

# Unpacking 2021 for Fleet Telematics in North America, Europe, and Australia



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## Introduction

In this whitepaper, we will present our 2021 outlook on the telematics industry for the regions where we operate, delivering our interpretation of information from the fleets we serve, the jobs we support, and the operating environments that shape our product, service, and solution strategies.

The year 2020 marked Fleet Complete's 20th anniversary. While it gave us a reason to reflect on our steady rise to being one of the top fleet telematics solution providers in the world<sup>1</sup>, it also gave us a greater resolve to help our customers thrive and offer the most advanced and comprehensive range of solutions.

More importantly, it gave us a reason to honour more than 40,000 businesses that collectively represent our 600,000+ subscriber base and support them through the global pandemic that changed how most organizations are run today. These fleet-owning businesses represent the widest cross-section of industries, vehicle classes, vocations, and duty-cycles, which provides us with a unique perspective into the technology and market trends that are shaping the future of fleet telematics. This also offers us a unique opportunity to share these valuable insights with all sectors of the commercial vehicle industry.

Our 20th anniversary was somewhat muted, as the communities and businesses that we serve grappled with a 'black swan' event in the form of a global coronavirus outbreak (COVID-19) that was unlike any in the last century. Before the pandemic, no one had yet heard of social distancing, mandatory face masks, and lockdowns; the global economy was booming, and the turmoil resulting from a new and deadly pathogen was only witnessed in movies for our generation.

This is why we think it is important to share the outlook of the global fleet telematics industry as we embark on a new year. Everyone has been impacted – our business partners (wireless telecom providers, vehicle manufacturers (OEMs), leasing and insurance providers, hardware and software partners), government partners (regulators, legislators), global team members, competitors, and, most importantly, our customers. So today, we all stand united in overcoming this global pandemic and its impact on our lives and societies.

In this whitepaper, we will present our 2021 outlook on the telematics industry for the regions where we operate, delivering our interpretation of information from the fleets we serve, the jobs we support, and the operating environments that shape our product, service, and solution strategies. We will present key insights that encompass both supply and demand side within the fleet telematics industry; discuss technology, econometric, application, and market trends; forecast industry metrics, and, most importantly, drive clarity in strategic decision making for all key stakeholding groups.

*1 Berg Insight, Fleet Management in the Americas, 10<sup>th</sup> ed., 2020; Fleet Management in Australia and New Zealand, 5<sup>th</sup> ed., 2020; Fleet Management in Europe, 15<sup>th</sup> ed., 2020.*



## Hindsight is 2020

Before we start presenting our outlook for 2021, let us look back at 2020. The global fleet telematics industry showed tremendous resilience in the face of unprecedented measures imposed on businesses worldwide due to the outbreak of the COVID-19 pandemic. As global economies experienced the onslaught of this viral pathogen, the service component of national gross domestic product (GDP) contracted, while the goods component expanded.

In addition to the expansion of the goods component of GDPs in our key markets, the global supply chain saw several key themes throughout the year, such as: 1) expedited rise of e-commerce, 2) changing architecture of global supply chains, 3) focus on first- and last-mile logistics, 4) demands coming from frontline workers, and 5) a greater need for remote mobile resource visibility/tracking when managing delivery and commercial fleets that included maximizing vehicle utilization, uptime, and safety.

The changing market demands, coupled with a steady need for more uptime and lower business costs, resulted in higher demand for fleet IoT (Internet of Things) solutions. We will focus on this in greater detail later in this document, but let us first focus on the economic signals from the key regions we operate in.

Table 1 below shows the GDP growth rates in the US, Canada, Mexico, Europe, and Australia. GDPs of all these regions, as well as global GDP, contracted in 2020. Organisation for Economic Co-operation and Development (OECD) analysis indicated a global GDP decline of 4.2% in 2020.

**Table 1: Regional and Global GDP Growth Rates, 2020**

<b>GDP 2020</b>	<b>Growth Rate (%)</b>
Global	-4.2
US	-3.7
Canada	-5.4
Mexico	-9.2
EU Region	-7.5
Australia	-3.8

*Source: OECD Economic Outlook, December 2020, OECD Economic Outlook: Statistics and Projections*

Industry research, conducted by leading third-party research and advisory organizations, indicate a fleet telematics installed base of 20.7 - 24.9 million vehicles in North America (US, Canada, and Mexico), Europe, and Australia. Table 2 shows the telematics installed base and penetration percentage of telematics within the commercial vehicle population in these regions.

The range indicates differences in market segmentation and total addressable market perimeter, considered by these organizations. However, these figures do indicate growth in subscriber base and penetration of telematics among commercial vehicles in operation in all these markets, despite these regions experiencing shrinking GDP. Fleet Complete added around 150,000 gross new subscribers in 2020, representing more than 1,000 new businesses each month.

**Table 2: Fleet Telematics Installed Base and Penetration, North America, Europe, and Australia, 2020**

	North America	Europe	Australia
Installed Base	10.1-12.3 Million	9.6-11.5 Million	1-1.1 Million
Percentage Penetration	31-38%	21-23%	19-22%

Source: Fleet Management in Americas, Fleet Management in Europe, Fleet Management in Australia and New Zealand, Berg Insight, 2020; Global Connected Truck Outlook 2020, Frost & Sullivan, 2020

As the telematics industry went into overdrive, catering to the demand for mobile resource productivity and enhancements in efficiency, other industry shifts were underway, with OEM-embedded telematics, asset tracking, and video telematics demand being much higher than anticipated. North American and European markets absorbed roughly 750,000 new OEM telematics subscriptions, while the total global subscription for video telematics reached 1.7 million<sup>2</sup>. Asset tracking solutions for sub-\$1,000 book value assets represented one of Fleet Complete's - and the telematics industry's - fastest growing market segments in 2020.

While 2020 showed a strong market pull towards fleet IoT solutions, it also represented a set of tectonic shifts that are fundamentally transforming the business models that define the global fleet telematics industry. These shifts and associated business model implications are shown in Table 3 below.

**Table 3: Tectonic Shifts Experienced by Telematics Industry and Corresponding Business Model Transformation, 2020 and Beyond**

Tectonic Shifts in Market Conditions	Business Model Transformation (2020 and Beyond)
Rise of OEM-embedded connectivity with the rise of factory-installed telematics hardware in commercial vehicles	Demand for aftermarket hardware started to shrink in 2020 and this shrinkage is likely to accelerate over next 1-5 years. OEM partnerships are crucial for telematics solution providers for delivering value to fleet businesses.
Massive expansion addressable market with growing demand for asset tracking	Asset tracking market expected to grow at a 20% CAGR over next 5 years, doubling in size by 2024 creating need for power efficient solutions featuring attractive form factor.
Safety and TCO (Total Cost of Ownership) reduction focus of fleet managers driving demand for video telematics	Video telematics is already the fastest growing segment in telematics industry. Demand for bi-directional video telematics to increase rapidly in next 0-36 months. OEMs expected to start offering embedded video telematics solutions within next 0-24 months.
COVID-19 driven demand for solutions that enhance efficacy and efficiency of first-mile and last-mile logistics, improve mobile resource utilization, and enhance fleet's ability in improving revenue growth	Demand for fleet telematics solutions such as digital freight matching (e.g. BigRoad Freight) and vehicle sharing solutions to increase in markets such as North America, Europe and Australia. Telematics solution providers will need to focus not only in reducing TCO of fleet customers but also facilitate in creating new revenue lines.
Big Data Analytics Creating Foundation for Predictive and Prescriptive Analytics	This is necessary in pivoting from owning assets to owning transactions to owning interactions as the measure of success for both fleets and fleet telematics solution providers.

<sup>2</sup> Global Truck Video Safety Solutions Market, Forecast to 2025, Frost & Sullivan.

As we started unpacking the aforementioned shifts to understand the boundary conditions for growth in 2021, it became evident that the bedrocks on which this industry is built are: 1) the commercial vehicle, 2) its operator, and 3) the fleet manager. All three of these entities experienced massive digital transformation in 2020. The commercial vehicle is no longer perceived as a product, but rather a service and a solution that solves crucial challenges, factoring in urbanization, rise of e-commerce and automation, shortage of drivers and technicians, volatility in fuel prices, mounting regulatory pressures, and more.

On one side, in 2020, nearly 9 out of 10 new commercial vehicles that were sold in the US, Canada, and Europe came out of factories with pre-installed telematics hardware and connectivity. On the other side, in 2020, the operators of commercial vehicles not only were required to drive these vehicles, but also perform other health-and-safety-related duties that can be supported by connecting the vehicle to the outside world and vice versa. And finally, in 2020, fleet managers, more than ever before, were under increasing pressure to make adaptive management decisions using performance insights from the mobile resources out in the work field (e.g. vehicles and drivers), including panoramic insights into the operational efficiency, effectiveness, uptime, utilization, and costs of fleet assets.

In 2020, COVID-19 and associated global economic slowdown, rise of e-commerce, and demand for higher levels of first/last mile logistics efficiencies and asset utilization accelerated the transformation of the telematics industry superstructure. Several artificial signals of value that were distorting the fleet telematics industry's reality were removed and the first principles of this industry were revealed. The market pulled telematics more than the push that was provided by telematics solution providers. It became very clear that this industry was at an inflection point, and the solution offerings, competitive landscape, market and technology trends, and customer pull will no longer remain the same.

These transformative shifts in 2020 brought in another major change within the global telematics industry. Until recently, for our fleet customers, the number of vehicles they owned (or in other words: their fleet size) was a measure of success. In the same way, for telematics solution providers, garnering a large base of subscribers was a measure for success.

As of 2021 and beyond, for fleets and telematics solution providers alike, the definition of success will be articulated in terms of an ability to own transactions and, more specifically, interactions involving a connected commercial vehicle. This will necessitate new partnerships, new solution designs, development, and, as owning transactions or interactions becomes more important, producing insights that are less descriptive and more predictive - or prescriptive - in nature to create more value to fleets.



## Customer's Voice Drives Clarity

Ever since its inception in 2000, Fleet Complete has remained focused on and committed to our vision, which is "Helping Fleets Thrive". This clear and durable vision helps us endure volatile markets and economy highs and lows that are inevitable with time. Serving more than 40,000 fleet-owning businesses and government agencies worldwide, we take great care in hearing their voices and developing our services and solutions to meet and exceed their demands.

Between October and December of 2020, we conducted a global Voice of Customer (VOC) research study, focused on our fleet clients. We've completed nearly 300 surveys during this period, with:

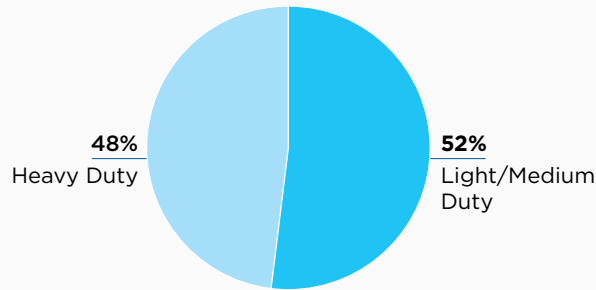
- 65% of respondents from North America
- 23% from Europe
- 12% from Australia

Firstly, we will present the demand side analysis based on key takeaways from this research study.

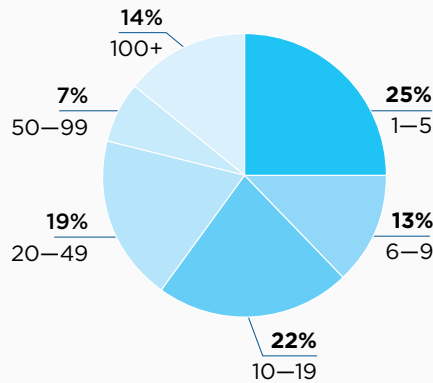
Chart A shows the demographics that represent this Voice of Customer survey. We received an equal level of input from fleets that employ light-, medium-, and heavy-duty vehicles. The survey targeted both SMBs (small-to-medium businesses), and large fleets (enterprise), as well as a wide cross-section of fleet vocations.

**Chart A: Survey Demographics, Global (North America, Europe, Australia), 2020**

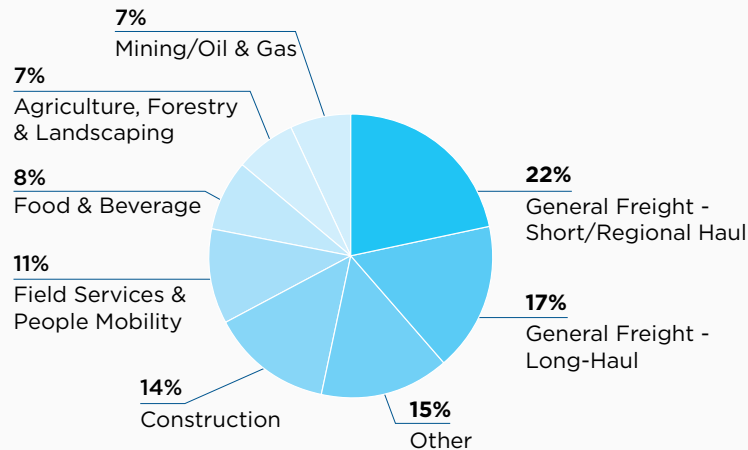
Q: What are the most common types of vehicles in your fleet?



Q: What is the size of your vehicle fleet?



Q: What type of operation most closely fits your fleet business?

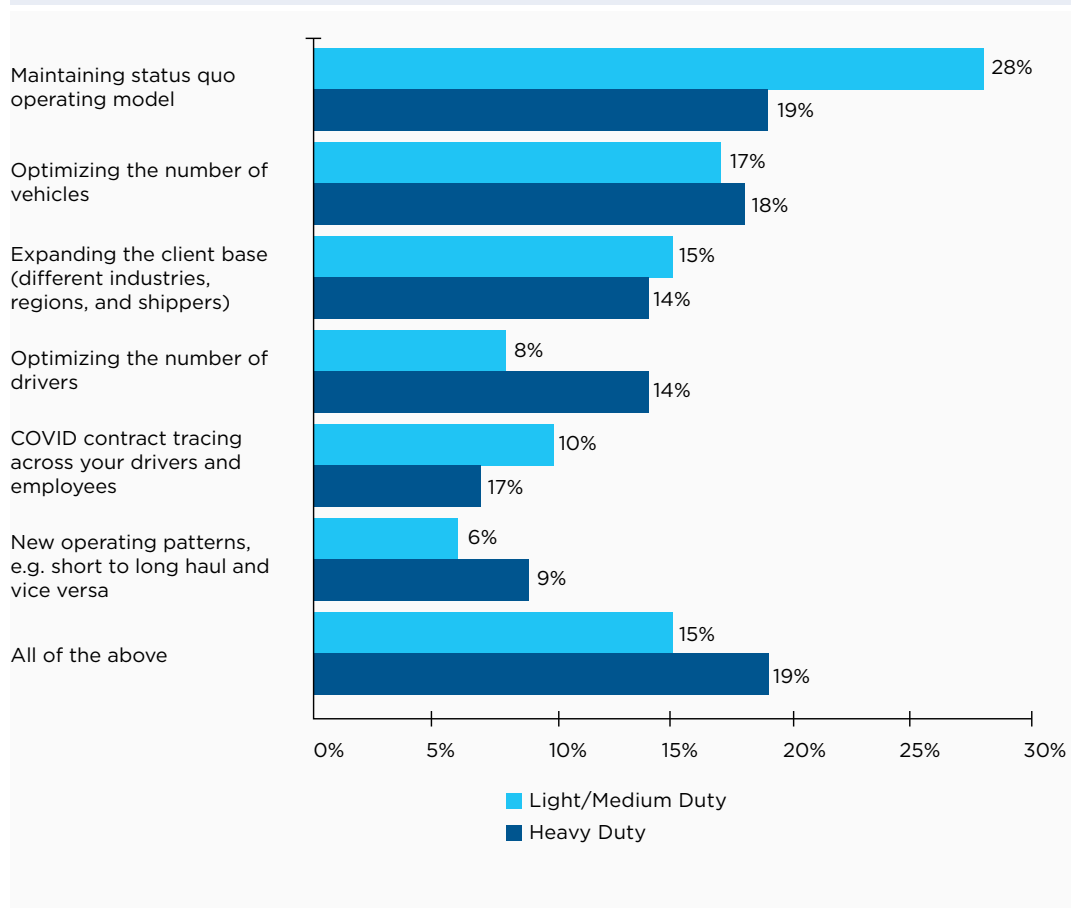


Source: Fleet Complete Analysis

Out of the surveyed fleets, considering the impact of COVID-19, only 28% of light- to medium- duty fleets and 19% of heavy-duty fleets showed the desire to maintain an existing operating model with no changes, while the vast majority of fleet managers indicated a need for recalibrating their operating model by optimizing the number of vehicles and drivers and expanding their customer base, as shown in Chart B.

**Chart B: COVID-19 Driven Fleet Management Priorities, Global (North America, Europe, Australia) 2020**

Q: Given the current global COVID-19 pandemic impacting global economies, which of the following are the greatest priorities for your company over the next 6-12 months?



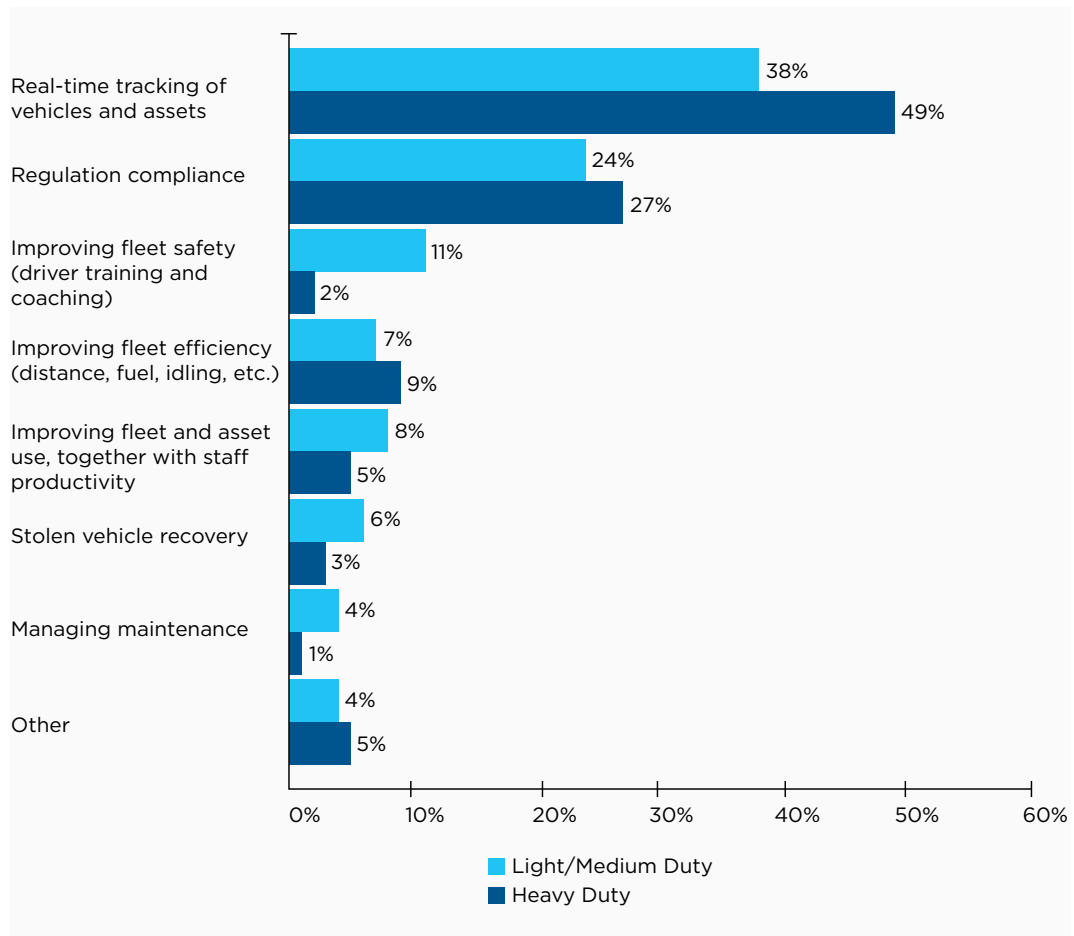
Source: Fleet Complete Analysis



The global Voice of Customer research study indicates that fleets are equipping their mobile resources with telematics to gain several benefits, most importantly including: 1) real-time tracking of vehicles and assets, 2) complying with regulations, and 3) enhancing fleet safety. Chart C presents these reasons in greater detail.

**Chart C: Key Reasons for Investing in Fleet Telematics, Global (North America, Europe, Australia), 2020**

Q: What is the main reason you use telematics for your fleet?

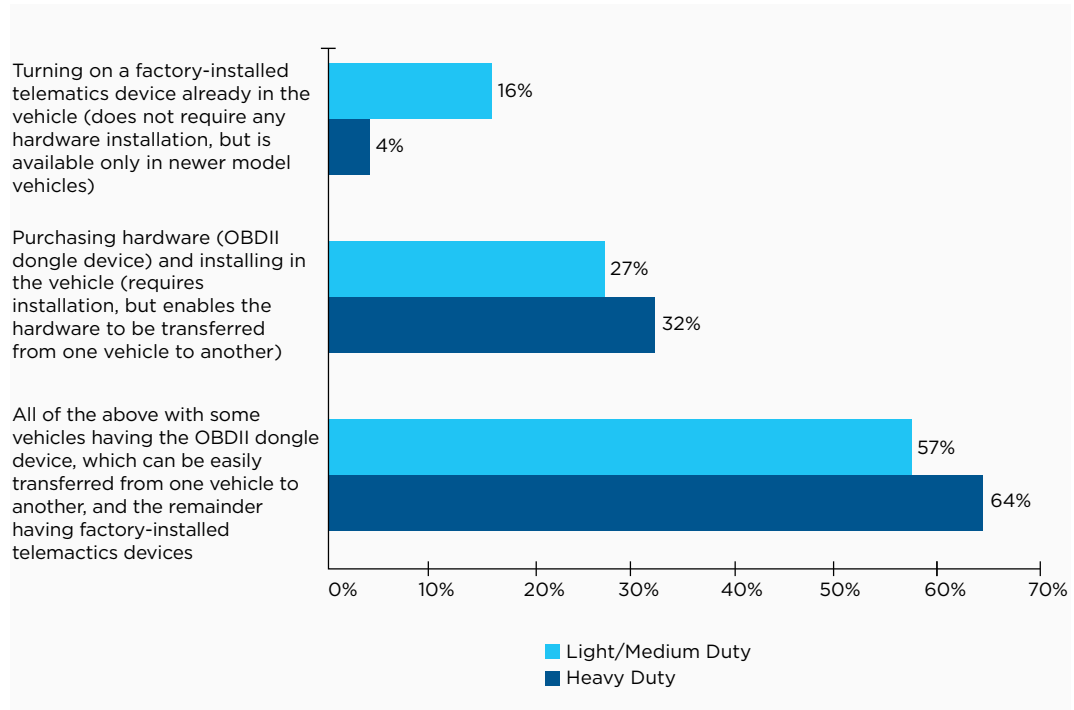


Source: Fleet Complete Analysis

One of the most interesting and telling findings from this survey is the rising demand for factory-installed telematics among surveyed fleets. Only 27% of light-duty fleets and 32% of heavy-duty fleets showed preference for only aftermarket hardware that requires installation in fleet vehicles. 73% of surveyed light-duty fleets and 68% of heavy-duty fleets showed interest in receiving the option to choose between either an OEM installed (factory-fitted) solution or an aftermarket solution (presumably for older vehicle models that do not feature the OEM factory-installed hardware option), as seen in Chart D below.

**Chart D: Fleet Telematics Hardware Preference, Global (North America, Europe, Australia), 2020**

Q: When you equip your fleet vehicles with a telematics solution, do you prefer

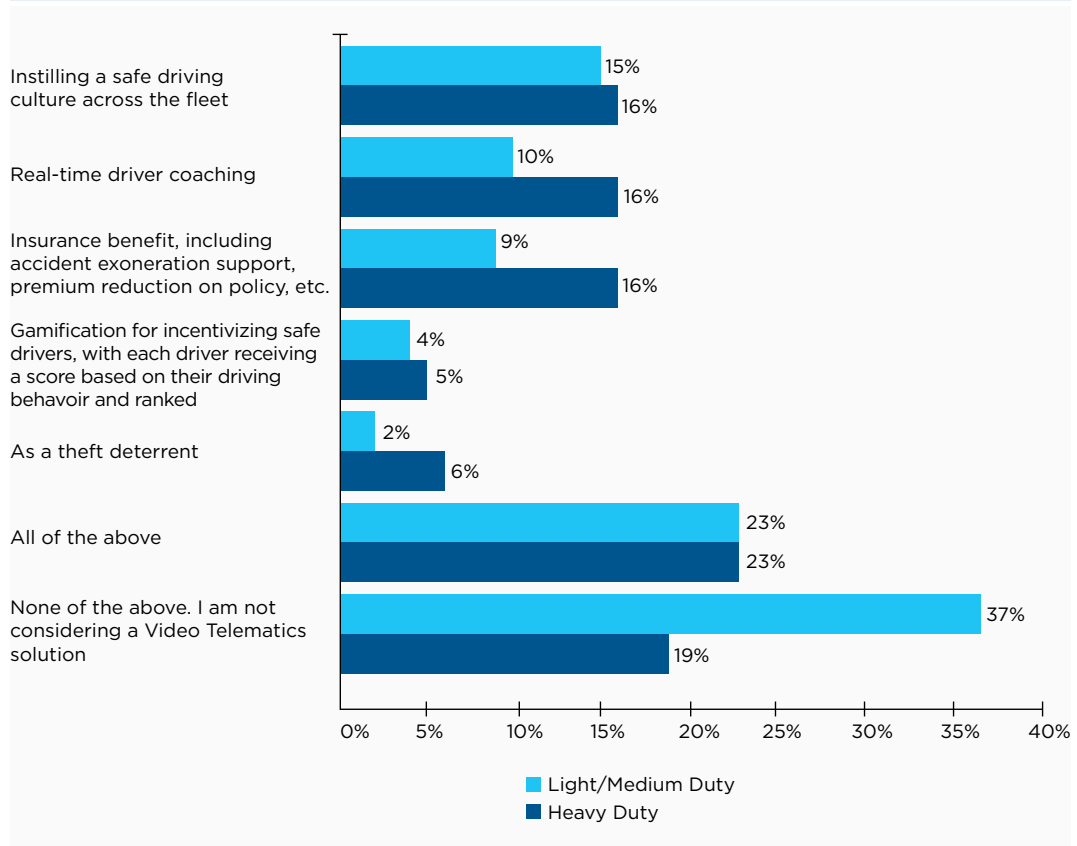


Source: Fleet Complete Analysis

Another key finding is the strong interest for video telematics in all regions. Chart E shows the key reasons why fleets will choose video telematics solutions in 2021. 63% of the surveyed light- to medium-duty fleets and 81% of heavy-duty fleets showed a desire to purchase this solution or are already using it. Some of these reasons revolve around instilling a safety culture, facilitating driver coaching, and improving insurance benefits.

**Chart E: Reasons for Choosing Video Telematics, Global (North America, Europe, Australia), 2020**

Q: What would be the main reason for you to consider a Video Telematics solution that includes a driver coaching software?

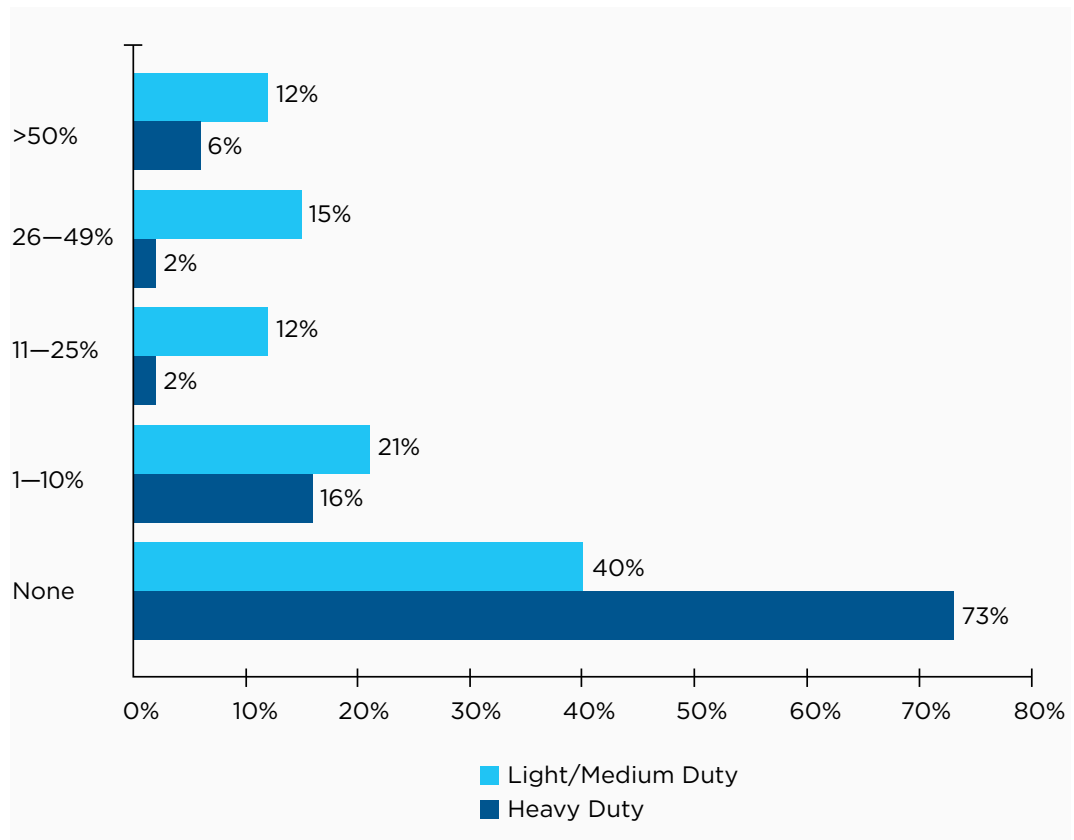


Source: Fleet Complete Analysis

We also found interest in choosing (also known as spec'ing) fleet vehicles with electric powertrain systems, a trend that is more pronounced amongst light-duty fleets than heavy-duty fleets, as can be seen in Chart F.

**Chart F: Desirability of Spec'ing Electric Powertrain for Fleet Vehicles, Global (North America, Europe, Australia), 2020**

Q: In 5 years, or by 2025, what percentage of your vehicles would you like to be Electric?



Source: Fleet Complete Analysis

Finally, both light-duty and heavy-duty fleets are aligned on the most important TCO (Total Cost of Ownership) constituents for their businesses, as seen in Chart G. Driver cost, fuel cost, and insurance costs are the most important elements of TCO for the surveyed fleets. This shows that fleet telematics is a solution for mobile resource management and should empower the driver, reduce fuel cost, and reduce insurance premiums. The driver and technician shortage faced by fleets in North America, Europe, and Australia could be a key reason why driver cost is not only the largest, but also the most important contributor to TCO.

**Chart G: Importance of Fleet TCO Expense Items, Global (North America, Europe, Australia), 2020**

	Heavy Duty	Light / Medium Duty
Driver	1	1
Insurance	3	2
Fuel	2	3
Maintenance	4	3
Tires	5	5
Lease / Finance	7	4
Permits, Tolls & Licences	6	6
Fleet telematics technology	8	7

Source: Fleet Complete Analysis

The key takeaways from our fleet-manager-focused Voice of Customer study can be summarized as follows:

1. COVID-19 has undoubtedly brought the need for business model recalibration as a top-of-mind item for fleet managers. Fleet IoT solutions developed and offered to fleet managers must enhance mobile resource utilization and enable cost savings.
2. With each passing day, the proliferation of factory-installed telematics units in the commercial vehicle population underlines the need for telematics providers to not only provide OEM-connected solutions, but also leverage the rich data obtained from these vehicles to develop solutions that deliver both granular and panoramic insights into a fleet’s mobile resources and their performance attributes.
3. Video telematics will continue gaining major product market fit and market pull as real-time vehicle tracking and fleet safety improvements, coupled with TCO benefits, lead fleets towards this technology.
4. While these are still early days, we are noticing stages of a developing interest in electric vehicles. This implies the need for fleet telematics solution providers to start designing and developing EV-compatible telematics solutions, especially targeted at the light-duty fleet segment.
5. Telematics solution providers must develop and offer solutions that can clearly and effectively reduce driver, fuel, and insurance costs for fleets. Solution providers that can deliver these benefits to fleets will be more successful than others in driving value and growth for their businesses.

Fleet managers have spoken and are offering the supply side participants clear inputs and opportunities to drive more growth, not only for themselves but for the industry and its ecosystem. In the following section, we present our outlook for the telematics industry from the supply side perspective, which also draws from the Voice of Customer research insights and findings presented in this section.



## Strategic Imperatives for Supply Side of Telematics Industry in 2021

As 2021 begins, so do the challenges for all corners of the connected commercial vehicle industry. The global COVID-19 pandemic has already left global economies in distress. The industry, considering both supply and demand sides, spent too much energy in developing and maintaining resiliency, while adopting completely new ways of catering to customers.

COVID-19 created a shock to the system and fleets of all sizes, vocations, and duty-cycles have been stretched to their limits. The industry spent so much energy and time mitigating the impact to their businesses that the pursuit of competitive differentiation and Blue Ocean advantages became secondary. Telematics solution providers compete in a highly-saturated space, making differentiation vital. Yet, far too often, the focus shifts to subscription base, market share, and revenue growth as markers of quality, which is like confusing the midwife with the miracle of childbirth. The rapid embrace and utilization of connected vehicle technologies by fleets does not get enough attention in the industry.

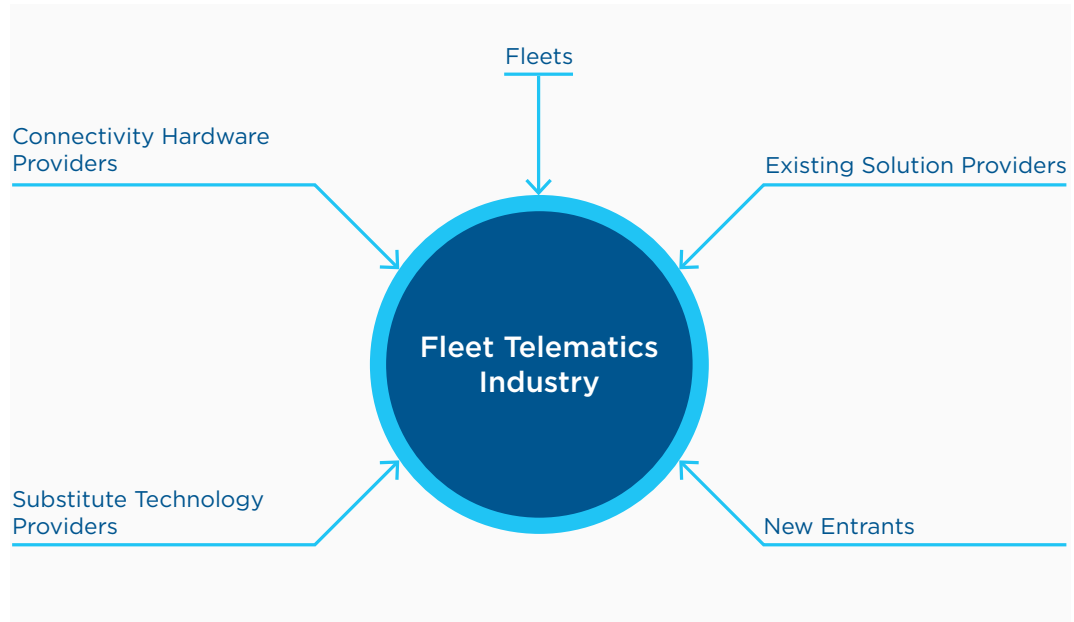
It is this very growth in connected vehicle population within the commercial vehicle industry that will become the core focal point for all industry stakeholding groups in 2021. This focal point will be the cause of an unprecedented level of mergers and acquisitions, ecosystem partnerships, industry innovation, and a higher level of value that fleet-owning businesses will derive from telematics. More importantly, we believe that connected vehicles will herald competitive differentiation and Blue Ocean advantages for future-focused telematics solution providers.

In 2021, our focus will be on value engineering for the 40,000+ businesses that use Fleet Complete every day in order to enhance mobile resource productivity, safety, utilization, and uptime. This is because we believe that Blue Ocean strategies are created from Red Oceans, where competition is intense and competitive. This means that differentiation is not only derived from innovative solutions, but also value engineering, the likes of which have been demonstrated in the past by Ford's Model-T and Chrysler's minivans. Neither Ford nor Chrysler invented automobiles, yet both created competitive differentiation and Blue Ocean advantages, engineering competitive value to their products.

2021 will be a pivotal year for proactive and fleet-focused telematics solution providers in terms of harnessing market forces to drive higher degree of value engineering for fleets representing the widest array of vehicle classes and categories, vocations and duty-cycles, sizes, and regions globally.

The fleet telematics industry is governed by a few major influencing forces, as demonstrated in Chart H.

**Chart H: Forces Governing Fleet Telematics Industry, 2020**



Source: *Fleet Complete Analysis*

These forces, as shown above, include: 1) fleets that purchase and equip their mobile resources with telematics, 2) existing service and solution providers, 3) new entrants, 4) connectivity hardware providers, and 5) substitute technology providers. In the past few years, fleets have been deriving increasing value from telematics and fleet managers are, consequently, getting savvier with regards to leveraging this technology, meaning they demand higher levels of descriptive, predictive, and prescriptive analytics.

- Existing solution providers have broadened their offering to higher levels of value at more affordable price points.
- New entrants are creating a sense of urgency to accelerate innovation in the industry.
- Hardware providers and vehicle manufacturers are offering greater functionality at a faster pace, while substitutes, such as mobile phones, are competing for fleet managers' attention with telematics hardware and vehicle-embedded telematics units.

Based on that, the strategic focus for the telematics solution providers worldwide will be to harness these factors in a way that enable them in delivering technology-driven solutions that not only meet today's fleet market demands, but also future-proof businesses from 2021 onwards.



## Technology Trends That Will Shape 2021

In more conventional industries, such as healthcare, education, consumer packaged goods, education, hospitality, and banking, consumers tend to pay more, with time, for services and basic offerings that don't include add-ons. In the technology sector, this tendency is reversed; consumers get more value for less because the additional features and insights, with time, either get cheaper or are included in the standard basic offering. That is the nature of the technology sector.

Since technology is at the core of the telematics industry, it is important to share major technology-related market drivers that have shaped 2020 and will continue shaping 2021. Table 4 presents these market drivers and their relative strength in 2020 and 2021.

**Table 4: Technology Driven Market Trends, North America, Europe, Australia, 2020-2021**

Technology Drivers	2020	2021
Rise of OEM embedded connectivity	High	High
Prevalence of big data platforms	Medium	Medium
Data monetization business models	Low	Medium
Demand for ML/AI enabled prescriptive analytics	Low	Medium
V2X (e.g. Vehicle-Vehicle, Vehicle-Infrastructure, etc.) interaction driven revenue streams	Low	Low
Rapid proliferation of asset tracking and video telematics	High	High

Source: Fleet Complete analysis

Our analysis shows the rise of factory-installed telematics, offered by vehicle manufacturers (OEMs) and enabled by solution providers, will have the most cascading impact on the fleet telematics industry. Research focused on key markets, such as the US, indicate that already 33% of all commercial vehicles in operation and roughly 90% of all model year 2020 vehicles feature factory-fitted telematics hardware. We expect the demand for factory-embedded telematics to gain greater momentum in 2021 in all markets and regions we serve, especially as personnel mobility and interactions are restricted to minimize the spread of COVID-19.

Select few international telematics providers, such as Fleet Complete, are working on expanding their OEM partnership list. Today, Fleet Complete has strong partnerships with global OEMs such as General Motors, Ford, Toyota, and Mitsubishi, and in 2021 we will announce more partnerships in all the regions where we operate. This means that our fleet-owning clients can start using our solution portfolio without the need to install any aftermarket hardware. It can be done on an on-demand basis for any vehicle model that is already factory-fitted. This also means that innovative fleet IoT solution providers, such as Fleet Complete, will be able to leverage rich and robust vehicle data and add layers of analysis to make it insightful, powerful, actionable, and effective.

The rise of connected vehicles will further catalyze the development of big data analytics platforms. These connected commercial vehicle oriented platforms will spur new solution strategies and will allow for new waves of partnerships among industry participants. The increased use of these platforms will, in part, accelerate



the digital transformation of freight and people mobility. We believe that 2021 will be the year when these technology-related market trends will dictate the growth trajectory of our industry for many years to come.

In 2021, some of the new big data analytics platform-enabled applications that will drive value for fleets and growth opportunities for solution providers include:

- **End-to-end visibility of mobile resources and assets in real time:** The track-and-trace solutions that offer a panoramic view of a fleet's mobile resources will cater to shippers, brokers, 3PLs, the retail industry, fleet managers, and customers. This will lead telematics solution providers, wireless carriers, OEMs, and other stakeholding parties to develop new data infrastructures and pricing models. The rise in demand for asset tracking and the sensorization of business assets is expected to further catalyze this trend.
- **Predictive maintenance built on vehicle system prognostics:** Fleets in North America, Europe, and Australia are facing driver shortage challenges. However, another less talked about but equally important challenge is the shortage of skilled technicians needed for vehicle service and maintenance. The sensorization of key vehicle systems, such as engines, transmissions, axles, brakes, and wheel-ends, is creating the foundation for remote diagnostics and prognostics of these systems, thereby creating downtime reduction solutions that fleet managers find extremely attractive – since it is common knowledge that the biggest enemy of a fleet manager is equipment downtime. Moreover, this offers a solution to the technician shortage challenge. Vehicle manufacturers, Tier-1 suppliers, telematics solution providers, and early-stage companies specializing in predictive maintenance are active in this space.
- **Video-telematics-driven driver coaching:** The industrial landscape across the globe is experiencing major uptick in the area of computer vision and the associated machine learning (ML) and artificial intelligence (AI). We believe this will manifest in the form of record-high demand and proportionately high solution placement for video telematics in the industry. More often than not, fleet owners are asking for forward-facing and bi-directional video telematics solutions to implement better driver coaching programs, safer driving culture, and get lower insurance premium. The demand for video telematics will continue to strengthen in 2021, and more advanced ML and AI technology applications will enhance the efficacy of video telematics in all key regions.
- **Digital freight matching solutions:** For the past few decades, heavy-duty truck telematics solutions have been developed with the aim of reducing fleet TCO. However, progressive and innovative telematics solution providers are also incorporating digital freight platforms into their offering, such as BigRoad Freight, that enable on-demand freight search based on vehicle location and the driver's hours-of-service profile and vehicle type. In 2020, BigRoad Freight has enabled shippers, brokers, fleets, and owner-operators to collaborate not only on a real-time basis, but also on a predictive basis. We expect greater levels of digitization in the freight sector in 2021 that will help fleets explore more revenue-generating opportunities on top of lowering operational costs through telematics technologies.
- **Electric vehicle telematics:** The adoption of electric vehicles (EV) in fleets, albeit small at the moment, will continue into 2021 and beyond. EV telematics solutions that provide insights around vehicle range, battery charge levels, total energy consumed, electric miles driven, and electric economy will become more important. This will lead telematics solution providers to find new and innovative ways for deriving EV telematics related data and analyzing

it to create solutions that drive value. Fleet Complete is working with its vehicle manufacturer partners to harness the data from electric vehicles and create solutions for segments that will emerge as first-wave adopters including government fleets, public transit fleets, utilities, and more.

- **Vehicle/car sharing:** COVID-19 highlighted the need for effective fleet vehicle utilization. As the economic crisis worsened, fleets were forced to operate their businesses with a reduced number of mobile staff and assets. In Europe, business fleets used more car-sharing solutions to ensure optimized utilization. The demand for vehicle sharing from fleets in North America and Mexico is also increasing in several sectors. We expect vehicle and car-sharing solutions to find introduction and application in regions outside of Europe.
- **Driver health, wellness, and wellbeing:** Faced with driver shortage challenges, fleets are focusing on solutions that can help with driver retention. COVID-19 further exacerbated the challenge for fleet managers who are seeking solutions that can enhance drivers' health, wellness, and wellbeing in order to retain and attract new staff. While OEMs are designing more ergonomic cabins with better visibility, human-machine interfacing, and comfortable seating, they are also working with healthcare and medical device industries, to develop solutions that use in-vehicle sensor systems, like steering wheels, to monitor drivers' health parameters, such as blood pressure, heart rate, and more. Moreover, telematics solution providers are developing and introducing contactless delivery applications and solutions. We expect greater co-operation among vehicle manufacturers, telematics solution providers, and healthcare and medical devices industries in 2021 to bring greater focus on driver health, wellness, and wellbeing solutions.
- **5G networks:** A major force in the fleet telematics industry that does not get much visibility but will be pivotal in 2021 is the providers of wireless telecommunications services. This will be driven by the introduction and adoption of 5G networks. 5G enables ultra-fast, ultra-reliable, and low-latency communication, which will be crucial for fleets in a post-COVID-19 era. It is also the foundation of edge-computing, which can dramatically improve the speed and volume of decision making by mobile staff in fleet management. Ultimately, this can drive tremendous improvements in fleet productivity, safety, utilization, and uptime. As discussed above, video telematics and asset tracking, along with predictive maintenance and end-to-end visibility of mobile resources in real time, will be increasingly built on big data platforms. 5G is expected to turbocharge the development, activation, and performance of these applications. Wireless telecom providers, such as AT&T (US), TELUS (Canada), Rogers (Canada), Deutsche Telekom (Europe), Telstra (Australia), and more, are playing a major role in this transformation.



## Fleet Telematics Industry Forecast 2021

Since fleet telematics exists to serve businesses that form the backbone of economies through the movement of goods and people, it becomes important for us to understand the econometric forces that will create operating conditions for our fleet partners.

Organisation of Economic Co-operation and Development forecasts a global GDP growth rate of 4.2% in 2021, with regions growing between 3.2% - 3.6%, as shown in Table 5.

**Table 5: Regional and Global GDP Growth Rates, 2021**

<b>GDP 2021</b>	<b>Growth Rate (%)</b>
Global	4.2
US	3.2
Canada	3.5
Mexico	3.6
EU Region	3.6
Australia	3.2

Source: OECD Economic Outlook, December 2020, OECD Economic Outlook: Statistics and Projections

Aggregating forecasts from leading industry research firms such as Frost & Sullivan and Berg Insight and considering differences in total addressable markets and boundary conditions, we see the possibility of an additional 3.2-3.9 million new subscribers using fleet telematics services and solutions in 2021 in regions where Fleet Complete operates (US, Canada, Mexico, Europe, and Australia).

As demonstrated in Table 6 below, the North American market, will experience the highest penetration of telematics-equipped commercial vehicles reaching the 33-43% range. Meanwhile, Europe will have a 25-27% penetration while Australia will be within the 22-25% range. Industry research also indicates that 440,000 new subscriptions for vehicle-embedded telematics will be added in North America and Europe in 2021, translating to an increase of 110,000 units over the levels in 2020<sup>3</sup>.

**Table 6: Fleet Telematics Installed Base and Penetration, North America, Europe, and Australia, 2021**

	<b>North America</b>	<b>Europe</b>	<b>Australia</b>
Installed Base	11.4-14.3 Million	10.9-13.3 Million	1.1-1.2 Million
Percentage Penetration	33-43%	25-27%	22-25%

Source: Fleet Management in Americas, Fleet Management in Europe, Fleet Management in Australia and New Zealand, Berg Insights, 2020; Global Connected Truck Outlook 2021, Frost & Sullivan, 2021

In summary, as global economies recover from the COVID-19-induced recession, demand for fleet telematics will increase across the board in all regions. Technology-driven market solutions around video telematics, predictive maintenance, digital freight platforms, vehicle sharing, and real-time mobile resource tracking will spur telematics subscriptions in 2021. This will be further supported by the rising adoption of new vehicle models that feature factory-installed hardware, an increasing demand for freight visibility, and a greater requirement for in-cab driver coaching and safety solutions to obtain lower insurance premiums.

<sup>3</sup> Berg Insight, Fleet Management in the Americas, 10<sup>th</sup> ed., 2020; Fleet Management in Europe, 15<sup>th</sup> ed., 2020.

2021 will also be the year where industry partnerships will noticeably increase, particularly between the following entities:

- Fleet telematics solution providers
- Vehicle manufacturers (OEMs)
- Suppliers of key systems to vehicle manufacturers (Tier 1)
- Wireless telecom service providers
- Insurers
- Leasing companies
- Governments, regulators, and legislators
- Sources of capital (e.g. private equities, venture capitals, financial institutions, etc.)
- Cities and municipalities
- Shippers and brokers
- Fleets and owner-operators
- Third-party system integrators

These synergies and partnerships will result in further industry consolidation. The following segment provides our outlook for further activities in the global telematics industry.



## Industry Consolidation Trends 2020-2021

The global fleet telematics industry has seen considerable consolidation over the last decade. However, the industry remains extremely fragmented with hundreds of independent telematics service providers continuing to compete with one another on a day-to-day basis. In recent years, consolidation has been led by: 1) companies outside of the fleet telematics market (i.e. telecom service providers, Tier 1s, auto OEMs) looking to participate in the outsized growth of this industry, and 2) regional telematics service providers looking to expand their geographic and technological footprint. Fleet Complete has been one of the industry's most expansion-oriented companies over this time, having acquired five leading businesses, enabling it to expand into Europe, Australia, and Mexico while also adding features related to Hours-of-Service, Vehicle sharing, and Stolen Vehicle Recovery, to name a few.

While 2020 saw continued industry consolidation, there was a notable pullback in activity, largely driven by the macro uncertainty due to the global pandemic. Despite this uncertainty, the fleet telematics industry across the globe demonstrated considerable resiliency throughout the year, enabling a healthy level of consolidation to take place while enhancing the overall appeal of the industry to external parties (i.e. financial sponsors such as private equity and venture capital investors, telecom service providers, and Tier-1 automotive suppliers).

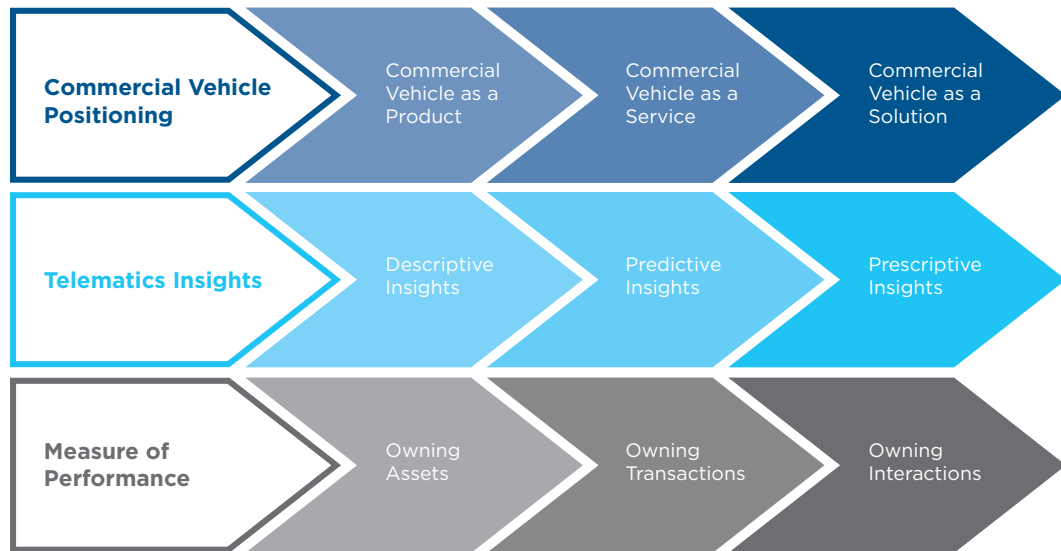
On the heels of this resiliency and the continued expectation for the outsized growth of the fleet telematics industry, 2021 is expected to see an acceleration of consolidation activity. This activity will continue to be led by multiple types of stakeholders, most notably: 1) existing telematics service providers looking to expand geographically and technologically, 2) financial sponsors, and 3) Tier-1 automotive parts suppliers. While COVID-19 has transformed many business models, it is also likely to serve as an accelerator to the consolidation activity as smaller competitors focus on partnering with larger ones in order to remain viable and larger competitors focus on leading the pack. From the perspective of our customers, further market consolidation should enable leading service providers to expand the scale and scope of their offering, ultimately leading to more innovative solutions, better customer experience, and improved outcomes - whether it be reducing TCO, enhancing driver safety, or monetizing new revenue opportunities.



# Path Forward for Fleet Telematics Industry Participants

The global fleet telematics industry is in the midst of a major transformation, accelerated by the impact of COVID-19 on global economies, spurring faster adoption of connected vehicle technologies to enhance remote management. This transformation is the result of a shift in: 1) the positioning of commercial vehicles by vehicle manufacturers, 2) telematics insights and capabilities enabled by solution providers, and 3) the measure of success that positions a business as successful in the commercial vehicle industry. These transformations are shown in Chart I.

**Chart I: Underlying Transformations in Fleet Telematics Industry, 2020**



Source: Fleet Complete Analysis

Commercial vehicles are the cornerstone of the fleet telematics industry. Historically, these vehicles were developed and sold as products. With the rise of connected vehicle technologies, commercial vehicles will soon be designed and positioned as a service rather than a product, solving for TCO reduction and greater mobile resource productivity. In the past, telematics insights were mostly descriptive in nature (e.g. vehicle location, vehicle health, regulation compliance, driving behaviour, etc.). In other words, fleet managers would receive insights on a vehicle's and/or driver's performance after an event had occurred. Nowadays, the focus is on delivering predictive insights that can help a fleet manager foresee a negative event happening and take pre-emptive measures to counteract downtime or any other detrimental effects. This is why Fleet Complete and other telematics solution providers are now focused more on developing prescriptive analytics that will provide outcome-centered insights to fleet managers, tailored to specific operating realities and requirements of a fleet.

Finally, the measure of performance for both fleet-owning businesses and their solution providers is transforming from owning assets (e.g. fleet vehicles and subscribers) as the success parameter to owning transactions, enabled by vehicle connectivity. However, the real measure of success in the near future will be owning interactions. Every time a vehicle interacts with the outside world and vice-versa, both telematics solution providers and fleet-owning businesses will want to own that interaction. What can be done with that interaction is the billion-dollar question, and there are several possibilities that might reveal themselves in the not-too-distant future. However, for now, the focus is on owning those interactions and creating predictive and prescriptive analytics based on them so that commercial vehicles and fleet assets perform more as a solution and less as a product.

Given the above-mentioned transformations, the path forward will require key stakeholding groups to prepare and plan for 2021 with clarity in strategic thinking. Fleet Complete’s recommendations for various stakeholding groups in the connected vehicle ecosystem are presented in Table 8.


**Chart J: Path Forward and Recommendations for Connected Commercial Vehicle Ecosystem Stakeholding Groups, 2021**

<b>Fleets</b>	Leverage fleet telematics technologies and solutions to support analytics and insight-driven decision making to reduce TCO and maximize revenue generation opportunities, safety, productivity, utilization, and uptime of mobile resources.
<b>Vehicle Manufacturers</b>	Accelerate factory-installed connectivity for the widest range of commercial vehicle models and work with telematics solution providers and other stakeholding groups in developing data-driven fleet management solutions that create value for fleet owners and operators.
<b>Wireless Telcos</b>	Expedite development of infrastructure and enable conditions for rapid increase of connected vehicle telematics, as well as collaborate with telematics solution providers and OEMs in developing revenue models that catalyze demand.
<b>Financial Industry</b>	Incentivize fleets that adopt commercial vehicle telematics technologies to enhance freight and people safety and enable stakeholding groups to turbocharge innovation and adoption of telematics solutions and associated revenue streams.
<b>Telematics Solution Providers</b>	Rapidly develop and introduce solutions that offer descriptive, predictive, and prescriptive insights, together with visibility, safety, regulation compliance, vehicle sharing, and revenue generation benefits to fleets, leveraging big data analytics for processed location, video, vehicle sensor, and other data.

Source: Fleet Complete Analysis

In conclusion, industry research indicates that the fleet telematics subscriber base is expected to reach 23.4-28.8 million in North America, Europe, and Australia, depending on market definition and boundaries. This means that the market is in a transformational phase, where beta-growth period (initial period of growth when all market participants are growing as a technology starts gaining mass adoption) is now yielding to alpha-growth period, where competition intensifies. Customers start demanding more value added from solution providers, and the use of this technology becomes more pervasive.

Through moving goods and medicines, commercial vehicle fleets are the bloodline of national economies worldwide. They represent a large number of front-line workers who, throughout this pandemic, work tirelessly and often at their own health risk to ensure others stay safe and supplied with basic essentials. All of us at Fleet Complete consider it a privilege to serve our front-line fleet clients, as they support their customers and clients in the pandemic recovery. Welcoming the new year and a new decade, we invite our business partners and competitors to join us in the mission of helping fleets thrive!



In 2021 and beyond, for fleets and telematics solution providers alike, the definition of success will be articulated in terms of an ability to own transactions and, more specifically, interactions that involve a connected commercial vehicle.

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