

PTOLEMUS Consulting Group

The Connected Insurance Analytics report



Presentation of the UBI Study 2016 additional report

October 2016 - PTOLEMUS intellectual property

The consulting & research firm for the connected world

Consulting services

**Strategy
definition**

**Investment
assistance**

**Procurement
strategy**

**Innovation
management**

**Business
development**

Deployment

Research services



Fields of expertise

Car infotainment & navigation

Connected services (traffic information, fuel prices, speed cameras, parking, POIs), maps, navigation

Usage-based charging

Connected insurance, driving behaviour monitoring & analytics, 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

Clients across the mobility ecosystem...

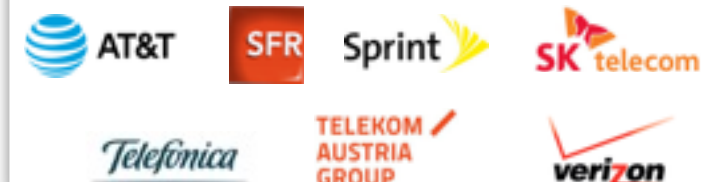
Analytics providers



Automotive manufacturers & suppliers



Mobile telecom operators



Applications providers



Telematics solution providers



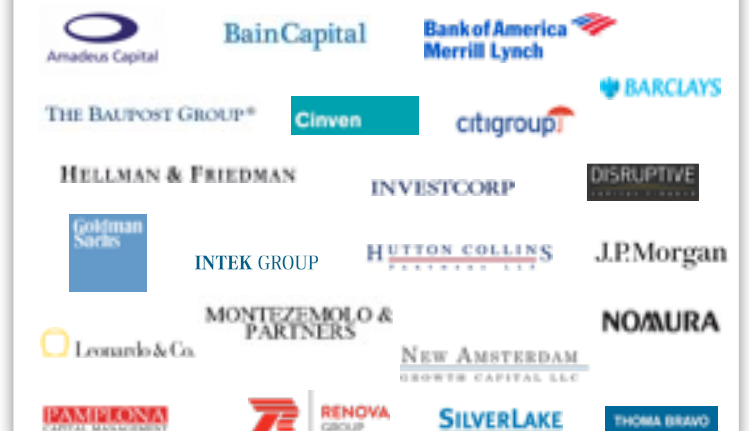
ITS operators, regulators & fleets



Insurers, aggregators & assistance providers



Banks & private equity investors



The authors of this report combine 40 years of experience in insurance telematics and analytics

Frederic Bruneteau, Managing Director, Brussels (fbruneteau@ptolemus.com)



Frederic 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 companies such as **Arthur D. Little, BNP Paribas, SFR Vodafone** and **TomTom**.

He has become **one of the world's foremost experts of Usage-based Insurance (UBI)** and is interviewed on the subject by publications such as the *Financial Times* and *The Economist*.

Frederic co-authored the Connected Insurance Analytics Report and the UBI Global Study 2016.

Matthieu Noël, Consultant, Paris (mnoel@ptolemus.com)



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.

Thomas Hallauer, Director of Research & Marketing, London (thallauer@ptolemus.com)



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, he is also the co-author of the UBI Global Study 2016.

Thomas reviewed and published the Connected Insurance Analytics Report.

Sahand Malek, Consultant, Brussels (smalek@ptolemus.com)



Sahand Malek has gained almost 5 years of **experience in telematics research and development projects on vehicle On-Board Diagnostics (OBD), data management and analytics**, Usage-Based Insurance (UBI) and Advanced Driving Assistance Systems (ADAS).

He notably conducted an extensive academic study on the effect of driving behaviour on fuel consumption and road safety.

Sahand is **the lead author of the Connected Insurance Analytics Report**.

Advanced analytics will change insurance in 6 ways

1- Advanced analytics provides an opportunity to explore new business opportunities because insurers can now use and look at the data in a new way

2- With advanced analytics insurers can explore telematics data at a much more granular level

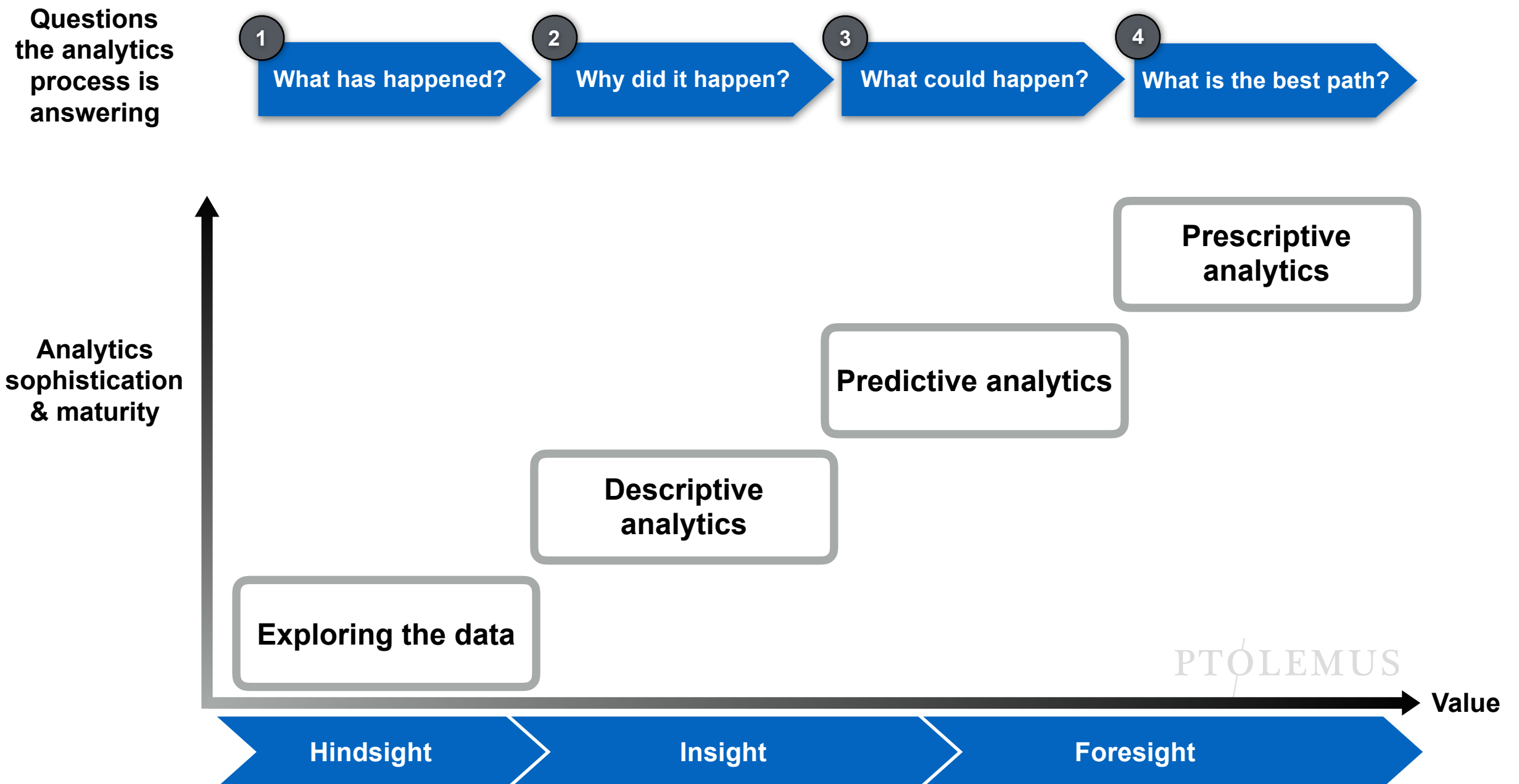
3- Better analytics helps generating new contact points with the customer and with that more driver-specific data at different stages of the contract.

4- It brings together and link the core activities of the insurance carriers from marketing to claims

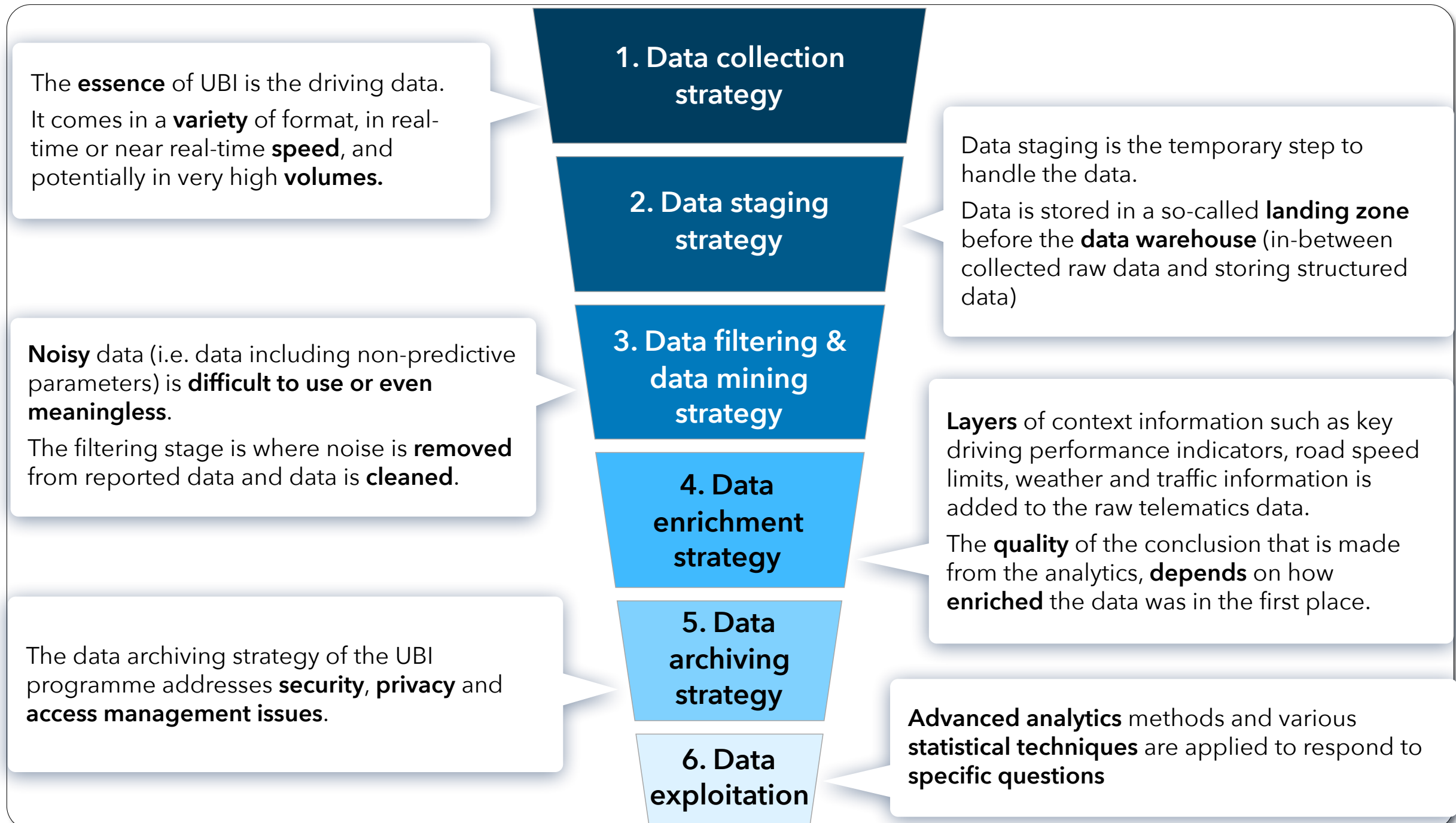
5- It enables the carrier to create new segment-specific offers

6- By defining precisely the nature of the driver's behaviour, advanced analytics provides detailed information on the aspect of the driving that needs to change, making driver feedback a lot more effective on risk management

The journey to advance analytics is long and arduous



Drilling into Big Data is done in 6 steps



6 best practices on driver scoring

1- Scoring should be trip-based with adjustments made monthly and quarterly using weighting methods.

2- Put driving behaviour in context by relating it to environmental information. The set of information layers should at least include: relative speed limit, road type and crash-prone locations

3- Sub-scores, such as smoothness, mileage, time of day and driving duration should be provided to insurers as standard.

4- Correlate behaviour with past claims records, crashes and actual claims losses to continue improving predictiveness.

5- Driver distraction tracking should be done at a granular level and it is recommended that a smartphone app is used to that effect.

6- Scoring criteria and sub-scores must be clearly expressed and made understandable to drivers. Criteria the driver cannot influence should be explained separately.

This report transform Big Data copper into Analytics gold



The most comprehensive research on the UBI Analytics market

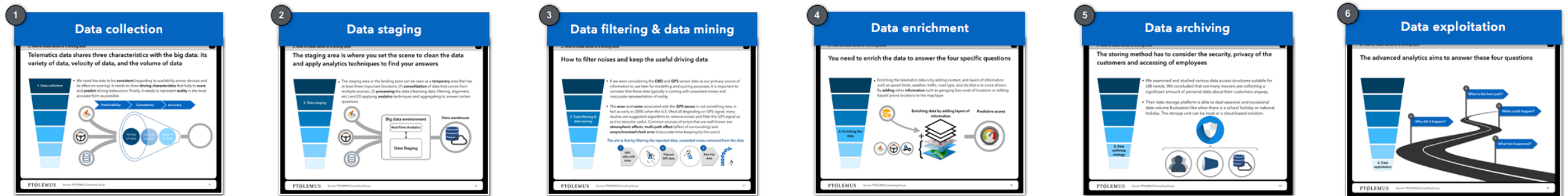
- Analysis of the pricing and data management policies of the 27 largest UBI programmes, including :
 - Admiral, Allianz, Allstate, American Family, AXA, Generali, Desjardins, Direct Line Group,, State Farm, The Hartford, UnipolSai, Uniqa and Zurich
- Based on 40 in-depth interviews with Telematics Service Providers (TSPs), analytics providers and insurers.
- 5 interviews transcribed:
 - Insurethebox, LexisNexis Wunelli, Nationwide, Octo Telematics and The Floow
- Illustrated by case studies from companies using advance analytics such as: Progressive, Generali, ITB and many more
- Profile and review of 12 advanced analytics suppliers active in UBI, including
 - Accenture, Cambridge Mobile Telematics, Cognizant, HERE, IBM, IMS, SAS, Verisk Analytics and Willis Towers Watson
- Findings and recommendations validated by 150 academic papers and journals
- All that in a 350+ page document with over 100 graphs and tables
- Resulting in 20 best practices including recommendations on how to record and process driving data, score drivers and interact with them.

Based on interviews of more than 200 new companies in 30 countries including 10 analytics providers

Organisation	Organisation	Company name	Country	Sector	Company name	Country	Sector	Company name	Country	Sector
	BMW	Market IP	Belgium					Generali France	France	General insurance
	Bouygues Telecom	Marks & Spencer	UK					Generali Group	Italy	General insurance
AAA Club Partners	Cambridge Mobile Telecom Inc.	Marmalade Group	UK		CLAL Insurance	Israel	General insurance	Generaltel (Generali Group)	Italy	
Achmea		Mastermoot	Europe		Clarion	Japan		Geotab	USA	
ADAC	Carrot Insurance	Matmut Assurances	France		CMA Claims	UK				
Admiral France - L'CE		Mercedes Benz	Germany		CNIL (Commission Nationale de l'Information et des Libertés)	France				
Assurances		Meta System	Italy		Co-operative Insurance	UK				
Admiral Insurance		Mitsubishi Electric	Japan		Cobra Automotive Tech.	Italy				
Ageas Continental Europe		Mix Telematics	South Africa		Cognizant	USA				
Agnik		Mobile Devices	France		Compagnie Générale d'Automatismes (CGA HBS)	France				
AIG		Mobileye	Israel		Comparethemarket.com	UK				
Aioi Nissay Dowa Insurance		Modus	USA		Confused.com	UK				
Airmax Group		MOJIO	USA		Continental	France				
ALD Automotive		Money Super Market	UK		Corporate Vehicle Observatory	France				
Allianz		Montezemolo & Partners	Italy		Covea Group	France				
Allianz		Moody's	USA		Coverbox	UK				
Allianz		MORE TH>N	UK		Coverhound	USA				
Allianz		Motacote	UK		Coyote	Europe				
Allianz		MyDrive Solutions	UK		Crédit Mutuel Arkea	France				
Allstate Insurance		Nationwide Insurance	USA		cTrack (Digicore)	South Africa				
Altima Assurance		Navteq / HERE	France		Cybit Mastermoot	UK				
Amadeus Capital Partners		navya	France		Daimler Fleetboard	Germany				
Amaguiz (Groupama)		ND a Islandi Ehf	Iceland		Daimler Insurance Services	Germany				
Amaguiz (Groupama)		NIS Glonass	Russia		Danlaw	USA				
American Family		Nissan Europe	Europe		Data Tec Co Ltd	Japan				
AnyDATA Corporation		Nissan Motor Corporation	USA		Davis Instruments	USA				
Aplicom		No Nonsense Insurance	N. Ireland		DBV Winterthur	Germany				
Arval		Nokia	Finland		Delphi	USA				
Association of British Insurers		Norton Rose	UK		Denso	Germany				
Atos		Novacom Europe	Netherlands		Department of Transportation	USA				
ATrack Technology		Novatel Wireless	Worldwide		Detector	Spain				
Audiovox		NTT DoCoMo	Japan		Deutsche Telekom	Germany				
Autoline		NXP	Netherlands		Diamonds	UK				
Autosaint (Fresh! Insurance Group)		ÖAMTC	Austria		Direct Line Germany	Germany				
Aviva (formerly Norwich Union)		OBD Experts	UK		Discovery Insure	South Africa				
Axa Assistance		Octo Telematics	Italy		Disruptive Capital Partners	UK				
Axa Belgium		OECD	France		Divis	UK				
Axa Global P&C					Dixon's	UK				
Axa Matrix Risk Consulting					Drive Power	USA				
Axa Re										
Axa UK										
Baseline telematics										
BGL Group Ltd										
Bird & Bird										
BluO Fund										

Organisation	Country
Telekom Austria Group	Austria
Telenor Connexion	UK
Telit	Italy
Telogis	USA
Teradata Aster	USA
Texa	Italy
The AA	UK
The Co-operative Insurance	UK
The Floop	UK
The Hartford	USA
TomTom	Netherlands
TomTom Business Solutions	UK
Touring	Belgium
Toyota	Belgium
Toyota Insurance Management	Belgium
Toyota Insurance Management	UK
Trac Global	UK
Tracker	South Africa
Traqueur	France
Trafficmaster	UK
Transics	Belgium
Travelers Insurance	USA
Trimble MRM	USA
TRL	UK
Uniq	Austria
Uralsib	Russia
US Department of Transport	USA
Vehcon	USA
Verizon Telematics	USA
Viasat	Italy
Vivium (P&V Group)	Belgium
Vodafone	UK
Volvo Cars	Sweden
Wireless Car	Sweden
Wunelli	UK
Xirgo Technologies	USA
Young Marmalade	UK
Zurich	Italy
Zurich	UK
Zurich Financial Services	France

It provides a step-by-step advanced analytics roadmap



And uses results of real world driving tests

Parameter	Unit	Formulas to consider	Method of data acquisition		
			Mobile	OBD	Other devices
Latitude and Longitude	d° m' s"	Decimal degrees (dd) or $\Phi = d + m/60 + s/3600$	GPS sensor	GPS sensor	GPS sensor
Elevation (Altitude)	m	—	Mapping	Mapping	Mapping
Speed	km/h	—	GPS sensor	ECU reading	GPS sensor
Acceleration	m/s ²	$a_t = \Delta V / \Delta t = (V_2 - V_1) / (t_2 - t_1)$	Accelerometer and GPS sensors	Accelerometer, Calculated from speed	Accelerometer and GPS sensors
Braking	m/s ²	—	GPS sensor	GPS sensor	GPS sensor
Cornering	g's	$(V_2^2 - V_1^2) / 2 \Delta X \cdot g$	GPS sensor	GPS sensor	GPS sensor
Mileage	km	$\Delta \alpha = 2 \arcsin \left[\sin \left(\frac{\Delta \phi}{2} \right) \cos \phi_2 \cdot \cos \phi_1 \cdot \sin \left(\frac{\Delta \lambda}{2} \right) \right]$ or use this: Distance travelled = $\int v(t) dt$	GPS sensor	GPS sensor	GPS sensor
Motorway miles	km	—	GPS sensor	Odometer	GPS sensor
Time of the trip	hh:mm:ss	—	Sync time	Sync time	Sync time
Duration of the trip	hh:mm:ss	Duration of a trip into sec: hh:mm:ss * 86400	Sync time	Sync time	Sync time
Other OBD / CAN data	Depends on parameter	—	—	—	—
Phone use / Driving	Yes / no	If the UBI came with dedicated mobile app the solution was easy. Otherwise, it is possible to use vehicle speakers to detect phone usage.	—	—	—

Parameter	The evaluation metrics: threshold rules and criteria
1 Speeding	Between 1.15 to 1.5 times above the speed limit
2 Harsh acceleration	Based on g force value, various thresholds, usually it is from 0.4 to 0.6 g
3 Harsh braking	Based on g force value, various thresholds, usually it is from 0.2 to 0.4 g
4 Cornering	Based on speed and cornering force, value exceeding 0.2 g
5 Unsafe lane changing	Based on speed, location and g force, value exceeding 0.2 g

Mrs Y

ID Driver 11

Age 25 - 35

Gender Female

Driving Score = 40

A B C C D D

Mr X

ID Driver 14

Age 25 - 35

Gender Male

Driving Score = 25

A B B C C D D

A	45 ≤ driver score ≤ 50	Excellent driver, with safe attitudes towards speeding and braking
B	40 ≤ driver score ≤ 44	Good driver, with occasional harsh acceleration and deceleration
B	35 ≤ driver score ≤ 39	
C	30 ≤ driver score ≤ 34	Dangerous driver, with a habit of harsh acceleration and deceleration, occasional speeding and cornering
C	25 ≤ driver score ≤ 29	
D	20 ≤ driver score ≤ 24	Poor driver, with careless driving attitude and a habit of harsh acceleration and deceleration, occasional speeding and cornering, frequently uses mobile phone while driving
D	0 ≤ driver score ≤ 19	

Mrs Y

ID Driver 11

Age 25 - 35

Gender Female

Marital status Married

Driving record 0

At fault accidents 0

Address AAA rate address

Vehicle mark Opel / Vauxhall

Vehicle model Corsa

Vehicle age 3 years

Class of use Social only

Vehicle value —

Mr X

ID Driver 14

Age 25 - 35

Gender Male

Marital status Single

Driving record Speeding 6 points

At fault accidents 0

Address BBB rate address

Vehicle mark Opel / Vauxhall

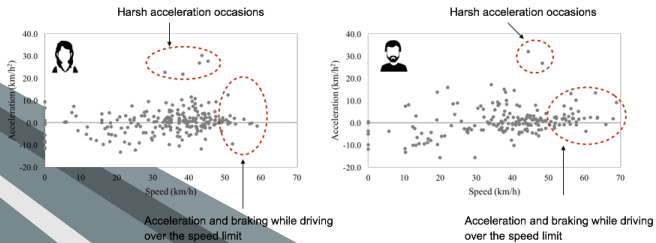
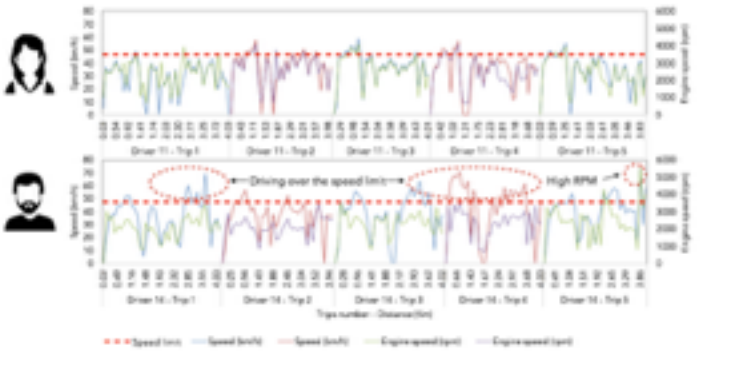
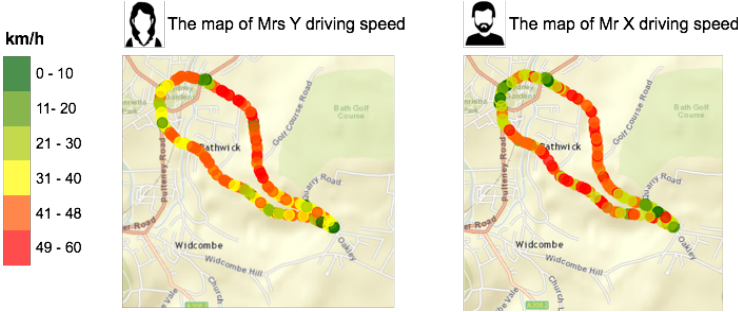
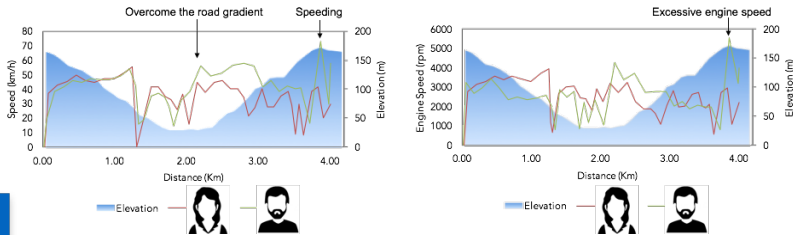
Vehicle model Corsa

Vehicle age 3 years

Class of use Social only commuting

Vehicle value —

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Other OBD / CAN data	Depends on parameter	—	—	—	—
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The UBI Study is a searchable PDF document that can be used by the whole company, worldwide



Reports	Connected Insurance Analytics Report Only	Full UBI Study 2016 with market forecasts and with Connected Insurance Analytics update
Contents	<ul style="list-style-type: none"> • 350+-page study (PDF format, password-protected) • 10 company profiles • 20 best practices • recommendations to insurers and analytics providers 	<ul style="list-style-type: none"> • 900+-page study (PDF format, password-protected) • Market forecasts outputs with graphs (Excel format, password-protected) • 50 TSP and TTP company profiles • 30 country profiles
Company-wide licence	<p>€ 2,995</p> <p>Approx. \$6,595</p>	<p>€ 8,995</p> <p>Approx. \$7,495</p>

For more information and to order the update if you have already bought the study, contact us at thomas@ptolemus.com

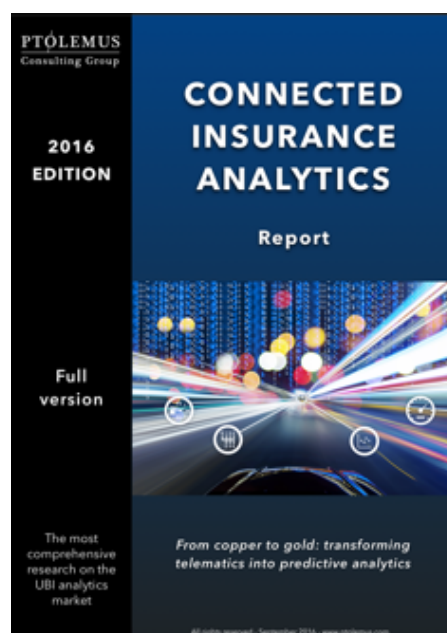
We also issue a quarterly dashboard of the UBI market



All the hard data you need to define & adjust your strategy

- 60-page barometer of the global UBI industry
 - Covers 170 companies
 - Covers the US, Canada, France, Germany, Italy, Spain and the UK
 - Issued on a quarterly basis
 - 190 charts, tables & figures
- Leverages both public information and primary research
 - A large set of public information collected from conferences, desk research, etc.
 - Supplemented and validated by primary research & data (Interviews, supplier questionnaires, own market forecasts, etc.)
- Brings you the most important market news
- Estimates UBI volumes and sales for all main players
 - Insurance companies
 - TSPs
 - Technology providers
- Deciphers the key market trends
 - UBI penetration
 - Number of programmes
 - Mix by business model (PAYD, PHYD, TBYP, etc.)
 - Market share of all main insurers, TSPs and device makers
 - Technology mix (Black boxes, OBD, apps, etc.)
 - Business line mix
 - Segment mix (Young drivers, mature drivers, etc.)
 - Channel mix aftermarket / OEM

PTOLEMUS brings unparalleled depth of knowledge in UBI



The most comprehensive research on the UBI Analytics market



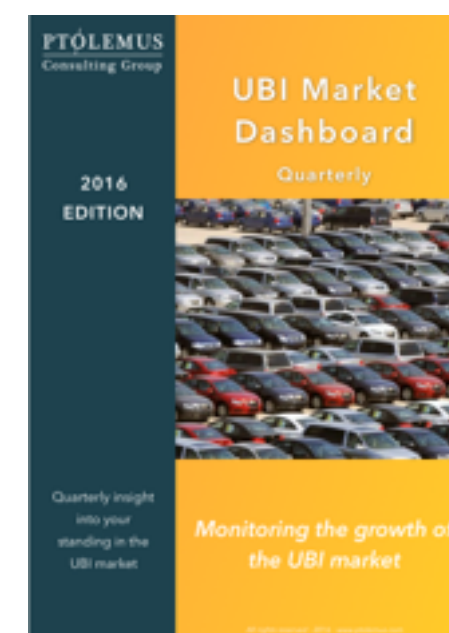
The reference report on the subject, quoted by The Economist, the Financial Times and the Wall Street Journal



30 insurance markets and 60 suppliers analysed



Referenced figures and forecasts for 14 connected car services



Quarterly insight into your standing in the UBI market

PTÓLEMUS Consulting Group
Strategies for Mobile Companies

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www.ptolemus.com



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