in how this technology will not only change financial transactions but also the transfer of valuable information," he said, noting a division, the Payments Innovation Team, that is dedicated to exploring the best applications for this technology to suit their customers.

"When shippers connect to multiple carriers using API messaging, they can access raw data about LTL shipments, enabling near real-time visibility," Thompson explained. "But with that greater shipment clarity comes a raft of big data that may overwhelm them. Shippers that experience this data overload due to API communications need the assistance of a technology provider that can take the relevant data, optimize it, and help the shipper drive efficiencies in its logistics processes."

So, as Thompson puts it, these APIs are bringing about greater visibility throughout the supply chain, but they are also necessitating partnership with a trusted, reliable technology provider.

Ultimately, technology is only one aspect of the overall logistics and supply chain management conundrum. While it may wave a magic wand over challenges such as visibility, there's scant prospect, for now at least, that it can solve some of the other pressing problems. "Our customers, both shippers and carriers, are feeling the impact of the driver shortage and don't see any changes on the horizon. While it's not directly a technology problem, nor is it a problem that we are able to directly solve," Pape said. "If there was a way to leverage technology to lessen the demand for drivers and improve capacity, that would be great."

He sees technology as a facilitator, among others, of better, closer relationships between businesses that need to work together to get freight where it's going. "We will continue to build on our industry-leading collaborative tools and services that can ease the burden in other areas of supply chain management and help strengthen the relationship between shippers and carriers," he said.

Shea emphasized the need for logistics managers to stay current on technological advances and aware of how they fit in with a wider goal of helping personnel move with the times. "Beyond the impact on businesses, we shouldn't underestimate the impact of technology innovation on people," he said. "We can clearly see a new role for supply chain professionals going forward as the strategists and orchestrators of a real-time, connected, global trading network." As technology enables system and software improvements, the strategic role of individuals developing these systems increases within the organization and, for those employees displaced by technology, there is a great opportunity to provide and encourage different skill sets, he explained.

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Thompson, however, warned, that logistics providers must carefully evaluate new technology before making an investment; shippers doubly so. "I wish this was not the case, but shippers really need to do their homework when selecting a technology provider," he said. "Technology companies must understand that a shipper's data is their confidential property. Companies that treat this data like a product are not ideal partners, and they are not working for the good of the supply chain." ■

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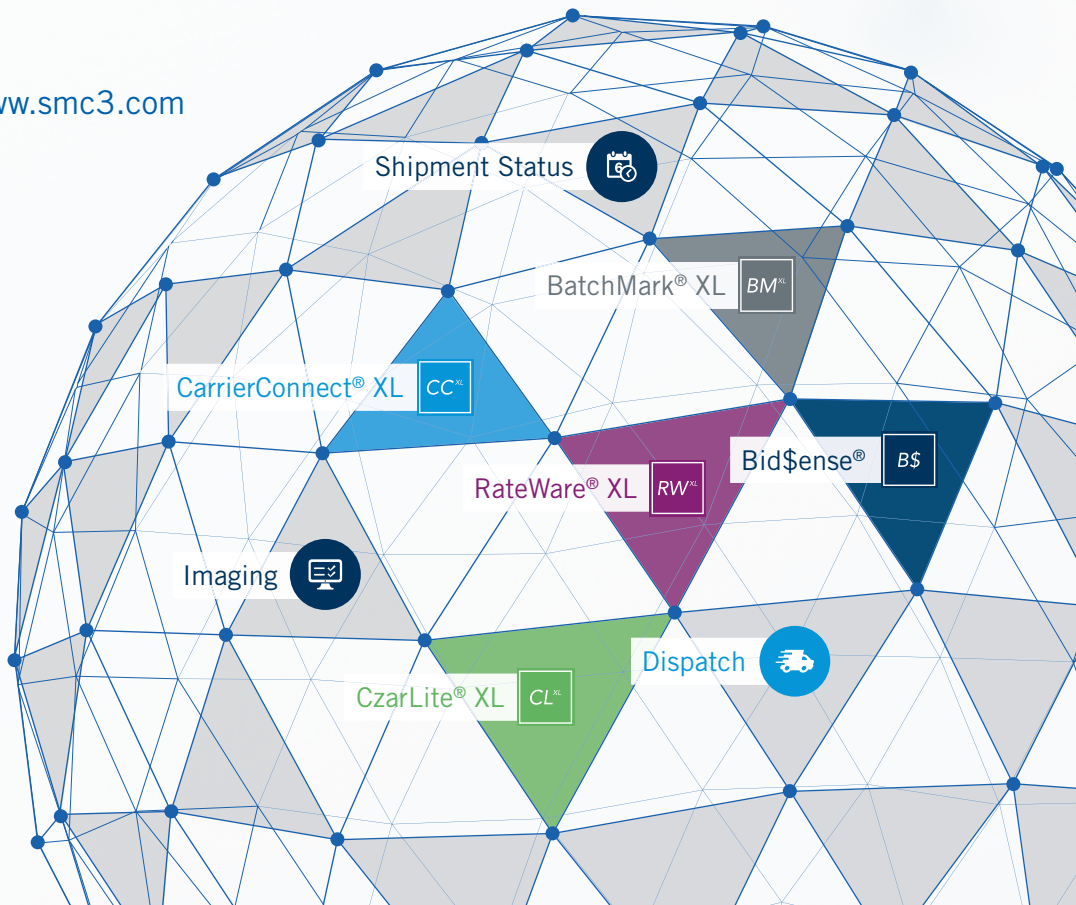
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