Key Technology Trends and Considerations for Transportation Mobility Solutions

Published 23 February 2021 - ID G00733955 - 26 min read

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Initiatives: Supply Chain Technology Strategy and Selection; Logistics and Customer Fulfillment

Government regulations, driver safety, increasing costs and need for visibility continue to drive mobility technology in transportation. Supply chain technology leaders in transportation should use this research to identify how mobility technology will benefit their organizations.

Overview

Impacts

- The global commercial telematics market continues to grow at approximately 25% per year, driven by government regulations and fueled by aftermarket telematics solutions as well as OEM offerings.

- Safety systems and advanced analytics continue to be adopted across industries and across fleet types. Driver safety and better fleet insights are needed to control fleet efficiency, cost and customer service.

- As the global market continues to grow, we continue to see changes in the vendor landscape. New vendors are appearing and expanding into new territories, while existing vendors are growing through partnerships, mergers and acquisitions (M&As). Vendors also continue to innovate existing products and introduce new, complementary solutions.

Recommendations

Supply chain technology leaders responsible for transportation mobility solution evaluations should:

- Improve regulatory compliance by investing in solutions that adhere to government standards, such as the U.S. and Canadian electronic logging device (ELD) mandates.

- Enhance and improve driver safety, real-time visibility, and driver and vehicle performance via real-time monitoring by implementing transportation mobility technologies. Reduce transportation costs, such as cost of incidents and insurance, while at the same time improving driver retention and recruiting by investing in video telematics.
Analysis

Fleet operators need to locate and track the movements, as well as monitor conditions, of mobile over-the-road transportation assets in real time, using cellular or, in specific cases, satellite links. These operators also need to track drivers to ensure driver safety and driver performance. Transportation mobility technology enables these functions and provides analysis of driver performance resulting in improvements in fuel consumption, prevention of workers’ compensation claims and prevention of accidents. This leads to lower operating costs, higher compliance, safety and accountability (CSA) scores, and possibly, lower insurance rates.

Impacts and Recommendations

The Global Commercial Telematics Market Continues to Grow Rapidly

The global market for mobility solutions has grown significantly in the last few years due to multiple factors. These include mandatory regulations, concerns for greater safety, the need for increased visibility, the increase in operational and insurance costs, the driver shortage and improvements to operational competency. The growth and adoption rates are different on a region-by-region basis. For the purposes of our research, Gartner makes a distinction between light commercial vehicles (LCVs) and heavy commercial vehicles (HCVs). The distinction is based on the weight and class of the vehicles. LCVs are typically less than 3.5 tons and are Class 1 and Class 2 vehicles. HCVs are over 3.5 tons and mainly fall into Classes 3 to 8 (see Figure 1 for fleet classifications).

- Identify the vendor landscape and the individual vendor as well as their offerings by recognizing vendors that are part of a larger organization or specialized vendors that can possibly get acquired.
### Classification of Fleet Vehicles

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>6,000 lbs or less.</td>
<td>Minivan, Cargo Van, SUV, Pickup</td>
</tr>
<tr>
<td>Class 2</td>
<td>6,001 to 10,000 lbs.</td>
<td>Minivan, Cargo Van, Full-Size Pickup, Step Van</td>
</tr>
<tr>
<td>Class 3</td>
<td>10,001 to 14,000 lbs.</td>
<td>Walk-in, Box Truck, City Delivery, Heavy-Duty Pickup</td>
</tr>
<tr>
<td>Class 4</td>
<td>14,001 to 16,000 lbs.</td>
<td>Large Walk-in, Box Truck, City Delivery</td>
</tr>
<tr>
<td>Class 5</td>
<td>16,001 to 19,500 lbs.</td>
<td>Bucket Truck, Large Walk-in, City Delivery</td>
</tr>
<tr>
<td>Class 6</td>
<td>19,501 to 26,000 lbs.</td>
<td>Beverage Truck, Single-Axle, School Bus, Rack Truck</td>
</tr>
<tr>
<td>Class 7</td>
<td>26,001 to 33,000 lbs.</td>
<td>Refuse, Furniture, City Transit Bus, Truck Tractor</td>
</tr>
<tr>
<td>Class 8</td>
<td>33,001 lbs. +</td>
<td>Cement Truck, Truck Tractor, Dump Truck, Sleeper Cab</td>
</tr>
</tbody>
</table>

Source: Gartner 733955_C

### Compliance

Regulations like the ELD mandate in the U.S. and Canada, or the Europe on the Move initiative or the Insurance Regulatory and Development Authority of India (IRDAI) in India, are adding a new layer of compliance complexity to the transportation industry. Now, drivers are required to interact with a (possibly) new piece of technology equipment. Drivers have ownership of their logs, allowing them to accept, change or comment on the services they perform and the trucks and trailers they use. Some transportation mobility solutions, like Trimble, incorporate workflow functionalities so drivers have to go through specific steps before the application is fully functional with the option to log or record services. By following a login process, compliance is improved because the driver is required to enter data like truck and trailer number, or data about the state of a vehicle, before moving the vehicle.

Additionally, the gamification of certain capabilities in transportation mobility solutions is becoming another resource to help increase compliance within organizations. Some of these solutions can assign...
scores to the various actions drivers are engaged in while driving, such as speeding, harsh braking or following the predefined route. This allows drivers to compare results, and can create healthy competition among peers aligned with the desired objectives. The possibility to benchmark different performance scores can provide an overview of the compliance levels of the entire fleet, as well as drill down into specific areas for improvement.

Market Growth

North America is still the largest market in transportation telematics units, but China and Western Europe are the fastest-growing regions (see Figure 2).

Figure 2: Forecast of Telematics Units Installed by 2024 (in Millions of Units)

In the following subsections on geographical areas, Gartner has used data from different sources. See the Evidence section for more information.

The Americas

North America
In North America, there were approximately 32.4 million commercial vehicles in 2019, of which 14.4 million are gross vehicle weight rating (GVWR) Classes 3 through 8 commercial vehicles and around 18 million lighter vehicles, including GVWR Classes 1 and 2 vehicles and cars with no GVWR.

The number of telematics systems in active use is forecast to grow at a compound annual growth rate (CAGR) of 17%, from 9.5 million units in 2018 to 20.8 million units by 2023. This growth has been driven by the U.S. and Canada ELD mandates. The penetration rate in the total population of non-privately-owned commercial vehicles is estimated to increase from about 30.9% in 2018 to just under 59.7% in 2023.

Latin America

In Latin America, the number of commercial vehicles in operation is estimated to be 26.7 million, of which 5.9 million are heavy trucks and 20.8 million are LCVs.

In Latin America, the number of telematics systems in use is projected to increase from 3.4 million units in 2018, growing at a CAGR of about 15.1% to reach 6.9 million units in 2023. The penetration rate in the region is estimated to increase from just below 12.8% in 2018 to 24.5% in 2023.

Europe

Western Europe

According to official statistics, there were 38.6 million commercial vehicles in use in Western Europe in 2016. The 6.2 million medium and heavy trucks accounted for more than 75% of all inland transports. LCVs accounted for 31.6 million assets used by mobile workers, and for activities such as distribution of goods and parcels.

The number of fleet management systems in active use in Europe is forecast to grow at a CAGR of 14.1%, from 9.1 million units at the end of 2018 to 17.6 million units by 2023. The penetration rate in the total population of non-privately-owned commercial vehicles and cars is estimated to double from about 17.4% in 2018 to 32% in 2023.

Eastern Europe

Eastern Europe accounts for around 26 million commercial vehicles, divided into 10 million HCVs and about 16 million LCVs.

The number of fleet management systems in active use in Eastern Europe is forecast to grow at a CAGR of 13.5%, from 7.3 million units at the end of 2018 to 13.8 million units by 2023. The penetration rate in the total population of non-privately-owned commercial vehicles is estimated to increase from 17.5% in 2018 to 29.8% in 2023. The Russian market accounts for a significant share of the region's total installed base and is forecast to grow from 3.3 million active fleet management (FM) units at the end of 2018 to 5.6 million units by 2023.

Asia/Pacific
China

Gartner expects the Chinese fleet management market will experience steep growth in the coming years as the trucking industry continues to grow.

The number of fleet management systems in active use will continue to grow at a CAGR of 22.9%, from 4.8 million in 2018 to 10.3 million in 2023. The penetration rate in the total population of registered commercial vehicles, including trucks and buses, is estimated to increase from 19.8% in 2019 to reach 38.6% in 2023.

India

The Indian trucks telematics market is expected to grow at a steady 25% year-over-year rate from 2020, and an estimated 7.42 million commercial vehicles are on Indian roads, serving various industries.

The Indian commercial vehicle telematics market is still small but has a growth potential, driven by factors such as rising fuel prices, increasing number of accidents and theft, demand for vehicle navigation, and the pressing need to monitor fuel pilferage. The IRDAI has endorsed telematics as a way for logistics companies to save money while staying safe and vigilant. The installed base is currently at around 1.6 million installed devices and is projected to reach 3.6 million by 2023.

Australia and New Zealand (ANZ)

The number of fleet management systems in active use is forecast to grow at a CAGR of 15%, from 0.9 million units in 2018 to 1.9 million units by 2023. The penetration rate of company-owned fleet vehicles is estimated to increase from 18.5% in 2018 to 33.6% in 2023.

South Africa

The number of fleet management systems in active use is forecast to grow at a CAGR of 15%, from 1.3 million units at the end of 2018 to 3.2 million units by 2023. The penetration rate of company-owned fleet vehicles is estimated to increase from 43.6% in 2016 to 63.1% in 2021. South Africa is a relatively mature telematics market and the penetration is comparably high from an international perspective. But the South African market is represented by comparably low-end tracking systems.

Recommendation:

Improve regulatory compliance by investing in solutions that adhere to government standards, such as the U.S. and Canadian ELD mandates.

Continued Adoption of Commercial Telematics Across Industries and Fleet Types

The growth and diversification of vendors have allowed potential customers to find solutions that match their industry-specific requirements. Several additional factors contribute to the exponential growth in demand, such as:
As telematics solutions have become more affordable and effective, larger numbers of smaller fleets are starting to benefit. The cost of devices, as well as the communication costs, have come down significantly (in some cases as low as $4 per month per vehicle in countries like India and $10 in the U.S.). Most solutions are offered on a subscription basis, which allows smaller companies to adopt them more easily as they don’t require large upfront capital investments. These solutions are no longer limited to larger fleets, but smaller fleets (even fleets with only one or two vehicles) can start using these offerings to provide value to their internal organizations as well as their customers. This growth trend is being accelerated, of course, by the government mandates issued in multiple countries requiring these

Government rules mandating the installation of telematics devices drive the adoption of commercial telematics solutions. A good example is the ELD mandate in the U.S. in 2019, and the upcoming Canadian ELD mandate, with the first phase of its mandate going into effect in June 2021 and the second phase in June 2023. In other economies, like Brazil and China, the government legislation mandates the adoption of telematics, given the rising concerns of vehicle tracking and safety and security. In India, the government introduced the IRDAI.

Additionally, the increasing penetration of 4G/LTE and 5G technologies worldwide continues to bolster the demand for commercial telematics in the global market. With 5G networks rolling out, this will impact the type and amount of data that can be exchanged.

The market for OEM telematics is increasing compared with aftermarket telematics, owing to the increasing partnerships between automobile manufacturers and telematics service providers. Several OEMs, such as Continental, Daimler Trucks & Buses and Michelin, have acquired telematics solutions as part of their overall strategy to support their trucks with these solutions.

The continued focus on driver safety, which became even stronger during the pandemic in 2020, is another driver for companies to adopt fleet telematics to drive compliance and safety.

The increase in the number and the size of verdicts in trucking has become a major concern. The size of verdict awards is growing by 51.7% annually at the same time that standard inflation grew 1.7% and healthcare costs grew 2.9%.

The maturing fleet management market has a growing awareness about the benefits of fleet management technology in monitoring and improving customer-service-related metrics, such as on-time delivery and satisfaction levels, and as a strategic business intelligence (BI) and management tool. As customer service and on-time delivery become even more important in the transportation industry, companies will adopt these solutions to measure their performance and efficiency.

Driver safety and benefits (wage and rest time) fairness are two other factors for which telematics devices are adopted. In Europe, the “Europe on the Move” initiative is introducing an update in 2020 on how the wages of long-haul drivers, who drive across different EU countries, should be calculated to help eliminate unfair competition practices. This new regulation also removes the current cabotage (see Note 1) cap allowing any number of cabotage operations within five days of international delivery. It also includes a rule that companies must pay for drivers’ accommodations for rest periods of over 45 hours.

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1. This regulation also includes a rule that companies must pay for drivers’ accommodations for rest periods of over 45 hours.
systems to be in place independent of the size of the fleet. Besides the fleets that are mandated to use these devices, Gartner has observed an increased use of these solutions in smaller fleets and non-HCVs, even though they do not fall under hours of service (HOS), ELD or similar regulations.

The telematics software component segment is expected to grow faster than the other segments (hardware, services). The demand for fleet management systems in this segment mainly stems from end users’ increasing adoption of mobile-based services.

Recommendations:

- Enhance and improve driver safety, real-time visibility, and driver and vehicle performance via real-time monitoring by implementing transportation mobility technologies.

- Reduce transportation costs, such as cost of incidents and insurance, while at the same time improving driver retention and recruiting by investing in video telematics.

Changes in the Vendor Landscape: Globalization and Consolidation Supported by Innovation

Globalization and Growth

The market is growing, and with that, vendors are increasing their footprint. A growing number of vendors in the leading regions (U.S. and Europe) reported more than 500,000 active units, and a few players have broken the 2 million subscriber unit barrier. Several vendors have expanded their international footprint, either through organic growth like Samsara or through acquisitions like Geotab and Verizon.

A large part of future telematics growth will come from OEMs, where solutions will be built into the truck when it comes off the assembly line. These larger vendors with increased capabilities and industry coverage will make it easier for larger fleets to select a solution. For smaller fleets looking at the portable telematics solutions, the number of options remains large. New vendors are entering the market due to the large opportunity that is offered in this fast-growing technology segment.

Gartner also notices that more vendors have adopted the strategy of partnering with value-added resellers (VARs) to implement their solutions in other territories, without the vendors having any local presence themselves.

Consolidation and Convergence

The consolidation in the market creates megavendors with global reach that offer broader solution sets. Some of these larger vendors play not only a larger role in telematics, but also in the overall Internet of Things (IoT) offering of the acquiring company as well as complementary solutions, such as routing or video telematics.
Convergence of solutions is becoming a more important criterion in all of supply chain execution (SCE), and it is a key differentiating factor in the transportation mobility technology space as well. Customers now get the opportunity to select a vendor that offers vehicle routing and scheduling, field service management, telematics and analytics in a single solution. These are all facts to keep in mind when selecting a vendor.

**Acquisitions and Investments**

The technology company consolidation trend continues, and numerous M&A activities have taken place in late 2019 and 2020.

- In 2020, Geotab acquired Intendia, a Spanish engineering firm specializing in integrated technology solutions for the heavy truck market in Europe.

- Omnitracs expanded its platform offering with acquisition of SmartDrive Systems. The combined company will bring together two transportation technology leaders to offer a converged, end-to-end platform that optimizes safety, driver productivity and workflow, as well as routing, dispatch and compliance.

- Omnitracs’ acquisition of VisTracks accelerates innovation of Omnitracs One Platform and expansion into the small and midsize business (SMB) market. The acquisition is built on the Omnitracs One Platform vision and further enhances the company's device-agnostic hardware and OEM strategy. It also extends Omnitracs’ reach into the SMB market by adding the VisTracks reseller community into the Omnitracs partner network.

- Lytx has received a new investment from London-based private equity firm Permira in January 2020. With the $1 billion investment, Permira will have a majority stake in Lytx, along with the Canada Pension Plan Investment Board and GIC.

- Lytx acquired Surfsight, an Israeli-based video telematics vendor.

- Microlise completed the acquisition of TruTac in March 2020. TruTac is the leading U.K. provider of fleet compliance and management software for heavy goods vehicles (HGVs) and public service vehicles (PSVs).

- Verizon Telematics (Verizon) has acquired Spain-based provider of commercial fleet management solutions Movildata as part of a strategy to expand its European footprint.

**Partnerships**

From 2019 through 2020, Gartner continued to see partnerships between telematics vendors and other solution providers to expand their offerings to the end user:

- CalAmp and tech startup Coastr partnered to revolutionize the worldwide car rental industry. It focuses on creating an integrated digital ecosystem by equipping car rental operators with advanced technological innovations and infrastructure.
- CalAmp’s subsidiary LoJack Mexico partnered with GNP Seguros to combat car theft across Mexico.

- CalAmp’s subsidiary Tracker partnered with Grove & Dean to protect vehicles and reduce motor insurance premiums.

- CalAmp’s LoJack Italia and Maldarizzi Automotive improved road safety with a “virtual technician.”

- Navistar partnered with Zonar to streamline fleet maintenance telematics. The partnership gives Navistar customers access to both smart fleet management capabilities from Zonar and Navistar’s OnCommand Connection’s Advanced Remote Diagnostics solutions on international commercial trucks.

- Zonar and BusPatrol made Stop-Arm and School Bus Safety Solutions free to school districts. The partnership provides school bus fleets with integrated safety technology solutions to ensure each vehicle and student rider is safe from bus stop to bus stop.

- Omnitraccs and EROAD partnered to address inconsistencies in CV inspections. Omnitraccs and EROAD announced the completion of a newly updated Commercial Vehicle Safety Alliance (CVSA) inspection bulletin on U.S. ELDs.

- UrgentCareTravel (UTC), a medical clinic network providing convenient and affordable healthcare for truck drivers and fleets, and EROAD, a global provider of fleet management, electronic tax reporting and ELD compliance solutions, announced a partnership to offer UTC’s health services to EROAD customers.

- EROAD partnered with HERE Technologies to expand smart navigation tools for large and small fleets. The location technology company strengthened its partnership with EROAD to create more routing options for commercial vehicles.

- Geotab partnered with Mercedes-Benz to support improved fleet management by incorporating vehicle data from Mercedes-Benz vehicles and vans into the MyGeotab platform.

- A partnership between Navistar and Geotab aimed to simplify fleet management solutions. Geotab’s solution includes electronic logging devices and hours of service compliance software without the installation of additional hardware.

- Deloitte and Geotab partnered to offer scalable telematics solution to large enterprise customers.

- PowerFleet announced that its subsidiary Pointer is working in tandem with Mobileye to install Pointer telematics units on traffic lights in the streets of Jerusalem.

- Fleet technology providers Lytx and Geotab collaborated to provide fleet safety and management support.

- Lytx announced a partnership with Idelic’s Safety Suite, the leading driver management platform, to create an all-in-one, easy-to-use and intuitive view of driving risk.
MiX Telematics and Navistar created a partnership to provide mutual customers with an enhanced and comprehensive combined dataset.

SkyBitz and Omnitracs formed a fleet telematics partnership. The new offering combines the information collected by in-cab telematics devices and trailer telematics systems to provide customers of Omnitracs and SkyBitz with more insights into their operations.

Omnitracs and Trimble collaborated to bring continued innovation to joint transportation customers. The integration between Trimble’s TMWSuite transportation management system (TMS) and the Omnitracs One Platform provides joint customers with access to several new enhancements and features, enabling more efficient workflows and greater ROI.

Omnitracs and McLeod Software extended partnership to bring more functionality and increased flexibility to customers. The integration with the McLeod LoadMaster transportation management system will enhance the interoperability of the Omnitracs One Platform, delivering more value to fleets globally.

Samsara launched an integrated fleet management solution for Ford Motor Company’s vehicles. Ford vehicle fleets can now seamlessly manage embedded telematics data through Samsara’s platform with Ford Data Services integration.

Nationwide partnered with Samsara to offer a new video telematics product to excess and surplus customers with 11 or more commercial trucks.

Samsara integrated with McLeod’s LoadMaster platform to streamline fleet dispatching.

EnVue Telematics partnered with Samsara to offer products that help increase the efficiency, safety and sustainability of operations.

Idelic partnered with Samsara. Through this partnership, customers using Idelic’s Safety Suite alongside Samsara technology have the ability to automatically upload their ELD and camera data to Safety Suite, and have driver information seamlessly pushed back to Samsara.

Teletrac Navman announced a new integration with fleet management software company, Fleetio. It gives customers the ability to simplify fleet management processes, stay ahead of fleet maintenance and reduce operational costs through automated odometer updates and live vehicle tracking.

Teletrac Navman announced the expansion of a technology integration with FLEETCOR that will help fleet managers track and control fuel costs.

Trimble joined Geotab Marketplace to accelerate expansion of video safety technology with focus on light- and medium-duty vehicle market.

Technology Trends
Safety Technology
Despite attempts to make trucking safer, the number of crashes involving large trucks has remained consistent over the last decade. The use of video inside and outside the cab offers an opportunity to increase safety and compliance by alerting drivers to potential risks, as well as enhanced options for training. Vendors such as SmartDrive Systems (acquired by Omnitracs) and Lytx have been leaders in this area, providing technology as well as services to analyze the video data. The vendors use edge compute devices to do this analysis on the vehicle to reduce latency and reduce connectivity data volumes by only sending video deemed useful rather than all video data. An increasing number of telematics vendors have added similar capabilities to their telematics offerings.

When integrated with telematics data, fleets can see a complete picture of the activities leading up to an event. Video footage is also used to defend innocent drivers accused of causing accidents. This technology adds to the safety, as well as the compliance capabilities, of these solutions. City buses, school buses and other means of public transportation have been some of the early adopters of this technology, which is now being adopted in commercial transportation.

Gartner has noticed the increasing use of artificial intelligence (AI) and machine learning (ML) to analyze video in real time to identify, for example, drivers who are not paying attention to the road. Through continuous analysis of eye, head and body movements, messages can be exchanged through audio signals to alert the driver. This, in turn, improves safety complementary to the technology that continues to be added on the truck, such as lane change, collision and other alerts.

Advanced Analytics

Companies have been collecting data on driver behavior as well as engine diagnostics of their fleets for years, but using the data to prevent breakdowns before they happen is gaining major ground. Predictive maintenance can help fleet operators maintain equipment with minor repair costs. Data can be analyzed to determine trends, like which makes/models have specific failures and how those makes/models compare with others. This can improve preventive maintenance plans, but it can also affect purchasing decisions. The same goes for monitoring driving behavior, where the data can be analyzed to decrease driver accidents, improve driving behavior and miles per gallon, and increase driver retention.

More vendors are using AI and ML tools to apply to the millions of data records they collect every day in order to provide key insights to their end-user companies. Advanced analytics is a major driver of efficiency that can be derived from telematics data solutions and it should be carefully reviewed when selecting a vendor.

Devices: Tablets, Smartphones and Wearables

Telematics continue to be more integrated with tablets and their even more omnipresent counterparts, smartphones. In the past couple of years, we have also seen several vendors connecting their technology to wearable devices. With location tracking, job dispatch, driver scoring and vehicle diagnostics data all available on handheld devices, fleet managers and dispatchers can make real-time decisions even outside the office. This will continue to help businesses reduce the risk of speed-related accidents, control maintenance costs and decrease fuel bills, as a few examples. Offering a tablet to a driver for
use during both work hours and downtime is being especially welcomed by over-the-road drivers. Some midsize fleets have used the investment in technology to recruit younger drivers to the transportation industry. With the average driver age increasing (e.g., 55 years old in the U.S.), many drivers are often opposed to the new technology. Younger drivers, however, love these new technologies, which provide real-time feedback and a job experience that is much closer aligned to their daily experiences.

Predictive Maintenance

Gartner has noticed the increased importance of the data provided by telematics for predictive maintenance. A safe vehicle is a well-maintained vehicle, and a well-maintained vehicle is a reliable one. These two facts will not only save money for the carrier or private fleet but also provide the right environment for driver retention. Drivers do not like breakdowns, which translate into lost time, a hassle and the loss of income (if they’re paid per mile). Driver pay is the highest cost in transportation fleets, followed by fuel and maintenance. A poorly maintained fleet will be at a significant disadvantage when it comes to retaining drivers and acquiring new ones. Controlling these costs is paramount in every segment of the transportation industry. Enterprise asset management companies, such as IBM, Infor, Oracle and SAP, can use the data from the telematics to schedule maintenance (see Magic Quadrant for Enterprise Asset Management Software). Other technology companies, such as Uptake and Noodle.ai, focus on predictive maintenance scenarios and partner with fleets and telematics vendors to provide this predictive capability. They use AI and ML to create better predictive models around fleet maintenance, resulting in lower maintenance costs.

Electric Vehicles

The adoption of electric vehicles (EVs) has increased over the past several years, resulting in millions of commercial EVs now on the road. This has created new requirements for solutions from telematics vendors. EVs introduce a set of new variables into the equation, and fleet managers have new challenges to detect and solve, such as:

- Putting vehicles into use without knowing their state of charge (SOC).
- Making drivers responsible for determining when and where to charge.
- Scheduling charging for less-than-optimized times.
- Charging vehicles longer than necessary at public stations.

A growing number of telematics vendors are focused on EVs (e.g., such as Airbiquity or Geotab). These EV-focused vendors offer solutions specialized in providing telematics for both hybrid vehicles and EVs.

Connected Vehicles

A connected vehicle is equipped with internet access and usually also with a wireless LAN that allows the vehicle to share internet access with other devices (both inside and outside the vehicle). It also allows a connection to other sources of information, including other vehicles. Addressing the challenges
posed by growing passenger and freight volumes, and enhanced communications can contribute to greater logistics efficiency and, thereby, a reduced environmental impact.

Scania and Ericsson are creating connected truck solutions that allow platoons of trucks to drive together in close proximity. Scania, the Swedish manufacturer of commercial trucks and buses, has pioneered platooning concepts with trucks driving in close formation, thereby reducing air drag and fuel consumption. To make this possible, these platoons must be coordinated through reliable vehicle-to-vehicle communication, which is provided by a mix of actuator and telematics technology.

In the U.S., Peloton is another company providing platooning technology. Peloton offers an AI solution that allows pairs of trucks to platoon, resulting in significantly lower fuel consumption, increased safety and labor savings (see Hype Cycle for Transportation Industry, 2020).

**Driver Data Privacy**

Fleet telematics solutions are used to track vehicles and monitor driver behavior. Since the main goal of telematics is to protect company assets, it's important for fleet managers to ensure that drivers understand this goal and that privacy policies underscore how seriously the company takes driver privacy. Such policies promote transparency and could include:

- Specifics around what the telematics system is monitoring.
- Highlights regarding how the system positively impacts employee and public safety.
- Examples of how the telematics tool helps improve driver safety/efficiency.
- Specifics around approved travel, geography, speeding and safety, idling, vehicle maintenance, substance abuse and more.

**Connectivity and Cybersecurity**

Connectivity, particularly in terms of the IoT, is trending positively in the industry as fleets and managers look to increase productivity, get a handle on operating costs and become more agile (see Hype Cycle for Connected Vehicles and Smart Mobility, 2020). At the same time, the increased use of smartphones, in-cab computers and back-end systems linked via the internet augments the risk of a cybersecurity threat.

ELD providers think the bigger concern is the vulnerability of data being transferred between the device in the cab, the back office, and the FMCSA's cloud system for transferring the data to roadside officials. For international companies that manage fleets in Europe, keep General Data Protection Regulation (GDPR) regulations in mind. Penalties will be enforced against organizations not meeting data protection obligations, and everyone in the supply chain who handles/processes data will be held liable, not only controllers.

**Recommendation:**
Identify the vendor landscape and the individual vendor as well as their offerings by recognizing vendors that are part of a larger organization or specialized vendors that can possibly get acquired.

**Evidence**

Gartner uses data from different sources such as:

- Gartner data collected during end-user and vendor inquiry calls and briefings.
- Gartner data collected from vendor surveys (including revenue, number of customers and geographies).
- Industry data from public sources such as American Trucking Associations (ATA) on the number of assets, Environmental Protection Agency (EPA) vehicle classes, and Federal Motor Carrier Safety Administration (FMCSA) (electronic logging device [ELD] adoption).
- Articles that reference telematics growth to see if they align with our views of the growth in the market.

1 Benefits for Truck Drivers and Companies and Europe on the Move: Commission Takes Action for Clean, Competitive and Connected Mobility, European Commission.

**Note 1: Cabotage**

Cabotage is the transportation of goods or passengers between two places in the same country by a transport operator from another country. It originally applied to shipping along coastal routes, port to port, but now applies to aviation, railways and road transport as well.

**Recommended by the Authors**

- Market Guide for Transportation Mobility Technology
- Market Guide for Vehicle Routing and Scheduling
- Market Guide for Real-Time Transportation Visibility Platforms
- Magic Quadrant for Transportation Management Systems
- Hype Cycle for Supply Chain Execution Technologies, 2020
- Hype Cycle for Transportation Industry, 2020
- Hype Cycle for Connected Vehicles and Smart Mobility, 2020
- Magic Quadrant for Field Service Management
- How to Take Advantage of Advanced Analytics in Transportation