Technology Series: Positioning Chassis Assets Where & When They're Needed

What forms of technology are available and/or on the horizon that can help put intermodal chassis where they are needed, and when? And what are the main challenges when it comes to using such technology to support improving asset utilization?

The first challenge is to understand how equipment providers are living up to their equipment commitments, BlackBerry Radar Senior Vice President Christopher Platt said.

"Can you easily measure if you have too many or too few chassis to meet your current or upcoming commitments?" he asked rhetorically. "Do you have this data in real-time and at your fingertips so that you can make decisions quickly, and economically, versus waiting until there is a crisis or pressure that pushes you to make more costly decisions?"

"Having a good technology solution that provides you reliable and accurate data about the current location and status of your chassis pools, compared to your needs and commitments, is the first step toward ensuring customer needs are met in the most economical way possible," Platt explained.

Matt Harris, a vice president with PowerFleet, a wireless Internet of Things and machine-to-machine solutions provider, told *Intermodal Insights* that the main challenge his company has experienced is expanding telematics adoption by chassis owners, lessors and rental providers.

"While chassis tracking is well established and growing in the chassis leasing market, adoption for chassis rentals is lagging, due in part to the cost of equipment, recurring communication cost and labor to deploy these systems weighed against the uncertain revenue potential," he explained. "Tracking for rental chassis must provide more than improved fleet utilization and efficiency for owners and lessors. It needs to provide a revenue source to justify the investment."

More Challenges

Joe Hite, director of national accounts for container chassis

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builder CIE Manufacturing, said that one of the bigger challenges his company has dealt with in the past year is creating strategies to improve chassis positioning.

"Intermodal still lags behind the dry van/reefer carrier in terms of utilizing technology to track and monitor assets," he said. "The technology is here and available but it will take a documented history of the efficiencies that chassis connectivity brings with it in order to get chassis owners and operators fully on board with its use."

TRAC Intermodal CEO Dan Walsh remarked that the intermodal industry continues to struggle with data fragmentation and silos, which limit visibility into cargo flow and have a direct impact on how chassis providers can proactively plan and position assets to ensure fluidity.

To counter this, he said, his company has developed fleet optimization models that include volume forecasting combined with proper fleet sizing, utilization and safety stock strategy allowing quick reaction to sudden changes in demand.

"As part of our demand forecasting, TRAC reviews internal historical data of chassis usage and turn times, container import/export data, projections from our business partners and port terminals, as well as reports from our many locations across the U.S.," he explained.

Blume Global CIO Yamini Vellore said other hurdles also exist.

"For shippers and 3PLs, the two main challenges have always been having connectivity to a large network of dray carriers and the visibility to first- and last-mile moves," she explained.

"Digitization has also been an issue in the past, but with the increased adoption of supply chain technology spurred by the coronavirus pandemic, more of the logistics world is connected than ever before," she explained, adding that Blume Global increases the connectivity of the supply chain ecosystem by empowering dray carriers to connect with shippers and 3PLs through a web solution that allows dray carriers to receive and accept electronic tenders, allocate and dispatch trucks and drivers, and submit tracking status and invoices.

"Reliability of data, and making sure the information is accurate and useable, is crucial," she said. "There are a lot of technologies on the market, and it takes a reliable, experienced supply chain technology partner to show users how to best use the solutions at their disposal – and to also separate the innovative tools from the products that simply create white noise in a crowded market."

Operational Enhancement

Regarding what tracking/positioning technologies are best equipped to enhance equipment location in North American intermodal service and the key functionalities needed to enhance operations and efficiency, Harris said that tracking technologies best positioned to enhance asset visibility and utilization are the ones owners and lessors should purchase and deploy.

However, he added, one technology does not fit all chassis providers and end users.

"For example, tracking technology for chassis rental equipment must have low-cost hardware and service, offer a fast, easy installation, and provide reliable reporting, even when tractor power isn't available," he stated. "Tracking technology for leased chassis

often requires more than location, such as whether the chassis is mounted or bare; in-transit 'bread crumb' reporting; and GPS-based mileage to provide end users the most comprehensive information to support operational planning and use."

Siamak Azmoudeh, vice president of Product Line Management with mobile asset tracking and management company SkyBitz, said the best tracking technologies include those that provide accurate location; show whether the chassis is container mounted or bare; give the motion status of chassis with high reliability; and have a platform for expansion to support external and future sensor technologies.

"The key functionality of an effective solution is to provide chassis owners total visibility to the status of their chassis in use to drive operational efficiency by working with their clients to get the chassis back to terminals timely to maintain a high level of availability," said Azmoudeh.

Other best-equipped technologies, he said, are ones that can reliably show the status of chassis' tires, lights, etc., to ensure that it is road worthy both from a safety and productivity prospective.

"GPS and RFID are the best technology solutions for tracking/positioning equipment," Walsh said. "Each gives chassis providers and their customers the ability to view real-time unit location. Additional key functionalities include the status of the chassis, mount versus dismount, and telematics with access to real-time data regarding PSI, wheel end temperature, hard braking incidents, which could help prevent breakdown incidents on the road."

"Having reliable data on the location and status of your chassis is important to facilitate improvement in operations and service," Platt said. "Being able to leverage the data and information effectively is key to a company's success in achieving the goals of better service and reduced costs."

In a statement, GPS tracking technology company Anytrek stated that "a robust, reliable and preferably covert solution is the key" for intermodal chassis tracking and touted its TrackLight product, which is built inside trailer lights and doesn't require special installation or wiring.

Manohar Patwardhan, president of IT services company Intelistics also mentioned GPS, but added that another good tool is geofencing, in which GPS or RFID technology is used to create a virtual geographic boundary.

"You could geofence a facility, then you know what's coming in and out," he explained. "Instead of manually capturing the data, now you can have the system tell you what went in, what went out."

In Development

Regarding whether there any chassis tracking and/or positioning technologies now in development that have the potential to disrupt the intermodal industry, Harris mentioned new low-power, Bluetooth-connected devices and sensors that pair with asset tracking technologies to provide visibility to the equipment that chassis interact with tractors and containers.

"These low-cost smart tags offer the capability to connect intermodal equipment and expand visibility," he said.

"Combining the platform technology with sensor data produces actionable information that can help improve capacity on a greater scale," he explained. "Taking it a step further, combining

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the intermodal telematics data such as arrival time, load state, vehicle type, and cargo type and providing that to distribution centers prior to arrival, they can proactively prepare for a quick truck turn."

With telematics devices for forklifts and other heavy machine equipment, cargo handlers can target the right equipment, identify its current location and utilization within the distribution center or yard and notify the appropriately trained operators to be staged at the correct bay for arrival. End-to-end supply chains provide transparency required for all participants to effectively manage their physical assets, gain efficiencies in the product shipping lifecycle, and respect the human resources that are critical to success.

Another technology is BlackBerry Radar's Events Alerting System, which allows users to create immediate alerts via text or email, as well as consolidated reports, so that equipment owners and users can focus on specific areas of interest and impact.

The system, which is an IANA Innovation Incubator award winner, leverages data elements on chassis status, such as location and time so that reports and dashboards can be created to highlight specific areas for improvement, such as identifying unauthorized use of chassis; assets sitting idle for too long; or receiving notification of chassis needing maintenance.

Investment

But when it comes to investment in chassis positioning technology, some experts differ on who should be responsible for it: chassis owners, lessors, beneficiaries, all or a combination of the three.

"Even though the technology will benefit all three stakeholders, chassis owners should invest in the technology to have total visibility to their chassis and drive toward optimum efficiency through automation to increase revenue, profitability, maximize availability, and reduce costs," SkyBitz's Azmoudeh said.

"As a chassis owner or a long-term lessee, I think you should be responsible [for technology positioning]," Patwardhan said. "The chassis owner or the chassis lessor can then pass the cost on for the utilization of that chassis."

Anytrek said its position is that chassis owners would most probably invest in chassis positioning technology, inventory check, dispatching, maintenance, utilization report and other aspects of daily operation. Stakeholders, the company said, should invest in chassis pooling and sharing.

Other experts, however, stated that costs need to be shared among all parties. Platt explained that chassis owners have a strong value proposition for investing in chassis tracking and monitoring, but so do lessors and BCOs.

"We have many stories where asset owners have effectively utilized their asset tracking capabilities to improve service and grow revenues by providing enhanced service visibility," he explained. "It can be a way to differentiate your business from others, and the sooner companies start leveraging these tools effectively, the further ahead they will be."

Harris also said that costs should be borne by all involved.

"Tracking providers have to offer reliable, feature-rich solutions at compelling prices; chassis owners and lessors must continue to invest in tracking solutions; and end users continue to utilize and pay for solutions that improve their fleet utilization and efficiency and help lower costs," he explained."

"Everyone benefits from a more digitized supply chain," Vellore stated. "When goods move more efficiently and parties have access to a wider network of providers, congestion is reduced; when the transportation of goods is optimized, empty miles and other waste is reduced or even eliminated, maximizing return on freight spend and creating a more sustainable supply chain."