PTOLEMUS Consulting Group

The Connected Fleet Services Global Study 2018

Big data for big trucks: digitalising transport services

The consulting & research firm for the connected world

Consulting services

- Strategy definition
- Investment assistance
- Procurement strategy
- Innovation management
- Business development
- Deployment

Market research services

Fields of expertise

Mobility services	Car pooling Car sharing Smart parking	Multimodal mobility Ride hailing	Road side assistance Tax refund
Vehicle services & telematics	bCall eCall FMS SVT / SVR	Tracking VRM In-car Wi-Fi Fuel cards	Parking Navigation Speed cameras Traffic information
Usage-based charging	Car As A Service Electronic Toll Collection	Mobility-as-a-Service Road charging	UBI / PAYD Vehicle rental Vehicle leasing
Vehicle data & analytics	AI CAN-bus Crowd-sourcing Data protection	Driving behaviour OBD Predictive analytics	Remote diagnostics xFCD
Vehicle automation	ADAS	Autonomous cars	Autonomous trucks
Enabling technologies	Positioning (GNSS / WiFi / cellular)	M2M / connectivity Smartphones	Telematic devices V2X

Clients across the mobility ecosystem…

Analytics, maps & applications providers

Automotive manufacturers & suppliers

Mobile telecom operators

Telematics solution providers

Fleet & fuel, ITS & regulators

Device & location suppliers

Insurers, aggregators & assistance providers

Banks & private equity investors

All key players in fleet services have started to innovate beyond their core business

*"[Our new toll device] has everything required to cope with future tasks, including **comprehensive vehicle data analytics**"*

Gertjan Breij, MD, **DKV**

- The largest fuel payment service provider in Europe -

*"We know the future is **embedded**"*

Andrés Irlando, CEO, **Verizon Telematics**

- The largest aftermarket telematics service provider in the world -

*"We are currently evaluating machine learning systems to apply **artificial intelligence** tools to the number crunching"*

Jason Krajewski, Manager, **Daimler Trucks North America**

- The largest truck manufacturer in the world -

*"**Telematics for commercial vehicles**, to improve segmentation and effectively price small fleets, is a space where we are enthusiastic about."*

Glenn Renwick, CEO, **Progressive**

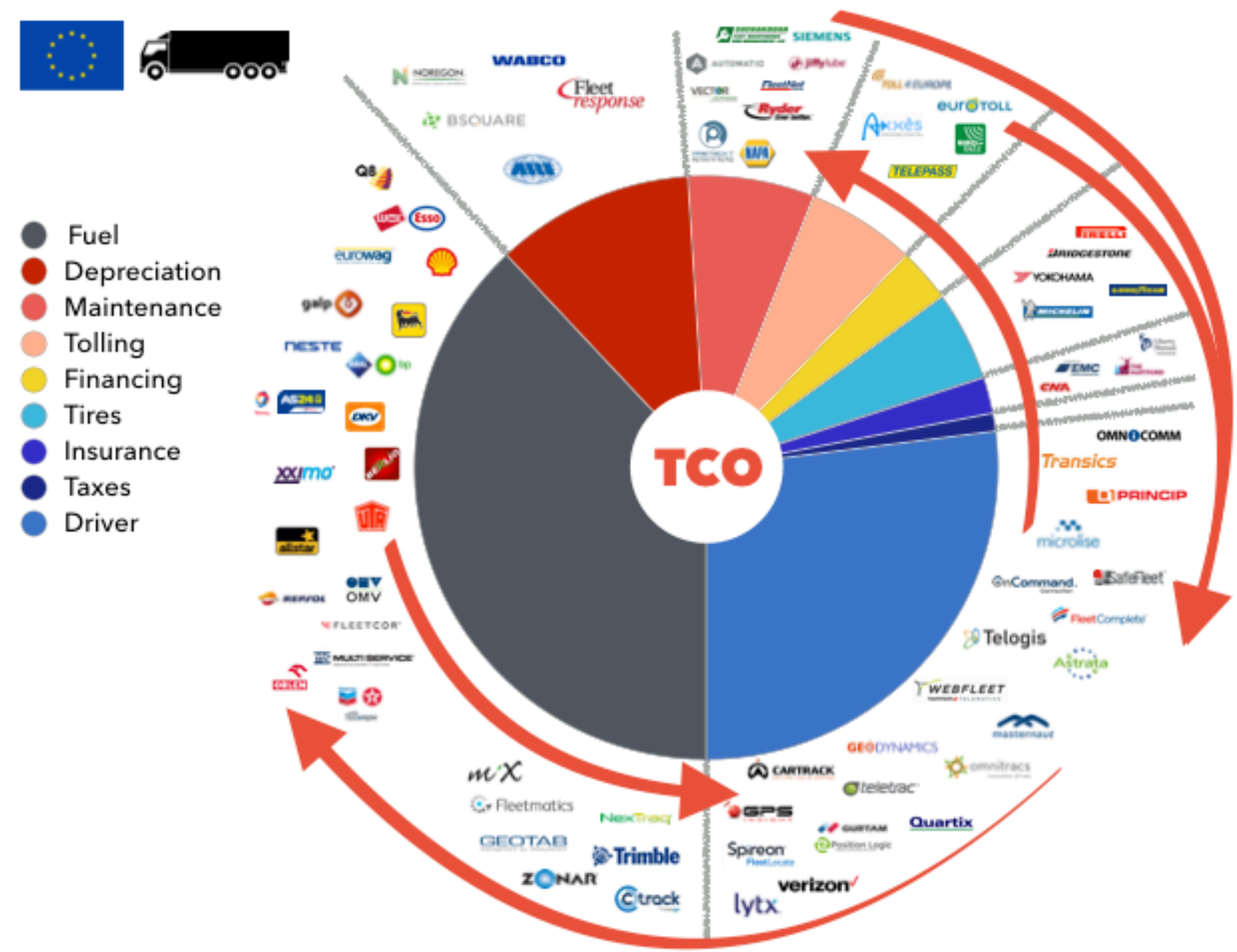
- The largest connected insurer provider in the US -

Multiple stakeholders are redefining fleet services

Cross-sector M&A transactions & partnerships in the commercial market

Cross-silo integration is also rapidly accelerating…

Suppliers attempting to reduce the truck's Total Cost of Ownership

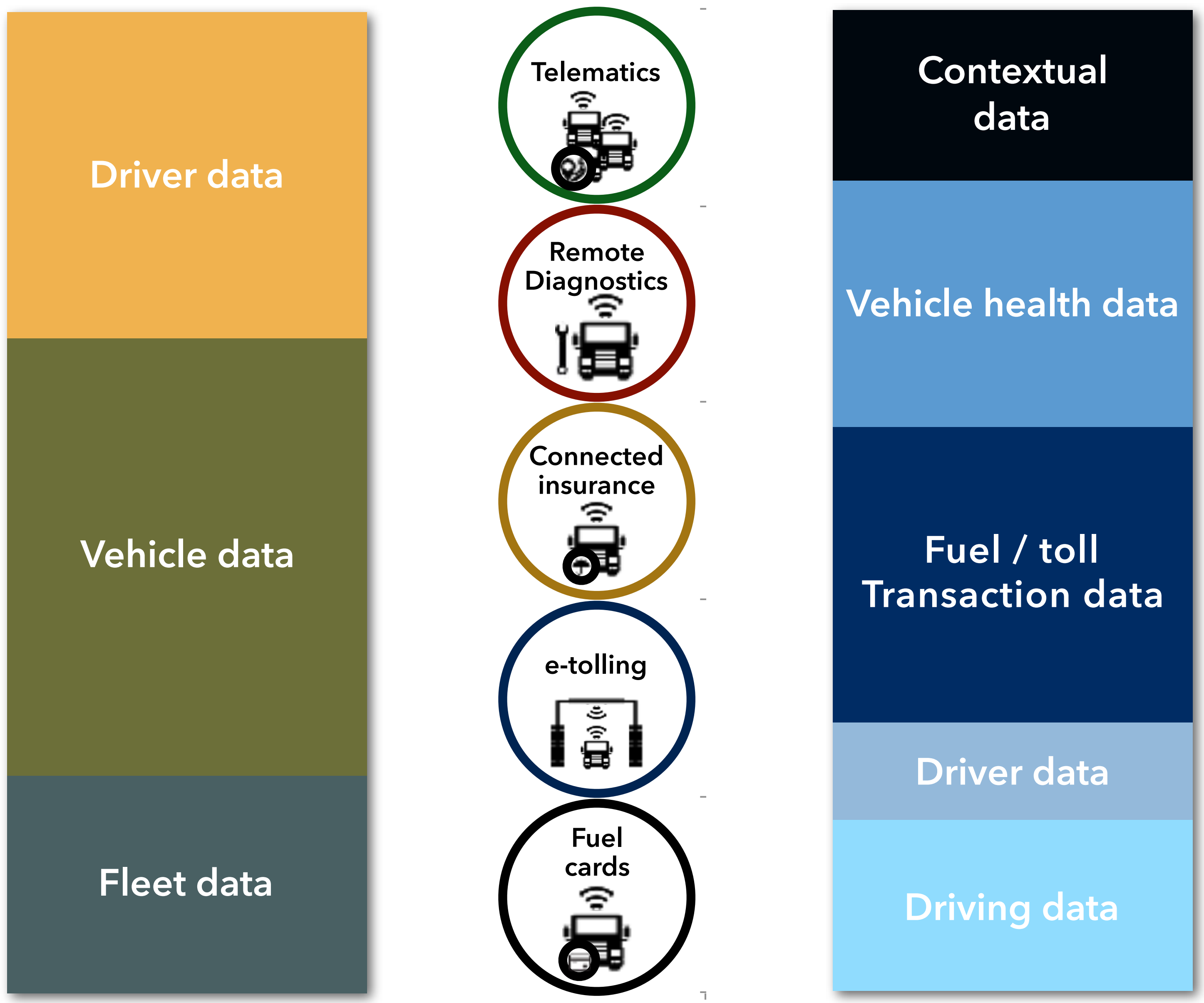


- Each service provider used to focus on its **TCO segment**
- As competition grows, they now need to **cross over**
- The most competitive area today is around **fuel cost** and **driver-related services**
- **TSPs** are also moving swiftly into maintenance solutions
- **Fuel card issuers** are broadening their payment networks with toll solutions
- **OEMs** are integrating aftermarket telematics solutions

Source: PTOLEMUS - Note: Sample vehicle TCO calculated for HGVs in Europe

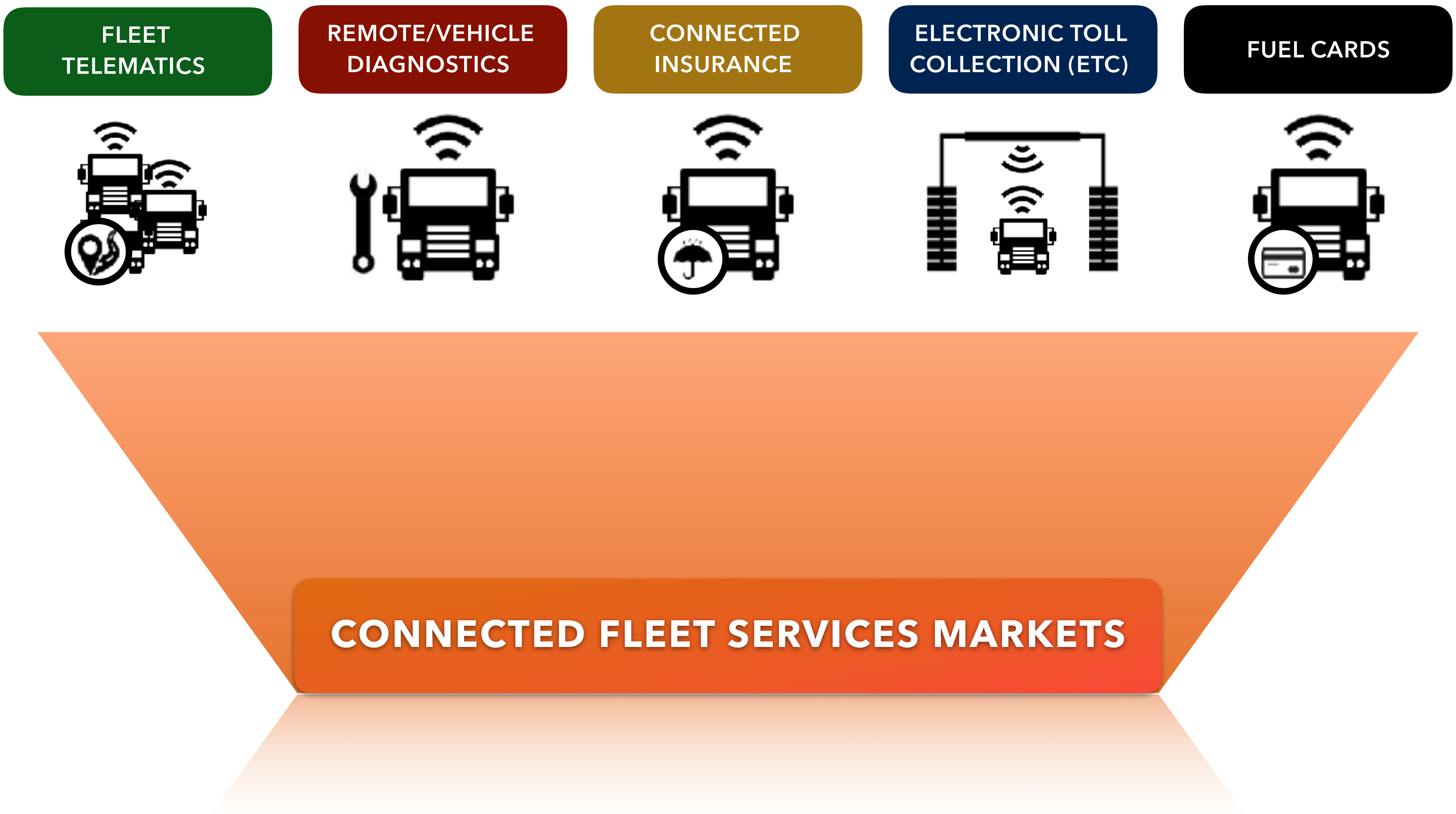
… as the same datasets can be used for multiple applications

Static and dynamic datasets used in powering and digitalising fleet services



- The 5 core services all rely on on a range of data sets, **some static, some dynamic**.
- Certain datasets are crucial to the delivery of any service
- Transaction and driving data are among the most valuable
- Delivering **electronic tolling services requires access to a surprisingly large number of distinct datasets**
- Future services value will be derived from the provider's ability to combine various data segments and apply analytics that will help improve fleet processes

By 2025, 5 distinct fleet industries will merge into a unified $61 billion fleet services market



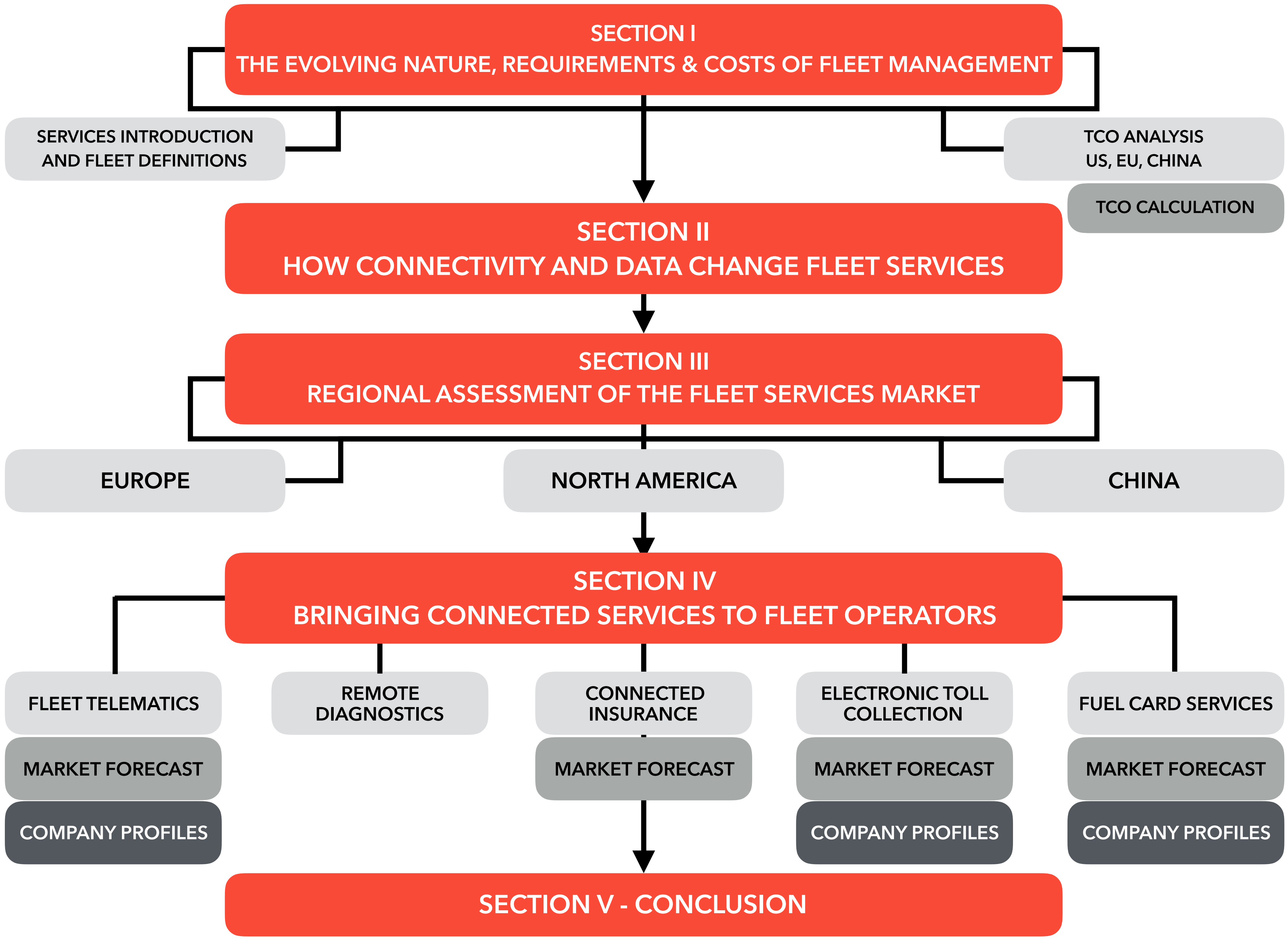
Source: PTOLEMUS

The first study to analyse how the 5 largest fleet TCO components will become integrated in a single market

Not only a market research and a competitive overview, the report is a complete strategic analysis

- The **1st report focused on the convergence of commercial fleet services:**
  - Fleet telematics
  - Remote diagnostics
  - Connected insurance
  - Electronic toll collection
  - Fuel payment services
- **800+ pages of analysis leveraging:**
  - **Over 70 interviews with fleets, OEMs and service providers**
  - 18 months of research conducted by 7 consultants & analysts across Europe, North America and Asia
  - Insights from 30 consulting projects
- Over **50 case studies** including BP, DKV, Fleetcor, Ford, Kapsch, GM, Mix Telematics, Navistar, TomTom, Shell, Total, Verizon, etc.
- **Analysing disruptive forces at play:**
  - Service integration by OEMs
  - Growth of fleet data aggregators
  - Data commoditisation
  - New providers entering the market
- Over **45 supplier profiles** covering the leading players in fleet telematics, fuel card services and electronic tolling
- **Global scope** with an emphasis on Europe, North America and China
- **4 bottom-up market forecasts (2016-2025):**
  - **Fleet telematics**: Global
  - **Electronic tolling**: Global
  - **Connected fleet insurance**: Global
  - **Fuel card** services: Europe and North America

A clear methodology to deliver actionable insights across 5 silos



Source: PTOLEMUS

The report responds to many critical questions such as:

How big is the opportunity in the fleet telematics, fuel card, tolling and connected insurance market?

What are the strategy and offerings of the 45 biggest players in fleet services?

Will truck manufacturers take over all fleet services?

How will the penetration of connected fleet services evolve in each country?

Which datasets will become commoditised?

How much will the connected Insurance market be worth in 2025?

Will all fleet services merge into one?

What are the key partnerships that matter?

How will fleet data aggregators impact the fleet market?

How will the average fleet telematics ARPU evolve?

7 experts conducted our research and analysis including:

Frederic Bruneteau, Managing Director, Brussels

Mr. Bruneteau has accumulated 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.**

He has become **one of the world's foremost experts in the field of telematics,** quoted by numerous publications such as *The Economist* and *the Financial Times*. He has spoken at more than 50 international conferences on the subject.

Within PTOLEMUS, he has **led 70 assignments related to connected & autonomous vehicle services** for leaders such as Aioi Nissay Dowa, Allianz, AXA, BP, Bridgestone, CNES, ENI, Generali, HERE, Fleet Complete, Kapsch, Liberty Mutual, Michelin, Octo Telematics, Pioneer, Qualcomm, Thales Alenia Space, Toyota and WEX Fleet.

Frederic performed a complete review of this report.

Thomas Hallauer, Research Director, London

Thomas Hallauer has gained 15 years of strategy, research and marketing experience in the domain of telematics and location-based services from companies such as **Admiral, DriveFactor, Liberty Mutual, Michelin, Mobile Devices, Octo Telematics and Wunelli.**

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.

Thomas also published the **UBI Global Study 2016 and reviewed the Connected Insurance Analytics Report,** interviewing dozens of insurance companies.

Thomas led the research, writing and publishing of this report.

Matthieu Noël, Manager, Paris

An automotive engineer, Matthieu Noël has gained **6 years of consulting experience in the automotive sector** primarily helping car manufacturers such as **BMW, PSA Peugeot-Citroën, Renault-Nissan** and **Faurecia**.

Within PTOLEMUS, he has advised numerous clients such as **Admiral, Airbiquity, Allianz, Bridgestone, HERE, Kapsch, Michelin, Octo Telematics** or **Vodafone Automotive** in defining and implementing their strategy.

He holds expert knowledge of domains such as connected vehicle data & analytics, OBD dongles, vehicle repair and maintenance, fleet telematics, fuel card services, ETC, UBI, autonomous vehicles, etc.

For this report, **Matthieu contributed to the building of the global fleet telematics and fuel card market forecasts.**

Justin Hamilton, Consultant, London

Justin has more than 5 years of **experience within the transportation, connected mobility and electronic tolling markets**. He conducts quantitative and qualitative analysis of global trends and developments in mobility, electronic road pricing and intelligent transport solutions.

Before joining PTOLEMUS, Justin launched Road User Charging Magazine and is frequently published in journals such as *Thinking Highways*, *Tolling Review* and *Tolltrans*.

His recent projects included defining the European fleet services strategy and go-to-market plan of a major provider of intelligent transports systems. He has also **helped one of the world's largest fuel card issuers develop their future strategic direction**.

Justin is the main author of the report.

An unparalleled analysis of the fleet market in 650 pages

Report structure

I. THE EVOLVING NATURE, REQUIREMENTS & COSTS OF THE FLEET MARKET

A. Introduction and definitions
1. The fleet segments we focus on in this report
2. We segment the fleet market along five lines
3. What constitutes fleet management today?
4. How fleet services are used across vertical markets

B. Mapping the total cost of ownership (TCO) across fleets
1. Identifying the total cost of operation across the CRT/OTR and maintenance & utilities segments
2. The TCO for HGVs and LCVs in Europe
3. TCO calculation for Class 1-5 and 6-8 vehicles in the US
4. The cost of operating LCVs and HGVs in China

II. HOW CONNECTIVITY & DATA CHANGE FLEET SERVICES

A. The era of mass connectivity and big data among fleets

B. OEMs' diverging approach to fleet services
1. Open loop services model
2. Closed loop services model

C. The growing commercial power of data integration and analytics

D. How data is driving the evolution of fleet services

III. REGIONAL ASSESSMENT OF THE FLEET SERVICE MARKET

A. EUROPE
1. Examination of current market conditions
2. Cost of fleet telematics
3. Key market drivers in fleet services provision
4. Service index and maturity scale
5. Key stakeholders and landscape evolution
6. The role of the OEMs in building fleet services

B. NORTH AMERICA
1. Examination of current market conditions
2. Key market drivers and regulatory issues
3. Key stakeholders and landscape evolution
4. The role of OEMs in developing fleet services

C. CHINA
1. Examination of key market drivers
2. Offering, Stakeholders & landscape evolution
3. Role of OEMs in building fleet services

IV. BRINGING NEW SERVICES TO FLEET OPERATORS

A. The golden era of fleet telematics
1. Background and recent market developments
2. Service integration and new players entering the market
3. Value chain
4. Systems architecture and data requirements
5. Typical devices in use
6. Delivery recommendations
7. Template graph from Fuel card slides - led by TCO split per region
8. Fleet telematics global forecast

B. Using vehicle data to reduce spend on maintenance and breakdowns
1. The benefits and opportunities of remote diagnostics service
2. Remote diagnostics solutions for light commercial vehicles
3. Remote diagnostics solutions for heavy commercial vehicles
4. The impacts of OBD dongles on vehicle safety
5. The value chain of remote diagnostics
6. Systems architecture & data requirements

C. The struggling growth of connected fleet insurance
1. Background & recent market developments
2. Technology trends and devices used in the truck sector impacting safety
3. The connected insurance value chain
4. Systems architecture & data requirements
5. Integration with other services
6. Forecasting the Connected Insurance market in LCVs and HGVs
7. Delivery recommendations

D. Electronic toll collection moves out of the shadows
1. Background & recent market developments including key geographic markets
2. Value chain
3. Systems architecture & data requirements (including certification requirements for new drivers, etc.)
4. Typical devices in use including data generated/functionalities, unit costs, etc.
5. Level of existing integration with other fleet services
6. Recommendations on how to deliver service i.e. is this a host service or an API?
7. TAM, ARPU, costs and growth forecasts

E. Fuel cards: the sleeping giants of fleet services
1. Background and recent market developments
2. The fuel card value chain
3. Systems architecture, data requirements and typical devices in use
4. Integration with other services
5. Level of existing integration with other fleet services
6. Growth forecast for fuel card services

V. CONCLUSIONS

VI. COMPANY PROFILES

Unequaled depth of the competitive analysis

18 ranked fuel card issuers

150 ranked TSPs (sample)

10 e-toll providers ranked

45 key players profiled and analysed

Fuel card issuers

- ARAL
- bp
- BERLIO
- E100
- WAG
- OMV
- COMDATA
- radius
- FLEETCOR
- Edenred
- eni
- usbank
- UTA
- DKV
- TOTAL

Telematics service providers

- MiX TELEMATICS
- GEOTAB
- Telogis
- verizon
- Fleetmatics
- NexTraq
- omnitracs
- lytx
- ABAX
- microlise
- GPS INSIGHT
- masternaut
- arvento Mobile Systems
- TOMTOM TELEMATICS
- Transics
- Astrata
- G7
- VIASAT SYSTEMS
- Ctrack
- ocean
- Business Services orange
- 中交兴路 SINOIOV

ETC providers

- Axxès
- BRO BIZZ
- eurotoll
- TELEPASS
- TOLL4EUROPE
- DKV
- TOTAL
- UTA
- eurowag

4 global, 2015-2025, bottom up forecasts by vehicle type

FLEET TELEMATICS

Vehicle segments

Large commercial vehicles (HGVs)

Light commercial vehicles

Scope and output

- HGVs, LCVs and company cars in use
- Addressable market for fleet telematics service providers
- Volume of commercial vehicles equipped with fleet telematics
- Global penetration of fleet telematics per vehicle type
- Revenues generated by fleet telematics providers by vehicle type

Regions covered

European Union
- France
- Germany
- Italy
- Poland
- Spain
- UK
- Rest of EU

Russia

Rest of Europe

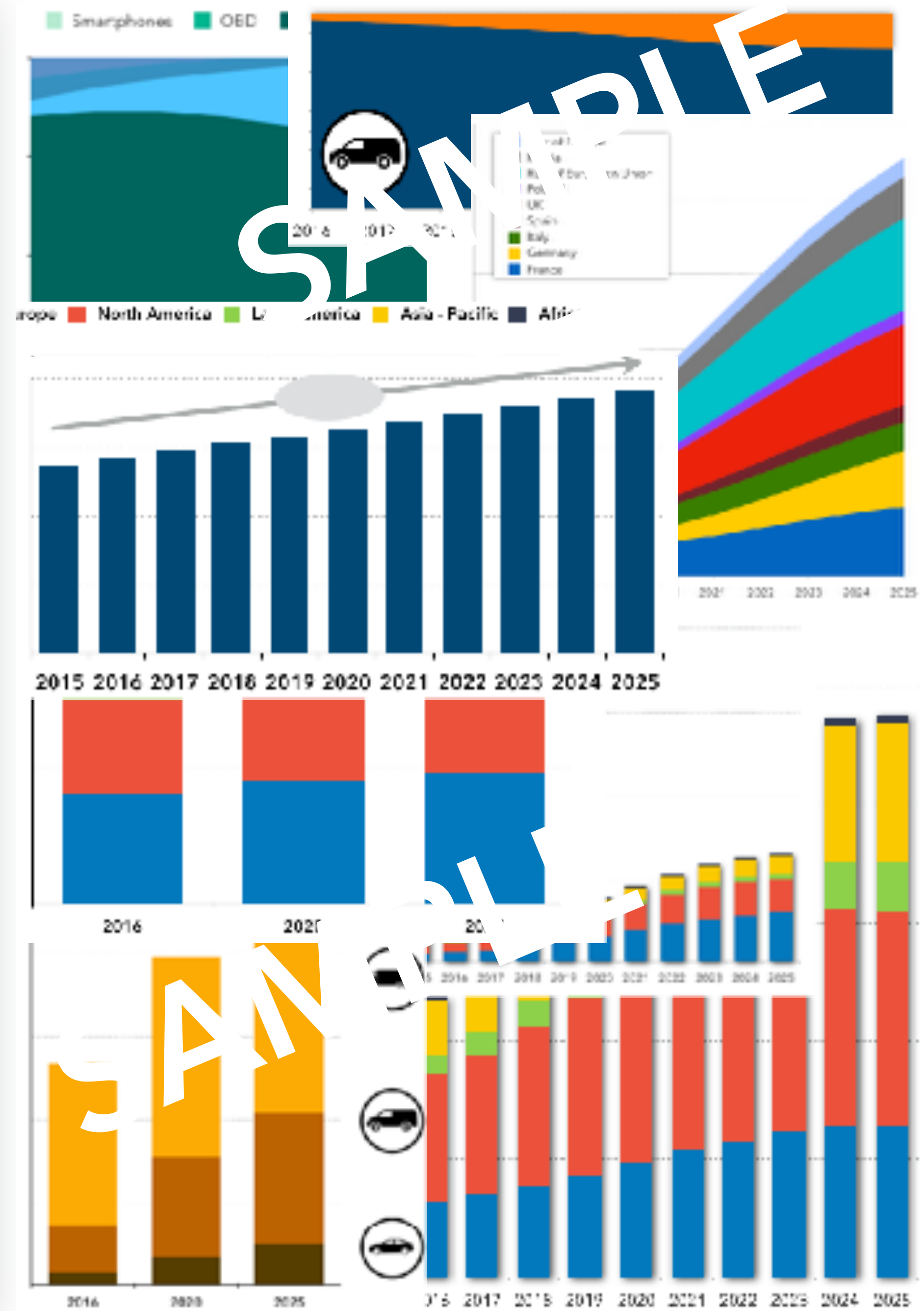
North America
- USA
- Canada

Latin America

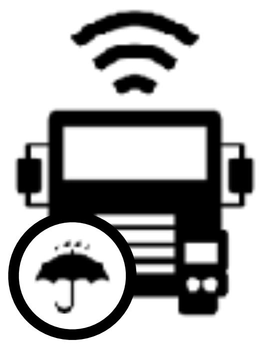
Asia - Pacific
- China
- India
- Japan
- Australia
- Rest of APAC

South Africa

Rest of Africa



4 global, 2015-2025, bottom up forecasts by vehicle type



CONNECTED INSURANCE

Scope and output

- Vehicles in use equipped with OEM connectivity
- Commercial vehicles with connected insurance coverage by vehicle type
- Commercial vehicles with connected insurance coverage by programme type:
  - Standalone (brought by insurers)
  - Aftermarket (brought by TSPs)
  - In-line fitted (embedded by OEMs)
- Connected insurance adoption
- Connected insurance written premiums
- Impact of connected insurance discounts on GWP
- Impact of ADAS on premiums

Regions covered

European Union
- France
- Germany
- Italy
- Spain
- UK
- Rest of EU

Russia

Rest of Europe

North America
- USA
- Canada

Latin America

Asia - Pacific
- China
- India
- Japan
- Australia
- Rest of APAC

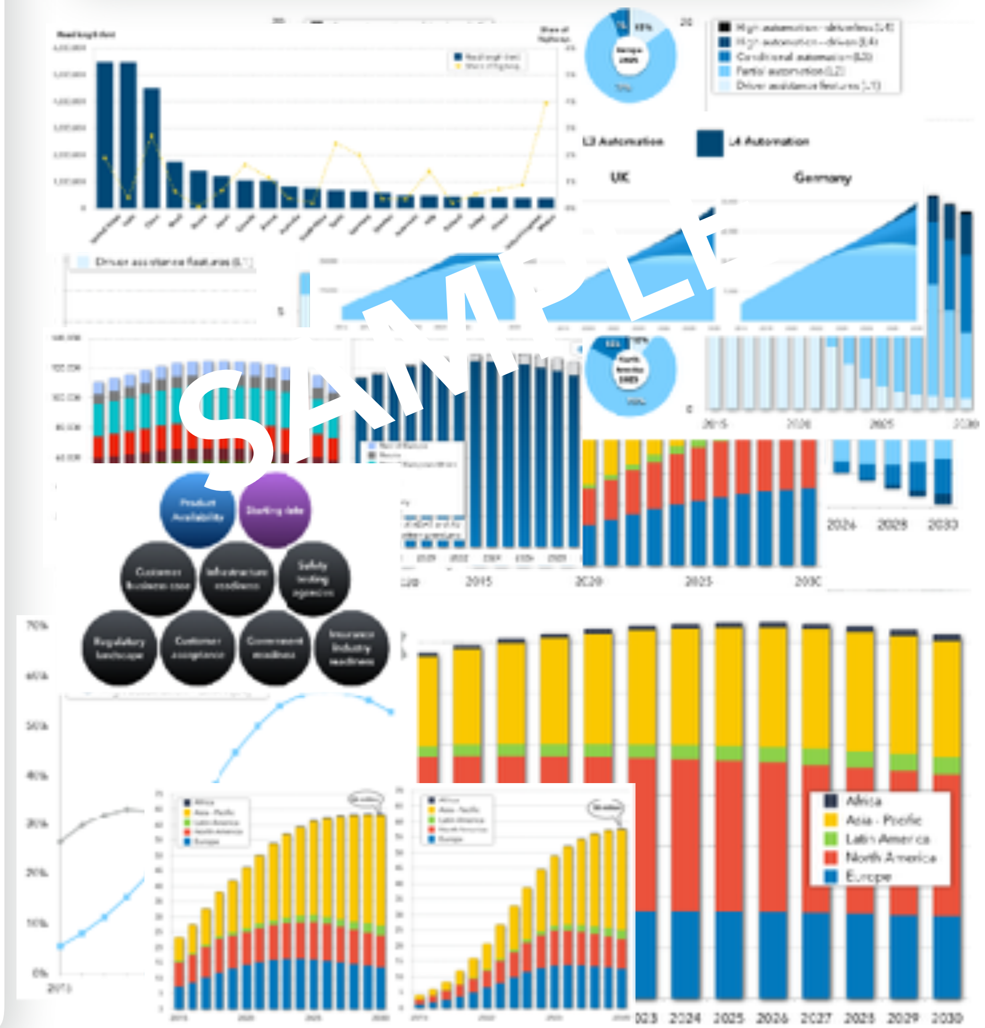
South Africa

Rest of Africa

Vehicle segments

Large commercial vehicles (HGVs)

Light commercial vehicles



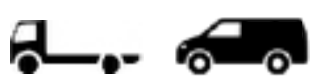
4 global, 2015-2025, bottom up forecasts by vehicle type

ELECTRONIC TOLL COLLECTION (ETC)

Vehicle segments

Large commercial vehicles (HGVs)

Light commercial vehicles



Scope and output

- ETC subscription volumes by technology type:
  - DSRC
  - GNSS
  - RFID
  - Infrared
- ETC subscription volumes by vehicle type and by country
- Revenues generated by ETC in each country and by vehicle type
- Country by country assessment

Regions covered

Europe
Austria
Belgium
Croatia
Czech Republic
Denmark
Finland
France
Germany
Greece
Hungary
Ireland
Italy
Netherlands
Poland
Portugal
Slovakia
Spain
Sweden
United Kingdom
Norway
Russia
Switzerland
Turkey

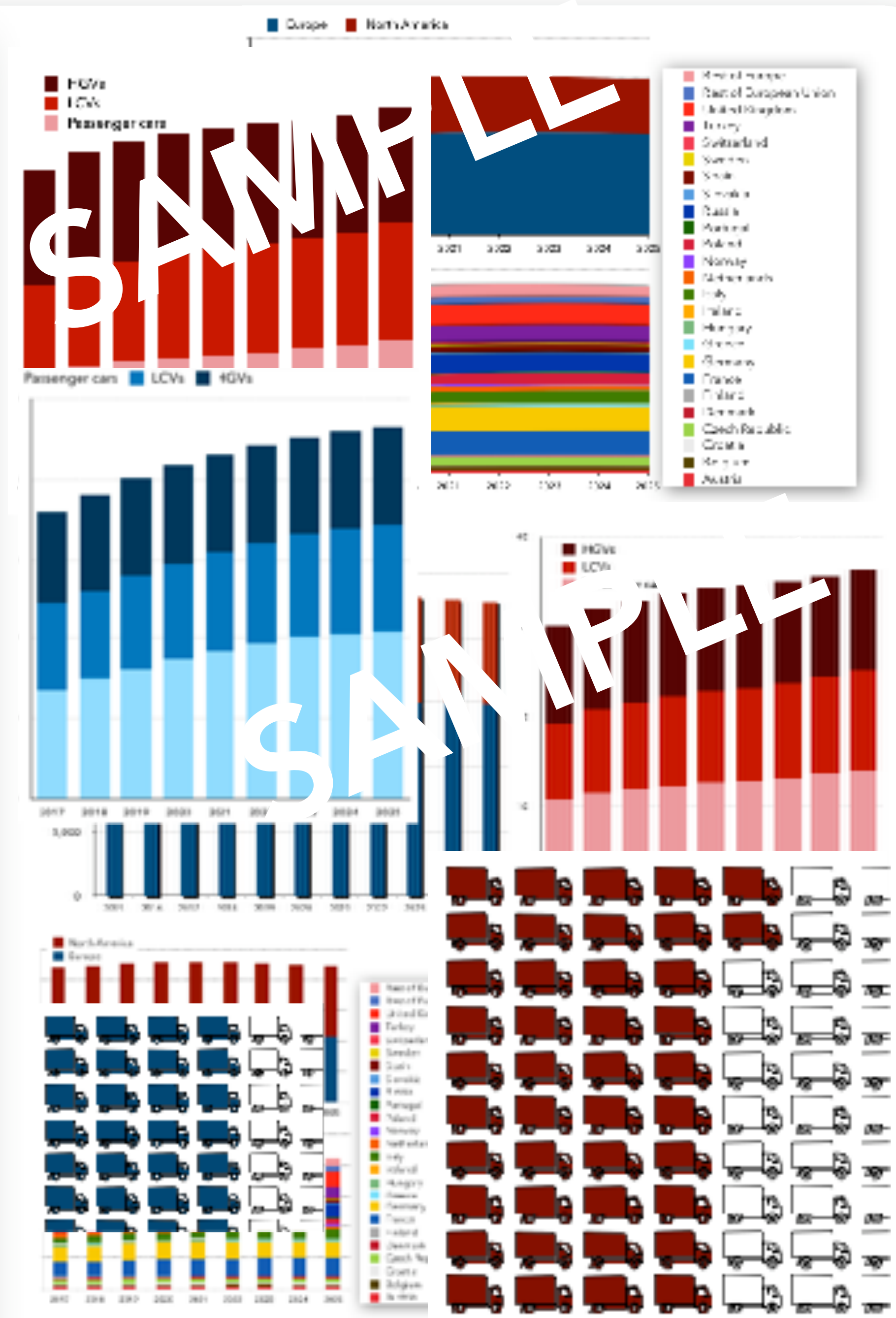
North America
US
Canada

Latin America
Brazil
Mexico

Africa
South Africa

Asia
China
India
Indonesia
Japan
Philippines
South Korea

Oceania
Australia
New Zealand



4 global, 2015-2025, bottom up forecasts by vehicle type

FUEL CARDS

Scope and output

- Number of issued fuel cards
- Number of used fuel cards by region
- Number of issued fuel cards by vehicle type
- Penetration of fuel cards by region and vehicle type
- Fuel card revenues* by region and vehicle types

Regions covered

Europe

Austria
Belgium
Croatia
Czech Republic
Denmark
Finland
France
Germany
Greece
Hungary
Ireland
Italy
Netherlands
Norway
Poland
Portugal
Russia
Slovakia
Spain
Sweden
Switzerland
Turkey
United Kingdom
Rest of European Union
Rest of Europe

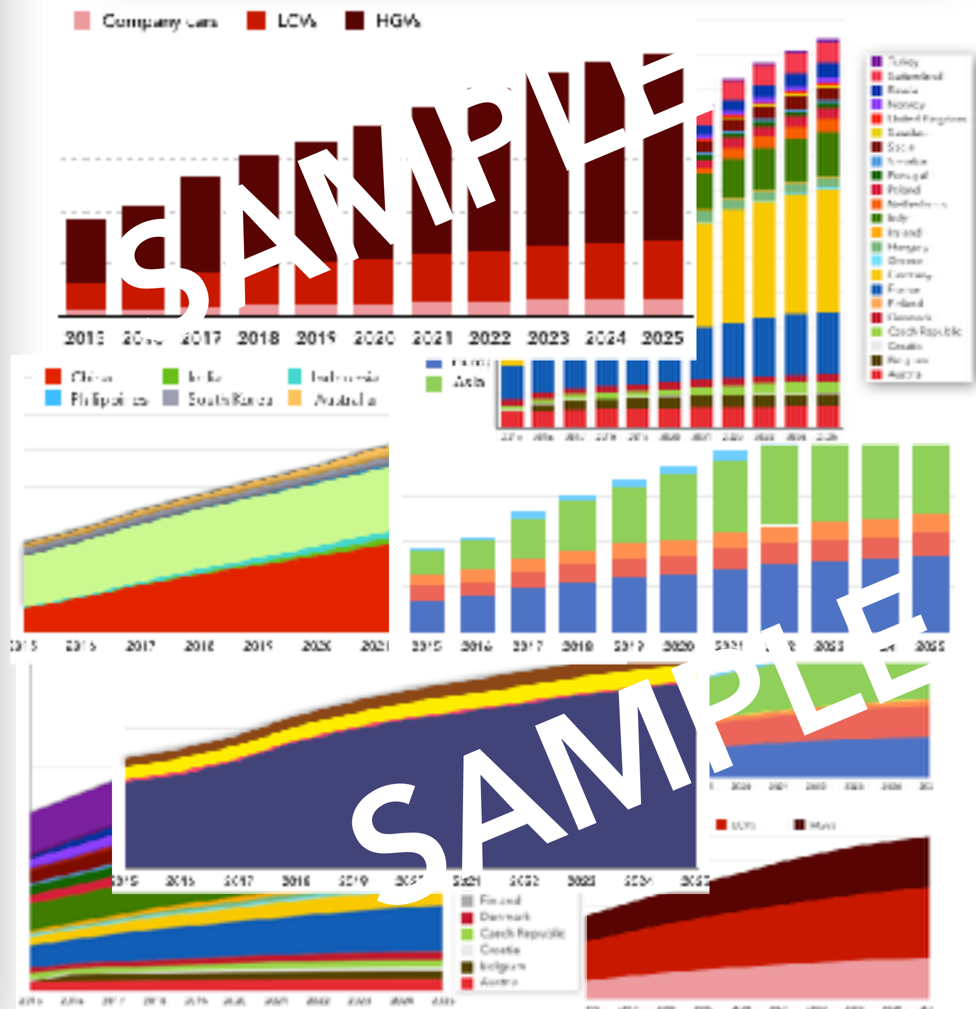
North America

US
Canada

Vehicle segments

Large commercial vehicles (HGVs)

Light commercial vehicles



Source: PTOLEMUS - Note: * Excluding additional services

The CFS Global Study: a single, worldwide company licence

Reinventing fleet management

Reports	Full Study with market forecasts	Full Study with slides* & market forecasts
Contents	• **650**+-page study (PDF format, password-protected) • **45** company profiles: Telematics service providers, fuel card issuers and e-toll providers • **4** 2015-25 market forecast outputs with graphs (Excel format, password-protected)	• **650**+-page study (PDF format, password-protected) • **45** company profiles: telematics service providers, fuel card issuers & e-toll providers • **4** 2015-25 market forecast outputs with graphs (Excel format, password-protected) • Complete study in abridged slide format (PDF)
Company-wide licence	**€ 5,995** *Approx. $7,070*	**€ 7,995** *Approx. $9,450*

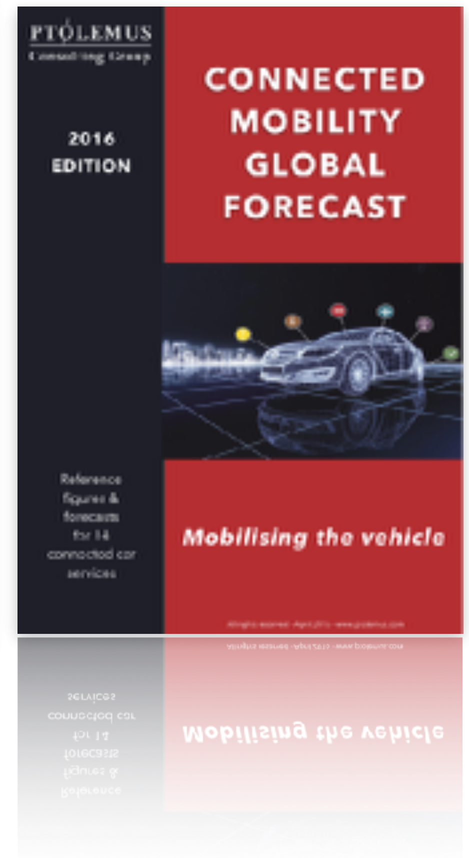
For more information and to order the study, contact thomas@ptolemus.com

PTOLEMUS brings unparalleled depth of knowledge in connected and autonomous vehicle services

The reference report on UBI, quoted by The Economist, the Financial Times and the Wall Street Journal

The most comprehensive research on insurance analytics

The most thorough analysis of ADAS and AVs



Referenced figures and forecasts for 14 connected car services

The reference on vehicle payment services

Recognised research globally

They mentioned PTOLEMUS research

Commercial fleet services are being reinvented by connected vehicles

- Today, each of the fleets' biggest **cost centres is dealt with individually**.
- This will not last: **driver, fuel, maintenance, insurance and tolling costs will increasingly be optimised together, using the same data**
- **New players are entering**, from Amazon, FleetCor to Tesla and Uber
- **Who is best positioned** to control this new industry? What will it take to compete in 5 years?
- The **Connected Fleet Services Global Study** analyses each sector individually and highlights the cross-over opportunities
- It offers you not only a competitive analysis but a real **set of tools to grow your business**

PTOLEMUS Consulting Group

Strategies for Mobile Companies

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