

2018 Market Guide for Transportation Mobility Technology

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

Key Findings

- The transportation mobility technology space continues to grow at approximately 20% per year, fueled by aftermarket telematics solutions as well as OEM offerings.
- Offerings in the transportation mobility technology continue to evolve. Safety systems and advanced analytics continue to grow in importance and add growth to the more standard telematics offerings.
- As the market continues to grow across the globe we see new vendors appear, and existing vendors grow and become more global. Gartner also notices continued activity in mergers and acquisitions.

Recommendations

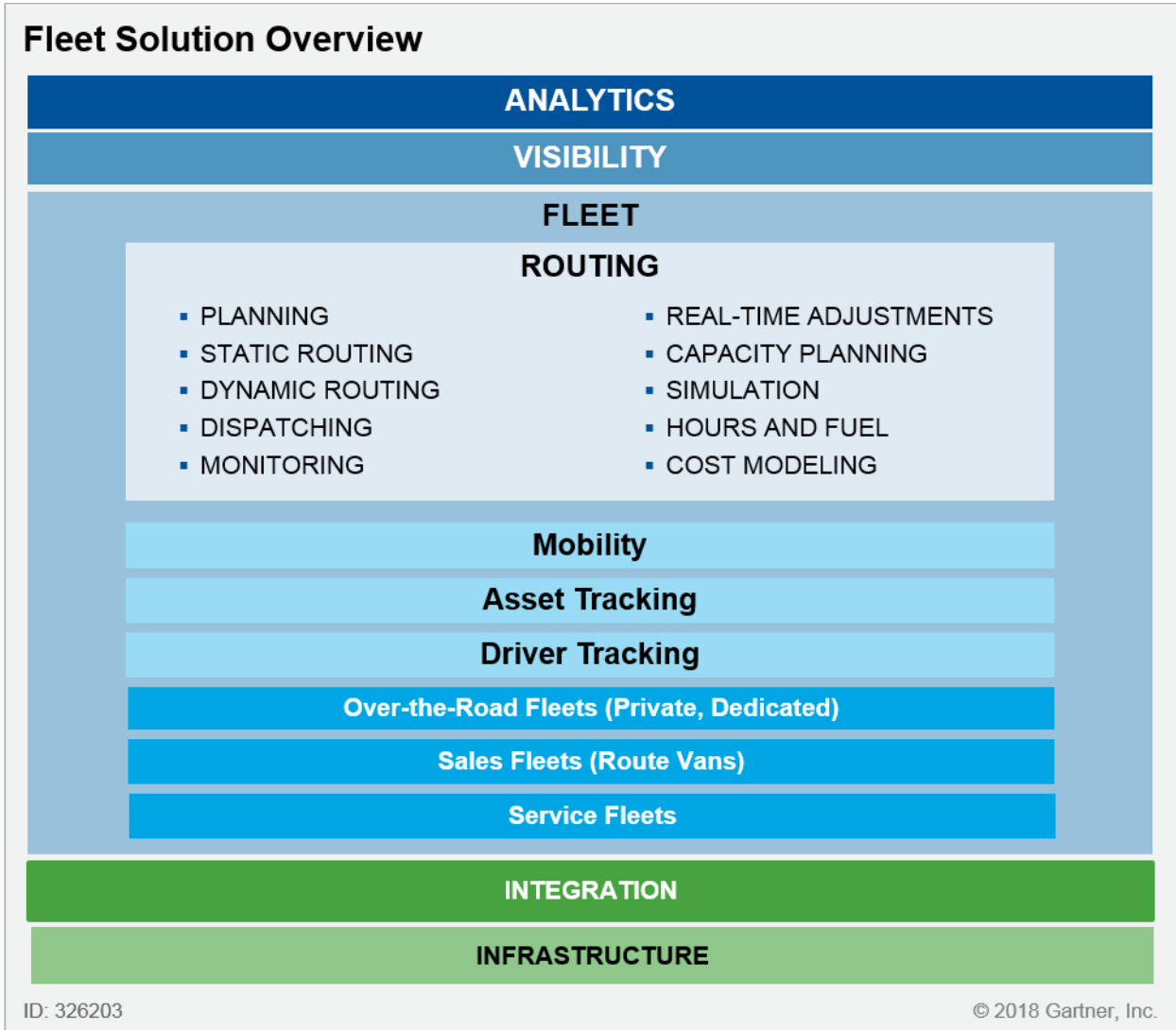
Supply chain leaders focused on technology and solutions for supply chain and operations:

- Adopt vehicle-tracking systems when the pain of empty loads, idle drivers and "lost" asset visibly affects customer satisfaction or operating efficiency for fleet operators.
- Implement transportation mobility technology to further enhance driver safety, as well as driver and vehicle performance, via real-time monitoring.
- Evaluate off-the-shelf and portable solutions that support specific business needs via an affordable subscription-based model, if supporting a smaller fleet.
- Explore whether newer, less-expensive offerings justify a switch from current transportation mobility technology, or extend its usage by using new functionality and integrating the solution into other execution and analytics solutions if supporting a larger fleet.

Market Definition

Transportation mobility technology enables fleet operators to locate and track the movements, as well as monitor conditions, of mobile assets in real time, using cellular or, in specific cases, satellite links (see Figure 1). It allows these operators to track drivers to ensure driver safety and driver performance. The analysis of driver performance results in improvements in fuel consumption, prevention of workers' compensation claims and prevention of accidents, leading to lower operating costs, higher compliance, safety and accountability (CSA) scores and, possibly, lower insurance rates.

Figure 1. Fleet Solution Overview



Source: Gartner (July 2018)

Through the use of these solutions, fleets can monitor exact asset locations, engine performance, fuel usage, hours of operation, maintenance problems, cargo temperature and tampering alerts via onboard sensors.

Some examples of the benefits fleets can obtain are:

- Fuel economy increased by 20%
- Economical driving improved by 15%
- Harsh-braking incidents decreased 75%
- Engine idle time down 60%
- Driving hours decreased 20%
- Safety incidents reduced by 20%
- Compliance increased by 15%

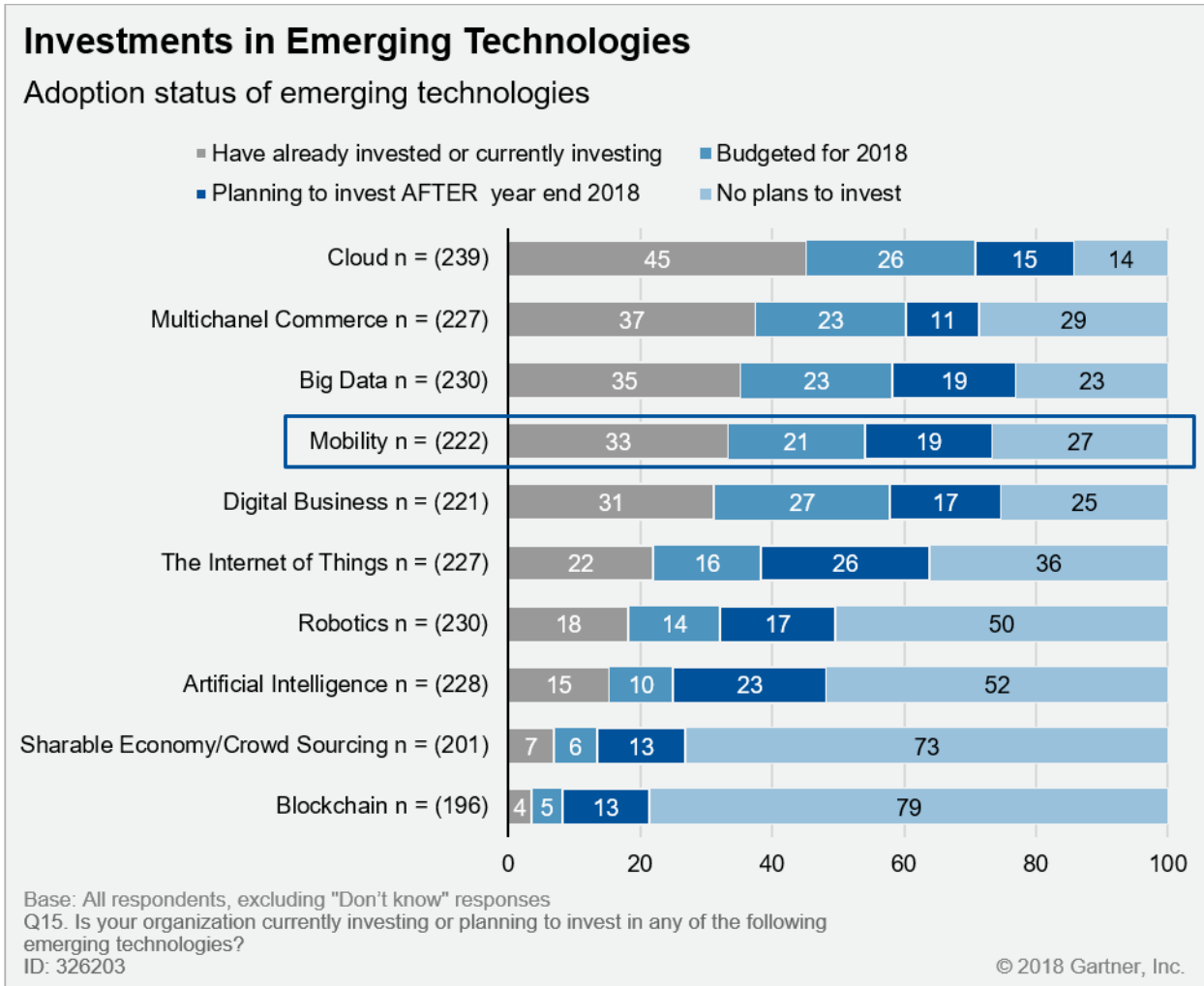
Mobility is also an essential component in dynamic driver-load-matching applications and dynamic routing solutions (see "Market Guide for Vehicle Routing and Scheduling"). These solutions also form the basis for feeding information into the real-time visibility platforms that provide real-time location data to shippers as well as to their end customers (see "Real-Time Transportation Visibility Platforms Provide Transportation Leaders With Supply Chain Efficiencies").

When looking into transportation mobility technology, this Market Guide focuses on road-transportation-specific solutions. This research includes commercial telematics solutions for heavy commercial vehicles (tractors and trailers) and light commercial vehicles (including sales delivery fleets and service fleets).

The coverage of this Market Guide is global, with a focus on solutions that can be used globally as well as different regional and local solutions.

Mobile technology continues to be a top technology investment, according to a recent Gartner survey of executive and functional leaders within the supply chain organization.¹ Transportation leaders increasingly use mobile technology to improve customer service, cut costs, reduce and mitigate risks, and boost revenue (see Figure 2).

Figure 2. Top Investments in Emerging Technologies in 2018



Source: Gartner (July 2018)

This note focuses on *three main types of commercial telematics systems*.

OEM-Embedded Telematics Systems

An onboard computer, also known as a fleet box, is installed in a vehicle during the manufacturing of the asset. OEM offerings include solutions that are developed by the OEMs themselves such as Mercedes-Benz Fleetboard, Scania Communicator, Volvo Dynafleet and MAN TeleMatics. However, we see more OEMs partnering with established telematics vendors to offer these solutions. The leading vendors working with OEMs are Verizon (Telogis), Omnitracs, Trimble (PeopleNet) and Zonar (Continental).

The system is mainly preinstalled by OEMs. The system is capable of engine management and telediagnosics, and has options for extensive customization. The advantage of this solution is that it comes preinstalled in new vehicles. Unfortunately, fleets only replace a small percentage of their

vehicles on an annual basis, and this solution would not allow an immediate solution for the entire fleet.

Gartner expects this category of telematics systems to grow to over 20% of the market by 2022.

Aftermarket-Installed Telematics Systems

These systems are at the origin of commercial telematics solutions. They are still prevalent, although hardware and communication methods have changed dramatically. The hardware varies from very expensive onboard computers to plug-and-play devices. The main vendors are Omnitrac, Trimble (PeopleNet), Verizon Connect (Telogis/Fleetmatics), Geotab, Zonar (Continental), Masternaut and TomTom Telematics. The main advantage of these solutions is that they can be installed on almost any vehicle in the fleet, new or old, and the purchase of these solutions is independent of the procurement of the vehicles.

These aftermarket solutions, which were the dominant category in the market in the past, will continue to play a dominant factor, especially in the over-the-road segment. They will also, in many cases, complement the OEM-embedded systems.

Portable Telematics Systems

Portable telematics systems require no installation and are easy to use. PDAs, portable navigation devices (PNDs), smartphones and tablets can be used as portable telematics systems. Vendors such as Verizon, Masternaut, TomTom Telematics, Teletrac Navman, GreenRoad, Omnitrac (XRS) and many others provide portable telematics systems (as well as installed telematics systems). These systems are easy to install. So, even smaller fleets can compete with their larger competitors.

An increasing number of leading vendors have designed their solution around a mobile gateway that provides the data network and the linkage to the truck. In the cab, a portable device can then be used that links to the gateway via Bluetooth.

There are also solutions that purely use mobile devices to track the vehicle and driver via GPS positioning. Although these systems serve many use cases, they cannot be used by fleets to satisfy the ELD mandate (see the technical requirements for the ELD mandate from the Federal Motor Carrier Safety Administration (FMCSA) "[Methods of Recordkeeping](#)").

The main benefits of these different types of mobile technology solutions are:

- Improved productivity
- Improved routing
- Improved safety
- Improved customer service
- Decreased fuel consumption
- Improved vehicle maintenance

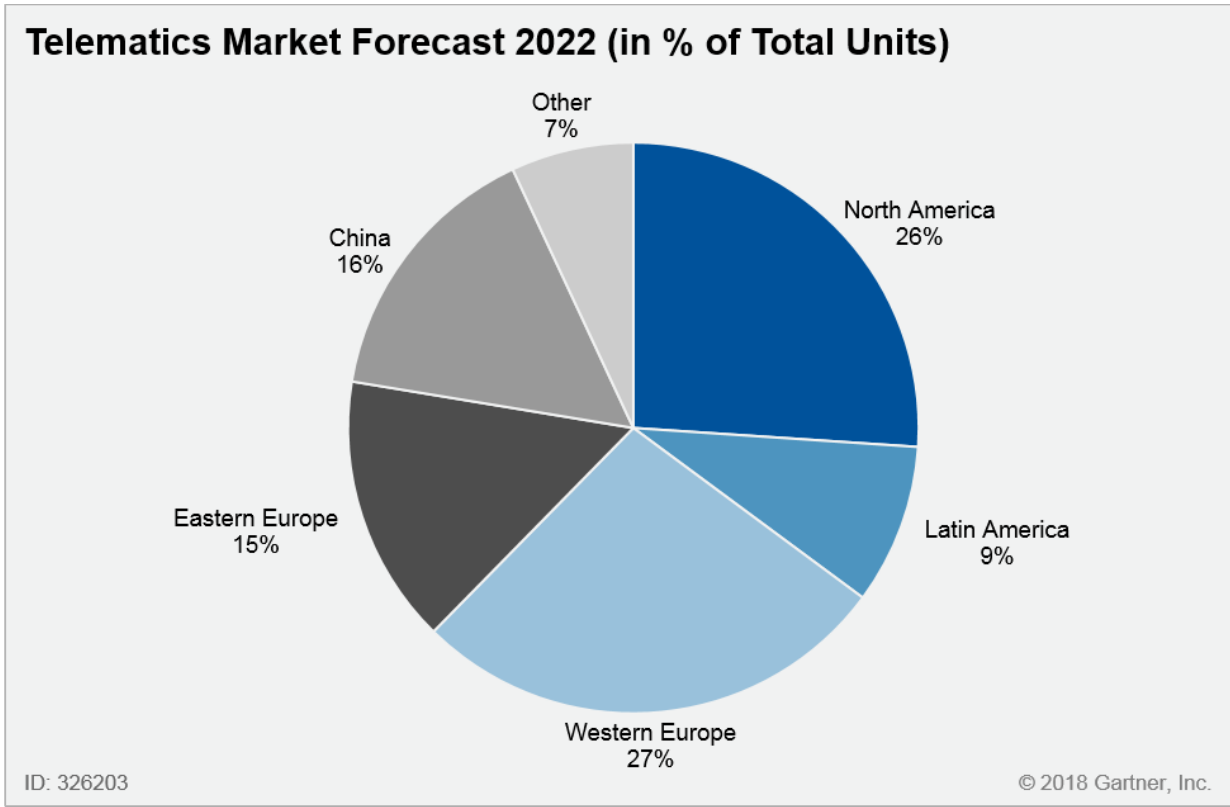
Other Telematics Systems

There is additional adoption of telematics systems growing beyond the direct usage in the vehicle or cab (such as trailers, containers, railcars, school buses, local government vehicles, industrial equipment and heavy machinery). The market of nonrolling assets, specifically, offers a large opportunity for vendors as it deals with millions of assets and a low percentage of penetration.

Market Description

The global commercial telematics market is expected to reach \$69.3 billion by 2022 at a CAGR of about 20%. The commercial telematics industry will consolidate and become increasingly global. Although, currently, there are hundreds of vendors in this fragmented market both in the U.S. and in Europe, with additional vendors growing in number in Latin America and Asia (see Figure 3). (See Note 1.)

Figure 3. Global Telematics Market



Source: Gartner (July 2018)

Market Direction

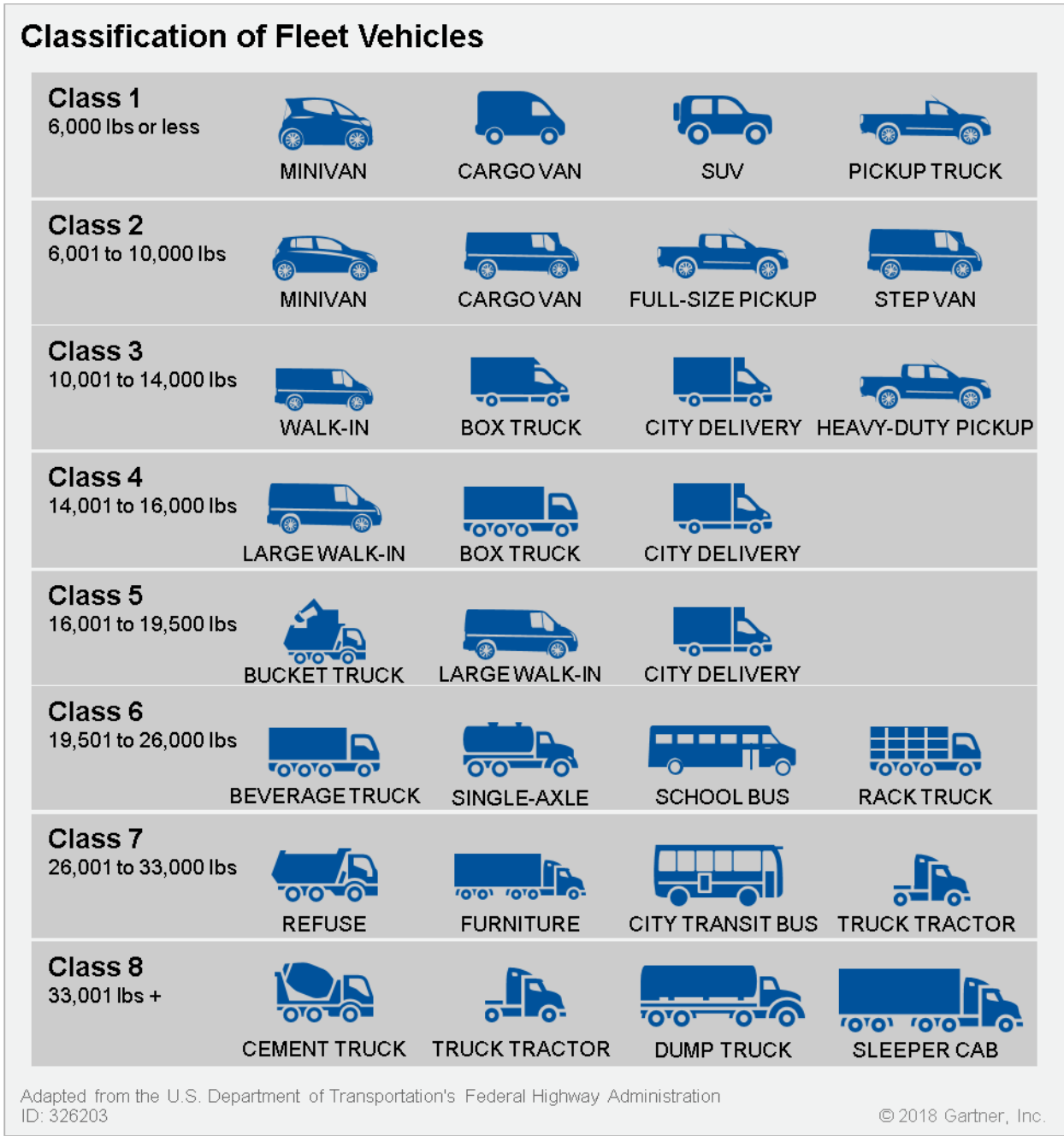
(See Note 1.)

The Americas

North America

In North America, there are approximately 32.4 million commercial vehicles of which 14.4 million are Gross Vehicle Weight Rating (GVWR) 3-8 commercial vehicles and around 18 million lighter vehicles including GVWR 1-2 vehicles and cars with no GVWR (see Figure 4 for fleet classes).

Figure 4. Classification of Fleet Vehicles



Adapted from the U.S. Department of Transportation's Federal Highway Administration (FHWA)

Source: Gartner (July 2018)

The market in the Americas continues to grow. In North America, the number of systems in active use is forecast to grow at a compound annual growth rate (CAGR) of 15.0% from 6.7 million units in 2016 to 13.5 million units by 2021. The penetration rate in the total population of nonprivately

owned commercial vehicles is estimated to increase from about 23% in 2016 to just under 42% in 2021.

Latin America

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

In Latin America, the number of systems in use is projected to increase from 2.5 million units in 2016, growing at a CAGR of about 13% to reach 4.7 million units in 2021. The penetration rate in the region is estimated to increase from just below 10% in 2016 to 17% in 2021.

Western Europe

According to official statistics there were 36.6 million commercial vehicles in use in Western Europe in 2014. The 5.8 million medium and heavy trucks accounted for more than 75% of all inland transports. Light commercial vehicles (LCV) accounted for 30.0 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 16.4% from 6.6 million units at the end of 2016 to 14.1 million by 2021. The penetration rate in the total population of nonprivately owned commercial vehicles and cars is estimated to double from about 16% in 2016 to 32% in 2021.

Eastern Europe

Eastern Europe accounts for around 25 million commercial vehicles, divided into 10 million heavy commercial vehicles (HCVs) and about 15 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 4.2 million units at the end of 2015 to 7.9 million by 2020. The penetration rate in the total population of nonprivately owned commercial vehicles is estimated to increase from 17% in 2015 to 27% in 2020. The Russian market accounts for a significant share of the region's total installed base.

China

The total ownership of commercial vehicles in China reached almost 28 million vehicles in 2016 according to official statistics. Gartner expects the Chinese fleet management market will experience steep growth in the next coming years as the trucking industry continues to grow. In 2016 about 2.3 million new commercial vehicles were registered in China.

The number of fleet management systems in active use is forecast to grow at a CAGR of 23% from 2.1 million units at the end of 2014 to 5.9 million by 2019. The penetration rate in the total population of registered commercial vehicles including trucks and buses is estimated to increase from 9.0% in 2014 to reach 19.8% in 2019.

South Africa

The number of FM systems in active use is forecast to grow at a CAGR of 12.6% from 1.1 million units at the end of 2016 to 1.9 million by 2021. The penetration rate of company owned fleet vehicles is estimated to increase from 24.1% in 2016 to 39.6% in 2021.

Australia and New Zealand (ANZ)

The number of FM systems in active use is forecast to grow at a CAGR of 16.0% from 0.5 million units in 2015 to 1.1 million by 2020. The penetration rate of company owned fleet vehicles is estimated to increase from 11.7% in 2015 to 22.3% in 2020.

India

The commercial vehicles telematics market installed base is projected to reach 1.4 million units by 2022 with a CAGR of around 40%.

Continued Adoption of Global Commercial Telematics Across Industries

The growth and diversification of the 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 the following:

- In recent years, the market for *OEM telematics* is increasing as compared to aftermarket telematics, owing to the increasing partnerships between automobile manufacturers and telematics service providers. Gartner expects the OEM telematics market for HCV and LCV to grow to over 20% of the market by 2022.
- *Government rules* mandating the installation of telematics devices drive the adoption of commercial telematics solutions. A good example is the e-log mandate in the U.S., which has already gone into effect in December 2017. Although the hard rule went into place in April of 2018 (where vehicles that are not compliant are taken out of service), many smaller trucking companies are still not compliant. The second phase where companies with older automatic on board recorders (AOBR) need to replace these with ELD devices will take place in December of 2019. Canada will announce a similar mandate before the end of summer of 2018. In other economies, like Brazil and China, the government legislation mandates the adoption of telematics given the rising concern of vehicle tracking and safety and security. This increases demand for telematics solutions.
- Additionally, the increasing penetration of long-term evolution (LTE) technologies and high-speed broadband, worldwide, continue to bolster the demand for commercial telematics in the global market. With 5G networks expected roll out in the next few years, this will impact the type and amount of data that can be exchanged. (Gartner expects that by 2020, 3% of network-based mobile communications service providers (CSPs) will launch the 5G network commercially.)

- The maturing and consolidating fleet management market has a growing awareness about the benefits of fleet management technology to monitor and improve 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 becomes even more important in the transportation industry, companies adopt these solutions to measure their efficiency and increase customer service, such as on-time delivery.

The 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 the increasing adoption of mobile-based services by end users.

Globalization and Consolidation in the Mobile Technology Market

Acquisitions

The consolidation trend continues and numerous M&A activities have taken place in 2017 and the first half of 2018.

- Isotrak acquired U.K. Fleet Management technology business Verilocation in June 2017.
- Also in June of 2017, ORBCOMM acquired inthinc, a provider of vehicle telematics solutions focused on improving driver safety, operational efficiency, regulatory compliance and workforce optimization.
- TIMKEN acquired Groeneveld Group that owns Groeneveld ICT Solutions.
- In September of 2017 Omnitracs completed the acquisition of Shaw Tracking, a subsidiary of Shaw Communications and the leading fleet management solutions provider in Canada.
- Michelin acquired Nextraq in June of 2017 from Fleetcor and took an equity stake in SmartDrive Systems in October of 2017.
- Also in October of 2017, ORBCOMM acquired Blue Tree Systems (Blue Tree Systems) based in Galway, Ireland, along with its subsidiaries in the United States, Germany and France.
- IFS, the global enterprise applications company, announced the acquisition of WorkWave in November 2017.
- In January 2018, Verizon acquired Movildata Internacional, a Murcia, Spain-based provider of commercial fleet management solutions.
- As recent as June of 2018 Geotab acquired FleetCarma, positioning Geotab as a dominant player for Electric Vehicle Fleet Management.

Globalization and growth

- The market is growing, and with that vendors are increasing their footprint. Several vendors in the leading regions (U.S. and Europe) reported more than 500,000 active units and a few players have broken the 1 million subscriber unit barrier.

- A large part of 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 to partner with value-added resellers (VARs) to implement their solutions in other territories, without any local presence of the vendor itself.

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 in the overall IoT offering of the acquiring company (Verizon and Continental are two good examples of this).
- 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.

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 and enhanced options for training. Vendors such as SmartDrive Systems and Lytx have been leaders in this area, and more telematics vendors have added similar capabilities to their offering. 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 public transportation have been some of the early adopters of this technology, which is now being adopted in the commercial transportation space (see "Video Is Emerging as a New Tool to Improve Trucking Safety and Efficiencies"). More recently, Gartner has noticed the use of artificial intelligence (AI) and machine learning (ML) to analyze video in real-time to identify as an example drivers who are not paying attention. Through continuous analysis of eye, head and body movement messages can be exchanged through audio signals to alert the driver. This, in turn, improves safety complimentary 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 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 fleets maintain equipment with minor repair costs. Data can be analyzed to determine trends, like which make/model has specific failures and how those makes/models compare to others. This can improve preventive maintenance plans, but it can also affect purchasing decisions. The same goes for driving behavior where the data can be analyzed to decrease driver accidents, improve driving behavior and miles per gallon, and increase driver retention (see "How to Derive Value From Big Data in Transportation"). 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 should be carefully looked at when selecting a vendor.

Increased Adoption

As telematics solutions have become more affordable and effective, smaller fleets benefit in larger numbers. 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 these solutions. These solutions are no longer limited to larger fleets, but smaller fleets (up to fleets with only one or two vehicles) can start using these offerings to provide value to their internal organization as well as to their customers. This trend is also impacted by the government mandates issued in multiple countries requiring these systems independent of the size of the fleet.

Tablets, Smartphones and Wearable Devices

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 (see "Supply Chain Brief: The Use of Wearable Technology in Transportation"). 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 that can be used for work as well as during their downtime is being especially welcomed by over-the-road drivers.

Electric Vehicles

With the adoption of electric vehicles increasing over the past several years, resulting in millions of EVs on the road, this has created new requirements on telematics vendors and the solutions they offer. EVs introduce a set of new variables into the equation, and fleet managers can run into challenges when:

- 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

One of the telematics vendors focused on electric vehicles is FleetCarma, which was acquired by Geotab in June of 2018. The EV-focused FleetCarma specializes in providing telematics for hybrid and electric vehicles.

Connected Vehicles

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

Scania and Ericsson are creating connected truck solutions that allow platoons of trucks driving together at 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.

Market Analysis

The transportation mobility technology market is very fragmented, with hundreds of players in each of the different regions. The market can be segmented based on the hardware/software capabilities, the fleet type and size, the geographical focus and the industry focus. Most vendors focus on a specific fleet size (either only large fleets or small to midsize fleets), a specific region and specific industries. Only a handful of the mobile transportation technology vendors cross over multiple fleet size/types, industries and/or regions.

Although this technology isn't new and Gartner identifies many established vendors in the market, the growth in the market has continued to attract new vendors to this specific solution market several of these having grown into sizable competitors in just over three to five years.

There are two groups of vendors in the market. The first group focuses still, for a very large part, on the design of the hardware as well as the software solution, and has a direct go-to-market approach. We see this group play a larger role in industries where telematics has not yet become a commodity and requirements can be very industry-specific (for example, construction, mining and government fleets). The second group of vendors tends to focus solely on the software side, and uses an ecosystem of partners to add additional hardware capabilities to their platform — and, in some cases, uses distributors to go to market. These vendors face tougher competition in

industries such as transportation, where telematics is more prevalent, and use their large ecosystem to differentiate themselves from their competitors.

We also see that there are telematics data aggregators showing up in the market that collect the data from multiple telematics vendors. Some of these vendors also have advanced capabilities in analytics that provide their customers with very valuable transportation insights (see "Real-Time Transportation Visibility Platforms Provide Transportation Leaders With Supply Chain Efficiencies").

The Gartner focus was mainly on the leading vendors in this solution space from both a global perspective and a regional perspective.

Representative Vendors

The vendors listed in this Market Guide do not imply an exhaustive list. This section is intended to provide more understanding of the market and its offerings.

There are several segmentation criteria in this technology driving differing software capabilities, differing hardware offerings and even pricing models:

- **Type of fleet:** Solutions for heavy commercial vehicles and light commercial vehicles — delivery fleets, service fleets, for hire and private fleets, long-haul fleets and local fleets.
- **Size of fleet:** Large fleets (more than 500 vehicles) and small-to-medium fleets (anywhere from one vehicle to 500 vehicles).
- **Industry:** Vendors focus on specific industries and the offerings are different for CPG industry compared to, for example, construction or oil and gas based on the particular needs of the industry served.
- **Geography:** Requirements are different depending on the region. In the U.S., the focus is primarily on hours of service and tracking; in Europe, the main focus is on driver safety and tracking; and in South America, it is on vehicle theft.

In Table 1, the leading global, regional and local vendors in the different regions are listed (Americas, Europe, Russia/Eastern Europe, South Africa and Asia/Pacific). It is indicated where these companies are headquartered as well as their geographic markets where the solutions are sold and implemented. Gartner has primarily focused on companies with more than 100,000 active units installed.

- **Global vendors:** Vendors that have offices and implementations in at least three continents (in case of two continents, we have specified the continents). The * indicates that the vendor has partnered with a reseller and local cellular carrier to offer their solution outside of their core region.
- **Regional vendors:** Vendors that have implementations across multiple countries within a single continent.

- **Local vendors:** Vendors that have a primary focus on a single country.

Following Table 1, we have provided additional info on the leading vendors that participated in Gartner's market survey. Included in the telematics vendors are the two leading safety management and video telematics providers: Lytx and SmartDrive Systems.

Table 1. Transportation Mobility Technology Providers

Vendor Name	HQ	Coverage	Website
Altech Netstar	South Africa	Regional	www.netstar.co.za
Arvento	Turkey	EMEA	www.arvento.com
Arya Omnitalk	India	Regional	www.aryaomnitalk.com
Astrata Group	Asia	APAC/EU	www.astratagroup.com
AT&T Fleet Management Solutions	US.	Regional	www.business.att.com/solutions/Family/internet-of-things/vehicle-solutions/
Autotrac	Brazil	Regional	www.autotrac.com.br
Azuga	U.S.	Global	www.azuga.com
BSM Technologies	CAN	Regional	https://bsmtechnologies.com/
CalAmp	U.S.	Global	www.calamp.com
CarrierWeb	U.S.	Global	www.carrierweb.com
Cartrack	South Africa	Global	www.cartrack.com
Chevin Fleet Solutions	U.S.	US/EU	www.chevinfleet.com
Coretex	U.S.	US/APAC	www.coretex.com
Ctrack	South Africa	Glob	www.ctrack.com
Descartes	CAN	Global	www.descartes.com
DigiCore (Novatel Wireless)	South Africa	Global	www.ctrack.com
E6GPS	China	Local	www.e6gps.com
EROAD	NZ	APAC/US	www.eroad.com
Etrans	China	Local	www.e-trans.com.cn
Fleet Complete	CAN	Global	www.fleetcomplete.com
Fleetilla	U.S.	Global*	www.fleetilla.com
Fleetistics	U.S.	Regional	www.fleetistics.com
G7	China	Regional	www.g7.com.cn

Vendor Name	HQ	Coverage	Website
Garmin	U.S.	Global	www.garmin.com
Geotab	CAN	Global	www.geotab.com
GreenRoad	U.S.	Global	www.greenroad.com
Gurtam	Russia	Global	www.gurtam.com
I.D. Systems	U.S.	Regional	www.id-systems.com
Innovative Software Engineering (ISE)	U.S.	Regional	iseinc.biz/fleet-services/
Isotrak	EU	Global	www.isotrak.com
iTriangle Infotech	India	Global	www.itriangle.in
KeepTruckin	U.S.	Regional	https://keeptruckin.com/
Konexial	U.S.	Regional	www.konexial.com
KORE Wireless Group's Position Logic	U.S.	Global	www.koretelematics.com
Lytix	U.S.	Global	www.lytx.com
MapAnything	U.S.	Global	www.mapanything.com
Masternaut	EU	US/EU	www.masternaut.co.uk
Michelin's NexTraq	U.S.	Global	www.nextraq.com
Michelin's Sascar	Brazil	Regional	www.sascar.com.br
Microlise	EU	Global	www.microlise.com
MiX Telematics	South Africa	Global	www.mixtelematics.com
Omnilink	Brazil	Local	www.omnilink.com.br
Omnitracs	U.S.	Global	www.omnitracs.com
ORBCOMM	U.S.	Global	www.orbcomm.com
Quartix	EU	EU/US	www.quartix.com
Rand McNally	U.S.	Regional	www.randmcnally.com
Rhino Fleet Tracking	U.S.	Regional	www.rhinofleettracking.com/

Vendor Name	HQ	Coverage	Website
Samsara	U.S.	Regional	www.samsara.com
SmartDrive Systems	U.S.	US/EU	www.smartdrive.net
Spireon	U.S.	Regional	www.spireon.com
TechnoKom	Russia	Regional	www.tk-nav.com
Teletrac Navman	U.S./APAC	Global	www.teletracnavman.com
Telular's SkyBitz	U.S.	Regional	www.skybitz.com
TomTom Telematics	EU	Global	telematics.tomtom.com
TouchStar	U.S.	US/EU	www.touchstargroup.com
Trakm8 Group	EU	Local	www.trakm8.com
Transics	EU	Global	www.transics.com
Trimble's PeopleNet	U.S.	Regional	www.peoplenetonline.com
Vehco	EU	Regional	www.vehcogroup.com
Verizon Connect	U.S.	Global	www.verizonconnect.com
Vnomics	US	Regional	www.vnomicscorp.com
WideTech	Columbia	Regional	www.widetech.co
WorkWave (IFS)	U.S.	Regional	www.workwave.com
Zonar (Continental)	U.S.	Regional	www.zonarsystems.com

Source: Gartner (July 2018)

The Vendors in This Market Guide

Vendors included in this Market Guide have customers that are successfully using their products and services. Selections are based on analyst opinion and references that validate IT provider claims; however, this is not an exhaustive list or analysis of vendors in this market. Use this perspective as a resource for evaluations, but explore the market further to gauge the ability of each vendor to address your unique business problems and technical concerns. Consider this research as part of your due diligence and in conjunction with discussions with Gartner analysts and other resources.

AT&T Fleet Management Solutions

AT&T is a provider communications and digital entertainment services in the U.S., Mexico and Latin America, and is a global network service provider. AT&T has embarked on a cultural, organizational market diversification and technological transformation. Part of that diversification is in the fleet management space where AT&T offers solutions for Enterprise, Government and SMB fleets. AT&T's fleet solutions include GPS-based vehicle tracking as well as a web-based portal that allow customers to track and monitor fleets, run reports and create alerts. AT&T's Fleet Management for Enterprise and for Government support larger businesses. AT&T Fleet Complete is a family of GPS-based tracking and management solutions that include fleet tracking, asset tracking and applications for mobile workers, including capturing driver's hours of service, forms and dispatch. AT&T Fleet Complete is also available for first responders. AT&T offers this commercial telematics solutions in North America currently but has plans for further geographic expansion.

BSM Technologies

BSM Technologies, headquartered in Toronto, Canada, provides GPS wireless tracking solutions. It designs and installs fleet management and tank monitoring solutions. BSM offers fleet tracking and asset tracking solutions, including planning, route optimization and dispatch functionality, to companies in construction, rail, government and service industries with national coverage in the U.S., Canada and Mexico. BSM merged with Webtech Wireless in 2015, and provides fleet management telematics, GPS and automatic vehicle location (AVL) solutions worldwide. It serves commercial and government fleet operations in transportation, construction, oil and gas, winter operations, public works, and waste management. Webtech Wireless and BSM, jointly, have over 1,500 customers across the U.S., Canada, Mexico and Europe, with 166,000 active units in the U.S. and Canada.

CalAmp

CalAmp is an integrated solution provider in the mobile resource management (MRM) and machine-to-machine (M2M) space. Headquartered in the U.S., it was founded in 1981. CalAmp provides turnkey telematics solutions to end customers, and also provides other telematics service providers, indirect channel partners and direct OEM customers with its hardware and infrastructure. CalAmp has an annual device run rate of 2.5 million units worldwide, approximately seven million devices actively using its platform services and approximately 1,500 customers, with over 650,000 unique application subscribers across the U.S., South America, Europe, APAC and South Africa.

CarrierWeb

CarrierWeb is an international company with operations on five continents, and headquarters in Atlanta, Georgia. CarrierWeb provides near-real-time information for mobile communications on terrestrial, satellite and Wi-Fi networks through its products: CarrierMate, ReeferMate and TrailerMate. It provides electronic logging devices (ELDs), two-way refrigerated command and control, and trailer tracking. CarrierWeb focuses mainly on for-hire and private fleets with over 250 fleets using its solutions ranging from 20 to 7,000 vehicles. It has a large presence in the food

industry — specifically, refrigerated regional over-the-road fleets. The CarrierWeb group has offices in the U.S., Brazil, China, Ireland, Morocco, the Netherlands and the U.K.

G7

G7, founded in 2010 and headquartered in Beijing, China, is a leading provider of telematics solutions in China. Besides telematics the vendor also offers visibility solutions, as it controls such a large part of the Chinese transportation industry. The G7 platform serves more than 20,000 customers, and its total number of connected vehicles exceeds 700,000. The vendor provides telematics and safety solutions for fleets ranging from 2 to 60,000 vehicles. G7's solutions cover express logistics, e-commerce, hazardous chemicals transportation, cold chain logistics, automotive logistics, bulk transportation, urban distribution, cargo owners and other logistics fleets.

Geotab

Geotab was founded in 2000 and is headquartered in Ontario, Canada. Geotab provides GPS fleet management and vehicle tracking (telematics) solutions. Geotab offers plug-and-play hardware and software solutions focusing on safety, productivity, regulatory compliance, fleet optimization and expandability. In June of 2018 Geotab acquired FleetCarma, a telematics player in the electric vehicle fleet management space. That same month, Geotab announced the launch of "[IoT Data Insight Solutions](#)." This publicly available tool helps enable smart cities, leveraging data collected from over 1 million vehicles equipped with Geotab telematics devices. Geotab offers an open platform for fleet management that allows easy integration as well as customized solutions such as in-vehicle cameras, real-time temperature tracking and tire pressure monitoring, and others in the Geotab Marketplace. Geotab is active in most industries around the world.

iTriangle Infotech

iTriangle Infotech, founded in 2009 and headquartered in Bangalore, India, is a leading provider of end-to-end telematics solutions in India that includes hardware, software applications on the web and via mobile. The company manufactures its products and currently has product/service offerings in the vehicle tracking and monitoring, fleet management & personal tracking and safety domains. The company provides solutions for two wheelers all the way to large trucks. It also offers a vehicle theft protection system, with Geo Lock, the first of its kind in India. iTriangle's main focus is on the transport, logistics, trading, educational institutions, healthcare and the automobile industries. iTriangle is mainly active in India, but is expanding into the Middle East, North Africa, the rest of Asia and North America.

Lytix

Lytix, based in San Diego, California, was founded in 1998 with the goal to increase driver safety. Lytx's technology analyzes driving and vehicle data to distill it into insights that empower fleets to run safer and more efficient. DriveCam Enterprise, DriveCam Protect and Lytx Video Services allow companies to capture video events, provide deep analytics and increase fleet performance with video-based coaching. Adding ActiveVision Service to a DriveCam program helps their clients

address and coach distracted or drowsy driving through machine vision and computer learning. Lytx also offers additional products as well as compliance services such as Driver Vehicle Inspection Report (DVIR) Management, Hours of Service (HOS) Management, Compliance, Safety & Accountability (CSA) Data Analysis, and auditing of driver qualification files through its RAIR Compliance Services. Lytx currently has over 3,000 clients and more than 850,000 drivers using its safety programs and services.

Masternaut

Founded in 1996, Masternaut is one of Europe's largest telematics service providers. It provides solutions for fleet tracking, driver performance management, temperature monitoring, jobs workflow and mobile applications through its own patented hardware as well as OEM factory fitted devices. Masternaut has partnered with leading OEMs, including Renault, Vauxhall, Opel, Citroën and Peugeot, to offer telematics in select models. The company also employs a team of data scientists, analysts and former management consultants to help customers translate data into actions and impact. The company has offices in the U.K. and France and can provide field support and customer service across Europe. Masternaut is owned by a joint venture between growth equity investors Summit Partners and FLEETCOR.

MiX Telematics

MiX Telematics, founded in 1996 and headquartered in South Africa, is a global provider of fleet and mobile asset management solutions. The company's products and services provide enterprise fleets, small fleets and consumers with solutions for safety, efficiency, compliance and security. Mix continues to expand its solution set with its mobile driver app (MyMix) as well as video telematics (MiX Vision). The company provides solutions in over 120 countries via a network of over 130 channel and implementation partners. MiX serves end markets such as utilities, emergency services, government, construction, transport and distribution, oil and gas, and public transport. MiX Telematics serves small and very large fleets and has currently more than 585,000 vehicles under subscription in more than 120 countries.

Omnitracs

Omnitracs, based in Dallas, TX, provides SaaS-based fleet management solutions to transportation and logistics companies across the entire transportation ecosystem. It provides technologies, including solutions for safety and compliance, fuel efficiency, driver retention, fleet productivity, GPS fleet tracking and fleet maintenance. It provides three separate platforms: Omnitracs Enterprise Services (based on the Qualcomm acquisition), Omnitracs XRS (based on the XRS acquisition) and Omnitracs RNA Telematics (Roadnet Telematics). It serves private and for-hire fleet customers and vehicles in North America and Latin America. Besides telematics, Omnitracs also offers vehicle routing and TMS solutions. In 2017 Omnitracs acquired Shaw Tracking, a subsidiary of Shaw Communications and the leading fleet management solutions provider in Canada. Omnitracs also led the \$60 million Series B funding round for Peloton Technology, a connected and automated vehicle technology company. Omnitracs is one of the leading telematics vendors in North America, with over 750,000 active units.

ORBCOMM

ORBCOMM, based in Rochelle Park, NJ, is a leading global provider of industrial Internet of Things (IoT) and Machine-to-Machine (M2M) communication solutions that remotely track, monitor and control fixed and mobile assets. ORBCOMM provides an integrated transportation solution offering from trucks, to refrigerated assets, to dry vans, to containers from a single platform. In 2017 ORBCOMM acquired Blue Tree Systems. In 2017 ORBCOMM acquired inthinc, a provider of vehicle telematics solutions focused on improving driver safety, operational efficiency, regulatory compliance and workforce optimization. The acquisition of Blue Tree Systems the same year, solidified ORBCOMM's transportation portfolio by adding truck in-cab and refrigerated fleet vehicle solutions to ORBCOMM's industry-leading cargo solutions. ORBCOMM provides solutions to most industries on a global scale. ORBCOMM has a diverse customer base including premier OEMs, solutions customers and channel partners spanning transportation, supply chain, warehousing and inventory, heavy equipment, maritime, natural resources and government.

PeopleNet (Trimble)

PeopleNet, based in Minnetonka, MN and part of Trimble, provides internet-based and integrated onboard computing and mobile communications systems for fleet management to the land transportation industry in North America. It provides vehicle intelligence solutions, such as fleet performance monitoring, navigation and routing; real-time diagnostics, video intelligence, safety and compliance solutions; and communications solutions. PeopleNet continues to be one of the leading telematics vendors in North America with its products being used by more than 2,000 truckload, LTL, private and energy services fleets in the United States and Canada. Trimble manages over 1 million commercial vehicles across North America, Europe and Asia with its solutions.

Samsara

Samsara, founded in early 2015 and based in San Francisco, California, offers modern telematics on a multitenant cloud platform. Samsara provides an integrated, software-centric solution combining plug-and-play sensors, wireless connectivity and cloud-hosted software. Samsara combines all of the key areas of fleet management: GPS tracking, dash cams/driver safety, ELD-compliant HOS, routing and dispatch, trailer tracking, and temperature/cargo monitoring in a single system. The cloud platform of Samsara offers an easy-to-use system, with plug-and-play hardware, self-configuring wireless capabilities, and an intuitive user interface for administrators and drivers. Samsara's customer base covers most industries. Its deployment is currently limited to the U.S., but an international expansion starting in Canada and Europe was announced in the summer for 2018.

SmartDrive Systems

SmartDrive Systems, based in San Diego, California, offers driver safety and transportation intelligence solutions. The company uses video and driver data to monitor driver behavior in commercial vehicles including trucks, buses and trains. SmartDrive Systems's Transportation Intelligence Platform collects data and video events to manage driver behavior with the goal to

reduce safety incidents and collisions. The system generates driver scorecards that help companies to incentivize the drivers as well as increase driver retention as well as impacting fuel consumption and claims spend. SmartDrive Systems announced in June of 2018 its partnership with Geotab providing integration between a leading safety solution and a leading telematics solution. SmartDrive Systems mainly serves clients in the U.S., Canada and the U.K., but with growing markets in the rest of Europe, South Africa, South America, Australia and New Zealand.

Spireon

Spireon, based in Irvine, CA, was born in 2011 out of the merger of three MRM companies — ProconGPS, EnfoTrace GPS and Procon Fleet Services. Spireon provides risk mitigation, mobile asset management and location-based services to its customers. Spireon's NSpire platform offers GPS fleet tracking as well as trailer tracking software solutions. It serves automotive dealers, lenders, rental car agencies, service and delivery fleets, and transportation and logistics companies. It currently has more than 4 million active subscribers in the North American marketplace.

Teletrac Navman

Teletrac Navman, headquartered in Glenview, IL, is a global SaaS-based fleet management solution provider, founded in 1988. The company provides tracking tools for real-time location detection, engine diagnostics, fuel efficiency, safety, compliance and BI for optimal fleet management. Its focus is on resources, mining, oil and gas, private delivery fleets, trucking, service, government and construction industries. Teletrac Navman has over 500,000 active units across the U.S., Europe, Australia, New Zealand and Mexico.

TomTom Telematics

TomTom Telematics is a business unit of TomTom dedicated to fleet management and vehicle telematics. It offers solutions for end markets, such as towing and recovery, insurance telematics, passenger transport, delivery and logistics, and services and maintenance. While the company's traditional focus is Europe, it also has a significant presence in South Africa, Australia and New Zealand, and North America, as well as Latin America. TomTom has an ecosystem of more than 300 partners that build software applications and hardware products integrated within its WEBFLEET platform. TomTom has more than 826,000 active fleet subscriptions across 60 countries and is the largest vendor in Europe.

Verizon Connect

Verizon Connect (formerly Verizon Telematics) has become the largest global fleet telematics provider, thanks to its acquisitions of Telogis and Fleetmatics in 2016. It has, by far, the largest amount of OEM partnerships. Verizon Connect's telematics solutions are both delivered via aftermarket and embedded at the factory for leading manufacturers of light duty, medium duty and heavy duty vehicles plus heavy equipment and assets such as "yellow iron," cranes (Manitowoc/Grove), and even components such as work trucks' "booms." In 2018 the solutions were rebranded as Verizon Connect. It offers telematics, field service management, routing and scheduling and analytics. Also in 2018, Verizon Connect acquired Movildata Internacional, a Murcia, Spain-based

provider of commercial fleet management solutions. Verizon Connect sells to customers across all industries and regions. Verizon Connect services fleets with less than five vehicles as well as fleets with over 30,000 assets.

WorkWave (IFS)

WorkWave, based in the U.S., provides cloud-based field service and fleet management solutions. WorkWave was acquired by IFS, the global enterprise applications company, in 2017. WorkWave's solutions include WorkWave Route Manager and WorkWave GPS, which optimize scheduling, vehicle routing and GPS tracking of service teams and their assets. WorkWave customers are mostly field service businesses and municipalities that have a mobile workforce. It offers terrestrial as well as satellite tracking and temperature monitoring. WorkWave is primarily focused on the U.S. region.

Zonar (Continental)

Zonar, headquartered in Seattle, WA, is part of Continental with Daimler Trucks North America owning a minority share. Zonar provides electronic inspection, tracking and management solutions for public and private fleet operations from 5 to 25,000+ vehicles. Besides telematics it offers solutions for pupil and transit transportation as well as electronic vehicle inspection. It offers its solutions for various applications in commercial and private trucking, pupil transportation, municipal fleets, concrete and aggregate haulers, waste operations, utilities, refuse, government, and construction. In 2017 Zonar introduced Zonar Coach an in-cab driver coaching solution and integrated with ContiPressureCheck tire sensors. The Zonar solution comes pre-installed on Daimler Trucks as well as Thomas Built buses. Zonar has over 450,000 units installed in North America (see Figures 5, 6, 7 and 8).

Figure 5. Functionality

Functionality	Driver Hours Compliance	Electronic On-Board Recorder/Tachograph	Driver Performance	Driver Communication & Messaging	Vehicle Condition Report	Engine Diagnostics	Geofencing	Real-Time Visibility to Vehicles in Route	Information Capture by Mobile Device	Trailer Tracking	Reporting	Visual In-Cab Training	Wearable Technology	Video Telematics
AT&T Fleet Management Solutions	■	■	■	■	■	■	■	■	■	■	■	■	■	■
BSM Technologies	■	■	■	■	■	■	■	■	■	■	■	■	■	■
CalAmp	■	■	■	■	■	■	■	■	■	■	■	■	■	■
CarrierWeb	■	■	■	■	■	■	■	■	■	■	■	■	■	■
G7	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Geotab	■	■	■	■	■	■	■	■	■	■	■	■	■	■
iTriangle Infotech	■	■	■	■	■	■	■	■	■	■	■	■	■	■
MiX Telematics	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Omnitracs	■	■	■	■	■	■	■	■	■	■	■	■	■	■
ORBCOMM	■	■	■	■	■	■	■	■	■	■	■	■	■	■
PeopleNet (Trimble)	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Samsara	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Spireon	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Teletrac Navman	■	■	■	■	■	■	■	■	■	■	■	■	■	■
TomTom Telematics	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Verizon Connect	■	■	■	■	■	■	■	■	■	■	■	■	■	■
WorkWave (IFS)	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Zonar (Continental)	■	■	■	■	■	■	■	■	■	■	■	■	■	■

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Source: Gartner (July 2018)

Figure 6. Fleet Type

Fleet Type										
	For-Hire Fleets	Private Fleets	Sales Delivery Fleets	Courier Fleets	Municipal Fleets	Government Fleets	Automotive Vehicles	Light Commercial Vehicles	Heavy Commercial Vehicles	Industrial Equipment
AT&T Fleet Management Solutions										
BSM Technologies										
CalAmp										
CarrierWeb										
G7										
Geotab										
iTriangle Infotech										
MiX Telematics										
Omnitracs										
ORBCOMM										
PeopleNet (Trimble)										
Samsara										
Spireon										
Teletrac Navman										
TomTom Telematics										
Verizon Connect										
WorkWave (IFS)										
Zonar (Continental)										

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Figure 7. Industry

Industry	Automotive/Vehicle Transportation	City Services (Waste Mgmt., Public Roadworks)	Consumer Products	Food Service	Furniture/Office Equipment	Government	High-Tech/ Consumer Electronics/Medical Devices	Industrial & Construction Machinery	Life Science/ Pharmaceuticals	Logistics Service Provider/ Carrier/3PL	Mill Products (metals, paper, plastics)	Oil & Gas	Petrochemicals - Bulk Commodity	Postal/ Courier	Public Transportation	Retail	School Transportation	Services	Utilities	Wholesale Distribution
AT&T Fleet Management Solutions																				
BSM Technologies																				
CalAmp																				
CarrierWeb																				
G7																				
Geotab																				
iTriangle Infotech																				
MiX Telematics																				
Omnitracs																				
ORBCOMM																				
PeopleNet (Trimble)																				
Samsara																				
Spireon																				
Teletrac Navman																				
TomTom Telematics																				
Verizon Connect																				
WorkWave (IFS)																				
Zonar (Continental)																				

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Figure 8. Geography

Geography						
	North America	South America	Europe	Pacific	Asia	Africa
AT&T Fleet Management Solutions	█					
BSM Technologies	█					
CalAmp	█	█	█	█	█	█
CarrierWeb	█	█			█	█
G7					█	
Geotab	█	█	█	█	█	█
iTriangle Infotech	█				█	█
MiX Telematics	█	█	█	█	█	█
Omnitracs	█		█			
ORBCOMM	█		█	█	█	█
PeopleNet (Trimble)	█					
Samsara	█					
Spireon	█					
Teletrac Navman	█	█	█	█		
TomTom Telematics	█	█	█			█
Verizon Connect	█	█	█	█	█	█
WorkWave (IFS)	█		█	█		
Zonar (Continental)	█					

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Source: Gartner (July 2018)

Market Recommendations

The transportation mobility technology market is growing as:

- Shippers require more visibility to the status of their loads and look at the fleets to provide this.
- Governments around the world drive more regulation requiring more compliance.
- Carriers require compliance as well as increased safety.
- Driver incentives and retention becomes more important.
- OEMs increase their effort to deliver built-in solutions in their light and heavy commercial vehicle lineup.

These same reasons drive the fleets to adopt these solutions that are now easier to install, have more advanced capabilities and have a lower price tag, making the ROI more attractive even for small fleets.

Gartner advises fleet operators to research these solutions to ensure compliance to government mandates, to ensure productivity for the fleet and to obtain better visibility tools that enhance customer visibility and fleet maintenance.

The time is now to invest in these solutions, as the advantages that can be gained will drive your fleet's efficiencies and increase customer service.

Use these solutions in combination with your current routing solutions or other fleet management tools. As more data is collected through these mobile solutions, leverage analytics to offer better visibility for both the fleet operator and the shipper.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Market Guide for Vehicle Routing and Scheduling"

"Magic Quadrant for Transportation Management Systems"

"Hype Cycle for Supply Chain Execution Technologies, 2018"

"Magic Quadrant for Field Service Management"

"Disruptive Technologies in Transportation: The Impact of Artificial Intelligence and Machine Learning"

"Article Top View: Supply Chain Guide to Emerging and Innovative Transportation Solutions"

Evidence

¹ 30 November 2017 through 21 February 2018, Gartner performed a survey to explore the role technology plays in the supply chain, how supply chain organizations leverage technology for competitive advantage and their changing views on how best to exploit technology in their SCM organizations. The sample was obtained through Gartner's partnership with Supply Chain Digest and CILT (Chartered Institute of Logistics and Transport). The 303 respondents who completed the web-based survey were qualified according to industry as well as their involvement in decisions regarding Supply Chain Management (SCM) processes, strategy, and supporting technology. The sample mix by region is as follows: North America (39%), EMEA (43%), APAC (14%) and South America (3%). The survey was developed collaboratively by a team of Gartner analysts who follow the IT market and was reviewed, tested and administered by Gartner's Research Data and Analytics (RDA) team. The results of this study are representative of the respondent base and not necessarily the market as a whole.

Notes

Note 1

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, geographies, etc.).
- Industry data from public sources like ATA (American Trucking Associations on a number of assets), EPA (vehicle classes), FMCSA (ELD adoption), etc.
- Articles that reference telematics growth to see if they align with our views of the growth in the market. We don't use specific data but use it more for alignment. Sources are mainly from statistics vendors and news sources such as Reuters, Statista, Allied Research, Berg Insight.

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