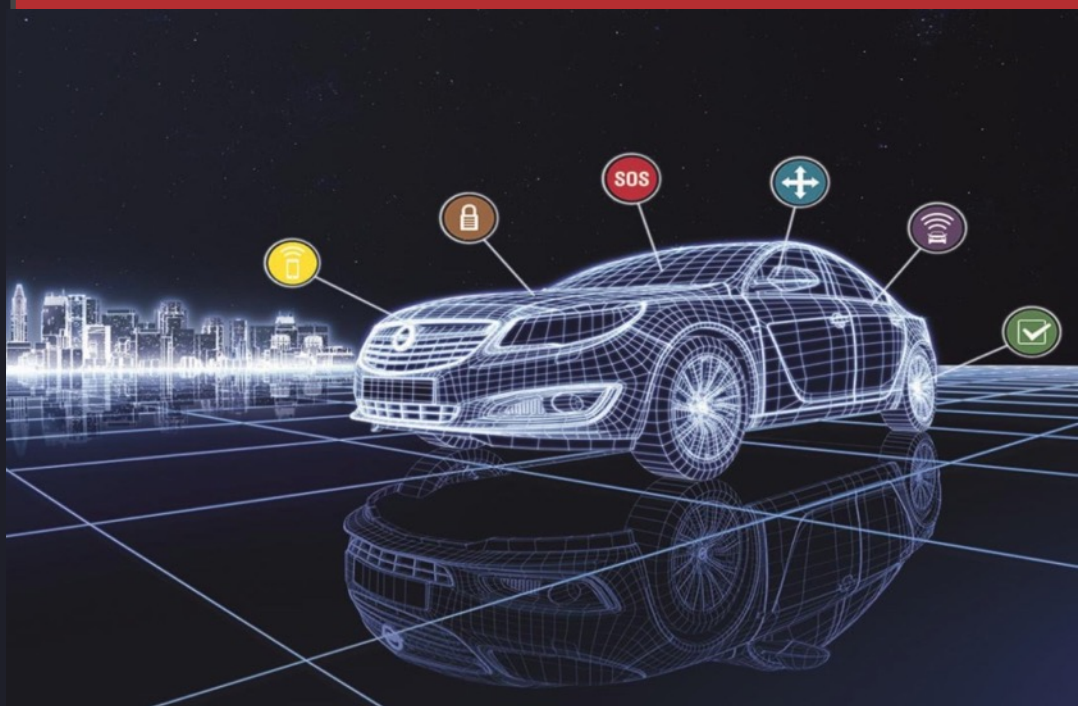# PTOLEMUS
Consulting Group

2016 EDITION

Reference figures & forecasts for 14 automotive markets

CONNECTED MOBILITY GLOBAL FORECAST

Quantifying future connected car services

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 7 countries: Belgium, France, Germany, Italy, Russia, the UK and the US.

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

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, ecosystem-building, 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

MS. Management, HEC Paris and CEMS Master, University of 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 led **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 Telematics Service Provider (TSP),
- He assisted a **global automotive tier-1 supplier in defining its UBI strategy**,
- He helped an insurance & data aggregation group detect **future breakthroughs in the connected car value chain** and their impact on the insurance market.

Thomas Hallauer, Research Director, London

BA, International Business, University 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 [ETC Global Study](#), 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 versions of the** [UBI Global Study](#) **and** interviewed dozens of companies 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, Thomas led the research on each of the sector's trends, environments and sizing, edited and published the final document.

Denis Gavrilov, Associate Partner, Moscow

BA in Political Science and MA in Management, Higher School of Economics of Moscow

Denis has gained more than 10 years of strategic and operational experience in insurance within international and local companies in Russia.

He is expert at **designing telematics products for insurance companies** with more than 6 years of expertise, dealers and car manufacturers. He is also an **expert of the digitalisation** of the insurance business: from online sales to online- and mobile-claims handling, electronic workflows and innovative business-processes settlement.

Denis notably

- Co-founded **Vazhno**, a UBI start-up using an online sales and mobile claims handling delivery model,

- Assisted several leading Russian insurance companies to develop their strategy to enter the motor UBI insurance market and their UBI product portfolio,

- For **Allianz Russia**, initiated a number of major partnerships and products such as the development of the joint Allianz - BMW UBI initiative.

A regular speaker at conferences on telematics and insurance digitalisation, Denis Gavrilov conducted our research for the Russian market.

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**, within the Industry Strategy & Operation branch.

For this report, Matthieu led our market forecasting work for the 14 connected services.

Alberto Lodieu, Senior Consultant, Paris

MBA, HEC Paris - BSc Industrial Engineering, Instituto Tecnologico y de Estudios Superiores de Monterrey

Alberto has more than 6 years experience in strategic and operations consulting. He has specialised in the **financial services and transport** industries in projects related to corporate and competitive strategy, operations excellence and business analytics.

Alberto has participated in more than 20 projects to help organisations identify, define and implement the initiatives needed to achieve or preserve their leadership position.

In his last 5 assignments, Alberto has helped multinational companies, willing to succeed in the connected vehicle market, to define their **global go-to market strategies**.

Before joining PTOLEMUS, Alberto worked for Deloitte Consulting in their strategy and operations practice. Additionally, he has participated as a strategic and financial advisor in investment projects both in **Europe and LATAM**.

For this report, Alberto researched and analysed four of the markets.

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 (TSP),

- 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, University 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:
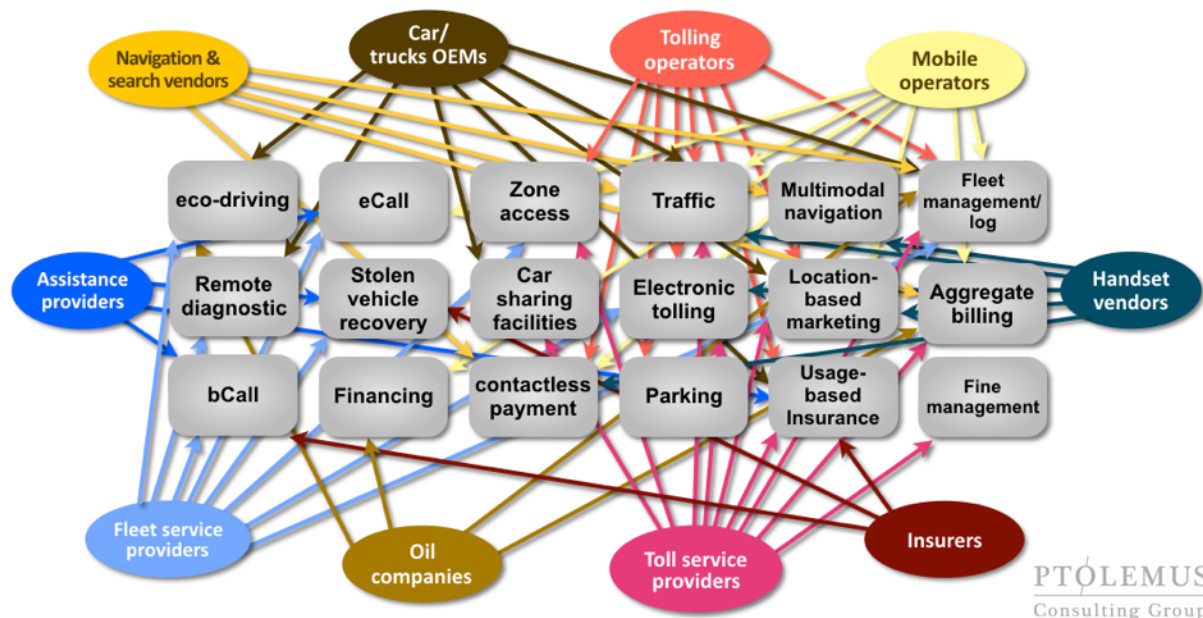
- An analysis of road charging opportunities across Europe, North America and Asia,

- A comprehensive ranking of global ETC service providers, systems integrators and technology suppliers.

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

FOREWORD

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

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 these 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[1] such as Uber, BlaBlaCar and Waze.

Less exposed is **the pace of change and the 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.

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[1] A Unicorn is a start-up company valued at over $1 billion from investments in its first 5 years

To assess the scale of this opportunity, PTOLEMUS is pleased to bring you a complete **analysis and global forecast of 14 connected mobility services:**

- **Convenience services**: Car sharing, car pooling, car rental, navigation, in-vehicle Wi-Fi hotspot,

- **Safety & security services**: Stolen vehicle tracking & recovery (SVT/SVR), emergency assistance (eCall), usage-based insurance (UBI),

- **Maintenance services**: Remote diagnostics and connected breakdown assistance (bCall),

- **Cost management & finance-related services**: car leasing, electronic road charging, fuel payment and fleet management services.

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

- **Ford** announced the launch of *Ford Smart Mobility*, *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, it 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 driver's weekly earnings. They 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, **RideWith**,

- 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	Harald Krueger, CEO

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

Like so many others, the mobility services 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 write this study and deliver these forecasts, we have leveraged experience from:

- **7 years** of primary research in the connected mobility market,
- The insights from **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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EXECUTIVE SUMMARY

The mutation of the car industry into a mobility business is underway!

- From approximately $100 billion today, the car mobility services market will cover 400 million cars and generate $350 billion by 2020.

- By 2020, 45 million of the 80 million cars sold worldwide will come pre-connected, against 20 million today. In Europe and North America, 90% of new cars will be sold with embedded connectivity.

- **Are car manufacturers as we know them facing extinction?** The result of our investigation is striking. While a third of connected services are controlled by the OEMs today, their control over the connected car services market and value chain will dwindle. In 5 years, aftermarket service providers will generate 84% of the mobility market revenues.

- With an estimated 3 billion active units by 2020, **smartphones will become the central delivery platform for most consumer mobility services.**

- In cities, **the car parc will gradually cease growing or even begin shrinking** due to the explosion of apps that optimise the use of cars through sharing or pooling. With no alternative, most OEMs are now embracing the sharing revolution.

- The race to access connected car data will have three consequences:
  - Successful Mobility Service Providers (MSPs) will strive to incorporate as many services as possible on their platform,
  - **None of the 14 services studied in this report will be provided independently by 2020!** They will all become part of a larger bundle of services,
  - Service providers unable to **access and analyse dynamic customer data** covering a single market will retreat rapidly. Some of them will disappear altogether.

- Digital map data, which has lost significant value, will become a strategic asset once again, as **3D maps become necessary for autonomous vehicles.**

- Success will not come purely from access to data, which will be commonplace, rather from the **smart analytics** derived from this data and the integrated customer experience delivered along with it. **The Apple of connected car services will be the company able to control its own hardware, software, data and solutions**, while remaining open to third party developers.

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Individual mobility services will grow 2 to 5 fold

- Today, there are roughly 100,000 connected vehicles in use for **car sharing** worldwide - **by 2020 we expect this to rise to over 2 million**, driven in part by the introduction of connectivity and remote access to the P2P parc.

- **Car pooling** is a nascent and dynamic market with, as yet, only limited connectivity. However, where connectivity is introduced, the growth can be phenomenal. **In each city where it has been launched, Uberpool now accounts for over 25% of all Uber bookings** and as much as 50% in both Paris and San Francisco.

- The introduction of real-time connectivity will enable P2P car pooling services such as BlaBlaCar to **compete directly with established B2C players** and other taxi hailing platforms, and to provide **a lower cost alternative to public transportation** over longer distances.

- By 2020, nearly **100 million vehicles globally will be insured with telematics policies** - this will grow to nearly **50% of the world's vehicles by 2030**, generating more than €250 billion in premiums for insurers.

- Volumes in the **bCall** / connected roadside assistance market are also set to grow 4 fold, accelerated by OEMs and independent apps as well the effective integration with insurance, remote diagnostics, parking or traffic.

- Connected services integrated in leasing contracts are seeing rapid growth as large-scale leasing providers have begun introducing their own, low-cost, FMS solutions.

- Road user charging (RUC) is taking off worldwide, driven by traffic congestion and infrastructure financing needs. We expect the **market to double from 200 million electronic tolling subscriptions in 2016 to over 400 million by 2025.**

- Connected navigation services represent **an ideal platform on which to integrate other mobility solutions such as car pooling, electronic toll payments and bCall.** Google-owned Waze has already integrated a car pooling service in Israel.

- The number of aftermarket mobility services based on OBD dongles will result in a battle for port access, **forcing providers to offer a broader suite of solutions.**

LIST OF FIGURES

Overview

Car sharing

Car pooling

Car rental

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)

Connected navigation

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)

In-vehicle Wi-Fi hotspot

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)

Remote diagnostics

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)

Connected breakdown assistance (bCall)

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)

Stolen vehicle tracking & recovery

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)

Emergency assistance (eCall)

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)

Usage-based insurance (UBI)

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)

Car leasing

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)

Road user charging (RUC)

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)

Fuel card services

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 ($ million)

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

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

Fuel card provider's transaction & subscription revenues from connected fuel cards on company cars ($ million)

Fleet management services (FMS)

FMS solutions in use in fleet passenger cars (thousand)

Global Fleet Management Systems revenues ($ million)

Europe Fleet Management Systems revenues ($ million)

LIST OF COMPANIES MENTIONED IN THIS REPORT

3M	RUC systems integrator	Alba Leasing	Leasing company
666GPS	Telematics service provider	Alcatel	Mobile hotspot supplier
AAA	Automobile club	ALD Automotive (Société Générale)	Leasing company
Abcfinance	Leasing company	Allianz	Insurance company
Abertis	Road operator	Allstate	Insurance company
ABN AMRO Lease	Leasing company	Alphabet (BMW)	Leasing company
Accenture	Analytics & data provider	Altech Netstar	Telematics service provider
ACE	Car rental	AMA (Mexico)	Automobile club
ACI (Italy)	Automobile club	American Express	General payment card company
Actia	B2C dongle & telematics provider	Amigo Express	P2P car pooling
ADAC (Germany)	Automobile club	Amodo	Mobile-centric TSP
Advantage	Car rental	Amovens	P2P car pooling
Agero	Telematics service provider	An Ji (China)	Automobile club
Agip	Oil company	AND	Navigable maps
Agnik	Analytics & data provider	Anhui Expressway	Toll agency / toll charger
Ainoring	P2P car pooling	Ants	P2P car pooling
AIPS	Analytics & data provider	ANWB	Automobile club
Airbiquity	RSA telematics service provider	Anydata	Telematics technology provider
AirIQ	Telematics service provider	Aplicom	Telematics technology provider
Airmax Group	Telematics service & technology provider	Apple	Navigation software
AKF Leasing	Leasing company	Arkan	SVT/SVR telematics service provider
Alamo	Car rental	Arnold Clark	Car rental
Alarm Trade	SVT/SVR telematics service provider	Arval (BNP Paribas)	Leasing company

Arvato	RUC systems integrator	Autostrade per l'Italia	Road operator
Arvento Mobile	Telematics service provider	Autotrac	SVT/SVR telematics service provider
Arya Omnitalk	Telematics service provider	Avis	Car rental & leasing
Asfinag	Toll agency / toll charger	Axa Assistance	eCall filtering / assistance company
Astrata	Fleet TSP integrating fuel cards	Axxès	Toll service provider
AT&T (US)	Independent RSA	Baidu	Navigation software
ATG Risk Solutions	Analytics & data provider	Baltic Leasing	Leasing company
Atlantia	RUC systems integrator	Baseline Telematics	Telematics service provider
Atlas Choice	Car rental agent	Beijing Zhongdou Technology	Telematics service provider
ATrack Technology	Telematics technology provider	Bessermitfahren	P2P car pooling
ATZuche	P2P car sharing	Big Road	Smartphone-centric TSP
Audi	OEM	Bipoolen	B2C car sharing
Audiovox	Telematics technology provider	BlaBlaCar	P2P car pooling
Auto Escape	Car rental agent	BlancRide	P2P car pooling
Auto Europe	Car rental	Blink Roadside Assistance (US)	Independent RSA player
Autobleue	B2C car sharing	Blom	3D maps
Autobot	B2C dongle solutions provider	Blue Tree	Telematics service provider
Autolib	B2C car sharing	BMW	OEM
Autoliv	eCall key system components	Bosch	Automotive technology supplier
Autolocator	SVT/SVR telematics service provider	BP	Oil company
Automatic	B2C dongle solutions provider	Breeze	Car rental
Automile	OBD-centric B2C TSP	Brisa	Road operator
AutoNavi	Navigation software	Broadcom	Automotive supplier
Autonet	Automotive supplier	Budget	Car rental

Business Lease Group	Leasing company	Carzonrent	Car rental
C2G Logic	Car sharing technology provider	Cavalry (UK)	Independent RSA player
CAA (China)	Automobile club	CCS	Fleet TSP
CalAmp	Telematics technology provider	CDL	Analytics & data provider
Caldrons	Toll agency / toll charger	CEABS	Telematics service provider
Cambio	B2C car sharing	Cellocator	Telematics technology provider
Cambridge Mobile Telematics (CMT)	Mobile-centric TSP	Censio	Mobile-centric TSP
Car next door	P2P car sharing	Centra	Toll agency / toll charger
Car2Go (Daimler)	B2C car sharing	Cesar Satellite	SVT/SVR telematics service provider
Car4Use	B2C car sharing	CGI	Analytics & data provider
CarAmigo	P2P car sharing	Chainway	Telematics technology provider
Careco	B2C car sharing	Chevron	Oil company
Carhood	P2P car sharing	China Auto Rental	Car rental & leasing
Carma	Car sharing & pooling	China Communications Construction Co. Ltd.	Toll agency / toll charger
Caronetas	P2P car pooling	Cintra	RUC systems integrator
Carpool King	P2P car pooling	Cite lib (Toyota)	B2C car sharing
Carpool Mates	P2P car pooling	Citroën Contract Motoring	Leasing company
Carpool World	P2P car pooling	City Car Club	B2C car sharing
Carrot (Mexico)	B2C car sharing	Citygo	B2C car pooling
Cars-scanner	Car rental agent	ClickSoftware	Telematics service provider
Carsystem	SVT/SVR telematics service provider	Co-Wheels	B2C car sharing
Cartrack	Telematics service provider	Cognizant	Analytics & data provider
CarTrend	Independent fuel card service provider	Communauto	B2C car sharing

Collision Management System (CMS)	Analytics & data provider	Didi Chuxing	B2C car pooling
Comovee	Car pooling technology	Digiparts	Car sharing technology provider
Comparte	P2P car pooling	DigitalGlobe	3D maps
Complete Innovation	Telematics service provider	DKV	Independent fuel card service provider
Continental	Automotive technology supplier	Dollar	Car rental
Convadis	Car sharing technology provider	Dolphin Technologies	Telematics service provider
Coride	P2P car pooling	Drive Smart	Telematics service provider
Corral Labs	Car pooling technology	DriveFactor (CCC)	Telematics service provider
Coseats	P2P car pooling	DriveJoy	P2P car sharing
Coyote System	Navigation devices	Driven Lower	Telematics technology provider
Credit Suisse AG	Leasing company	DriveNow (BMW)	B2C car sharing
Ctrack (Novatel Wireless)	Telematics service provider	Driver's Alert	Telematics service provider
Cubic	RUC systems integrator	Driveway Software	Mobile-centric TSP
Daimler	OEM	Drivy	P2P car sharing
Daimler Fleetboard	Telematics service provider	Drust	B2C dongle solutions provider
Danlaw	Telematics technology provider	DVB LogPay	Toll service provider
Dash	B2C dongle solutions provider	E-covoiturage	P2P car pooling
De Lage Landen International	Leasing company	E-Drive Technology	Telematics service provider
Delphi	Telematics technology provider	E6GPS	Telematics service provider
Denso	eCall embedded OBU / TCU provider	Ease simulation	Automotive supplier
Detector	Telematics service provider	Easy Car Club	P2P car sharing
Deutsche Lending	Leasing company	Easytrip	Toll service provider

Easyway	P2P car pooling	ETrans	Telematics service provider
Ebbon-Dacs	Independent fuel card service provider	Europ Assistance	eCall filtering / assistance company
Echelon	SVT/SVR telematics service provider	Europcar	Car rental
Ecofrotas	Independent fuel card service provider	Eurotoll (Sanef)	Toll service provider
Economy Car Rentals	Car rental agent	Eurowag	Toll service provider
Edenred	Independent fuel card service provider	Expedia	Car rental agent
Efkon	RUC component & device supplier	EZ-Pass	Toll agency / toll charger
Egis Projects	RUC systems integrator	eZway	B2C dongle solutions provider
Eileo	Car sharing technology provider	Fastrack	Toll agency / toll charger
Eiver (SaveCode)	B2C dongle solutions provider	FETC (Far Eastern Electronic Collection)	Toll agency / toll charger
Element Financial Corporation	Leasing company	Ficosa	eCall embedded OBU / TCU provider
Elift Club	P2P car pooling	Findalift	P2P car pooling
Eliocity (Mobivia)	Device manufacturer	Finder	Telematics service provider
Embratec	Independent fuel card service provider	Firefly	Car rental
EMG	Navigation software	Fleet on Demand	Independent fuel card service provider
Emixis	Telematics service provider	FleetCor	Independent fuel card service provider
Encamello	P2P car pooling	Fleetmatics	Fleet TSP integrating fuel cards
Encontrack	Telematics service provider	Fleetster	Car sharing technology provider
Engis Technologies	Navigation software	Flinc	P2P car pooling
ENI	Toll service provider	Flinkster	B2C car sharing
Enjoy (Fiat)	B2C car sharing	FMG Support	Telematics service provider
Enterprise	Car rental	Ford	OEM
ERM	Telematics technology provider	Foursquare	Location-based content & services
EROAD	Tolling and fleet technology provider	Frotcom	Telematics service provider

G.E.A.	RUC component & device supplier	GreenRoad	Telematics service provider
G4S Telematix	Telematics service provider	Greenwheels (VW)	B2C car sharing
Garmin	Navigation devices	Gurtam	Telematics service provider
Gemalto	RUC component & device supplier	HaHa Pinche	P2P car pooling
Generali	Insurance company	Hame Technology Co.	Mobile hotspot supplier
Geotab	Telematics technology & service provider	Harman	Navigation software
Getaround	P2P car sharing	Hazens Automotive	Navigation devices
GM	OEM	Heetch	B2C car pooling
GM OnStar	OEM telematics platform	HERE	Location-based content & services
GMV	RUC component & device supplier	Hertz	Car rental & leasing
GoCar	B2C car sharing	Hitachi Capital Vehicle Solutions	Leasing company
GoCatch	P2P car pooling	Hitch-a-ride	P2P car pooling
GoDrive (Ford)	B2C car sharing	Hochtief	Toll agency / toll charger
GoFleet	Telematics service provider	Holiday Autos	Car rental agent
GoMore	P2P car sharing & pooling	Honk (US)	Independent RSA player
Gomyway	P2P car pooling	Huawei Technologies	Mobile hotspot supplier
GoodCard	Independent fuel card service provider	Hubio	Telematics service provider
Google (Alphabet)	Technology & software supplier	Hyundai Mobis	eCall embedded OBU / TCU provider
GoSafe	Telematics technology provider	Ibilek	B2C car sharing
GPS Buddy	Telematics service provider	IBM	Analytics & data provider
GPS Colombia	SVT/SVR telematics service provider	icarsclub	B2C car sharing
Grabhitch	B2C car pooling	ID Systems	Telematics service provider
Green Flag (Direct Line)	White label RSA service provider	Identifix	Automotive supplier

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IHS Automotive	Location-based content & services	Koolicar	P2P car sharing
iMetrik	Telematics technology & service provider	KT Kumho	Car rental
IMS	Telematics service provider	Kuantic	Telematics technology provider
Infrasure	Mobile-centric TSP	La route verte	P2P car pooling
Inosat	Telematics service provider	lastminute.com	Car rental agent
Inrix	Location-based content & services	LAT Assistance (Russia)	Automobile club
IntelliTrac	Telematics service provider	Launch Tech	B2C dongle solutions provider
Inter Mutuelles Assistances (IMA)	eCall filtering / assistance company	Leaseplan	Leasing company
Intermap Technologies	3D maps	Let's Drive (GM)	B2C car sharing
Interrent	Car rental	Lex Autolease	Leasing company
Invers	Car sharing technology provider	Lexis-Nexis / Wunelli	Analytics & data provider
ITURAN	Telematics service provider	Liftshare	P2P car pooling
JAF (Japan)	Automobile club	Locomute	B2C car sharing
Jaguar Trackstar	OEM SVT/SVR	Lojack (now CalAmp)	Telematics technology provider
Jet Cost	Car rental agent	Lyft Line	B2C car pooling
Jiangsu Expressway	Toll agency / toll charger	Lysanda	Telematics technology provider
Jooycar	B2C dongle solutions provider	m2m Telefonica	Telematics service provider
Joycar	B2C car sharing	Macquarie	Toll agency / toll charger
Kangaride	P2P car pooling	Magellan	Navigation devices (PNDs)
Kapsch	RUC component & device supplier	Magneti Marelli	Telematics technology provider
Karma	Mobile hotspot supplier	Mail.ru	Navigation software
Kayak	Car rental agent	Mapfre	Insurance company
Keep Truckin	Smartphone-centric TSP	MapmyIndia	Navigation software

Mappy	Location-based content & services	Mix Telematics	Telematics service provider
MapQuest	Navigation software	Mobile Devices	Telematics technology provider
Market IP	Telematics technology provider	mobileObjects AG	Telematics service provider
Marvell	Automotive supplier	Mobility	B2C car sharing
MasterCard	General payment card company	Mobiliz	Telematics service provider
Masternaut	Telematics and fleet service provider	Modo	B2C car sharing
Matcha	B2C car sharing	Modus	Telematics service provider
Matrix (part of Mix Telematics)	eCall aftermarket device provider	Mojio	B2C dongle solutions provider
Maven (GM)	B2C car sharing	Mondial Assistance	eCall filtering / assistance company
MCC Ukraine	SVT/SVR telematics service provider	MoveAbout	B2C car sharing
Mechanics Advisor	B2C dongle solutions provider	Movelo	Mobile-centric TSP
Mediamobile	Location-based content & services	MTS	Telematics service provider
Mega-F	SVT/SVR telematics service provider	Multi Service Tolls	Toll service provider
Meta System (Deren Electronic)	Telematics technology provider	Multicity (Citroën)	B2C car sharing
Metavera	Car sharing technology provider	Mycartracks	Smartphone-centric TSP
MiCar	B2C car sharing	MyDrive Solutions (Generali)	Mobile-centric TSP
Michelin Travel Partners	Location-based content & services	Myles (India)	B2C car sharing
Microlise	Telematics service provider	MylesCar	Car rental
Micromax	Mobile hotspot supplier	Nabobil	P2P car sharing
Micronet Enertec Technologies	Telematics technology provider	National	Car rental
Mireo	Navigation software	NATIXIS Lease	Leasing company
Mitsubishi Heavy Industries	RUC component & device supplier	NavInfo	Navigable maps
Miveo	Car sharing technology provider	Navitime	Navigation software

Navmii	Navigation software	Oocar	B2C dongle solutions provider
NDrive	Navigation software	OpenFleet	Car sharing technology provider
Nebula Systems (RAC)	Automotive supplier	OpenStreetMap	Navigable maps
Netgear	Mobile hotspot supplier	Orange Business Services	Telematics service provider
NexTraq	Telematics service provider	Orix Auto Corporation	Car leasing & sharing
Nissan Connect	OEM SVT/SVR	Oskando	Telematics service provider
NNG	Navigation software	Ouicar	P2P car sharing
Norbit	RUC component & device supplier	Parkopedia	Location-based content & services
Nordea Finance	Leasing company	PayGo Systems	Telematics technology provider
Noritomo	P2P car pooling	People's Uber	B2C car pooling
Nova car hire	Car rental agent	Petron	Oil company
Novatel Wireless	Telematics technology provider	Petronas	Oil company
Novera	Automotive supplier	Pinnacle Actuarial Resources	Analytics & data provider
Novero	eCall embedded OBU / TCU provider	PIT	SVT/SVR telematics service provider
O₂	B2C dongle solutions provider	PKO Leasing	Leasing company
ÖAMTC	Automobile club	Plextek	Telematics technology provider
Octo Telematics	Telematics service provider	Pointer	Telematics service provider
OJSC VEB Leasing	Leasing company	Porsche	OEM
Ola	P2P car pooling	PPZuche	P2P car sharing
Olive Trips	P2P car pooling	Procon	Telematics technology provider
OmniComm	Fuel level sensing system provider	PSA Peugeot Citroën	OEM
Omnitracs	Telematics service provider	Q-Free	RUC component & device supplier
OMV	Oil company	Q8	Oil company

Qualcomm	Automotive supplier	Ridemix	P2P car pooling
Quanta Tecnologia	Telematics technology provider	Road Vikings	B2C dongle solutions provider
Quartix	Telematics technology & service provider	Roadnet	Telematics service provider
Queclink	Telematics technology provider	Rostec	RUC systems integrator
Quicar (VW)	B2C car sharing	Route 66	Navigation software
QuickQ	RFID gas station system provider	Ryde	B2C car pooling
RAC	Roadside assistance provider	Rydes	P2P car pooling
RACE (Spain)	Automobile club	Safefleet	Telematics service provider
Radius	Independent fuel card service provider	Safety Connect (Toyota)	OEM SVT/SVR
RAM Mobile Data	Telematics service provider	Samsung	B2C dongle solutions provider
RAMK (Russia)	Automobile club	Sanef ITS	RUC systems integrator
RAT (Russia)	Automobile club	Santander Espana	Leasing company
Raxel	Telematics service provider	SAS	Analytics & data provider
RCI Banque	Leasing company	Sascar	Telematics service provider
Rdvouz	P2P car pooling	Sascar (Michelin)	Telematics service provider
Redtail / Plextek	Device manufacturer	SatData	Telematics service provider
Redtail Telematics	Telematics technology provider	Satellic (T-Systems)	RUC systems integrator
Rental Car Group	Car rental agent	Schneider Electric	RUC systems integrator
Rentalcars.com	Car rental agent	Scoop	Car pooling technology
Ressa	Toll service provider	Scope Technologies	Telematics service provider
Rhino Car Hire	Car rental agent	Segsat	SVT/SVR telematics service provider
Ridebuzz	P2P car pooling	Share transport	P2P car pooling
Ridefinder	P2P car pooling	Share Your Ride	P2P car pooling

Shell	Oil company		SPX	Automotive supplier
Shenzhen Huabao Electronics Technology	Telematics service provider		Squarell	Telematics technology provider
Shenzhen Weitongda Electronics	Telematics service provider		SSP	Analytics & data provider
Siemens	RUC systems integrator		Starline	Telematics technology provider
Sierra Wireless	Telematics technology provider		Statoil	Oil company
Singu	Car pooling technology		STP	Independent fuel card service provider
Sinocastel	Telematics technology provider		Strabag	RUC component & device supplier
Sirit	RUC component & device supplier		StrandD (India)	Independent RSA player
SiriusXM (Agero)	SVT/SVR telematics service provider		Subaru Starlink	OEM SVT/SVR
Sixt	Car rental & leasing		Sunfleet (Volvo)	B2C car sharing
Sky Patrol	Telematics technology provider		SunPass	Toll agency / toll charger
Skybitz (Telular)	Telematics service provider		Sygic	Smartphone-centric TSP
Skyscanner	Car rental agent		Takata	eCall key system components
SmartFuel	Fuel level sensing system provider		Tantalum (Lysanda)	Telematics technology provider
SnappCar	P2P car sharing		Tracker UK	Telematics service provider
Socar	B2C car sharing		Tech Mahindra	Telematics service provider
Sodexo	Independent fuel card service provider		Technoton	Fuel level sensing system provider
Spedion	Smartphone-centric TSP		Telefonica M2M	Telematics service provider
Spireon	Telematics technology provider		Telenav	Fleet service provider
Split-it	B2C car pooling		Telepass (Autostrade)	Toll service provider
Sprint	Telematics service provider		Teletrac	Telematics service provider

Telia Sonera	B2C dongle solutions provider	Trackstar	SVT/SVR telematics service provider
Telic	Telematics technology provider	Traffilog	Telematics service provider
Telit	Component & device supplier	Trafineo	Toll service provider
Telogis	Telematics service provider	Trak Global	Telematics service provider
Teltonika	Telematics technology provider	Trakm8	Telematics technology provider
Teradata	Analytics & data provider	Tramigo	Telematics technology provider
Texa	Device manufacturer	Transcore	RUC component & device supplier
Texas Instruments	Automotive supplier	Transpoco	Fleet TSP integrating fuel cards
Thales	RUC systems integrator	Transurban	Toll agency / toll charger
The AA	Automobile club	TranzLease	Leasing company
The Floow	Analytics & data provider	Traqueur	SVT/SVR telematics service provider
Thrifty	Car rental	Travel Supermarket	Car rental agent
Times Car Plus	B2C car sharing	Trees for cars	P2P car pooling
Toll Collect	Toll agency / toll charger	Trimble	Telematics service provider
TomTom	Location-based content & services	TripAdvisor	Location-based content & services
ToMyCar	Car sharing technology provider	Tripda	P2P car pooling
Total	Oil company	TRL	Analytics & data provider
Touring Club (Switzerland)	Automobile club	Trondheim Bilkollektiv	B2C car pooling
Touring Club Belgium	Automobile club	TRW	eCall key system components
Toyota	OEM	Turo	P2P car sharing
Tp-Link	Mobile hotspot supplier	Turpak	RFID gas station system provider
Tracker	Telematics service provider	Ubercommute	B2C car pooling

Uberpool	B2C car pooling	Viasat	Telematics service provider
UBI Finance	Leasing company	Vinci	Toll agency / toll charger
Uhaul	Car rental	Vinli	B2C service provider
UK Fuel	Independent fuel card service provider	VISA	General payment card company
Unicredit leasing	Leasing company	Visteon	eCall embedded OBU / TCU provider
Unilife	Telematics service provider	Vitronic	RUC component & device supplier
UnionPay	General payment card company	Vodafone Automotive (Cobra)	Telematics service provider
UnipolSai	Insurance company	Volkswagen	OEM
Uniqa	Insurance company	Volvo	OEM
Urgent.ly (US)	Independent RSA player	Voxx Electronics	B2C dongle solutions provider
US Bank (Voyager)	Independent fuel card service provider	VRent (VW)	B2C car sharing
UTA	Independent fuel card service provider	Vulog	Car sharing technology provider
Valeo (Peiker)	eCall embedded OBU / TCU provider	Wayzup	B2C car pooling
Vayamos Juntos	P2P car pooling	Waze	P2P car pooling
Vehcon	Mobile-centric TSP	WebEye	Telematics service provider
Vendeka	RUC component & device supplier	WebTech Wireless	Telematics service provider
Verband Öffentlicher Versicherer	Insurance company	Wejo	Smartphone-centric TSP
Verisk Analytics	Analytics & data provider	WEMA	Fuel level sensing system provider
Verizon	Telematics solutions provider	Western India Automobile Association	White label RSA service provider
Via	B2C car pooling	WEX	Independent fuel card service provider
Vialtis	Toll service provider	White Clark Group	Leasing company

Willis Towers Watson	Analytics & data provider	YourDrive	P2P car sharing
Wireless Logic	Car sharing technology provider	Zatix	Telematics service provider
WirelessCar	Automotive supplier	Zemtu	Car sharing technology provider
World Fuel	Independent fuel card service provider	Zenrin	Navigable maps
Wunelli (LexisNexis)	Telematics service provider	Zhejiang Expressway	Toll agency / toll charger
Xee (Eliocity)	B2C dongle solutions provider	Zify	P2P car pooling
Xerox	RUC systems integrator	Zimride	P2P car pooling
Xirgo Technologies	Telematics technology provider	Zipcar	B2C car sharing
XRS Corporation	Telematics service provider	Zonar Systems	Telematics service provider
Yandex	Navigation software	Zoomcar	B2C car sharing
Yelp	Location-based content & services	ZTE	Mobile hotspot supplier
YF International	Navigation devices	Zubie	B2C dongle solutions provider

I. WHAT IS MOBILITY?

Its definition is changing rapidly. From the ability to transport people and goods in urban and interurban environments, the concept of mobility has grown to include a large variety of services, and revenues, within multimodal transportation.

Mobility encompasses a number of concepts, including sustainability and accessibility as the result of the optimal management of individuals, assets and companies transportation needs. It encourages coordination and resource sharing among various shareholders and brings together a panel of activities and options in order to facilitate an individual requirement.

In this forecast, we have investigated the markets for **14 different mobility services**. We have chosen them because they have characteristics in common:

- They are **focused around the car** (for commercial or private use),
- They are **improved by connectivity and data analytics**,
- They are **growing and evolving** rapidly,
- They involve the activities of **multiple stakeholder categories, which increasingly overlap between** different services.
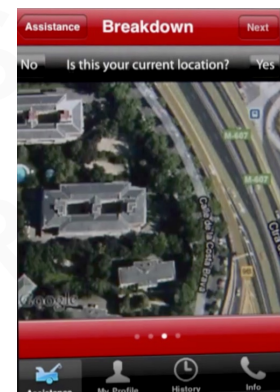
We have structured the services as follows:

Services around convenience		Services around safety & security	
	Car sharing		Stolen vehicle tracking & recovery
	Car pooling		Emergency assistance (eCall)
	Car rental		Usage-Based Insurance (UBI)
	Connected navigation	**Functions linked to cost management & finance**	
	In-vehicle Wi-Fi hotspot		Car leasing
Services around the vehicle maintenance			Road User Charging (RUC)
	Remote diagnostics		Fuel card services
	Connected breakdown assistance (bCall)		Fleet Management Services (FMS)

1. The benefits of connectivity for mobility services

We will describe the architecture of the connected services in Section III but to give a brief example, we shall examine roadside assistance (RSA).

Without telematics, RSA relies on the customer calling the assistance company, describing where the car is and what the problem looks like. As with eCall and e112, locating the endangered driver quickly and precisely is often a difficult and time-consuming task.

Using telematics, the assister is now able to receive **automatic geolocation and breakdown diagnostics**, which accelerates the process. Mapfre Assistance's *MAiassist* app, pictured, requests the customer to confirm his position to avoid any error.

He / she can check for eligibility of service before the car starts. He / she is also immediately able to dispatch the nearest vehicle as well as to channel the repair to its own network of garages. By receiving accurate diagnostics data directly from the vehicle, many common faults can also be repaired at the roadside, without need for further recovery.
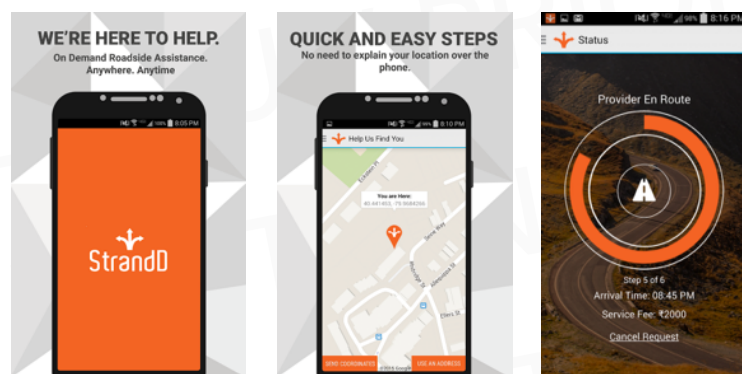

Mapfre's **MAiassist** *app*

Tomorrow, the integration between the RSA provider and the manufacturer will be such that it will be able to receive information about the fault as the same time as the alert and even be in a position to **predict faults ahead of time** using vehicle data to build **prognostics and preemptive alerts**.

For the driver, the benefits are clear: **faster intervention, more reliable repair and better service** all around with more effective communication. This of course results in better customer retention for the Mobility Services Provider (MSP). Post-recovery data analysis will also enable assistance operators to improve their services in future.

In addition to reducing costs and improving the user experience, **connectivity can facilitate market entry at a much faster rate**.

India's on-demand RSA provider **StrandD** is a typical example.

Launched in mid-2015, the smartphone app extracts location data from the user's device and matches it with local

In less than a year, StrandD has become available in over 4,800 locations across India

assistance providers, as well as delivering real-time information from telematics devices in the assistance vehicles.

Despite being on the market for less than a year, **the platform already covers twice as many locations as India's largest existing, subscription-based RSA provider** and boasts a much faster growing user base!

The costs associated with car transportation are centred on the driver, the car and the connectivity. While car purchasing costs still represent a key part of consumers' and fleets' budget, and vehicle-centric innovation will continue, it appears that **connectivity is in fact behind every single evolutionary step on the service side**.

Connectivity is the tail wagging the dog.

It has become a lot more than a nice feature to have: for many of these services, for example fleet management, it is now central to the existence of these services. For others, it is the critical difference that has made the service successful. **Connectivity has created success for new service providers almost overnight**, it has also caused headaches for others. Today, industries such as taxi transportation, insurance, assistance, car rental or road user charging are all wagged by the tail! In the case of navigation, smartphone connectivity has resulted in a complete overhaul of the industry and unseated once dominant players such as TomTom and Garmin.

2. Scope of our mobility services forecasts

This report specifically analyses each of the 14 connected car services or sectors in terms of volumes and revenues for connected services sold to the private individual or the company car fleet.

The report also evaluates the total addressable market for each solution, accounting for non-connected as well as connected vehicles.

In order to deliver meaningful forecasts, we began by calculating the size of the total mobility services markets and then estimated the penetration of connected services.
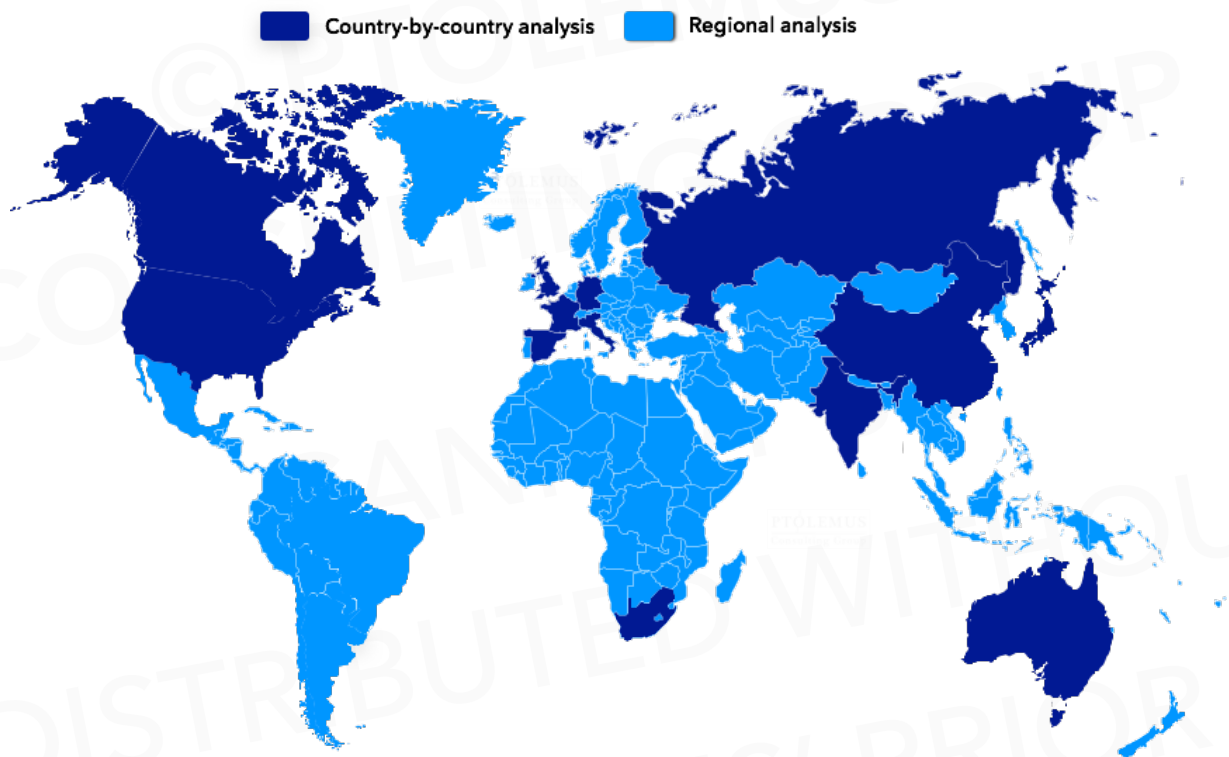
For each of the 14 services we examined the value proposition and typical devices involved.

We then assessed the distribution channels and common value chain(s). Lastly, we analysed the environment of each sector and built our own growth forecasts based on competition, technology, demand and regulatory trends.

Our bottom-up market forecast is global and country-by-country analyses are available for the following 18 markets.

PTOLEMUS connected mobility services bottom-up market forecast

Source: PTOLEMUS Consulting Group

The market forecast outputs and charts are available as an Excel spreadsheet. They have been built using **a bottom-up approach in each region with a detailed calculation in 18 countries** and quantify today's and tomorrow's activities for the 14 mobility services.

The outputs include **2015-2020 volume and revenue forecasts** for both:

• The **Mobility Services Providers (MSPs)** - who offer services to end-customers - such as

  - Insurance companies in the UBI domain (Allianz, Liberty Mutual, etc.),

  - Toll chargers / agencies (Autostrade, Toll-Collect, etc.),

- Car manufacturers and aftermarket providers of Wi-Fi hotspots (Ford, Toyota, Verizon, etc.).

• Their **Connected Solutions Providers (CSPs),** who provide MSPs with the solution, such as

- Embedded navigation suppliers in the connected navigation market (HERE, TomTom, etc.)

- Fuel card processing specialists such as Edenred or WEX,

- Suppliers of Wi-Fi hotspot systems (Novatel, Samsung, etc.).

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Disclosure

The recommendations and opinions expressed in this study reflect PTOLEMUS' independent and objective views. However, PTOLEMUS cannot provide any guarantee as to the accuracy of the information provided or the reliability of its analyses and forecasts.
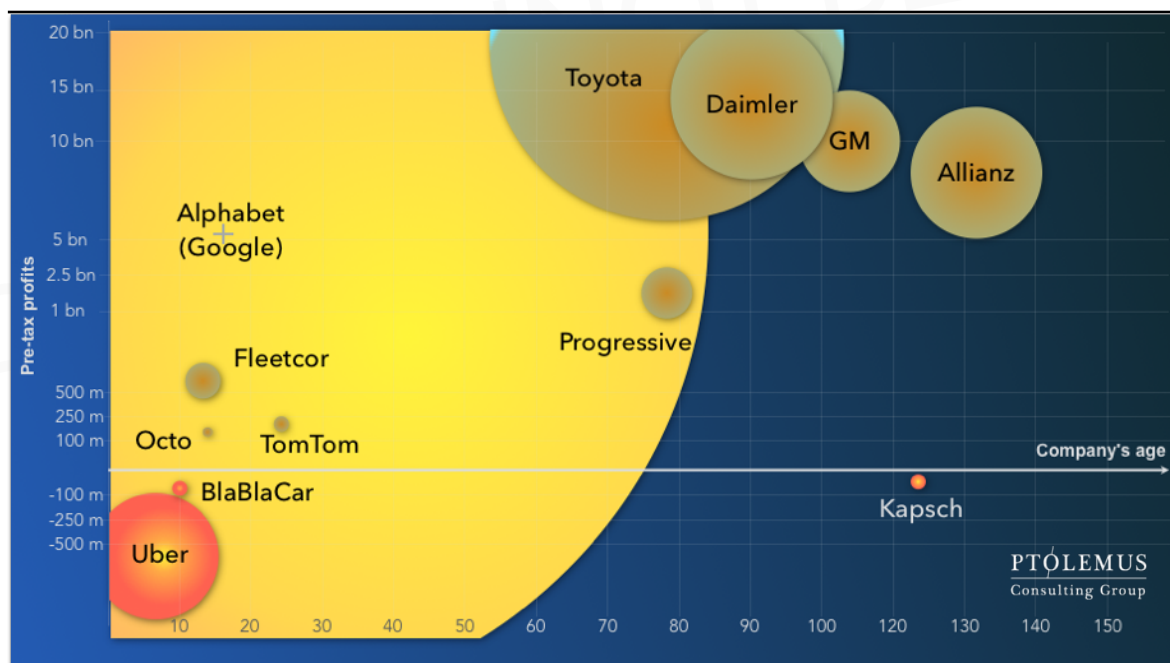
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SEIZE THE OPPORTUNITY, OR SOMEONE ELSE WILL

Throughout its 108-year history, **General Motors** (GM) has faced numerous changes and disruptions to its business model - not least facing bankruptcy in 2009. In 2015, the company posted healthy pre-tax earnings of $10.8 billion, up from $6.5 billion in 2014. Today, along with a number of other OEMs, GM is at the forefront of change in the personal mobility space and in OnStar, it arguably has the most advanced embedded telematics platform of any vehicle manufacturer.

Leveraging its base of 7 million subscribers, GM has forged partnerships with other service providers to deliver UBI, car sharing, Wi-Fi connectivity, eCall, bCall, SVT/SVR and remote diagnostics directly to its customers. GM now has a **market capitalisation of $48 billion.**

Taxi hailing app **Uber** was created in 2009 and officially launched in San Francisco in 2011, having received roughly $1.5 million in initial investment. At its last round of funding in late 2015, Uber was available in over 400 cities across the globe and **valued at $62 billion. The start-up has achieved this** despite never having generated a profit and accumulating debts of $1.6 billion. Uber already has exclusive agreements in place with **FleetCor, ExxonMobil, TomTom, Google, Apple and Tesla**.

Beware the rise of the unicorns!

Note: The size of each bubble corresponds to the company's market capitalisation
Source: PTOLEMUS (Some pre-tax profits and market capitalisations are PTOLEMUS' own estimates)

In our view, this chart summarises perfectly why it is important for mobility companies to embrace the opportunities and confront the challenges posed by connectivity. Financial markets have no respect for heritage and in almost no time, a start up with the right idea can disrupt an industry which has otherwise stood for a hundred years.

FULL FORECAST CONTENT

The Connected Mobility Global Forecast 226-page report includes:

An analysis of the Total Addressable Market (TAM) volume and revenue for each service, provided from the perspective of the service provider to the end user, defined as the Mobility Service Provider (MSP) and its supplier, the Connectivity Service Provider (CSP).

A comparative examination of each market assessing:

- Business models, value chains and key players
- Regulatory and competitive environment
- Connectivity penetration by region
- Key volume and revenue drivers
- Current and future market trends
- Global forecast to 2020 of the volumes and revenues per region

The Forecast also comprises the underlying 2015-2020 outputs of 14 bottom-up forecasts across 18 geographical markets. For each service, the 4,800 line workbook includes:

- The total addressable market in volume and value seen from the MSP and CSP perspective
- The total underlying volumes and revenues by country
- The volume and revenue forecasts for the MSP and the CSP
- The split between OEM and aftermarket volumes and revenues

To access the full study, visit www.ptolemus.com/mobility
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