2016 EDITION

CONNECTED MOBILITY GLOBAL FORECAST

INTERNAL VERSION



Reference figures & forecasts for 14 connected car services

Mobilising the vehicle



ABOUT PTOLEMUS CONSULTING GROUP



from Ptolemy, the Egyptian savant who built the 1st map of the world in the 2nd century

PTOLEMUS is the first international strategy consulting firm specialised in the connected vehicle and the Internet of Things (IoT).

We help our clients apply strategic analysis to this fast-moving ecosystem, across all its industries (automotive, consumer electronics, insurance, mobile telecoms, etc.) and on an international basis.

PTOLEMUS, founded by Frederic Bruneteau, operates worldwide and is present in 6 countries: Belgium, France, Germany, Italy, the UK and the US.

PTOLEMUS has performed 70 consulting assignments related to connected vehicle services.

For any enquiries, please send a message to contact@ptolemus.com

Our consulting services

Strategy definition

Vision creation, strategic positioning, business plan development, board coaching & support

Investment assistance

Strategic due diligence, market & technology assessment, M&A, post-acquisition plan

Procurement strategy

Specification of requirements & tender documents, launch of tenders, supplier negotiation & selection

Innovation management

Value proposition definition, product & services development, architecture design, assistance to launch

Business development

Partnership strategies, detection of opportunities, ecosystembuilding, response to tenders

Implementation

Deployment plans, complex project & programme management, risk analysis & mitigation strategy

Our fields of expertise

Car infotainment & navigation

Connected services (Traffic information, fuel prices, speed cameras, weather, parking, points of interest, social networking), driver monitoring, maps, smartphone integration, smartphone-, PND- or embedded navigation,

Usage-based charging

Connected insurance, road charging / electronic tolling, fleet leasing & rental, car sharing, Car As A Service, etc.

Telematics & Intelligent Transport Systems

ADAS, connected vehicle, crowd-sourcing, fleet management, eCall, bCall, SVR, tracking, vehicle data analytics (OBD / CAN-bus), VRM, V2X, xFCD

Positioning / Location enablement

M2M & connectivity



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THE AUTHORS OF THIS REPORT

Frederic Bruneteau, Managing Director, Brussels (HEC Paris, CEMS Cologne)



Mr. Bruneteau has accumulated nearly 20 years of experience including 17 years of experience of the mobility domain and 8 years of strategic and financial advisory for company such as **Arthur D. Little, BNP Paribas, SFR Vodafone and TomTom.**

Having assisted dozens of clients such as Allianz, Generali, Telit, Michelin, Qualcomm and Toyota, he has become one of the world's foremost experts in the field of telematics, quoted by numerous publications such as *The Economist* and *Reuters*. He has spoken at more than 20 international conferences on the subject.

Within PTOLEMUS, he has participated to 70 assignments related to connected vehicle services:

- He assisted one of the world's largest insurance groups in designing its telematics strategy & business plan across Europe;
- For one of the largest global car makers, he defined the insurance telematics and fleet management specifications of their future embedded device,
- He defined the 5-year device roadmap of a major insurance Telematics Service provider,
- He helped a global automotive tier-1 supplier in defining its strategy for the UBI market,
- He assisted a large insurance and data aggregation group in identifying the future
 breakthroughs in the connected car value chain and their impact on the auto insurance market.

Thomas Hallauer, Research Director, London (BA, International Business, Univ. of London)



Thomas Hallauer has gained 12 years of marketing experience in the domain of telematics and location-based services. He is an expert in new products and services notably in the telematics, motor insurance, electronic tolling and positioning industries.

Before PTOLEMUS, Thomas held management responsibilities with **Mobile Devices**, a leading provider of telematics technology platform and devices and with FC Business Intelligence (**Telematics Update**).

Thomas is the lead author of the <u>ETC Global Study</u>, the most thorough review of the Electronic Toll Collection and Road Charging market published in May 2015.

Mr. Hallauer **co-wrote the 2013 and 2016 UBI Global Studies and** interviewed dozens of company from AAA, Admiral, Ageas, Allianz, Liberty Mutual, Mapfre USA to Zurich as well as telematics suppliers such as Danlaw, DriveFactor, Geotab, Himex, IMS, The Floow or Verizon Telematics.

For this report, he led the research on each of the sector's trends, environments and sizing, edited and published the final document.



Matthieu Noël, Senior Consultant, Paris (MS Automotive Engineering & Project Management, ESTACA, Paris and MS Marketing, HEC, Paris)



Matthieu Noël has gained 6 years of experience in the automotive industry covering technical, strategy, marketing and business development, including more than 4 years in consulting.

Mr Noël has performed more than 20 assignments in the automotive and telematics industries. He understands the business and strategic implications of new technologies in the mobility eco-system and can adapt quickly to new industries and situations.

He has gained strong expertise in telematics, particularly in Usage-based Insurance (UBI), fleet management (FMS) and vehicle OBD data analytics for numerous applications such as vehicle remote diagnostics, eco-driving and driving behaviour analysis. He also recently contributed to the publication of the Insurance Telematics Global Study and Electronic Toll collection Global Study. He also regularly speaks at conferences.

Before PTOLEMUS, Matthieu acquired consulting experiences with **7M Consulting**, a strategy consulting firm specialised in the automotive industry and with **Deloitte Consulting**, within the Industry Strategy & Operation branch.

For this report, Matthieu led the market forecasting work.

Philippe Brousse, Business Analyst, Brussels (MSc Eng., ENSIMAG & MS Strategy ESSEC, Paris)



Philippe has gained experience in strategy and market research for companies such as Altai Consulting, CGI Business Consulting and Safran Morpho.

He has performed multiple market research projects in the connected mobility domain such as:

- The assessment of the Benelux fleet telematics management market for a North American TSP,
- The evaluation of the European fleet telematics management market for a \$40 billion US hedge fund,
- The forecast of the European and North American UBI and fleet management markets for a smartphone Telematics Service Provider,
- The bottom-up sizing of the global UBI market for one of the largest TSPs,
- For a global insurance company, a **global analysis of smartphone apps** for UBI data collection and customer acquisition.

For this report, Philippe led the research and analysis to quantify and forecast 3 of the services market size.



Justin Hamilton, Business Analyst, London (BA, Politics, Univ. of East Anglia and M.Litt. International Relations, Univ. of St Andrews)



Justin has more than 3 years of experience within the transportation, road user charging and connected mobility markets, with a particular focus on national tolling and road user projects and related policy development.

A native of the UK, Justin conducts quantitative and qualitative analysis of global trends and developments in usage based charging and connected mobility.

Before joining PTOLEMUS, Justin was editor of Road User Charging magazine and head of content research at Akabo Media and served as an in-house writer for various UK government departments. His articles on road charging have been **published in more than half a dozen leading print and online publications**. Recent assignments include:

- An analysis of road charging opportunities across Europe, North America and Asia,
- A comprehensive ranking of global ETC service providers, systems integrators and technology suppliers.

For this report, Justin conducted market analysis and quantitative forecasting across 4 of the services.

Alberto Lodieu, Senior Consultant, Paris (MBA, HEC Paris - BSc Industrial Engineering, Instituto Tecnologico y de Estudios Superiores de Monterrey)



Alberto has more than 5 years of experience in strategy and operations consulting. He has specialised in the financial services, transport and professional services industries in projects related to corporate and competitive strategy, operations excellence and business analytics.

Alberto participated in 15 projects to help organisations identify, define and implement the initiatives needed to achieve or preserve their leadership position.

Alberto is a native speaker in Spanish, fluent in English and intermediate in French and Italian.

Before joining PTOLEMUS, Alberto worked for **Deloitte Consulting** in their strategy and operations practice. He participated as a strategy and financial advisor in investment projects both in **France and Mexico**. He also helped a transport company define its strategy and evaluate the benefits of telematics.

For one of the world's largest insurance company, Alberto recently performed:

- · An analysis of UBI market opportunities in numerous Asian countries,
- A global analysis of smartphone UBI apps.

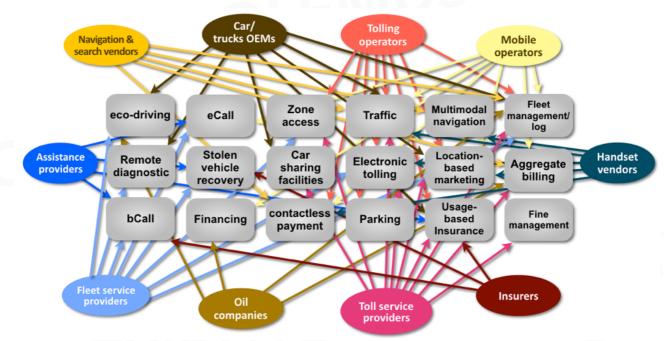
Alberto researched and analysed 4 of the markets.



FOREWORD

We live in the era of Big Data, it has affected all services and none less so than those concerning the vehicle. Yet, having a broad and all encompassing view of what those services are and how they are evolving is hard to find.

Both our Usage-Based Insurance and Electronic Toll Collection reports have been a resounding success. Within these and other previous studies, we have **repeatedly demonstrated the growing links between mobility services** and the threats this will pose to legacy operators who remain bound within a single silo. The figure below, taken from our previous reports, outlines the increasing crossover:



Much has already been written concerning the disruptive influence of mobility service unicorns* such as Uber, BlaBlaCar and Waze. Less exposed is **the pace of change and unification of services** this disruption has led to, not to mention how the introduction of telematics and connectivity will affect the market inexorably. Understanding these changes will result in tremendous opportunities for astute companies to cross silos and package multiple functions.

To assess the scale of this opportunity, the whole PTOLEMUS team is pleased to bring you a complete analysis and **bottom-up global forecast of the 14 key connected mobility services**;

Convenience: Car sharing, Car pooling, Car rental, Navigation, In-vehicle Wi-Fi hotspot

Safety & Security: Stolen vehicle tracking & recovery, emergency assistance (eCall), Usage-Based Insurance

Maintenance: Remote diagnostics, connected breakdown assistance (bCall)

Cost management & finance: Vehicle leasing, Electronic tolling, Fuel payment services, Fleet management



Over the past year, we have seen **real shifts it the connected mobility landscape**, arguably led by the car manufacturers, who see increasingly visceral threats to their existence:

- Ford announced the launch of Ford Smart Mobility, which has since been followed up by the introduction of GoDrive (car sharing), Game Challenge (multi-modal transportation platform using gamification) and FordPass (mobility platform utilising partnerships with ParkWhiz and FlightCar, among others),
- General Motors (GM) invested \$500 million in Lyft and has begun leasing cars to Lyft drivers at
 little or no cost. GM also introduced Maven, an amalgamation of car sharing schemes which use
 the OnStar embedded telematics platform and signed insurance telematics partnerships with
 Verisk in the US and Octo Telematics in Europe.
- Like many OEMs, **BMW** has long been active in the car leasing market. As part of its 'Vision Next 100' strategy, BMW is investing heavily in its own car sharing platform, *DriveNow*, which will also be integrated into the *Alphabet* leasing service as a corporate service, *AlphaCity*,
- **Daimler** acquired transportation app *RideScout* and booking platform *MyTaxi* both of which have been integrated into the comprehensive mobility application *Moovel*. The world's largest B2C car sharing company, *Car2Go*, also sits within this division of Daimler,
- Fleetcor signed the first contract with *Uber* to provide fuel card services to Uber drivers in the US. The service will automatically deduct fuel expenses from each individual's weekly earnings. Drivers will also benefit from fuel discounts following a 3-way partnership with ExxonMobil. Shortly after, Fleetcor announced the purchase of the Brazilian road toll services provider, *Sem Parar*,
- Leasing giant Arval launched its own branded fleet management system, Active Link, which will
 compete directly with providers such as TomTom Telematics, which is itself a major player in
 connected navigation software,
- Google acquired navigation provider and road community app Waze, which is also trialling its
 own car pooling service,
- Telematics insurance provider **Intelligent Mechatronic Systems (IMS)** was selected to deliver technology and account management for the California road usage charging pilot,

"GM is at the forefront of redefining the future of personal mobility"

"We are driving innovation in every part of our business to be both a product and mobility company"

"The value creation is in shifting from the actual hardware toward software and services"

Dan Ammann, President

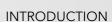
Mark Fields, CEO

Mark Fields, CEO











The mobility landscape is changing at an incredibly rapid pace and we feel it is high-time to bring a unified view about the future market for connected mobility services and examine their global evolution.

Like so many others, the mobility market is becoming dominated by technology and is thus increasingly **moving at the speed of the technology market**. To inform strategic and investment decisions over the coming years, we have built a comprehensive, bottom-up forecast for each of the 14 connected services to the year 2020.

To conduct this study and deliver these figures we have leveraged experience garnered from:

- 7 years of primary research in the connected mobility market,
- The insights from more than 70 consulting assignments in the field of connected mobility,
- Interviews with over 60 executives from across the mobility spectrum,
- A review of worldwide mergers, acquisitions and strategic undertakings by applicable companies.



It has been a pleasure for us to write this report. We hope that you will enjoy reading it. If your company plays a role in one of these sectors which you feel has not been mentioned please let us know so that we can update future iterations. Please send your comments to thomas@ptolemus.com.

We hope that this publication will aid all players in the connected car market make strategic decisions, helping them merge and integrate many of these services together.

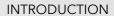
Sincerely,

Frederic Bruneteau Managing Director



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LIST OF FIGURES

Overview:

Beware the rise of the unicorns (Age vs. pre-tax profits and market capitalisation of key mobility companies)

Share of new passenger cars sold with embedded connectivity

Share of new passenger cars sold with embedded telematics

New connected vehicles sold Total market* (millions)

Major trends impacting the mobility market

The mobility devices today and what will be left tomorrow

Connected services bundles offered by some of the key mobility stakeholders

Most mobility services can be provided by a unique platform

Who is at the centre of the mobility ecosystem (cross-silos activity from key mobility player types)

Passenger car sales worldwide (million)

Share of passenger cars sold with embedded connectivity

Passenger cars with connected mobility services (thousand)

Passenger cars with aftermarket connected mobility services (thousand)

Revenues generated from connected services for MSPs (\$ million)

Connected services revenues for MSP - OEM vs aftermarket (\$ million)

Connected mobility wealth index in 2015 and 2020

Connected services market size in volume (thousand)

Connected services market size in value (\$ million)

Assessment of 14 markets:

Total number of shared passenger cars in use (thousand)

Total number of connected shared passenger cars in use (thousand)

Total car sharing revenues generated by MSP (\$ in millions)

Connected car sharing market total revenues generated by MSP (\$ in millions)

Connected car sharing market total revenues for CSP (\$ in millions)

Total number of passenger cars in use for car pooling (thousand)

Total number of connected passenger cars in use for car pooling (thousand)

Car pooling market total revenues generated (\$ in millions)

Connected car pooling market total revenues generated (\$ in millions)

Total number of rental passenger cars in use (thousand)

Total number of connected rental passenger cars in use (thousand)

Total number of connected rental passenger cars in use in Europe (thousand)

Rental passenger car market total revenues generated by MSP (\$ in millions)

Connected rental passenger cars market revenues generated by MSP (\$ in millions)

Connected rental passenger cars market revenues generated by European MSP (\$ in millions)

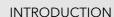
Number of active navigation devices by type (thousand)

Total number of connected navigation on passenger cars in use (thousand)

Passenger cars connected navigation total revenues generated by MSP (\$ in millions)

Passenger cars connected navigation total revenues generated by CSP (\$ in millions)







Total number of passenger cars in use with active Wi-Fi hotspot (thousand)

Passenger Wi-Fi hotspot subscriptions total revenues generated by CSP (\$ in millions)

Fleet passenger Wi-Fi hotspot hardware revenues generated by MSP (\$ in millions)

SVR & SVT total market size for passenger cars (thousands)
Total SVR / SVT revenues generated by CSP (\$ in millions)
Total SVR / SVT revenues generated by MSP (\$ in millions)

eCall market size for passenger cars (thousand)
eCall revenues from passenger cars for MSP (\$ in millions)
eCall revenues from passenger cars for CSP (\$ in millions)

Number of active UBI policies in passenger cars (thousand)
Number of active UBI policies in European passenger cars (thousand)
Total UBI premiums from private passenger cars (\$ million)
Total UBI premiums from European private passenger cars (\$ million)
TSP revenues from UBI policies in private passenger cars (\$ in millions)

Total number of remote diagnostics service active subscriptions (thousand)
MSP revenues generated by remote diagnostics active subscriptions (\$ million)
CSP revenues generated by remote diagnostics active subscriptions (\$ million)

Roadside assistance policies for passenger cars (thousands) bCall market size for passenger cars (thousands) Roadside assistance total revenues for passenger cars (\$ in millions) bCall revenues for passenger cars (\$ in millions)

Total number of leased fleet passenger cars in use (thousand)

Total number of connected leased fleet passenger cars in use (thousand)

Fleet passenger cars leasing market, total revenues generated (\$ in millions)

Fleet passenger cars connected leasing market, revenues generated (\$ in millions)

Total number of tolling transactions from passenger cars (million)

Total number of passenger cars equipped with ETC (thousand)

Total revenues from passenger car tolling (\$ million)

MSP revenues from passenger car ETC transactions (\$ million)

MSP revenues from European passenger car ETC transactions (\$ million)

Total number of active fuel cards on company cars (thousand)

Total number of connected active fuel cards on company cars (thousand)

Total revenues from active fuel cards on company cars including fuel transaction amounts (\$ in million)

Fuel card provider revenues from active fuel cards on company cars - Only transaction & subscription fees (\$ in million)

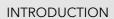
Total revenues from connected active fuel cards on company cars including fuel transaction amounts (\$ in million) Fuel card provider's transaction & subscription revenues from connected fuel cards on company cars (\$ in million)

FMS solutions in use in fleet passenger cars (in thousand) Global Fleet Management Systems revenues (\$ million) Europe Fleet Management Systems revenues (\$ million)



LIST OF COMPANIES MENTIONED IN THIS REPORT

	Systems integrator	Alphabet (BMW)	Leasing company
A A			
AA	Automobile club	Altech Netstar	Telematics Service Provider
AA (UK, SA)	Automobile club	AMA (Mexico)	Automobile club
AAA	Automobile club	American Express	General payment card companiy
AAA (US, Australia)	Automobile club	Amigo Express	P2P car pooling
Abcfinance	Leasing finance	Amodo	Telematics Service Provider
Abertis	Road operator, toll charger	Amovens	P2P car pooling
ABN AMRO Lease	Leasing company	An Ji (China)	Automobile club
Accenture	Analytics provider	AND	Navigable maps
ACE	Car rental	Ants	P2P car pooling
ACI (Italy)	Automobile club	ANWB	Roadside assistance provider and Auto club
Actia	eCall embedded OBU	ANWB (Netherland)	Automobile club
ADAC	Car club	Anydata	Telematics Technology Provider (TTP)
	Car rental	Apple	Navigation software (aftermarket)
	eCall filtering entity / assistance company	Arnold Clark	Car rental
Agero (Sirius XM)	RSA Telematics Service provider	Arval	Major leasing company
Adin	Oil company with own fuel card solutions	Arvato	Systems integrator
Agnik	Analytics provider	Arvento Mobile	Telematics Service Provider
Ainoring	P2P car pooling	Asfinag	Toll agency, toll charger
Airbiquity	Telematics Service Provider	Astrata	Fleet Telematics Service provider integrating fuel cards
AKF Leasing	Leasing company	AT&T (US)	Insurance and other independent player
Alamo	Car rental	Athlon	Leasing company integrating fuel cards
Alba Leasing	Major leasing company	Atlantia	Systems integrator
Alcatel	Mobile hotspot supplier	Atlas Choice	Rental agent
ALD A	Leasing company	Atrack	Telematics technology
ALD Automotive	Leasing company		provider (TTP)

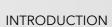


Allianz Global Assistance	Roadside assistance provider and Auto club	Audi	OEM
Allstate	eCall filtering entity / assistance company	Audiovox	Telematics Technology Provider (TTP)
Allstate roadside assistance (US)	Insurance and other independent player	Auto Escape	Rental agent
Alphabet	Leasing company integrating fuel cards	Auto Europe	Car rental
Autobleue	B2C car sharing - non OEM	Brisa	Road operator, toll charger
Autobot	B2C dongle solutions provider	Broadcom	Automotive supplier
Autolib	B2C car sharing - non OEM	Budget	Car rental
Autoliv	Key system component	Business Lease Group	Telematics service provider
Automatic	Mobile TSP	C2G Logic	Device and service provision
Automile	Mobile TSP	CAA (China)	Automobile club
AutoNavi	Navigation software (embedded)	Calamp	Telematics Technology Provider (TTP)
Autonet	Automotive supplier	Caldrons	Toll agency, toll charger
Autostrade	Systems integrator	Cambio	B2C car sharing - non OEM
Autostrade per Italia	Toll agency, toll charger	Cambridge Mobile Telematics	Analytics provider/ Mobile TSP
AutostradeTech	Component	Car next door	P2P car sharing
Avis	Car rental	Car2Go (Daimler)	B2C car sharing - OEM
Avis Lease	Telematics service provider	Car4Use	B2C car sharing - non OEM
Axa Assistance	eCall filtering entity / assistance company	CarAmigo	P2P car sharing
AXA Assitance (Europe)	White label RSA service provider	Careco	B2C car sharing - non OEM
Axxès	Toll service provider	Carhood	P2P car sharing
Baidu	Navigation software (aftermarket)	Carma	P2P car pooling
Baltic Leasing	Telematics service provider	Carma	P2P car sharing
Baseline Telematics	Telematics Service Provider (TSP)	Caronetas	P2P car pooling
Bessermitfahren	P2P car pooling	Carpool King	P2P car pooling
Big Road	Smartphone based TSP	Carpool mates	P2P car pooling
Bipoolen	B2C car sharing - non OEM	Carpool World	P2P car pooling
BlaBlaCar	P2P car pooling	CarRentals.com	Rental agent
BlancRide	P2P car pooling	Carrot	B2C car sharing - non OEM



Blink Roadside assistance (US)	Insurance and other independent player	Cars-scanner	Rental agent
Blom	3D map	Cartrack	Telematics Service provider
BMW	Car maker	Carzonrent	Car rental
Bosch	Service provider (in-line fitted)	Cavalry (UK)	Insurance and other independent player
ВР	Oil company outsourcing part of its fuel card operations	CCS	Fleet Telematics Service provider integrating fuel cards
Breeze	Car rental	CDL	Analytics provider
Cellocator	Telematics Technology provider	CSR	Automotive supplier
Censio	Telematics Service Provider (TSP)	Ctrack	Telematics technology provider
Centra	Toll agency, toll charger	Cubic	Systems integrator
Cesar Satellite	Service provider (in-line fitted)	Daimler	OEM
CGI	Analytics provider	Daimler Fleet Management	Major leasing company
Chainway	Telematics Technology Provider (TTP)	Danlaw	Telematics Technology Provider (TTP)
Chevron	Oil company outsourcing part of its fuel card operations	Dash	Mobile TSP
China Auto Rental	Major leasing company	De Lage Landen International	Telematics Service Provider
China Auto Rental Holdings	Rental agent	Delphi	Telematics Technology Provider (TTP)
Chrysler Uconnect	Car maker	Denso	eCall embedded OBU
Cite lib (Toyota)	B2C car sharing - OEM	Detector	Telematics Service Provider (TSP)
Citroen Contract Motoring	Major leasing company	Deutsche Lending	Telematics service provider
City Automobile club	B2C car sharing - non OEM	Didi Kuaidi (Shun Feng Che)	B2C car pooling
Citygo	B2C car pooling	Digiparts	Device and service provision
ClickSoftware	Telematics Service provider	DigitalGlobe	3D map
Co-Wheels	B2C car sharing - non OEM	DKV	Independent fuel card service provider
Cognizant	Analytics provider	DKV	Toll service provider
Collision management system (CMS)	Analytics provider	Dollar	Car rental
Communauto	B2C car sharing - non OEM	Dolphin	Telematics Service Provider (TSP)
Comovee	Device and service provision	Donlen	Analytics provider





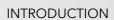
Comparte	P2P car pooling	DriveFactor	Telematics Service Provider (TSP)
Complete Innovation	Telematics Service provider	DriveJoy	P2P car sharing
Continental	Service provider (in-line fitted)	DriveNow (BMW)	B2C car sharing - OEM
Continental	eCall embedded OBU	Driver's Alert	Telematics Service provider
Convadis	Device and service provision	Driveway	Telematics Service Provider (TSP)
Coride	P2P car pooling	Drivy	P2P car sharing
Corral Labs	Device and service provision	Drust	Mobile TSP
Coseats	P2P car pooling	DVB LogPay	Toll service provider
Coyote System	Navigation device (PND)	E-covoiturage	P2P car pooling
Credit Suisse AG	Telematics service provider	E-Drive Technology	Telematics Service provider
Earnix	Analytics provider	eZway	B2C dongle solutions provider
Ease simulation	Automotive supplier	Fastrack	Toll agency, toll charge
Easy Car	Rental agent	Ficosa	eCall embedded OBU
Easy Automobile club	P2P car sharing	Findalift	P2P car pooling
Easyway	P2P car pooling	Firefly	Car rental
Ebbon-Dacs	Independent fuel card service provider	Fleet on Demand	Independent fuel card service provider
Ecofrotas	Independent fuel card service provider	FleetCor	Toll service provider
Economy Car Rentals	Rental agent	Fleetmatics	Telematics technology provider
Edenred (UTA)	Independent fuel card service provider	Fleetster	Device and service provision
EFKON	Systems integrator	Flinc	P2P car pooling
EFKON	Component	Flinkster	B2C car sharing - non OEM
Egis Projects	Systems integrator	FMG Support	Telematics Service Provider (TSP)
Eileo	Device and service provision	Ford	ОЕМ
Element Financial Corporation	Major leasing company	Ford Sync	Car maker
Elift Club	P2P car pooling	Foursquare	Location-based content & services
Eliocity Xee	B2C dongle solutions provider	G.E.A	Component
EMG	Navigation software (embedded)	Garmin	Navigation software (embedded)
Encamello	P2P car pooling	GE Capital	Major leasing company



Engis Technologies	Navigation software (aftermarket)	Generali	Insurance company
ENI	Toll service provider	Geoconcept	Telematics Technology provider
Enjoy (Fiat)	B2C car sharing - OEM	Geotab	Telematics Technology Provider (TTP)
Enterprise	Car rental	Getaround	P2P car sharing
EROAD	Toll service provider	GM	OEM
Europ Assistance	eCall filtering entity / assistance company	GM OnStar	OEM
Europ Assistance (Europe)	White label RSA service provider	GM OnStar (US)	Insurance and other independent player
Europcar	Car rental	GMV	Component
Eurotoll (sanef)	Toll service provider	GoCar	B2C car sharing - non OEM
Eurowag	Toll service provider	GoCarShare	P2P car pooling
Expedia	Rental agent	GoCatch	P2P car pooling
EZ-Pass	Toll agency, toll charger	GoDrive (Ford)	B2C car sharing - OEM
Google	Device and service provision	Jooycar	Mobile TSP
GoFleet	Telematics technology provider	Identifix	Automotive supplier
GoMore	P2P car sharing	IHS Automotive	Location-based content & services
Gomyway	P2P car pooling	iMetrik	Telematics Service Provider (TSP)
GoodCard	Independent fuel card service provider	IMS	Telematics Service Provider (TSP)
Grabhitch	B2C car pooling	Infrasure	Mobile TSP
Green Flag (Direct Line)	White label RSA service provider	Inosat	Device and service provision
Green Road	Smartphone based TSP	Inrix	Location-based content & services
GreenRoad	Telematics Service provider	Inter Mutuelles Assistance	Roadside assistance provider and Auto club
Greenwheels (VW)	B2C car sharing - OEM	Inter Mutuelles Assistances (IMA)	eCall filtering entity / assistance company
Gurtam	Telematics technology provider	Intermap Technologies	3D map
HaHa Pinche	P2P car pooling	Intermutual Assistance (Europe)	White label RSA service provider
Hame Technology Co.	Mobile hotspot supplier	Interrent	Car rental
Harman	Navigation software (embedded)	Invers	Device and service provision
Hazens Automotive	Navigation device (PND)	ITURAN	Telematics Service provider
Heetch	B2C car pooling	JAF (Japan)	Automobile club



HERE	Navigation software (embedded)	Jet Cost	Rental agent
Hertz	Car rental	Kangaride	P2P car pooling
Hertz Lease	Telematics service provider	Kapsch	Systems integrator
Hitachi Capital Vehicle Solutions	Major leasing company	Karma	Mobile hotspot supplier
Hitch-a-ride	P2P car pooling	Kayak	Rental agent
Hochtief	Toll agency, toll charger	Keep Truckin	Smartphone based TSP
Holiday Autos	Rental agent	Kemwel	Car rental
Honk (US)	Insurance and other independent player	KT Kumho	Car rental
Huawei Technologies	Mobile hotspot supplier	Kuantic	Telematics Technology Provider (TTP)
Hubio	Telematics Service Provider (TSP)	La route verte	P2P car pooling
Hyundai Blue Link Remote	OEM	lastminute.com	Rental agent
Hyundai Mobis	eCall embedded OBU	Launch	Telematics Technology Provider (TTP)
Ibilek	B2C car sharing - non OEM	Leaseplan	Major leasing company
IBM	Analytics provider	Let's Drive (GM)	B2C car sharing - OEM
icarsclub	B2C car sharing - non OEM	Lex Autolease	Major leasing company
Lexis-Nexis	Analytics provider	Metavera	Device and service provision
Liftshare	P2P car pooling	MiCar	B2C car sharing - non OEM
Locomute	B2C car sharing - non OEM	Michelin Travel Partners	Location-based content & services
Lojack	Service Provider (aftermarket)	Microlise	Telematics technology provider
Lyft Line	B2C car pooling	Micromax	Mobile hotspot supplier
Lysanda	Telematics Technology provider	Micronet Enertec Technologies	Telematics Technology provider
m2m Telefonica	Telematics technology provider	Mireo	Navigation software (aftermarket)
Macquarie	Toll agency, toll charger	Mitsubishi	Component
Magellan	Navigation device (PND)	Mitsubishi HI	Systems integrator
Magneti Marelli	eCall embedded OBU	Miveo	Device and service provision
Mail.ru	Navigation software (aftermarket)	Mix Telematics	Telematics Technology provider
Mapfre	Insurance company	Mobile Devices	Telematics Technology Provider (TTP)



MAPFRE Asistencia (International)	White label RSA service provider	MobileEYE	Telematics Technology provider
Mapfre Assistance	eCall filtering entity / assistance company	Mobility	B2C car sharing - non OEM
MapMyIndia	Navigable maps	Mobiliz	Telematics technology provider
Марру	Location-based content & services	Modo	B2C car sharing - non OEM
MapQuest	Navigation software (aftermarket)	Modus	Telematics Service Provider (TSP)
Marvell	Automotive supplier	Mojio	Mobile TSP
MasterCard	General payment card companiy	Mondial Assistance	eCall filtering entity / assistance company
Masternaut	Telematics Technology provider	Mondial/Allianz Global Assistance (Europe)	White label RSA service provider
Matcha	B2C car sharing - non OEM	MoveAbout	B2C car sharing - non OEM
Matrix (part of Mix Telematics)	eCall aftermarket device	Multi Service Tolls	Toll service provider
Maven (GM)	B2C car sharing - OEM	Multicity (Citroen)	B2C car sharing - OEM
Mechanics Advisor	B2C dongle solutions provider	Mycartracks	Smartphone based TSP
Mediamobile	Location-based content & services	MyDrive Solutions	Mobile TSP
Mercedes	Leasing company integrating fuel cards	Myles	B2C car sharing - non OEM
Mercedes mbrace or Connect eCall	Car maker	MylesCar	Car rental
Meta	Service Provider (aftermarket)	Nabobil	P2P car sharing
Meta system	Telematics Technology Provider (TTP)	National	Car rental
MetaSystem	eCall aftermarket device	NATIXIS Lease	Leasing company
NavInfo	Navigation software (embedded)	Octo Telematics	Telematics Service Provider (TSP)
Navitime	Navigation software (aftermarket)	OpenStreetMap	Navigable maps
Navmii	Navigation software (aftermarket)	ORACLE	Analytics provider
NDrive	Navigation software (aftermarket)	Orange Business Services	Telematics technology provider
Nebula systems	Automotive supplier	Orion	Telematics Technology Provider (TTP)
Netgear	Mobile hotspot supplier	Orix Auto Corp.	Leasing company integrating fuel cards
NexTraq	Telematics technology provider	Orix CarShare	B2C car sharing - non OEM
Nissan	OEM	Ortec	Telematics Technology provider
		Ouicar	P2P car sharing



NNG	Navigation software (embedded)	Parkopedia	Location-based content & services
Norbit	Component	PayGo Systems	Telematics Technology Provider (TTP)
Nordea Finance	Telematics service provider	People's Uber	B2C car pooling
Noritomo	P2P car pooling	Petron	Oil company outsourcing part of its fuel card operations
Nova car hire	Rental agent	Petronas	Oil company outsourcing part of its fuel card operations
Novatel Wireless	Telematics Technology Provider (TTP)	PKO Leasing	Major leasing company
Novatell Wireless	Telematics Technology provider	Pointer	Telematics Service provider
Novera	Automotive supplier	Porsche Bank	Telematics service provider
Novero	eCall embedded OBU	PPZuche	P2P car sharing
O2	B2C dongle solutions provider	Procon	Telematics Technology provider
OAMTC	Roadside assistance provider and Auto club	PSA Peugeot Citroën	OEM
OAMTC (Austria)	Automobile club	Q-Free	Systems integrator
Octo Telematics	Telematics Service Provider (TSP)	Q8	Oil company with own fuel card solutions
OJSC VEB Leasing	Telematics service provider	Qualcomm	Key system component
Ola	B2C & P2P car pooling	Quartix	Telematics Technology Provider (TTP)
Olive Trips	P2P car pooling	Quartrix	OBD dongle manufacturer
OmniComm	Fuel level sensing system	Quecklink	Telematics Technology Provider (TTP)
Omnitracs	Telematics technology provider	Quicar (VW)	B2C car sharing - OEM
OMV	Toll service provider	QuickQ	RFID gas stations system
OnStar	Connected services operator (aftermarket)	RAC	Telematics Service Provider (TSP)
OnStar (GM)	Device and service provision	RAC (UK)	Automobile club
OpenFleet	Device and service provision	RACE (Spain)	Automobile club
Radius	Independent fuel card service provider	Share transport	P2P car pooling
RAF (Russia)	Automobile club	Share Your Ride	P2P car pooling
RAXEL	Telematics Service Provider (TSP)	Shell	Oil company with own fuel card solutions
RCI Banque	Telematics service provider	Shell (Europe)	Toll service provider





Rdvouz	P2P car pooling	SIEMENS	Systems integrator
Redtail	Telematics Technology Provider (TTP)	Siemens Financial Services	Telematics service provider
Rental Car Group	Rental agent	Sierra Wireless	Component
Rentalcars.com	Rental agent	Sierra Wireless	Key system component
Ressa	Toll service provider	Singu	Device and service provision
Rhino Car Hire	Rental agent	Sirit	Component
Ridebuzz	P2P car pooling	SiriusXM (Agero)	Service provider (in-line fitted)
Ridefinder	P2P car pooling	SISTRAN	Analytics provider
Ridefinders	P2P car pooling	Sixt	Car rental
Ridemix	P2P car pooling	Sixt Leasing	Telematics service provider
Roadnet	Telematics technology provider	Sky patrol	Telematics Technology provider
Roadnet Technologies	Telematics Service provider	Skyscanner	Rental agent
Robert Bosch	eCall embedded OBU	SmartFuel	Fuel level sensing syster
Rostec	Systems integrator	SnappCar	P2P car sharing
Route 66	Navigation software (aftermarket)	Socar	B2C car sharing - non OEM
Ryde	B2C car pooling	Sodexo	Independent fuel card service provider
Rydes	P2P car pooling	Spedion	Smartphone based TSP
Samsung	B2C dongle solutions provider	Spireon	Telematics Technology provider
Sanef ITS	Systems integrator	Split-it	B2C car pooling
Santander Espana	Telematics service provider	SPX	Automotive supplier
SAP	Analytics provider	Squarell	Fuel level sensing syster
SAS	Analytics provider	SSP	Analytics provider
Sascar	Telematics Service provider	Statoil	Oil company with own fuel card solutions
Schneider Electric	Systems integrator	STP	Independent fuel card service provider
Scoop	Device and service provision	Strabag	Component
Scope Technologies	Telematics Service Provider (TSP)	Subaru Starlink	ОЕМ
Sunfleet (Volvo)	B2C car sharing - OEM	Tracker	Telematics technology provider

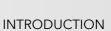




SunPass	Toll agency, toll charger	Tracker (worldwide)	Service Provider (aftermarket)
Sygic	Smartphone based TSP	Tracker ZA	Telematics Technology Provider (TTP)
T-Systems	Systems integrator	Trackm8	Telematics Technology Provider (TTP)
Takata	Key system component	Trackstar	Service Provider (aftermarket)
Tapazz	P2P car sharing	Trafineo	Toll service provider
Technoton	Fuel level sensing system	Trak Global	Telematics Service Provider (TSP)
Telenav	Navigation software (embedded)	Trakm8	Telematics Technology provider
Telenav Enterprise	Fleet TSP integrating fuel cards	Transcore	Systems integrator
Telepass	Toll agency, toll charger	Transcore	Component
Telepass (Autostrade)	Toll service provider	Transics	Telematics technology provider
Teletrac Navman	Telematics technology provider	Transpass (Egis)	Toll service provider
Telia Sonera	B2C dongle solutions provider	Transpoco	Fleet TSP integrating fuel cards
Telit	Key system component	Transurban	Toll agency, toll charger
Telogis	Telematics technology provider	TranzLease	Telematics service provider
Tencent	B2C dongle solutions provider	Traqueur	Service Provider (aftermarket)
Теха	B2C dongle solutions provider	Travel Supermarket	Rental agent
Texas Instrument	Automotive supplier	Trees for cars	P2P car pooling
The Floow	Analytics provider	Trimble	FMS provider
Thrifty	Car rental	Trimble (ALK)	Navigation software (aftermarket)
Times Car Plus	B2C car sharing - non OEM	TripAdvisor	Location-based content & services
TomTom	Telematics technology provider	Tripda	P2P car pooling
TomTom Telematics	Fleet TSP integrating fuel cards	TRL	Analytics provider
Total	Toll service provider	TRW	Key system component
Touring Club (Switzerland, Belgium)	Automobile club	Turo	P2P car sharing
Touring Club Belgium	Roadside assistance provider and Auto club	Turpak	RFID gas stations system
Tower Watson	Analytics provider	TxTag, TollTag, EZ Tag	Toll agency, toll charger
Toyota	OEM	Ubercommute	B2C car pooling



Toyota Safety Connect	OEM	Uberpool	B2C car pooling
Tp-Link	Mobile hotspot supplier	UBI Finance	Major leasing company
Uhaul	Car rental	Volkswagen	OEM
UK Fuel	Independent fuel card service provider	Volkswagen Car-Net	Car maker
Unicredit leasing	Major leasing company	Volkswagen Fleet	Leasing company integrating fuel cards
UnionPay	General payment card companiy	Volkswagen Group Leasing	Major leasing company
UnipolSai	Insurance company	Volvo	OEM
Uniqa	Insurance company	Volvo OnCall	Car maker
Urgent.ly (US)	Insurance and other independent player	Voxx Electronics	B2C dongle solutions provider
US Bank (Voyager)	Independent fuel card service provider	VRent (VW)	B2C car sharing - OEM
UTA	Toll service provider	Vulog	Device and service provision
Valeo (Peiker)	Key system component	Wayzup	B2C car pooling
Vayamos Juntos	P2P car pooling	Waze	P2P car pooling
Vendeka	Systems integrator	Wejo	Smartphone based TSP
Verband Öffentlicher Versicherer	Insurance company	WEMA	Fuel level sensing syster
Verisk	Device and service provision	Western India Automobile Association	White label RSA service provider
Verison	Device and service provision	WEX	Toll service provider
Verizon	B2C dongle solutions provider	WEX (EFS)	RFID gas stations system
Verizon NetworkFleet	Telematics technology provider	White Clark Group	Major leasing company
Verizon Telematics	Telematics Service Provider (TSP)	Wireless Car	Connected platform operator (embedded)
Via	B2C car pooling	Wireless Logic	Device and service provision
Viajamosjuntos	P2P car pooling	World Fuel	Independent fuel card service provider
Vialtis	Toll service provider	Wunelli	Telematics Service Provider (TSP)
Viasat	Telematics Service Provider (TSP)	Xerox	Systems integrator
Vinci	Toll agency, toll charger	Xirgo	Telematics Technology Provider (TTP)
Vinli	B2C dongle solutions	XRS Corporation	Telematics Service





VISA	General payment card companiy	Yandex	Navigation software (aftermarket)
Visteon	eCall embedded OBU	Yelp	Location-based content & services
Vitronic	Component	YF International	Navigation device (PND)
Vodafone Auto (Cobra)	Service provider (in-line fitted)	YourDrive	P2P car sharing
Vodafone Automotive	Telematics Service Provider (TSP)	Zemtu	Device and service provision
Zenrin	Navigable maps	Zonar Systems	Telematics service provider providing fuel solutions
Zify	P2P car pooling	Zoomcar	B2C car sharing - non OEM
Zimride	P2P car pooling	ZTE	Mobile hotspot supplier
Zipcar	B2C car sharing - non OEM	Zubie	Mobile TSP



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Disclosure

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