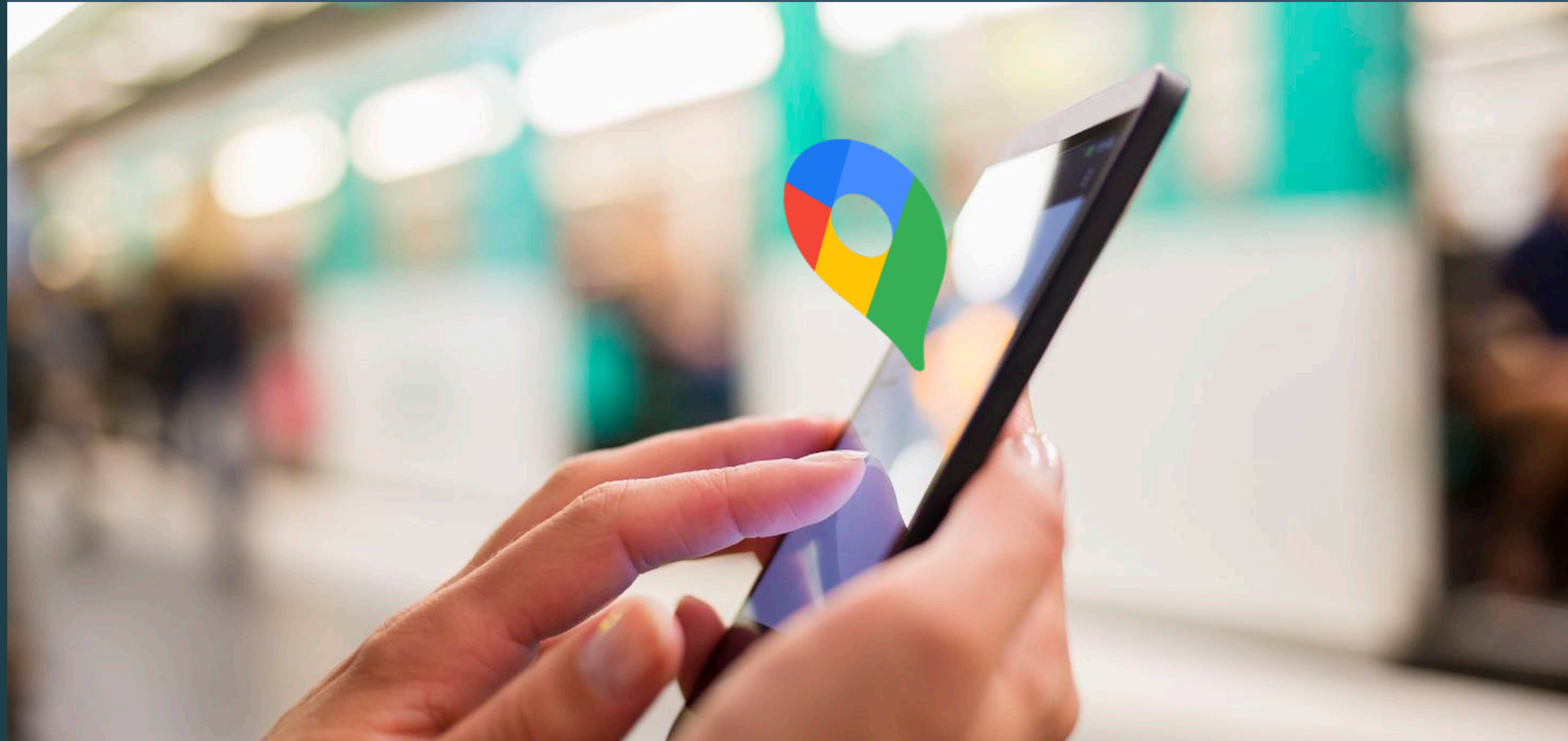


# GOOGLE IN MOBILITY

## Report

**FREE  
ABSTRACT**

The first analysis  
of Google's  
future urban  
mobility strategy



*From Google Maps to Google MaaS  
Will Alphabet take over mobility?*



# The rumours of Google's death have been greatly exaggerated



As a former executive of TomTom, which almost died as a result of Google's move to free navigation on smartphones, I have been always been paying extreme attention to Google's steps in mobility.

Since the launch of Google Maps in 2005, Alphabet has made increasing inroads in the domain of mobility.

Its free, advertising-based model has *de facto* killed or forced the repositioning of many mobility stakeholders, from MiTac, Navigon, TomTom to HERE and many app developers from Maporama, MapQuest, NNG NavNGo to Telenav, Telmap, Sygic, ViaMichelin, etc. RIP.

Is it now the turn of MaaS platforms (CityMapper, Siemens, Whim...) and ticketing providers (Conduent, Cubic, etc.)?

In this research, we tracked Google's every move in urban transport and were impressed to see how close they are now to offer end-to-end multimodal mobility services to end-users.

I have often compared Google to the sea level. You can erect barriers but you cannot resist for a long time to rising water levels as it surrounds you. At some point you need to adapt... or die.

Despite the EU's Digital Markets Act, Google has the force of being present in virtually all smartphones in the world (save China) and is the default mapping, routing and navigation app for the planet.

Given that MaaS will come from smartphones and that Google Maps is free, nobody will be able to resist Google for long.

Thus despite its perceived lagging position in AI, Alphabet is ready to make the connection between the digital and the physical transportation world.

Do not believe my words, just read this report! And act fast!



# The first investigation of whether, how and when Google will take over the urban mobility market

- A **130-page analysis of Google's current and future strategy in the urban mobility market**, based on:
  - **10** years of constant market surveillance
  - PTOLEMUS' mobility experience with nearly **200** consulting assignments across the transportation ecosystem
  - **8** months of research and analysis
  - Interviews with **22** transport stakeholders in Europe and North America
- An in-depth analysis of Alphabet's successes in mobility to date
- An analysis of Google's partnerships and actions in urban mobility
- An assessment of Google's strategy and initiatives in the mobility field, including
  - An analysis of its key mobility assets: Google Maps, Google Wallet, Waze and Waymo
  - A review on how Google Maps has integrated payments
- An analysis of Google Maps' key sources of revenues
- An assessment of how companies integrate and what are the benefits of Google Maps to the mobility partners programme
- A detailed analysis of 4 strategy alternatives that Google could adopt to enter the urban mobility market, including booking and ticketing & payment for Mobility-as-a-Service (MaaS)
- An evaluation of the future MaaS evolution scenarios, including customers' segments needs and future drivers of demand and supply
- An assessment of the future role, position and strategy of Google in the urban mobility services market based on
  - The 3 main evolution options we identified and their respective likelihood to transpire
  - A forecast until 2030 of Google's EBITDA generated by MaaS in Europe in the 3 main strategy alternatives



*More than just market research.*

*In-depth strategic analysis and a complete tool to help your organisation make the right decision in the MaaS market*



# Today, no mobility player offers Mobility-as-a-Service on a large scale but we believe Google will within the next 2 years

## MaaS has not taken off...

- Alternatives to the use of private vehicles in urban areas are rapidly gaining traction due to increased traffic congestion and the need to reduce emissions and pollution in general
- Because it unifies all other modes of transport, **MaaS is seen as one of the most prominent alternatives and almost every big city has launched an initiative to make it happen**
- **Still, more than 7 years after the ITS World Congress in Bordeaux where the MaaS concept was invented, the market has not taken off**
  - To date, the supply remains limited as no player offers a fully integrated solution\* across multiple regions and transport modes
  - Efforts remain regional depending on the structure of the transportation sector in each country / region / city
  - Due to the lack of multi-modal / multi-operator integration, the demand remains subdued, which makes the champions of the concept, e.g. Whim and CityMapper fragile
- **However, the technology has never been so mature for mobility to become cleaner, safer and more accessible**
  - Smartphones are becoming ubiquitous for mobile access to online platforms and now for payments in the physical world

## ... but this is largely a supply issue that Google could solve

- Digital platforms - leveraging cloud computing and AI - are integrating connected transport modes to offer real-time advice on the best route to reach a destination
- Emerging battery-powered micro-vehicles are becoming the preferred mobility mode for first/last mile and short trips, notably in urban areas
- So far, **Public Transport Operators (PTOs)**, supported by platform suppliers such as Siemens, have created the most relevant initiatives regarding multi-modal integration, but **lack international scalability and often offer a poor customer experience**
- There are many successful examples of mobility delivered as a service for a single transport mode
  - Players like Moovit, Uber and FreeNow have been able to create scalable international solutions but still struggle to integrate public transport
  - However, **we have not yet seen scalable MaaS platforms integrating public transportation with shared mobility in multiple countries**
- **Based on its continuous progress in the last 20 years, Google appears as the best positioned player to deliver such a proposition**



**This report is the first one to analyse whether Google will take over the urban mobility market by delivering a mobility service globally**



# In this report, we respond to 12 questions that are absolutely crucial to understand the future of Google in urban mobility





# Google will dominate the city mobility market by integrating ticketing & payment, enabling the end-to-end mobility experience in 1 app

- **Google has become the number 1 digital mobility services providers in the world**

- Google has built the number 1 franchise in digital mobility, Google Maps
- It has *de facto* killed competition by offering its services for free and acquiring its most threatening competitor, Waze\*
- It has aggregated the largest static and dynamic data related to urban mobility and public transport
- It has managed to make all largest mobility providers dependent on its APIs
- It is gradually creating a natural duopoly (with Apple) in our cars through Android Auto and GAS

- **Fundamentally Google is one of the very few operators that has found a sustainable business model in digital urban mobility services**

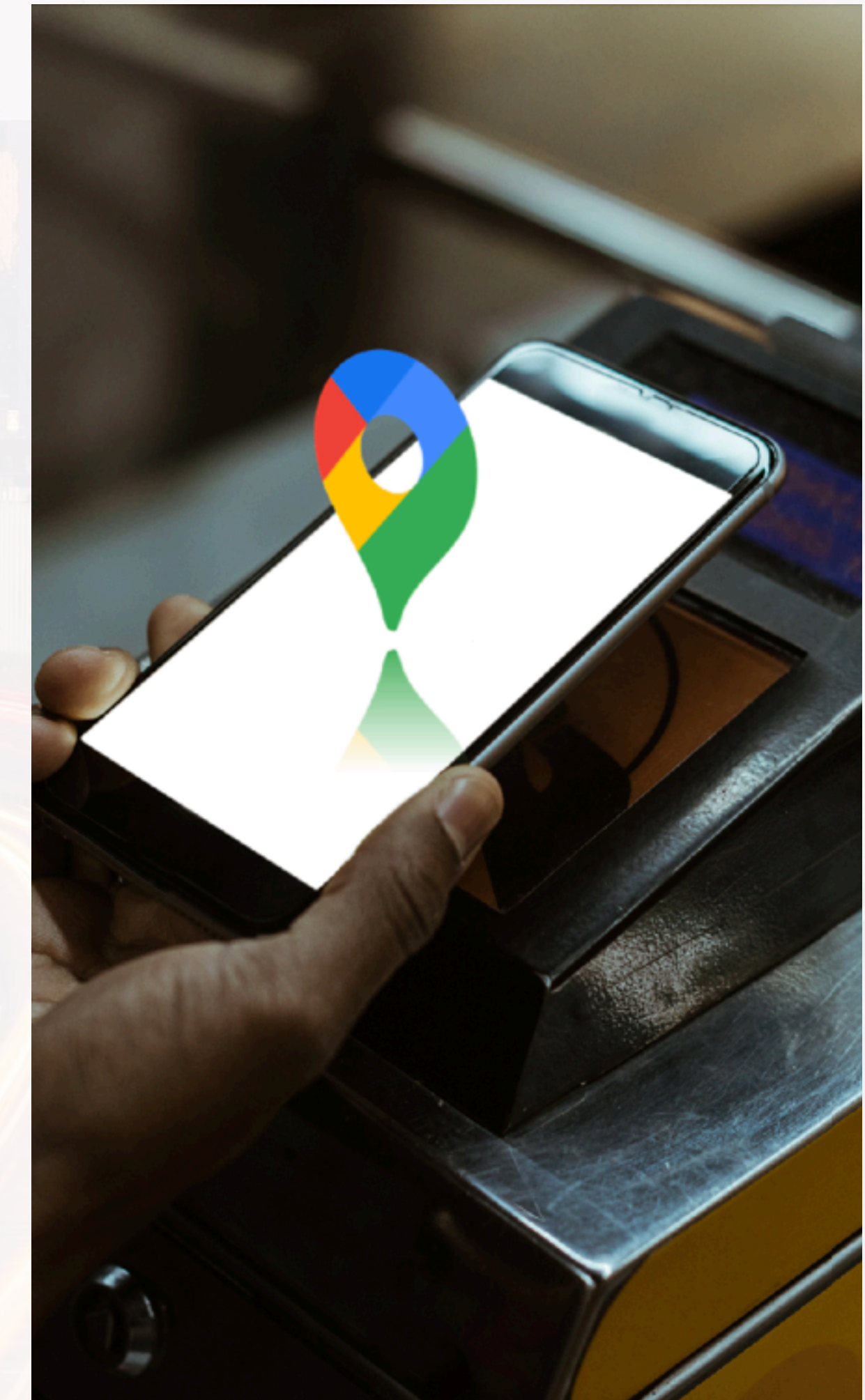
- Thanks to its advertising model and its APIs, Google has an economic model today
- Given Alphabet's opaque financial statements, it is not possible to ascertain whether its mobility services are profitable

- Thanks to the commission model on Google Pay, any transport payment will generate commissions for Google

- In any case, Google has understood the vital importance of catching users / eyeballs to feed its advertising machine
- Today none of Apple, Didi, Uber, Lyft, Moovit and Via / CityMapper is profitable in its urban mobility business
- PTOs are operating under low or negative margins and are generally subsidised
- Alibaba, with its Alipay unit, could have been a major contender but it is now split into 6 units
- Today, Google Maps has the most comprehensive global app to commute in all transport modes

- **We expect Google to integrate booking, ticketing and payment for most transport modes in the next 3 years, initially in Europe and North America**

- In European cities, it will focus on the integration of public transport and shared mobility
- In North American cities, it will focus on car-related services including parking, tolls, etc.

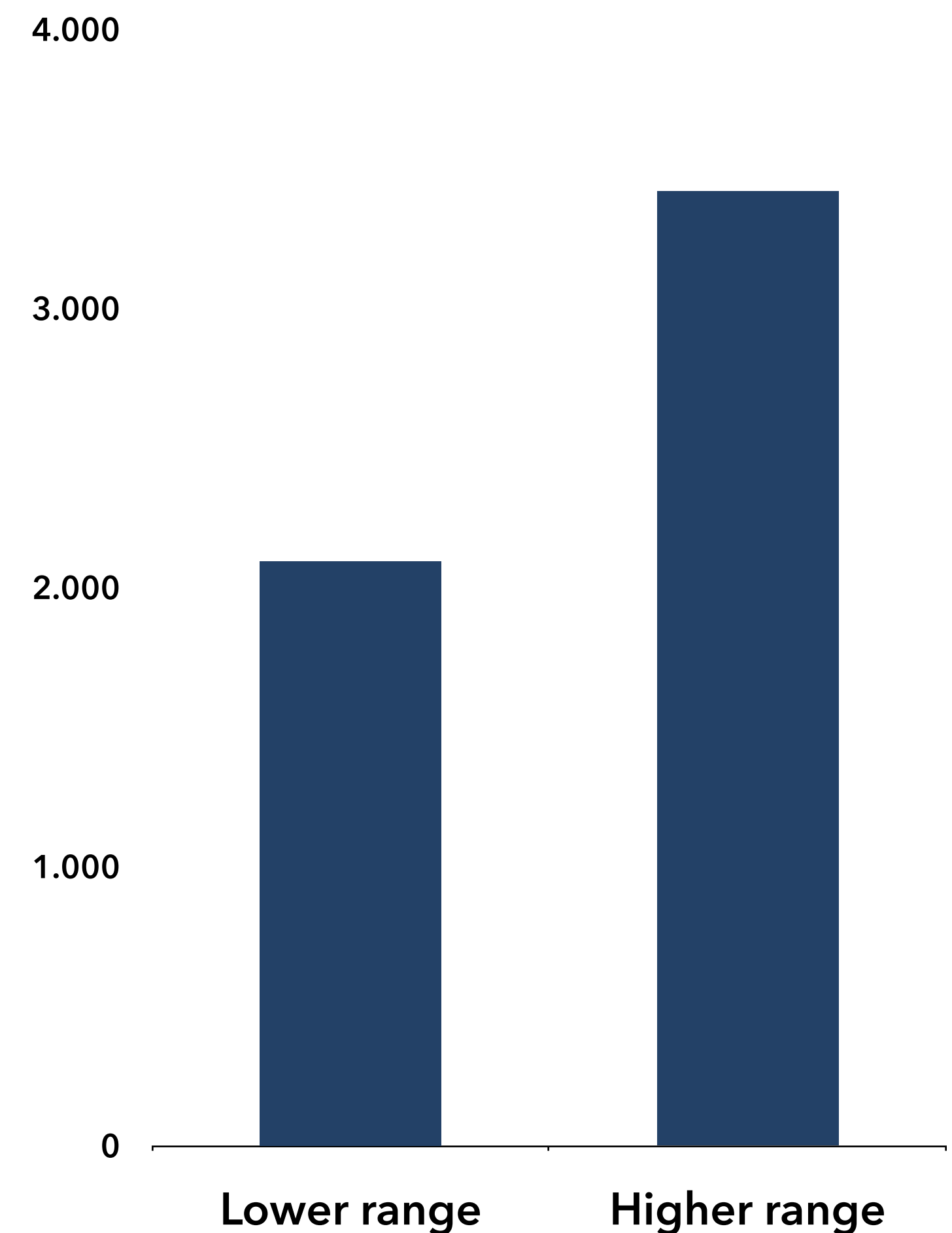




# Moving into ticketing & payments represents for Google an additional EBITDA from now until 2030 of 2 to 3.4 billion

- **Google has already achieved what any mobility operator would love**
  - The largest customer base that actively uses the app to search for options to reach its destination
  - It has integrated real-time information on the most relevant mobility operators in almost all geographies
- By integrating ticketing & payment into Google Maps, Google would further develop its position in the urban mobility market
- We estimate that by integrating ticketing & payment, Google would generate an **accumulated EBITDA from €2 billion to over €3.4 billion between 2023 and 2030**
- It would generate direct revenues via commissions paid by users to PTOs or Mobility Service Providers when using transport modes in their respective areas
- The scale of the transport and mobility services industry is enormous
  - In Europe, it accounts for more than 5% of the total value added and represents approximately 10.5 million employments\*
- Thanks to the fast adoption of mobile payments and the scalability of cloud-based processing platforms, **Google could benefit from high margins**
- Through the cloud, Google can quickly deploy its services across multiple regions
- With 1.6 billion mobile money accounts, mobile transactions represented \$1.26 trillion in 2022\*\*
- It would also generate indirect revenues through cross-selling (i.e. advertising), which is not included in this estimate
- Such movement will make Google a Gatekeeper in one more market, and thus it will **be subject to Digital Markets Act in the transport digital payments market**

Estimation of Google's potential accumulated EBITDA generated with MaaS ticketing & payment in Europe\*\*\* (2023-2030, € million)









# With Google’s silent integration, MaaS operators and PTOs will need to redefine their strategy and decide whether to cooperate or collide

- **Google integrating ticketing and payment will have an immense impact on the urban mobility market:**
  - MaaS operators such as Cogo, FREE NOW, Lyko, Moovit, Siemens, SkedGo, Skipr, Telepass, Uber, Vaigo, Via / Citymapper and Whim will be heavily impacted by Google’s vertical integration in the MaaS market, losing market share to Google Maps and Google Pay
  - Many users will switch from PTOs or mobility service providers apps to **Google Maps** to plan and pay their trips
  - On the other hand, **on-demand mobility operators**, who focus on service provision, **will benefit** from the additional traffic generated to their platforms by Google Maps
  - EU institutions and national ministries of transport will be pressured by MaaS operators and PTOs to regulate the role of Google in the value chain



Player	Actions	
 <b>On demand mobility operators*</b> must start surfing the wave	<ul style="list-style-type: none"><li>• Understand how to better rank in Google’s map recommendations</li><li>• Allocate budget for advertising in Google Maps</li><li>• Strongly focus on operations efficiency</li><li>• Develop robust analytics to determine how to better position fleet in the cities</li></ul>	
 <b>MaaS operators</b> need to quickly start to either scale-up or specialise	<ul style="list-style-type: none"><li>• Find the right partners to scale up substantially and create a competing MaaS platform</li></ul>	or <ul style="list-style-type: none"><li>• Specialise in operating specific mobility modes, no longer on building a MaaS platform</li><li>• Specialise in niche MaaS markets such as Corporate MaaS or regions where Google will struggle to enter</li></ul>
 <b>PTOs</b> can cooperate or collide	<ul style="list-style-type: none"><li>• Partner with Google to have 1 single app and integrate ticketing &amp; payment APIs</li></ul>	or <ul style="list-style-type: none"><li>• Create partnerships with other mapping (e.g. HERE, TomTom, OpenStreetMap) and MaaS (e.g. Cogo, Freenow, Moovit) platform providers to produce a competitive alternative</li><li>• Partner with multiple PTOs from other regions to create a European mobility app</li></ul>
 <b>EU institutions and Transport Ministries</b> have the power to make MaaS flourish	<ul style="list-style-type: none"><li>• Push towards a smartphone-based payments ecosystem</li><li>• Regulate the payments ecosystem to avoid monopolies</li><li>• Open the transport payments ecosystem, which will push players to specialise and compete in different steps of the value chain, improving mobility services for users</li></ul>	



# This report is divided into 6 sections

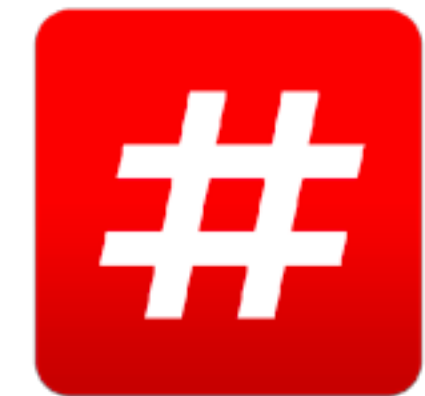
<b>1 Introduction</b>	<b>18</b>	<b>4 The future of the MaaS market</b>	<b>88</b>
1. Definitions		1. MaaS drivers and inhibitors	
2. Context		2. Future MaaS scenarios	
3. The 5 levels of MaaS			
<b>2 Google's initiatives in mobility</b>	<b>35</b>	<b>5 The future role of Google in the urban mobility market</b>	<b>105</b>
1. What has Google been doing so far?		1. Google's current position	
2. Alphabet and Google		2. Return and risk assessment	
3. Zoom in to Google Maps		2.1. Potential revenues	
4. Waymo		2.2. Cross-selling and synergies	
5. Google Wallet		2.3. Competition	
6. Waze		2.4. Regulation and relationship with the EU	
		2.5. Alignment with the corporate strategy	
		3. Google's future alternatives	
		4. Google's future position in the urban mobility ecosystem	
<b>3 Mapping Google's strategy in urban mobility</b>	<b>63</b>	<b>6 Conclusion and recommendations to stakeholders</b>	<b>130</b>
1. Cross-selling & synergies			
2. Competition in the mobility market			
3. EU regulations			
4. Alignment with the corporate strategy			



We would like to thank those organisations for sharing their knowledge and insights with us!

The logo for TIER, consisting of the word "TIER" in a bold, green, sans-serif font.The logo for SIEMENS, consisting of the word "SIEMENS" in a bold, teal, sans-serif font.

WhereIsMyTransport



ENTUR



OCTO

voi.



Fluidtime





# The report leverages PTOLEMUS' mobility experience and the expertise of 8 consultants and researchers of 7 nationalities (1/2)



**Frederic Bruneteau**  
Managing Director



**Alberto Lodieu**  
Senior Manager



**Andrew Jackson**  
Research Director



**Svetlana Tvorogova**  
Research Consultant

Experience

**27 years**

The founder of PTOLEMUS, Frederic has accumulated 25 years of experience of the mobility and transport domain.

He has become **one of the world's foremost experts of connected mobility** and is interviewed on the subject by publications such as the *Financial Times*, *Forbes*, the *Wall Street Journal* and *The Economist*.

He has **led over 180 consulting projects and helped many world leaders define their strategy and implement it.**

Clients he has served include A-to-Be, Abertis Mobility Services, AGC Automotive, Allianz, Axxès, AXA, Baloise, Bombardier, BP, Bridgestone, HERE, the European Commission, Hitachi, Octo Telematics, Orange, Société Générale, ST Engineering, Telepass, TomTom, Toyota, Transurban, wejo and WEX.

**Frederic supervised the research of the Mobility Platform Suppliers Handbook in 2018 and fully reviewed this report.**

**14 years**

Alberto has 14 years of experience in strategy consulting, and has participated to over 60 consulting assignments.

He has specialised in connected mobility, location-based services, electronic toll collection, road usage charging, autonomous vehicles, and usage-based insurance.

He has assisted 40+ organisations in defining their mobility strategies, launch new services, perform commercial due diligence

Alberto has been leading our work to build a global picture and forecast of mobility trends: new players, new vehicle types, new business models, smart city initiatives, etc.

Alberto is a regular speaker at mobility, location-based services and fleet conferences.

**He led the research and writing of our landmark 750-page Global Mobility Roadbook (2019)**

Alberto coordinated the research, writing and review of the report.

**15 years**

With a career in market research spanning 15 years, Andrew has over 11 years of experience working in the automotive and industrial sectors.

Andrew has led and participated in many automotive and telematics market research projects:

Provided forecasts for the growth of EVs in the UK, to a leading automotive media company;

Provided insights to a major telematics technology provider regarding the future of connected vehicles

Led the global research and created 5-year sales forecasts for a major geospatial data analysis company's go-to-market strategy;

Provided insight and analysis on the automotive aftermarket for some of Europe's key tier-1 suppliers.

As PTOLEMUS' Research Director, Andrew supervised and contributed to the research and writing of this report.

**20 years**

Svetlana has gained experience with a very large set of organisation such as Arthur D. Little, Bamberg University (Germany), Erasmus University Rotterdam, the Higher School of Economics of Moscow, EuroWejo and the World Bank.

For more than 10 years, Svetlana taught at the Research University - Higher School of Economics (Moscow, Russia), which nominated her for the Nation's best lecturer, and at Bamberg University, Germany.

Some key projects Svetlana completed include:

Helped a vehicle data hub understand fleets' use of telematics and interest for vehicle data services in Europe and North America;

Helped a private equity firm evaluate the future demand from insurance companies for UBI solutions in Europe and North America;

Svetlana led the primary research, and participated to the writing and review of the report.

Biography



# The report leverages PTOLEMUS' mobility experience and the expertise of 8 consultants and researchers of 7 nationalities (2/2)



**Laura Pájaro**  
Research Analyst



**Damien Orsoni**  
Business Analyst



**Nan Chu**  
Research Analyst



**Claudia Lozano**  
Senior Business Analyst

## Experience

### 4 years

An architecture, transportation and mobility technologies enthusiast, Laura holds a master degree in Urbanism from the VUB and ULB, Brussels.

Since Laura joined PTOLEMUS she conducted first and secondary research on Mobility-as-a-Service and User-Based Insurance.

She participated fragmenting regional research reports and creating case studies.

Key projects she completed include:

Suggested possible functionalities and case uses for a master mobility centre operating in Flanders and Brussels, Belgium

Helped to understand the likelihood to choose specific tracking technologies for the implementation of RUC in Brussels

Revised business plan to consider opportunities to expand architectural services to the middle east market

Laura participated in the research, writing and review of the report.

### 3 years

A passionate of strategy consulting and new technologies, Damien Orsoni has studied in France, the Netherlands and Italy. Within PTOLEMUS he has developed an expertise on Usage-Based Insurance (UBI), Telematics and Connected Mobility.

Damien's most important consulting assignments include:

For a major US telecommunication operator, he helped defining its entry strategy into European and Asian emergency services markets,

For a major European assistance group, he designed their connected vehicles strategy, value proposition, MVP and implementation roadmap,

He participated in the research and writing of PTOLEMUS' Connected Auto Insurance Global Study, an in-depth analysis of the connected auto insurance industry, and contributed to the design of the 2020-2030 market forecast.

Damien participated in the research, writing and review of the report.

### 3 years

Before joining PTOLEMUS, Nan has worked in marketing research covering China & Europe, enabling stakeholders in industries such as ICT, logistics and biopharmaceutical, to identify, explore and leverage business opportunities.

Nan's recent projects include:

For a European telecoms company, he helped identify the top Chinese companies in the mobility business that require cellular connectivity.

For a human resources consulting firm in Europe, he helped organising a major advertising campaign targeted for Chinese speaking clients.

Within PTOLEMUS, Nan has contributed to our new Commercial Fleet Telematics Global Study.

Nan participated in the research and writing of the report.

### 6 years

A Toulouse Business School alumnus, Claudia worked at Accenture on strategy consulting assignments for the mobility sector:

For a multinational car manufacturer, she helped determining the User Recognition technologies to implement on the connected vehicle.

For several User Recognition technologies, Claudia performed benchmarking analysis including OEMs and OESs, identified relevant use-cases.

For a leading railway company, she supported the definition of a governance structure for the infrastructure projects.

Claudia has also worked on business transformation out of the mobility sector.

Claudia also acquired experience during her internship at IBM as a Junior Consultant on a business transformation project.

Claudia participated in the research and writing of the report.

## Biography



# The report is structured in 6 sections

1. Introduction
2. Google's initiatives in mobility
3. Mapping Google's strategy in urban mobility
4. The future of the MaaS market
5. The future role of Google in the MaaS market
6. Conclusion and recommendations to stakeholders





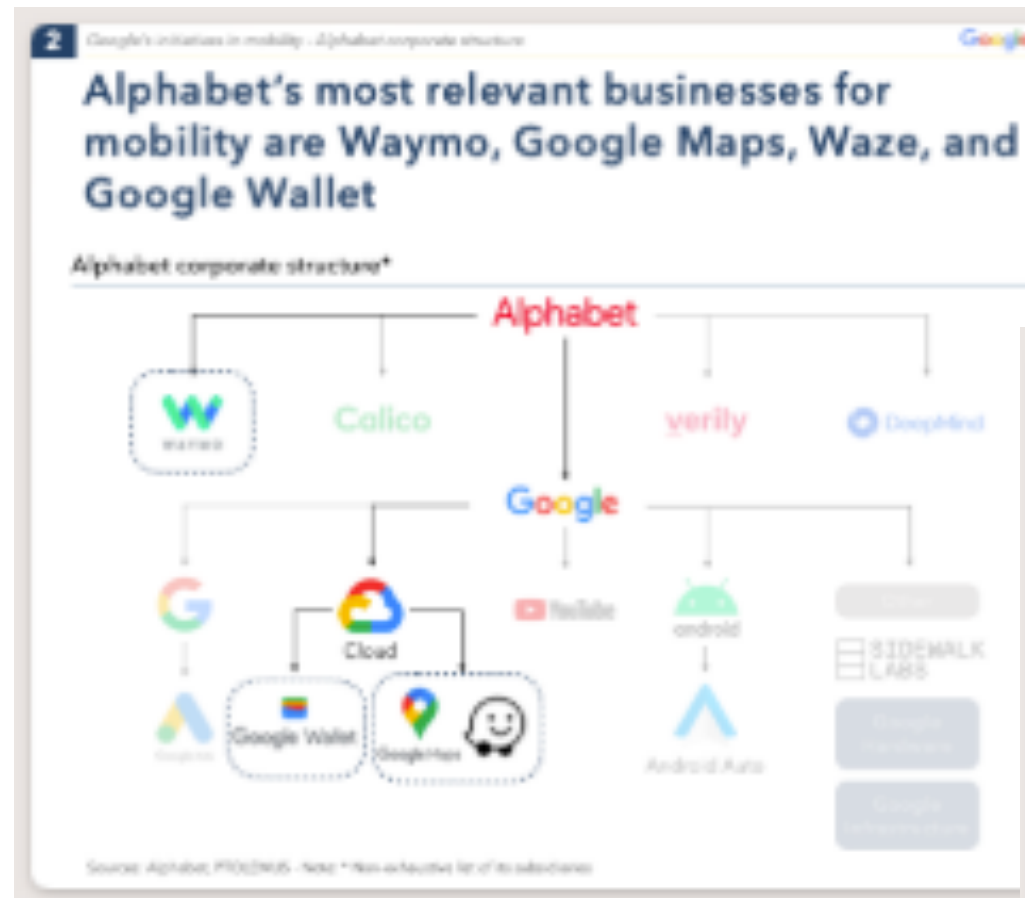
# In section 1, we explain what MaaS is and the rationale for the report, including why we chose to focus on Google

- This first section includes 15+ slides
- It defines MaaS and describes its importance in the development of mobility

- It describes Google’s history and successes in mobility
- It analyses Alphabet’s current capabilities and resources
- It explains why we chose to analyse Google

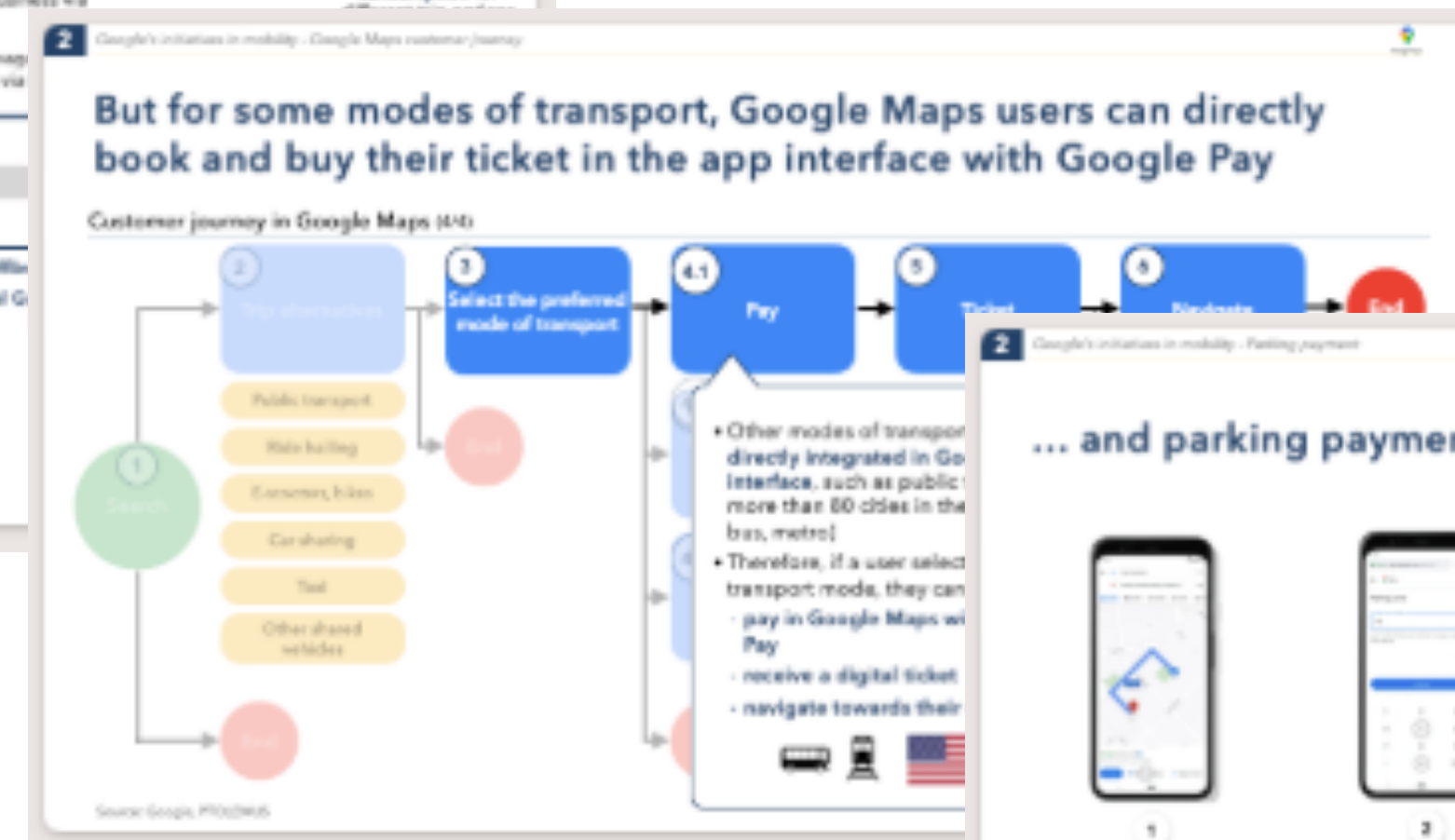
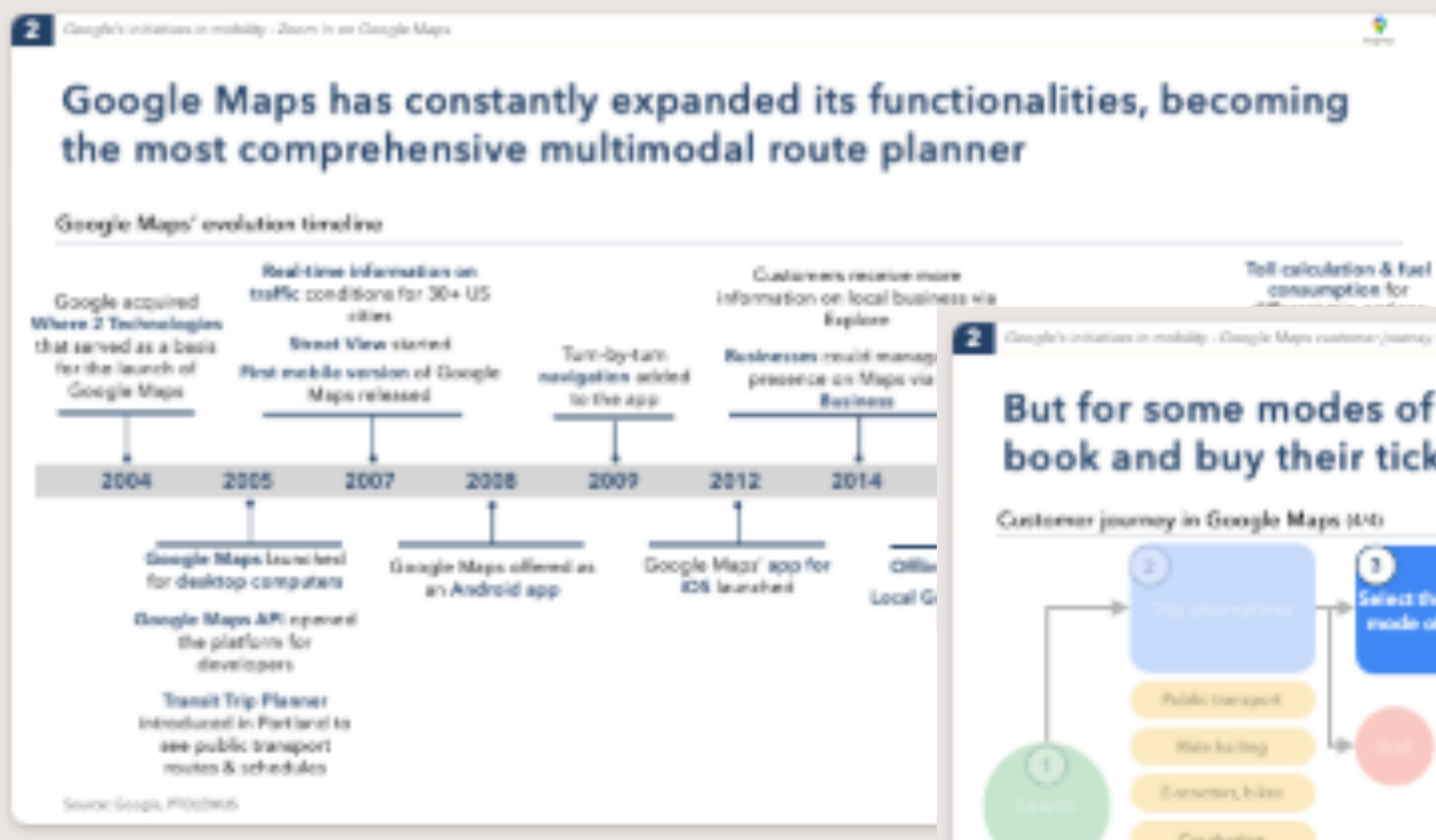


# In section 2, we track and examine Google's initiatives in mobility



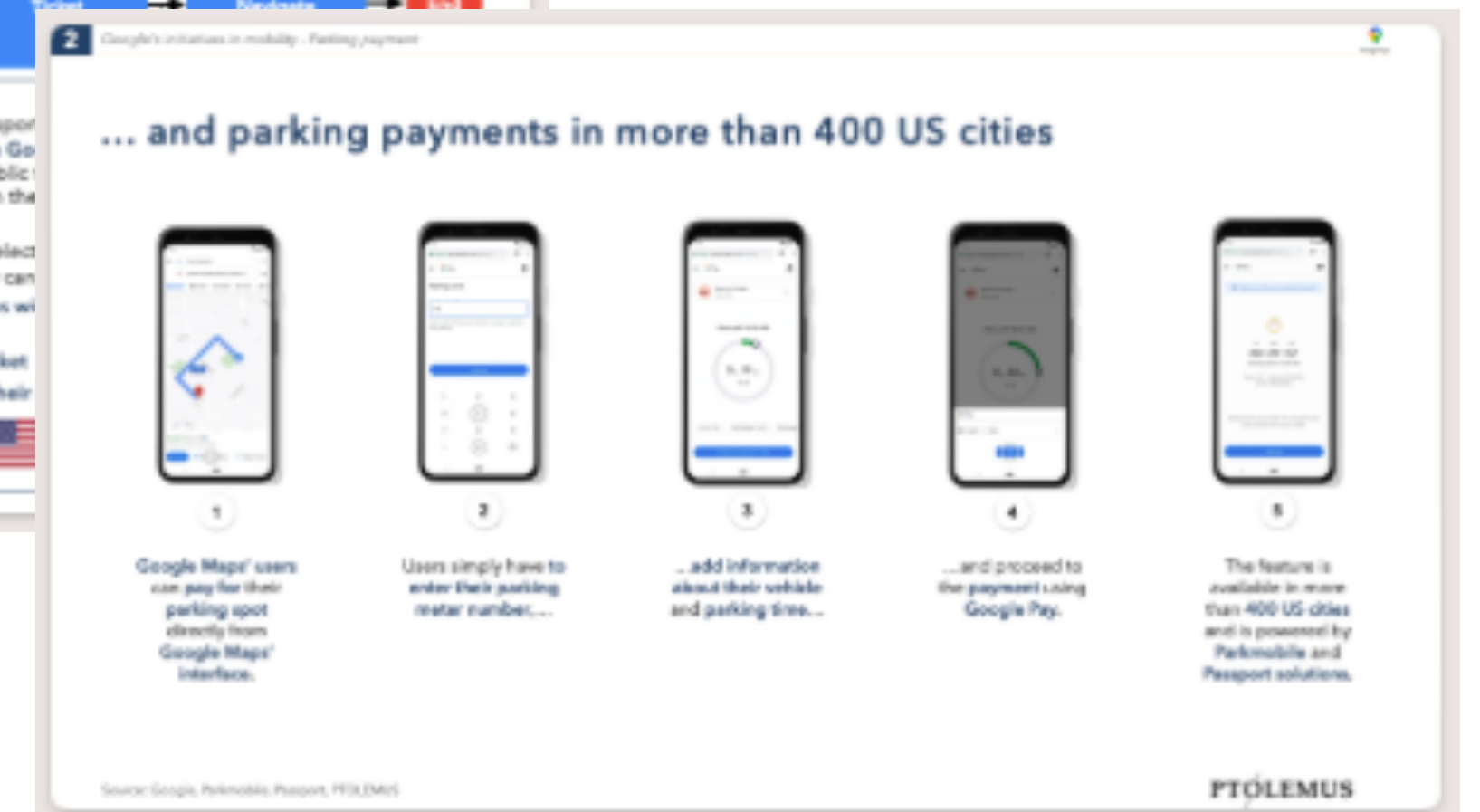
Google's self-driving car programme was created in 2009 by 15 Google engineers, and the programme became Waymo in 2016

- Waymo is the world's first robotaxi service
- Its AIs are launched in suburban areas where vehicles can provide a cheaper service compared to traditional taxis
- In 2021, Waymo's vehicles were made available without a driver in Phoenix and San Francisco, and its fleet had driven more than 20 million



- This second section includes 25+ slides
- It dives into the **evolution of Google and its changing role and activities in the mobility ecosystem**

- It describes **Google Maps'** evolution, features, customer journey and business model
- It analyses Google's initiatives in mobility, including **Waymo, Google Wallet** and **Waze**





# In section 3, we map Google's strategy in urban mobility

- This third section includes 20+ slides
- It dives into Google's strategy in urban mobility





# In section 4, we build 3 main future MaaS evolution scenarios

**We foresee 3 evolution scenarios as the most likely to happen in the European MaaS market**

- S1 Scenario 1: Car-centric MaaS development**
  - MaaS guidelines and AVs' progress ramp up the development of car-centric MaaS models
  - Mobility remains dominated by PTOs
- S2 Scenario 2: MaaS dominated by PTOs slowly emerges**
  - Without a clear framework, MaaS remains slow and remains dominated by PTOs
  - Car ownership progress MaaS offers remain high
- S3 Scenario 3: Multi-modal MaaS flourishes**
  - Thanks to relevant environmental and data policy, adoption rapidly increases
  - Car dominance decreases, making MaaS more attractive

Source: PTOLEMIUS - ICE Internal Combustion Engine, EV Electric Vehicle, AV Autonomous Vehicle

**Scenario 2 is the one changing the least compared to the status quo**

Drivers and inhibitors for each of the 3 scenarios

Category	Variables	Scenario 1	Scenario 2	Scenario 3
Environmental and data policy	Heavy taxation to petrol/gas vehicles	✓	✓	✓
	EU Green Deal/level implementation	✓	✓	✓
	Consumer protection	✓	✓	✓
	DMA & anti-trust regulation	✓	✓	✓
	API integrated at an EU level	✓	✓	✓
Infrastructure and socio-economic developments	EU-wide MaaS regulation	✓	✓	✓
	Taxation extended to electric cars	✓	✓	✓
	Increased urbanized areas	✓	✓	✓
	Car ownership decreases	✓	✓	✓
	Improved electric grid infrastructure	✓	✓	✓
Technological progress	Economic crisis	Short	Medium	Short
	Energy crisis and inflation	Medium	Strong	Medium
	Transition towards green energy	Medium	Strong	Full
	UWB implementation	Medium	Low	Strong
	Industry developments	✓	✓	✓

Source: PTOLEMIUS - DM Digital Marketing, API Application Programming Interface, UWB Ultra Wide Band, AV Autonomous Vehicle

- This fourth section includes 15 slides
- It uses the most important technological, market and regulation drivers and inhibitors to build future scenarios of MaaS

- It builds 3 future scenarios of MaaS in Europe
- It assesses their respective characteristics and likelihood

**MaaS guidelines and AVs' progress ramp up the development of car-centric MaaS models**

**Scenario 1 - Business oriented MaaS development**

Source: PTOLEMIUS - AV Autonomous Vehicle, ICE Low Emission Vehicle, EV Electric Vehicle, CC Congestion Charging

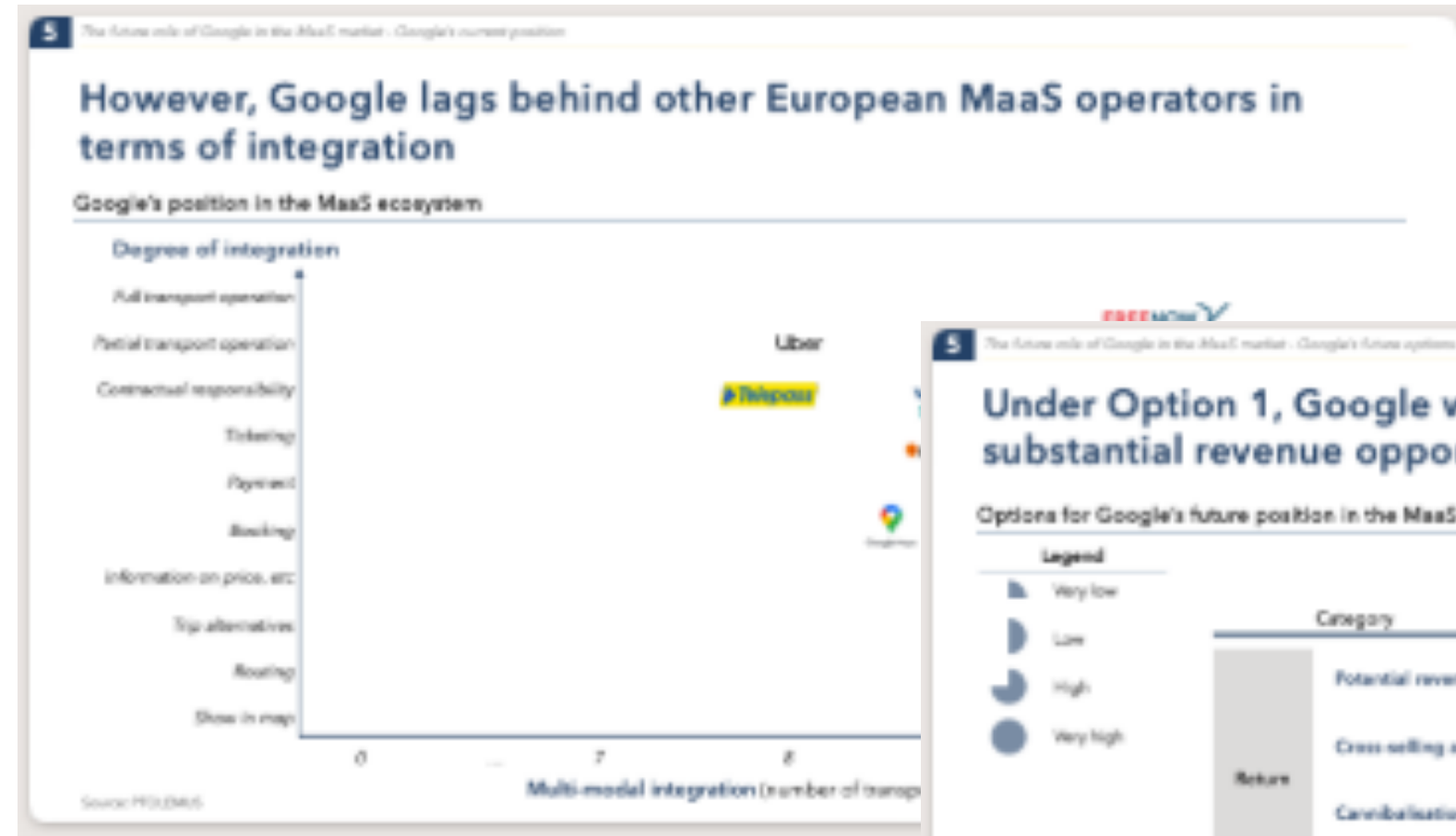
**Under scenario 2, MaaS develops only slowly and remains dominated by PTOs**

- Without national or EU-wide guidelines and/or initiatives to foster the market, MaaS is likely to become a platform for infrastructure booking, available as a value added function within other applications, such as banking and tolling, rather than a platform for mobility
- Under this scenario, without adequate regulations by governments and EU guidelines, PTOs have limited incentives to open their platforms to MSPs
- Hence, payment and ticketing access is not fully available for TSPs at EU level and therefore PTOs keep control over data coming from trips made using public transport infrastructure
- MaaS initiatives remain restricted to the regional level, as PTOs take a conservative approach to transport provision
- Competition between TSPs remains fragmented, impeding the building of a profitable business case for smaller TSPs

Source: PTOLEMIUS

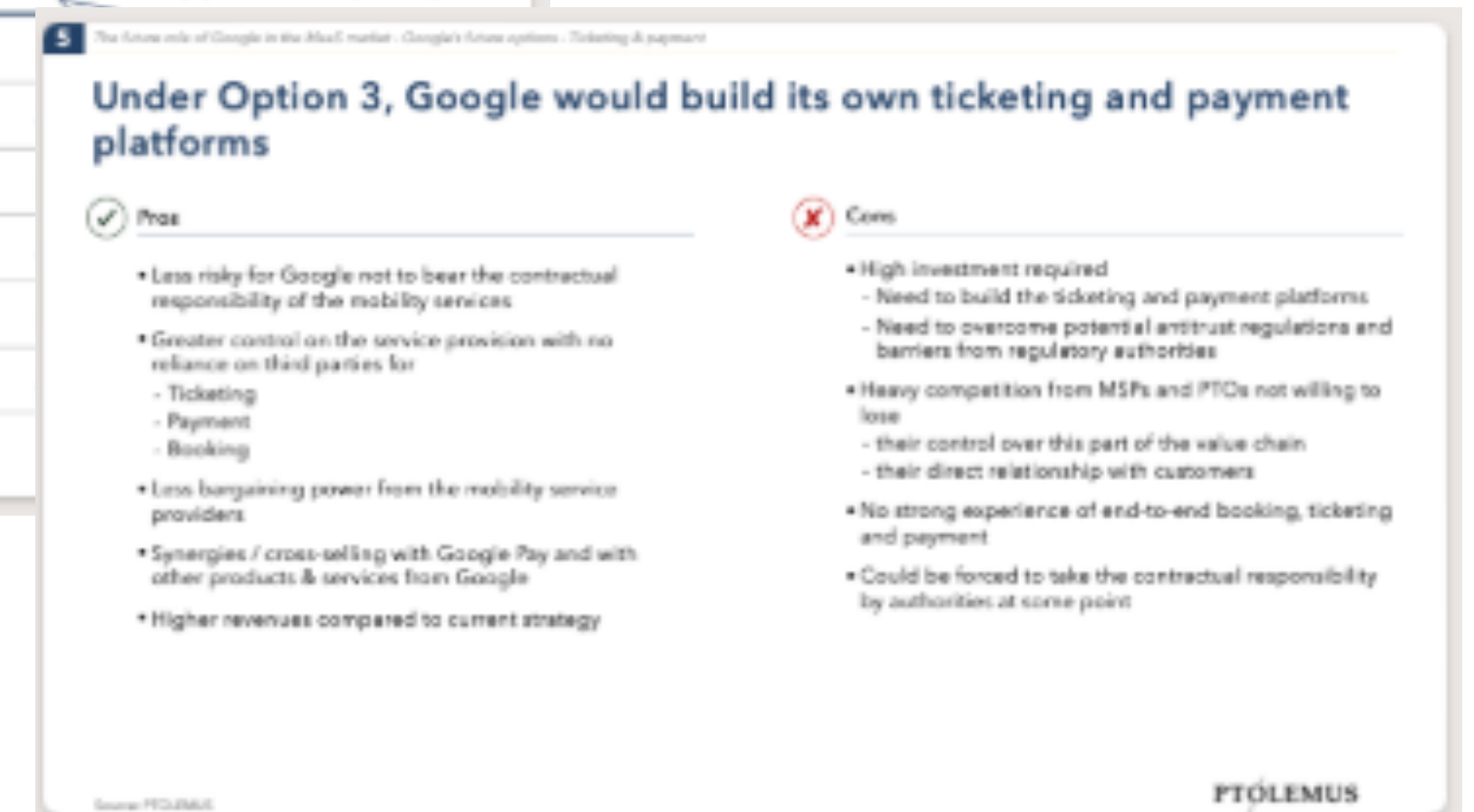


# In section 5, we predict the future role of Google in the MaaS market



- This fifth section includes 20+ slides
- It assesses the **options Google has in the future MaaS market** based on 6 risk and return criteria

- It defines **Google's optimal future position in the MaaS ecosystem** considering the likelihood of the 3 MaaS evolution scenarios
- It estimates **Google's future EBITDA generated by MaaS in Europe under 3 scenarios**





# In section 6, we provide our conclusions and recommendations to the key stakeholders of the MaaS ecosystem

- This sixth section includes **6 pages**
- It classifies MaaS players into **6 different groups**

**We have evaluated challenges and recommendations for MaaS players regarding the 3 main Google's options in mobility**

- Google is likely to move further into MaaS under one of the 3 following options:
  - Keep the status quo by a focus on booking
  - Integrate booking, ticketing & payment
  - Integrate booking, ticketing & payments and bear contractual responsibility
- In addition, we see all MaaS stakeholders face multiple challenges to address a market that remains volatile
- We analysed the impact of Google's strategy on 4 different groups:
  - On-demand mobility operators: companies providing commercial transport services e.g. Tax, Limo, Donkey Republic, Citycar2
  - MaaS service providers: user-facing companies, which are the ones who provide the application users interact with e.g. Skipr, Whim, Ubi
  - Public Transport Operators (PTOs): agencies providing public transport services e.g. RATP, De Lijn, DMT
  - EU institutions and Transport Ministries: institutions behind the legislation of mobility & transport in the EU and governments behind the legislation of transport in cities and regions
- These players do not exclusively belong to a group and they can offer services in different and non-consecutive parts of the value of transport in cities and regions
- PTOLEMUS identified the pros and cons of Google's 3 main strategic options for the players
- In addition, for each one of these options we gave recommendations to these stakeholders
- Within this section, we trace final conclusions about how these players can foster MaaS implementation and react to Google's multiple options in this market

**Even when Google integrates the contractual responsibility, shared mobility operators have interesting opportunities**

On-demand mobility operators*	Advantages	Disadvantages	Reaction recommendations
Option 2 - Booking	<ul style="list-style-type: none"> <li>Additional traffic generated by Google Maps</li> <li>Reduction in commercial expenditures</li> <li>No need to pay transaction fee to Google</li> </ul>	<ul style="list-style-type: none"> <li>Need to pay referral fee to Google</li> <li>Lower customer interactions</li> </ul>	
Option 3 - Ticketing & payment	<ul style="list-style-type: none"> <li>Additional traffic generated by Google Maps</li> <li>Cost reduction as there is no need to integrate ticketing and payment into the platform</li> </ul>	<ul style="list-style-type: none"> <li>Transaction fee paid to Google</li> <li>Lower customer interactions</li> </ul>	
Option 4 - Contractual responsibility	<ul style="list-style-type: none"> <li>Reduction of legal responsibilities</li> <li>Possibility to focus exclusively on logistics and fleet management without having the administrative burden</li> </ul>	<ul style="list-style-type: none"> <li>Margin reductions</li> <li>Becoming a supplier to Google, who will be extremely powerful</li> <li>Losing the direct relationship with the final user</li> </ul>	

**EU institutions and national transport authorities would need to regulate to avoid monopolies**

EU institutions and Transport Ministries	Advantages	Disadvantages	Reaction recommendations
Option 2 - Booking	<ul style="list-style-type: none"> <li>Distributes the demand among different mobility services</li> <li>Additional communication channel with high reach</li> </ul>	<ul style="list-style-type: none"> <li>Threatens national players, notably small mobility service providers and PTOs</li> </ul>	
Option 3 - Ticketing & payment	<ul style="list-style-type: none"> <li>Distributes the demand among different mobility services</li> <li>Improves payment operations at the full mobility ecosystem</li> </ul>	<ul style="list-style-type: none"> <li>Threatens national players, notably small mobility service providers and PTOs</li> <li>Google could become a monopoly for transport payments</li> </ul>	
Option 4 - Contractual responsibility	<ul style="list-style-type: none"> <li>Brings competition and forces existing PTOs and mobility operators to improve service</li> </ul>	<ul style="list-style-type: none"> <li>Threatens the investments made in PTOs and MaaS initiatives</li> <li>Google could become a monopoly for transport services distribution</li> </ul>	

**While the most impacted are clearly MaaS providers, the winners are on-demand mobility operators**

Net and total impact of Google's move into MaaS on key stakeholders

Total impact	Extremely high	High	Medium	Low
Extremely high	MaaS service providers	On-demand mobility operators*		
High			PTOs**	
Medium				EU & Transport Ministries*
Low				

**It evaluates their respective challenges regarding Google's 3 main alternatives in mobility**

**Finally, it gives concrete recommendations to these players**

**On-demand mobility operators would benefit from Google's booking and ticketing & payment options as it would generate more traffic and decrease their operating costs, enabling them to focus on improving their operations**

**MaaS service providers would lose clients to Google - if it decides to become a direct competitor - and will thus be obliged to:**

- Create a big partnership ecosystem to compete or
- Find niche markets / segments and deliver specialised services

**Public Transport Operators would not be threatened on the operational side by Google as Google will not get into public transport operations, but could lose the customer relationship to Google and pay consequent referral and transaction fees to Google**

**EU institutions and national transport ministries need to open the market to ensure that users are offered best in class services while making sure no player becomes too powerful to control the market**



# Google in MaaS report

About PTOLEMUS



PTOLEMUS Consulting Group



# PTOLEMUS is the first strategy consulting and research firm entirely focused on connected mobility and smart infrastructure



## Strategy consulting services

Strategy definition	M&A advisory	Growth strategy
Innovation management	Partnership strategy	Procurement strategy



## Market research services

Off-the-shelf reports	Subscription services	Custom market research
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## Fields of expertise

Autonomous Vehicles	Connected Vehicles	Connected Motor Insurance
Electric Vehicles	Electronic Toll Collection	Emergency Services
Fleet Telematics	Intelligent Transportation Systems	Location-based Services
Mobility Payments	Mobility-as-a-Service	Road Usage Charging

# PTOLEMUS has completed nearly 200 consulting assignments, serving over 350 clients across the mobility ecosystem

## DATA & ANALYTICS



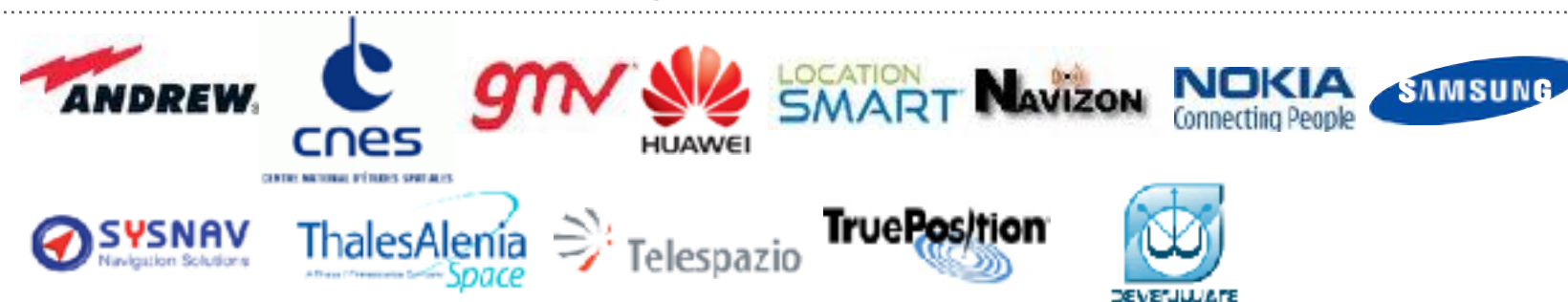
## AUTOMOTIVE



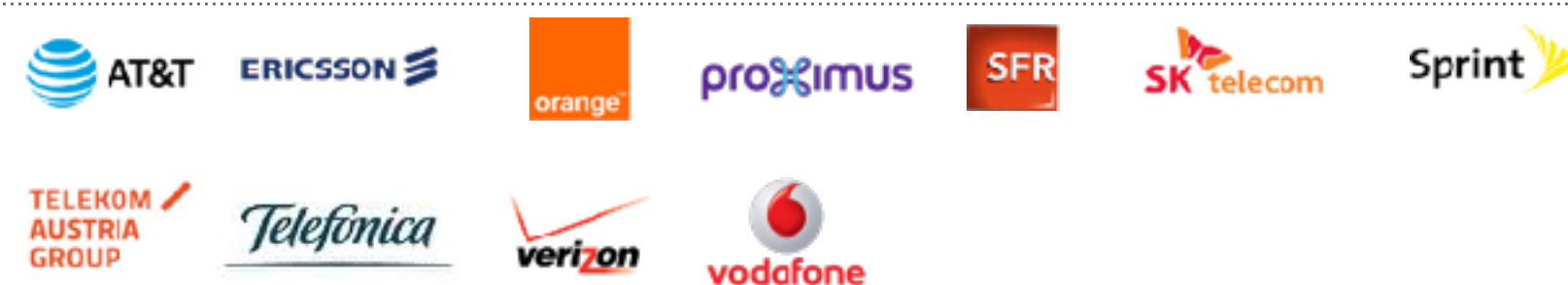
## FINANCE



## POSITIONING



## MOBILE TELECOMS



## INSURANCE & ASSISTANCE



## SMART CITY, ITS & FLEETS

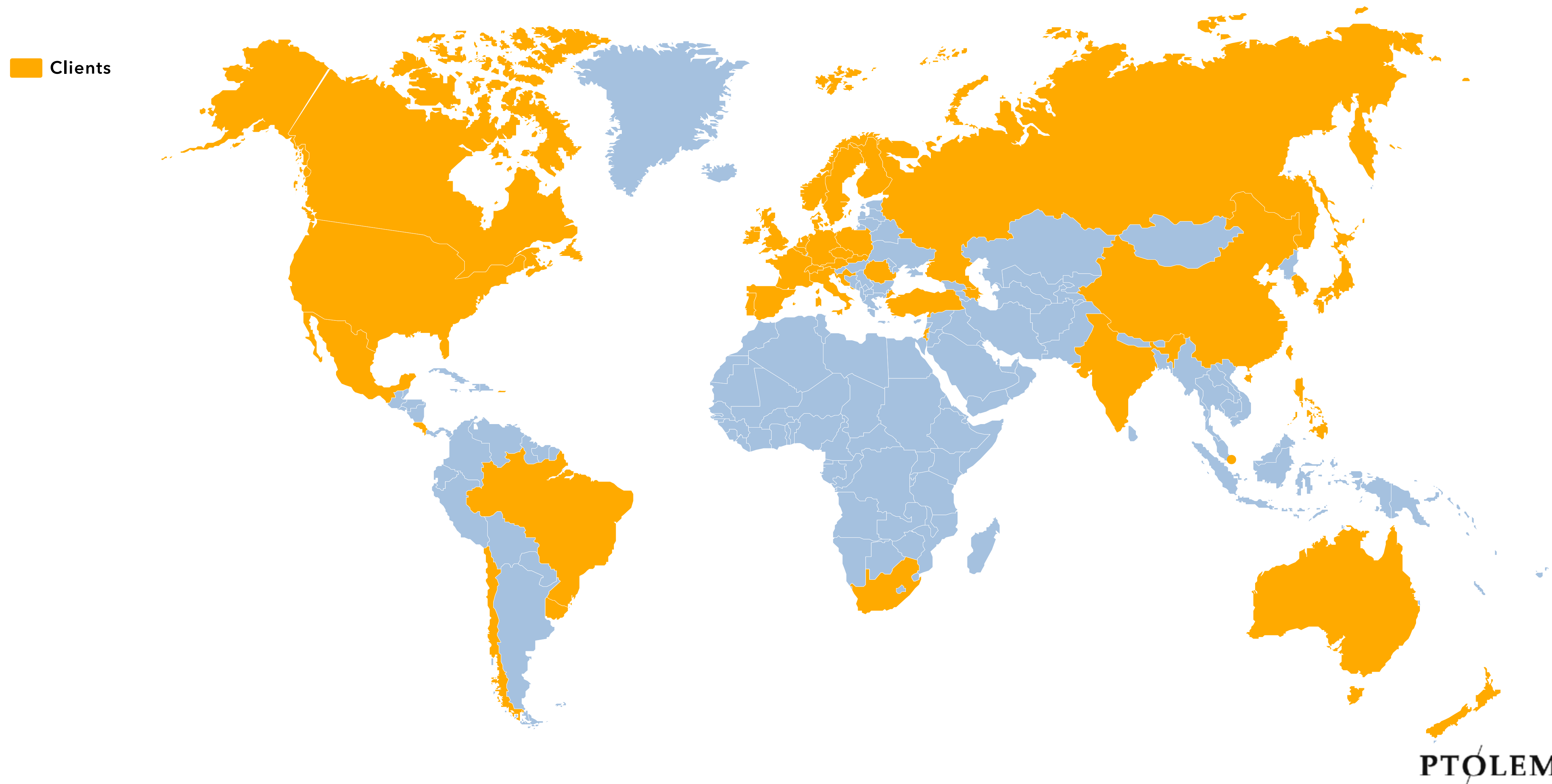


## TELEMATICS





**Our team of consultants, experts and analysts with 12 nationalities,  
serves our clients in 41 countries**





# PTOLEMUS has published nearly 30 landmark reports and market forecasts on mobility markets

### AUTONOMOUS DRIVING

**OEM READINESS FOR AUTONOMOUS VEHICLES**  
Global Study

FULL VERSION

The first global roadmap of OEMs' deployment of driverless cars

**AUTONOMOUS VEHICLE TECHNOLOGY & SUPPLIERS**  
Global Study

FULL VERSION

How will autonomous cars actually work? Are we there yet?

### CONNECTED VEHICLE

**VEHICLE DATA MARKET**  
Global Study

FULL VERSION

The first investigation of OEM strategies and car data hubs

The future of car data sharing: from concept to mass adoption

**CONNECTED VEHICLE PAYMENTS**  
Global Study

1st EDITION

The first investigation of the global v-commerce market

The future of in-vehicle payments for goods & services to 2030

### ELECTRIFICATION

**NORWAY VEHICLE ELECTRIFICATION STUDY**

FULL VERSION

A case study on how to succeed in electric

What other countries should learn from the global leader

**FLEET ELECTRIFICATION GLOBAL STUDY**

FULL VERSION

From the challenges to the solutions

How to radically accelerate the move towards electric

### TOLLING & ROAD USAGE CHARGING

**ELECTRONIC TOLLING GLOBAL STUDY**

2019 EDITION

The updated reference report on electronic toll collection

Towards connected car payments

**ROAD USAGE CHARGING United States Report**

FREE ABSTRACT

The first RUC diagnostic and evaluation tool for road & transport decision makers

The future of road funding after the EV revolution

### FLEET MANAGEMENT

**FLEET INSURANCE TELEMATICS**  
Global Study

FULL VERSION

The complete reference report on commercial fleet telematics

Fleets have embraced telematics, will insurers seize the opportunity?

**COMMERCIAL FLEET TELEMATICS**  
Global Study

FREE ABSTRACT

The reference report on commercial fleet telematics for on-road and off-road vehicles

Has the time come for vehicle OEMs to dominate fleet telematics?

### INSURANCE

**GIG ECONOMY MOTOR INSURANCE**  
European Study

FULL VERSION

Identifying the growth and opportunities in Europe

How the gig economy is disrupting commercial motor insurance in last-mile mobility

**UBI Global Study 4th Edition**  
CONNECTED AUTO INSURANCE

FULL VERSION

The updated reference report on UBI and digital insurance

Will connected cars dominate the auto insurance industry?

### MOBILITY

**MOBILITY PLATFORM SUPPLIERS**  
Handbook

FREE ABSTRACT

The first global buyers' guide to 17 mobility suppliers

Building multimodal transportation from shared mobility to MaaS

**GLOBAL MOBILITY ROADBOOK**

2019 EDITION

FREE ABSTRACT

The first holistic analysis of urban mobility in 148 countries

Guiding the industry from transportation to mobility

**GOOGLE IN MOBILITY**  
Report

FULL EDITION

The first analysis of Google's future urban mobility strategy

From Google Maps to Google MaaS Will Alphabet take over mobility? How and why?

**MOBILITY-AS-A-SERVICE**  
Market Study

FULL EDITION

The first in-depth analysis of the European MaaS markets

Will the MaaS market take off? How and why?



# PTOLEMUS Consulting Group

*Strategies for Mobile Companies*

**Frederic Bruneteau**

Managing Director

fbruneteau@ptolemus.com

+32 4 87 96 19 02

contact@ptolemus.com

www.ptolemus.com

@PTOLEMUS

**Alberto Lodieu**

Senior Manager

alodieu@ptolemus.com

+33 6 13 23 61 90

