

CONNECTED AUTO INSURANCE

Latin American Study

**FREE
ABSTRACT**

The updated
reference report on
UBI and digital
insurance



*Will connected cars dominate the
auto insurance industry?*

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Connected Auto Insurance Latin America Study 2022 - Table of contents

| | |
|---|------------|
| Section 1: Introduction..... | 5 |
| 1.1. Report authors..... | 6 |
| 1.2. Executive summary..... | 8 |
| 1.3. Feature interviews..... | 10 |
| 1.4. Glossary..... | 26 |
| 1.5. About PTOLEMUS Consulting Group..... | 28 |
| Section 2: Status of the global connected auto insurance market..... | 36 |
| 2.1. An introduction to connected auto insurance..... | 37 |
| 2.2. The current telematics value chain..... | 81 |
| 2.3. The impact of COVID-19..... | 102 |
| Section 3: How will data be collected in the future..... | 111 |
| 3.1. Why is connectivity important for insurance..... | 112 |
| 3.2. What devices are available to collect data..... | 120 |
| 3.3. What data is available to the insurance industry..... | 153 |
| 3.4. How is this data typically managed..... | 162 |
| 3.5. How will data be collected in the future..... | 203 |
| Section 4: Why insurers should adopt connected insurance..... | 209 |
| 4.1. Engage with customers..... | 212 |
| 4.1.1. Driving benefits and value proposition..... | |
| 4.1.2. Scoring..... | |
| 4.1.3. Gamification..... | |
| 4.2. Improve revenues with digitalisation..... | 234 |
| 4.2.1. Better claims resolution..... | |
| 4.2.2. Offer additional VAS | |
| 4.2.3. Selection of less risky drivers | |
| Section 5: How the industry will be disrupted..... | 272 |
| 5.1. Digital brokers role in the insurance value chain..... | 273 |
| 5.2. OEM's future role in the insurance value chain..... | 282 |
| 5.3. VDH's future role in the insurance value chain..... | 320 |
| 5.4. Opportunities for insurers..... | 330 |
| Section 6: Forecasting the market to 2030..... | 350 |
| 6.1. Geographic forecast..... | 355 |
| 6.1.1. Latin America..... | |
| 6.2. Technology forecast..... | 363 |
| 6.2.1. Black boxes..... | |
| 6.2.2. CLAs..... | |
| 6.2.3. Line-fitted devices..... | |

| | |
|--------------------------------|-----|
| 6.2.4. OBDs..... | |
| 6.2.5. Smartphones..... | |
| 6.3. TSP revenue forecast..... | 374 |

Section 7: Conclusions.....377

Section 8: Region & country profiles...394

| | |
|---------------------------|-----|
| 8.1. Latin America..... | 395 |
| 8.1.1. Latin America..... | |

CONNECTED AUTO INSURANCE GLOBAL STUDY

- 1 Introduction
- 2 Status of the global connected auto insurance market
- 3 How data will be collected in the future
- 4 Why insurers should adopt connected insurance
- 5 How the industry will be disrupted
- 6 Forecasting the market to 2030
- 7 Conclusions
- 8 Regional and country profiles
- 9 Regional company profiles

CONNECTED AUTO INSURANCE GLOBAL STUDY

1

Introduction

2

Status of the global connected auto insurance market

3

How data will be collected in the future

4

Why insurers should adopt connected insurance

5

How the industry will be disrupted

6

Forecasting the market to 2030

7

Conclusions

8

Regional and country profiles

9

Regional company profiles

The study will answer the following key strategic questions on the connected auto insurance landscape

What is the strategy of major OEMs in insurance telematics?

Why should insurers adopt insurance telematics?

What are the trends and drivers for usage-based insurance growth between 2020 - 2030?

What will be the role of aftermarket devices in the future usage-based insurance?

Will OEM telematic solutions challenge existing insurer's business?

What will be the role of the emerging insurtech players in the UBI value chain?



What has been the impact of COVID-19 on insurance telematics industry?

What will be the size of the usage-based insurance market in 2030 by region?

What will be the predominant technology used to collect insurance telematics data by 2030?

How will UBI grow in the LATAM region, by 2030?

A comprehensive report on the global usage-based insurance industry for personal line insurance



More than just market research.

A strategic analysis of the connected auto insurance business and the global usage-based insurance market

- **360-pages of analysis** of the connected auto insurance industry including, strategies, use-cases and geographies, based on:
 - 11 years of constant market surveillance
 - Multiple interviews with key stakeholders
- Strategy analysis and assessment of the **4 key routes** OEMs have to enter the connected insurance market
- **An analysis of the** usage-based insurance value chain, including technologies, benefits, and Covid-19 impact
- **Analysis of the current status of the global UBI industry** that includes:
 - Digital brokers role in the insurance value chain
 - OEM's future role in the insurance value chain
 - VDH's future role in the insurance value chain
 - Opportunities for insurers
- **A profile of the Latin American connected auto insurance industry, including details such as:**
 - Share of active UBI policies & top car insurers
 - Market trends and timeline
 - Regulatory summary and UBI impact assessment
 - UBI value chain in Europe
- **2020-2030 bottom-up market forecast encompassing:**
 - Active policies
 - Technology splits
 - Revenues by technology
 - Distribution model, and
 - region/country

The report is the result of 9 months of work by a team of 8 consultants and analysts with 7 nationalities (1/2)



Frederic Bruneteau
Managing Director, Brussels

The **founder** of PTOLEMUS, Frederic has accumulated **25 years of experience of the mobility and transport domains** and 15 years of strategic and financial advisory.

He has become **one of the world's foremost experts of connected insurance** and is interviewed on the subject by publications such as the *Financial Times*, *Forbes*, the *Wall Street Journal* and *The Economist*. He has also spoken at over 40 conferences on the subject.

He has led over 160 consulting assignments including 70 related to UBI, helping many world leaders define and implement their strategy including:

- **Insurers** such as Admiral, Aioi Nissay Dowa Insurance, AXA, Baloise, Crédit Agricole Assurances, Generali, HUK Coburg, Liberty Mutual, Macif, Matmut, Nationwide, Société Générale Insurance, etc.
- **Analytics / telematics suppliers** such as Alfa Evolution, Danlaw, DriveFactor, LexisNexis, MUNIC, Octo Telematics, Pioneer, Sentiance and Vodafone Automotive.

Frederic also leveraged his experience of leading & reviewing 15 reports including the **UBI Global Study** and the **Fleet Insurance Telematics Global Study** to review this study.



Andrew Jackson
Research Director, London

With a career in market research spanning 12 years, **Andrew has over 8 years of experience working in the automotive and mobility domains**.

He has delivered **advisory services, custom projects, data and insights for some of the biggest names in mobility** e.g. BCA, Continental, CNH Industrial, Delphi, Johnson Controls, Hyundai, LeasePlan, Mannheim, Mercedes Benz, Mobis, PSA, SEAT, Tenneco, Volkswagen and Zego Insurance.

Over the years, he has been sought to share his opinion via a variety of publications such as the *Financial Times*, the *Wall Street Journal*

and *Automotive Industries*, *AMonline*, *Fleetworld* and *Fleet News* as well as a variety of national newspapers. He is also interviewed on global automotive events by Bloomberg, CNBC and Reuters.

Andrew is a **Certified Member of the Market Research Society (CMRS)**. Andrew is also a qualified Change Management Practitioner, a Certified Scrum Product Owner and Agile Business Analyst.

Andrew directed the design, research, analysis and forecast. Plus, he wrote several sections and entirely reviewed this report.



Alberto Lodieu
Senior Manager, Paris

Alberto has 11 years of experience in strategy and operations consulting.

He has specialised in the mobility, insurance and assistance industries in projects related to corporate and competitive strategy, operations excellence and business analytics.

He has **participated in over 30 assignments** helping clients such as Abertis, **AGC Automotive**, **AXA Partners**, CNES, the French space

agency, **CVC Capital Partners**, **Danlaw**, DMP, Deloitte, **Europ Assistance**, the European Commission, **Gruppo Banorte**, Ferrovial, **HUK Coburg**, **Liberty Mutual Insurance**, **Société Générale Insurance**, **Silver Lake**, Telespazio, Transurban, **wejo** and **ZirconTech**.

Alberto helped review, research and write this report.



Damien Orsoni
Business Analyst, Paris

After graduating from Kedge Business School and the University of Groningen in 2019, Damien completed his MSc in Management at Milan's Bocconi University in 2021. [?]

During his studies, he worked at S2M-Group, an IT consulting firm based in Barcelona, where he participated in projects with major financial institutions, insurance companies and telecom operators located in France. His area of focus was Client Communication Management.

Damien took up the role of VP of Cuora Consulting, a strategy consulting association offering pro-bono consultancy services to international NGOs and social start-ups. There, he had the chance to work with Ecosteer, a data ownership platform enabling companies in the augmented mobility industry to monetise their IoT investments by involving their customers into the data value chain.

Damien contributed to the research, analysis and writing of this report.

The report is the result of 9 months of work by a team of 8 consultants and analysts with 7 nationalities (2/2)



Nina Neubauer
Business Analyst, Brussels

An urban planning and transportation engineering graduate, Nina has developed expertise in **Autonomous Vehicles (AVs), Electronic Toll Collection, Smart Cities and connected cars** by assisting companies such as AXA Partners, Bain Capital, Advent International, Baumar Project, Intrado, Telepass and Vodasun Energie.

She has completed several research projects related to **traffic management** and **engineering** for the AVL Motor Test Center AB in Gothenburg and within the TU Munich.

For a global roadside assistance operator, she helped define their **connected car service strategy** and built a **forecast of 7 connected car services markets** in Europe.

For a private equity firm, Nina analysed the **European electronic tolling market**.

She has built our **2020-2030 global automotive market forecasts** and contributed to our **Connected Vehicle Payments Global Study**.

Nina helped build the market forecasts for this report.



Spardha Taneja,
Senior Business Analyst, Brussels

Spardha has gained 3 years of experience in the automotive and insurance sector. She has specialised in usage-based charging and Big Data analytics, gaining experience from companies such as Abertis, **AXA, AXA Partners, Capvis, Danlaw, HUK Coburg, Hitachi, Mobivia, Octo Telematics and wejo**.

She formulated a search engine marketing strategy to increase the visibility of Wayscra's (part of **Mobivia** group) web site on search engine result page based on

process mapping of non-financial KPIs in the electric bicycle market.

Spardha has been conducting research on the global insurance telematics market for PTOLEMUS UBI market quarterly dashboard for 2 years. She has developed a specific expertise of smartphone-enabled Usage-Based-Insurance, by analysing 16 technology service providers and 15+ UBI apps for our Mobile Insurance Global Study.

Spardha led the research, analysis and writing of this report.



Hosung Suh
Business Analyst, Brussels

Hosung obtained his Bachelor's degree in Economic History at Erasmus University Rotterdam in June 2018, and went on to complete an MSc in Strategy and International Business at Nova School of Business and Economics in 2020.

Amid the course of his studies, he worked on projects that fed his curiosity to explore and learn different roles and different industries. He spent some time as a Sales Analyst for the beer segment

in Belgium and also worked at Henkel as Brand Manager in Germany.

Furthermore, he broadened his experience by completing a consulting project at Europ Assistance in Portugal where he improved the products and operations within the roadside assistance branch, while exploring and learning about the future of mobility and usage-based insurance market.

Hosung contributed to the research, analysis and writing of this report.



Filippo Frezet
Business Analyst, Brussels

Filippo has gained experience in **mobility, insurance and emergency services**, helping clients such as Advent International, Bain Capital, the European Commission, SkyToll, wejo and Zego Insurance.

He has contributed to several consulting and research projects e.g.

- **For the European Commission, he analysed the impact** of mandating a combination of positioning technologies on mobile phones for emergency applications (E112)
- **Helped a European ITS company defining its expansion and M&A strategy**

• **For a leading private equity fund, he conducted the due diligence** of a leading electronic tolling service provider

• **He participated in the research and writing of PTOLEMUS' Vehicle Data Market Global Study**, the first in-depth analysis of car data hubs worldwide, analysing companies such as Caruso, LexisNexis, Otonomo, Verisk and wejo,

• He also led the work for our **Gig Economy Motor Insurance European Study**.

Filippo contributed to the research, analysis and writing of this report.

Will connected cars dominate the auto insurance industry?

Elon Musk just tweeted Tesla's intent to launch a UBI product in Texas in October, citing why, with the stream of "actual driving data", Tesla was best placed to price insurance premiums for its customers.

For once, however, this announcement is not so "avant-garde" and in fact represents the tip of the iceberg for the insurance industry...

COVID-19 has triggered the demand for mileage-based insurance...

Based on 9 months of research, this report reveals that the collapse in car usage provided by pandemic-related confinements has led policyholders to demand flexible policies priced on their actual mileage.

Many insurers, especially in the US, issued rebates, as policyholders demanded refunds, and, in response to the outcry, established UBI programmes too.

Furthermore, a large number of carriers told us how **demand for Mileage-Based Insurance (MBI) has increased significantly**, with reports of **40-50% of all new policies being written to connected auto insurance programmes** no longer being uncommon.

... and OEMs are responding

With the now dominant share of connected cars being sold in developed countries, OEMs are responding to the demand for km-based policies.

Aided by the COVID-19 pandemic but also OEMs' own initiatives, **connected car insurance is increasingly substituting traditional car insurance**. Since 2017, the growth of connected car insurance programmes has been **outpacing insurance based on aftermarket devices**.

PTOLEMUS' research identified that at least 13 global OEMs have launched telematics insurance programmes in the last two years, all **of which use the car's built-in connectivity without the need for additional aftermarket hardware**.

At least **17 OEMs are selling connected car services** with dynamically-priced insurance already available from Ford, GM, Kia, Hyundai, Mercedes-Benz, Stellantis, Tesla, Toyota and Volkswagen. Many car manufacturers have also forged insurance partnerships (i.e. Ford with Arity, GM with American Family, Ford with Octo Telematics, PSA with AXA, Daimler with SwissRE).

Furthermore, in a clear statement of intent, 50% of all OEM in-house UBI programmes now use connected car data only, removing insurers or TSPs from the equation entirely.

What will be the impact?

PTOLEMUS has found that aftermarket devices will continue to hold a significant global marketshare for the next 5 years, but PTOLEMUS **expects the share of black boxes, cigarette-lighter adaptor, dash cameras and OBD dongles global to decline by 2030**.

That is not to say that the future will be OEM data only. Indeed, PTOLEMUS also found that the growth in **smartphone-based programmes will continue for Pay How You Drive programmes**.

This can be attributed to the ease of app distribution and relative low cost.

Critically however, **the biggest strength of smartphone insurance comes from its ability to connect with the consumer** in a way that no other aftermarket device can offer.

Is it too late for insurers adopt UBI?

Not necessarily! The advent of the COVID pandemic has inadvertently resulted in a public referendum on traditional insurance products. Due to this exceptional event, **the benefits of UBI have finally become evident to policyholders**.

The reasons for UBI adoption are very much established too, with 5 key areas where the technology can provide benefits, including: customer

acquisition, onboarding, customer engagement, policy management and, claims management.

Also, by using connected insurance within claims management, insurers can reap significant improvements in claims processing, **reducing lead times by up to 75%. Meaning a lead time of 20-30 days can be reduced to little more than a week**.

But insurers must move fast to address the growing vacuum in the market as, automakers and digital brokers are proving that they will be able to disrupt the market.

A market that will be multiplied tenfold

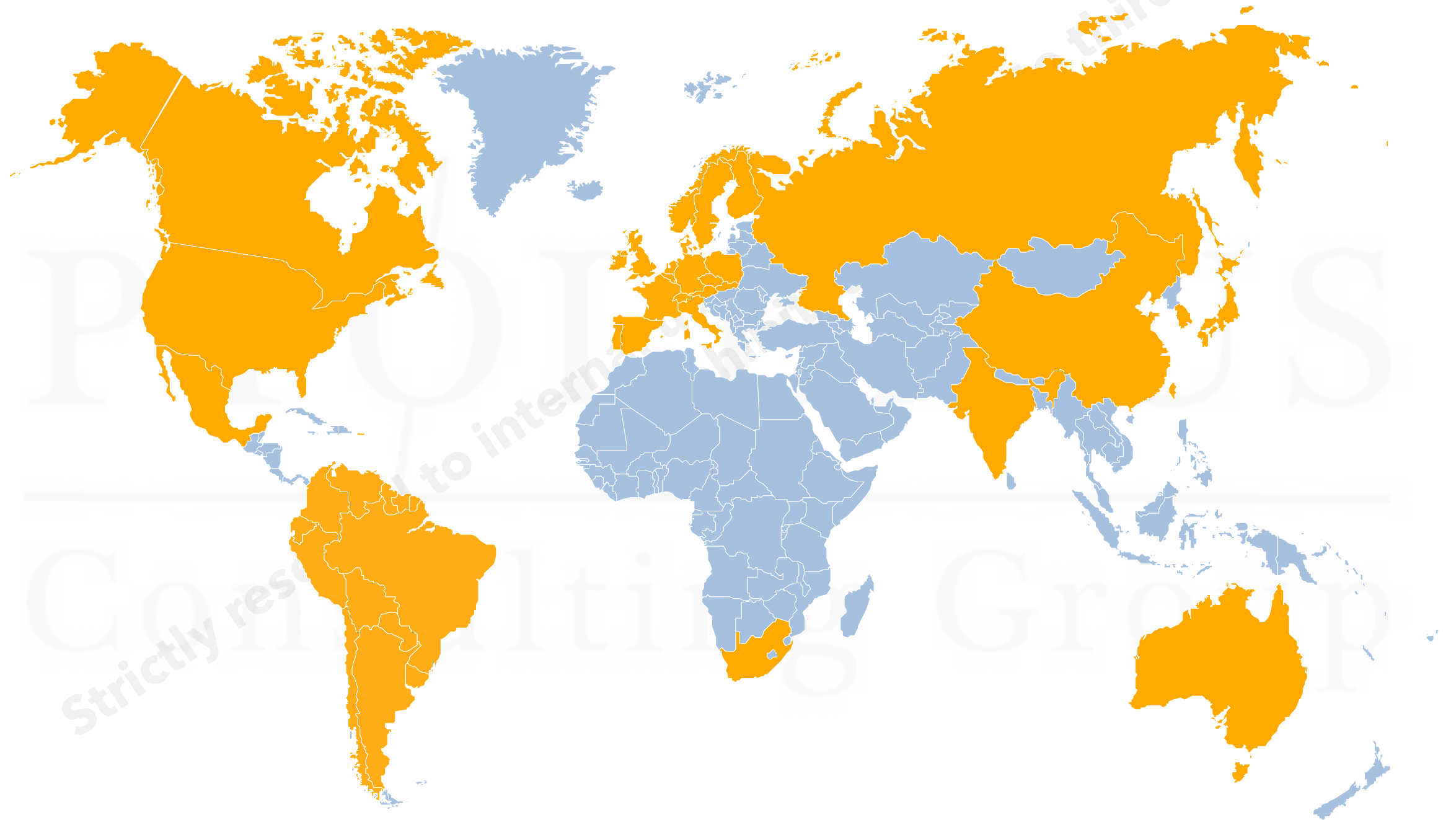
Today, the market for **connected auto insurance represents 26 million active policies across all types of distribution models and technologies, generating €15 billion in premiums**.

Nearly 50% of global active programmes are concentrated in the USA, the UK and Italy. However, in last two years, 16 smaller markets have been positing double-digit growth too.

We expect that the increasing ease and lowering costs of data collection will allow UBI-based policies to grow to **248 million across 18 regions**.

As a result, global UBI premiums are expected to surpass **€150 billion by 2030, 10 times more than last year!**

The report covers the top 15 countries and regions that are most active in connected auto insurance



Commercial opportunities exist due to COVID-19 boosting the profile of telematics with consumers



Gina Minick
Product Director,
Insurance
Chicago, USA

Could you please tell us more about Arity's telematics solutions?

Arity provides the most predictive telematics analytics utilising loss data at unmatched scale to help insurers price more accurately and competitively, all while motivating safer driving.

Our configurable platform and end-to-end suite of solutions is designed to support the launch of a new programme -- or supercharge an insurer's existing capabilities with everything from data collection to scoring, not to mention innovations like the ability to target marketing and price tens of millions Americans based on actual driving behaviour. Our insurance industry solutions include:

- Routely® app & Arity SDK - data origination & collection,
- Drivesight® - pre-filed risk score models,
- Arity IQSM - tens of millions of pre-scored drivers available for pricing purposes,
- Marketing Solutions - targeting of nearly 100 million drivers based on risk score.

Arity now provides telematics services to players other than Allstate. What was the rationale for such a transformation? What have been the benefits so far?

While Arity was born from Allstate, our vision has always been broader. We were originally created as an independent company specifically so we could provide services to any insurer as well as to companies in other industries. Today we partner with a wide range of mobility leaders, including multiple insurers and reinsurers, OEMs, sharing economy companies, transportation leaders like Michelin, and apps like Life360 and WeatherBug.

This reach allows us to work across the transportation ecosystem to pursue our ultimate goal of making transportation smarter, safer, and more useful for everyone. Not only has this allowed us to accelerate insurance telematics innovation, for example by recently bringing Arity IQ to market, but it allows us bring telematics solutions like collision detection to meet consumers where they are, for example in Life360 where it saves lives every day. The wide range of our work allows us to see problems in different ways and bring new insights to bear.

How has the market evolved since 2016? What would you say have been the biggest beneficial evolutionary steps taken with regards to customer acceptance, technology, and legislation?

A lot has aligned to help accelerate telematics over the past 5 years. The biggest technology shift has been the move from OBD-II dongles to phone apps as the primary data collection method, which has also allowed for new factors like phone handling. As part of that, we've seen higher acceptance by customers who have more comfort with apps and see a higher ease of use in downloading an app vs. installing a device in their vehicle. Consumer acceptance has also increased as comfort with the use of driving behaviour for pricing has consistently risen year-over-year, including a significant jump in 2020, when the COVID-19 pandemic caused people to seek out lower

insurance rates to reflect their reduced mileage. Simultaneously, regulation in the U.S. has continued to be more open to telematics pricing, making it easier to file and in more states.

Arity is equally committed to accurately collecting data and to providing industry leading driving scores and analytics. That said, while our SDK and apps track the driving behaviours of 26 million Americans every day, we also recognise that ultimately data at scale will come from multiple sources, so we've crafted our solution to ingest data from anywhere, whether it's our SDK, a third-party TSP, or an OEM. As for our analytics, Arity's insights are based on the industry's largest collection of mobile driving data tied to actual insurance loss and policy information, so we're able to understand the real risk behind driving behaviours and build more accurate models as a result.

Where does Arity see the future of insurance telematics heading in the North America?

The pace of insurance telematics innovation is only increasing. Companies continue to innovate their programmes, from more sophisticated pricing to value added services such as collision detection. The most exciting near-term innovation that we see, however, is the opportunity to obtain actual driving behaviour insights on consumers before they buy, which will bring telematics insights from renewal up to marketing and sales, revolutionising the industry. Arity IQ is a database of actual driving behaviour that we've collected, with opt-in permission, on tens of millions of Americans which insurers can ping for pricing, similar to the way credit or MVR is used now. We also have marketing targeting based on actual driving available on nearly 100 million US drivers.

Data volume and variety will grow, but issues such as unintentional biasing will become regulated



Gina Minick
Product Director,
Insurance
Chicago, USA

What do you think will be the biggest challenge that might prevent such progress being made?

Telematics data is already massive, and as increased accuracy is demanded and additional factors like phone handling are added it continues to grow. As it continues to evolve, it will also come from many sources. A number of insurers already have multiple programmes in market collecting from OBD-II devices, mobile devices, tags, OEM and more. Data at scale, especially from multiple sources, will require specialised expertise in scrubbing and matching data types, as well as an ability to optimise analysis of available data.

How is Arity working to mitigate this challenge?

No two sources of data are identical, so the ability to optimise scoring on diverse data sets is a huge advantage. Arity embraced a sensor-agnostic approach to data ingestion several years ago. In addition to our own SDKs and mobile apps, we also work with OBD-II devices, plus numerous other mobile apps, TSPs, OEMs, and third-party data sets, so we have a wealth of experience in ingesting and merging disparate data and resolving the issues this

presents. While our data ingestion is agnostic and simple, our models themselves are sensor based to ensure the unique value of each sensor, such as phone handling, is fully leveraged. We do the heavy lifting for our customers, allowing them to offload the time, resources and expertise many don't have. They can build and iterate on programmes using the most predictive to acquire, service, and retain their best customers.

How has COVID-19 impacted Arity and the regions/markets it operates in, over the last 18 months?

COVID-19 proved just how valuable accurate, real-time driving data really is. We provided insights into the shifting driving behaviours that we saw in the U.S. for free during 2020 via a series of webinars, reports, and a microsite, and helped our customers navigate the changes in risk that they saw on their book of business, including providing data that informed things like customer give backs as well as price adjustments or defending prices to regulators. In addition, we saw a significant shift in customer mindset during the pandemic, where the significant decrease in driving most Americans experienced led to significant jumps in interest in safe driving or mileage-based programmes.

What makes for a good insurance telematics service? How does Arity know that its portfolio of services is being well received?

No two insureds are the same, however ease of use and the ability to see their safe driving reflected in their price are fairly universal desires. Similarly, no two

carriers are the same – some are at different points in their telematics journey or have different strategies or different books of business – and Arity is engaged with carriers across this entire spectrum. Still, pretty much all insurers also want to meet consumer desires in order to maximise adoption, as well as ensuring accurate pricing. We aim to build programmes that ensure adoption and retention numbers an insurer can be proud of while maximising profitability.

What types of programmes do you see becoming popular over the next 5 years? What are the reasons? What is Arity's strategy to support this industry evolution?

Customers want ease of use and rates that make sense to them. Insurers also want ease of use, plus increased adoption and profitability. Any programme that helps to deliver on these will gain popularity.

In addition, as a result of the increased focus on racial justice, U.S. regulators are starting to restrict rating variables that potentially cause unintentional racial bias in rating. This will lead to greater reliance on driving behaviour, which is more logical and controllable.

As a result of all of this, we expect Arity IQ, which allows insurers to bring telematics scores to the point of quote, to grow in popularity as it can allow insureds to see their discount right away, which improves adoption and customer satisfaction as well as allowing insurers to improve pricing and underwriting from the start.

Arity will maintain data agnosticity whilst focusing on making crash detection a reality for consumers



Gina Minick
Product Director,
Insurance
Chicago, USA

Where will Arity's strategic focus be in the coming 5 years?

In addition to continuing to enhance our pricing and ingest more data sources, Arity's focus will be on leveraging telematics data to revolutionise insurance marketing and sales. This will allow carriers to target, underwrite, and price insureds accurately based on their actual driving behaviour, without needing cumbersome systems to collect and leverage data only after the buying decision has been made. Carriers can target the best drivers, and those customers will be able to see their real price at time of quote, improving adoption. While we already have tens of millions of drivers available to price in our Arity IQ database and almost 100 million available for marketing, we're working aggressively to continue increasing our reach.

The capabilities of direct data feeds from OEMs are very often talked about, but they are still not a mass market data alternative to black boxes, smartphones etc.. How is Arity working with its OEM partners to get direct data into the market for insurers? When do you think this will become a mainstream alternative?

Arity has partnered with OEMs, most recently Ford, because OEMs have quality data that can provide a lot of value for insurers' telematics programmes. However, we believe that in order to scale as quickly as possible it's important to find ways to meet the customer where they already are, which means leveraging other data sources available as well. Therefore, while Arity partners with OEMs we also continue to be agnostic in how we ingest data; if the data exists, wherever it exists, we're ready to leverage it.

Driving behaviour is the most predictive factor we have available to us in pricing auto insurance. It's also increasingly perceived as the most logical factor by both consumers and regulators. Insurers who don't leverage it are missing out already, opening themselves up to sub-par pricing and adverse selection. They may soon find themselves scrambling to match the segmentation power of industry telematics leaders as regulators restrict use of traditional factors that are perceived as having disparate impact among minorities.

In terms of adjusting behaviour, several studies have shown that the simple knowledge that someone is being monitored can positively improve their driving behaviour and gamification experiences can provide additional shifts around specific behaviours. We've seen our own technology and user experience impact the driving behaviour of our clients through both distracted driving case studies and pure premium analyses.

Have you been able to observe actual improvements in the way people drive?

Yes, we have, although it's worth noting that some behaviours are much easier to shift than others. People seem to be willing adapt by speeding less and accelerating or decelerating more gradually, but most don't have much control over what time of day they drive. People are also incredibly resistant to altering their phone use regardless of whether they're prompted via an in-app campaign or as a result of outside influences, such as during the drastic changes to traffic during COVID.

How can the quality of data collected for claims and crash management be improved? Is there a need for an aftermarket device?

No one solution is ideal. OBD-II devices are costly. Bluetooth tags can prohibit or slow down onboarding by requiring another step for the consumer to install them. OEM data isn't currently available at scale. Mobile phones can't synch to a vehicle. Rather than waiting for the perfect solution, Arity is focused on leveraging our strong analytics to optimise the data and systems available today. And while we're actively working to improve things like detection of low-speed crashes, we're proud to say we've successfully deployed mobile crash detection to well over 30 million devices since we implemented it, which has given us a huge learning opportunity, and have successfully identified well over 30,000 confirmed crashes in the past 3 years.

According to a CMT survey, 63% of Americans are ready to switch to UBI



Ryan McMahon

VP, Insurance and
Government Affairs,
Boston, USA

Could you please tell us more about CMT's telematics solutions?

At Cambridge Mobile Telematics our goal is to make the world's roads and drivers safer. The company was founded in 2010 based on research from MIT. We are now the world's largest mobile telematics provider, powering 70+ enterprise programmes in more than 25 countries.

Our technology serves several million drivers a day through our partnerships with leading insurers, ride hailing platforms, MNOs, and car manufacturers.

Using mobile sensing and IoT, machine learning, and behavioural science, our telematics platform measures driving behavior to help drivers improve and reduce risk. We also provide instant crash alerts and roadside assistance to drivers in need. The data generated by our ability to recognise a crash helps create a smooth

connected claims process to reduce costs and improve efficiency.

Since our acquisition of TrueMotion, we now provide the top 2 service platforms worldwide. For insurers, it means unprecedented innovation, scale and accuracy.

How has the market evolved since 2016? What would you say have been the biggest beneficial evolutionary steps taken with regards to customer acceptance, technology and legislation?

The early telematics programmes relied on technology that was incredibly expensive to scale. As a result, insurers' investment into telematics was limited to specific use cases that ended up following particular patterns in each country. It wasn't until much lower-cost mobile telematics was invented, and the technology matured enough that the market realised that there was a broader future for the technology.

The overall acceptance of telematics has followed the technology evolution, the bigger choice in models, and the increased awareness.

In the U.S., our latest survey suggests 72% of U.S. drivers are interested in UBI and 63% are ready to switch. In Europe, where awareness varies and is generally lower, our survey suggests 50% of

drivers are interested and 27% are ready to switch.

As a result of the increased acceptance and better understanding of the delivery models, most UBI programmes have now switched from roll-over to continuous monitoring. In turn this has triggered the opportunity to provide a vast array of value added services which make the programme more "sticky".

2016 was when the world realised telematics technology was stable enough to sustain an insurance offer. It was the peak of the hype and the market did not continue past that stage as most programmes were device-based and unable to scale.

What has changed is the nature of the market which has radically switched to embrace mobile telematics instead of single purpose devices. Now besides Metromile and Snapshot, all consumer UBI programmes in the U.S. are smartphone-centric.

CMT believe there is a model of insurance telematics for everyone



Ryan McMahon

VP, Insurance and
Government Affairs,
Boston, USA

Today does Cambridge Mobile Telematics position itself as a TSP or as an analytics provider? How does Cambridge Mobile Telematics differentiate itself from its competitors?

CMT provides a complete solution to its insurance partners. This starts with the technology, the customer management, the communication and model choices, the rewards option, and the partnership involved, but it doesn't stop there.

CMT scores drivers and provides them with feedback on their driving. We also provide insurers with a "Premium Score" which is tailor-made for actuaries to individually price drivers. This is all about preventing crashes, but in the worst-case scenario, we can detect collisions and measure their severity very precisely to inform the rescue teams as well as the claims management team.

This all-encompassing approach is what makes us unique. We have more drivers on our platform than any other mobile telematics service providers combined, in Europe and North America where we now serve 21 out of the 25 largest auto insurers.

Where does Cambridge Mobile Telematics see the future of insurance telematics heading in North America and Europe?

We believe there is a model of insurance telematics for everyone. We recently launched a new mileage-based programme in the U.S. that rewards drivers monthly depending on their mileage. Unlike with typical PAYD policies, they always know how much they will pay at the end of the month, but if they drive very little in that month, they will receive some of their premium back.

We're also at the beginning of using connected car data to help price insurance. While this new data stream is definitely useful, the raw data provided by the car sensors is not enough to understand driver behaviour on its own. Insurers will want to partner with a TSP that knows how to process and analyse this type of streaming data, merge it with mobile telematics focused on the driver, and help add it to their risk models. As

mentioned above, any good TSP is also an analytics company.

What do you think will be the biggest challenge that might prevent such progress being made?

The biggest challenge will be privacy concerns from consumers; some players do not stop at scoring their customers' drives and show a total lack of accountability for an intrusive monitoring.

We see companies gathering huge sets of private behaviour information unbeknownst to their customers. The scoring should stop when the engine stops, and that's why CMT has an iron-clad privacy guarantee for its customers to only use their data in ways they explicitly permit.

How is Cambridge Mobile Telematics working to mitigate this challenge?

We are working alongside our partners to ensure communication around the usage of the programmes is clear, complete, and transparent. We believe gaining drivers' trust is paramount to engagement, retention and the overall success of any telematics programme.

In 2020, interest in CMT's mileage-based insurance programmes tripled



Ryan McMahon

VP, Insurance and
Government Affairs,
Boston, USA

How has COVID-19 impacted Cambridge Mobile Telematics and the markets it operates in, over the last 18 months?

The pandemic has had many unexpected consequences on the auto insurance market. One of them has been a sharp increase in the average crash severity. As trips taken dropped by 50%, speeding risk increased by 45%. We also measured an increase of 18.5% in distraction during the lockdown months in the U.S. Empty roads have led to measurably more dangerous driving.

The major change in day-to-day behaviour has also led drivers to examine what they're paying for car insurance and think more about how their premium is calculated. As a result, the appetite for connected insurance models has increased sharply since the pandemic started in Europe, with 65% of the population now likely to make the switch. In January 2020, "only" 49% of European

drivers suggested they would be likely to try usage-based insurance.

What makes for a good insurance telematics service provider? How does Cambridge Mobile Telematics know that its portfolio of services is well received?

A new telematics programme is an exciting opportunity for an insurance carrier to benefit from improved pricing, better claims handling and increased profitability.

One important KPI for us in our partnership is engagement and retention. We have a dedicated team of engineers and behavioural specialists that look at our partners' users and ensure onboarding, experience, and renewal are maximised.

A good TSP is one that helps you grow your portfolio faster.

CMT believes that our partners' success is our success, a value that has brought us over 65 programmes actively in the market.

From a technical standpoint, our commitment to research has yielded the best solution for insurers offering highly accurate data. Utilising more than one sensor (the Tag and the app) increases data accuracy for App+Tag users, who benefit from

sensor fusion (the conflation of data from more than one sensor). This also helps App-only users, whose data is made more accurate due to being trained against datasets which include Tag data. This is a unique advantage that no other telematics provider in the market has.

What types of programmes do you see becoming popular over the next 5 years? What are the reasons? What is Cambridge Mobile Telematics' strategy to support this industry evolution?

Just last year, the interest in mileage-based programmes tripled. Looking at the variations in the UBI programmes in the last two years, it is impossible to know what UBI model will be favoured in five years. Chances are that model does not exist yet.

We are finding new scoring criteria every year and are sharing our research with our closest partners. Maybe U-turns will become 2021's most predictive criteria...

CMT believes ubiquity and general tech advances will safeguard phone-based UBI



Ryan McMahon

VP, Insurance and
Government Affairs,
Boston, USA

The capabilities of smartphone-based telematics programmes are often subject to scrutiny, and sometimes criticism, when compared to other hardware solutions. What is your opinion on this? Are there limitations to smartphone-based insurance telematics? What is Cambridge Mobile Telematics doing to mitigate this perception and inform its customer base?

First and foremost, the ubiquity of the smartphone makes it by far the most cost effective telematics programme - insurers don't need to invest in a piece of hardware that everyone already has.

Also, sensors in smartphones evolve constantly and more money is invested in creating the next Apple phone than has been invested for years in upgrading black box technology.

The criticisms around smartphone data have been muted for many years, especially since the largest insurers in the U.S. have demonstrated the technology was better than dedicated hardware and all switched to mobile.

Today the data quality and the robustness of the analytics is not in doubt, but a black box is installed into a vehicle by an engineer, so its understanding of the vehicle's behaviour will be better than the smartphone. We concentrate on measuring the driving behaviour of the driver to which the smartphone is – very much – attached.

What needs to be remembered is that black box insurance does not allow for feedback to the driver, it is strictly based on the model around monitoring in exchange for a discount.

Consequently, the offer is limited to niches of high risk drivers that do not have other choices. Mobile telematics is for everyone and can support a multitude of models, such as behaviour-based with rewards or cash back, mileage-based, or trial periods.

Do you see telematics improving people's driving behaviour in a lasting manner? What is the biggest reason for an insurer to introduce a telematics programme?

The relative risk of crashing increases by a factor of 23 if texting while driving. Throughout the U.S., distracted driving occurs on over one-third of trips. After seven days of using the DriveWell app, we observe a 15% decrease in distraction events, followed by a 35% reduction in distraction after 30 days. These improvements are sustained by drivers that remain engaged with the programme.

Insurers have found the benefits of using telematics programmes in better pricing and risk management, in differentiation and adaptation to environment changes (think of the PAYD rush during the lockdowns) and of course in their ability to use telematics data to make their claims process more efficient.

I believe the first reason to introduce telematics is the customers. They have the most to gain: reduced premium, much fairer rating criteria, transparency and value added services; and this is just the start.

Tag-based solutions can assist claims, whilst video telematics is on the horizon



Ryan McMahon

VP, Insurance and
Government Affairs,
Boston, USA

Have you been able to observe actual improvements in the way people drive?

Our analysis of billions of miles traveled by millions of drivers worldwide indicates that distracted driving feedback and user engagement can be impactful, with the top 30% of drivers on their platform reducing their phone distraction by 39% after 30 days, speeding by 30%, and hard braking by 51%.

Our customers also see that; Discovery Insure recently published a paper highlighting a 24% reduction in crash frequency.

They also demonstrated that driving data has the ability to further segment and improve non-behaviour models such as age: a driver in their 20's that has "gold" status has 28.6% lower accident frequency than a "bronze" driver in their 50's. As a result, their top tier drivers are 54% more profitable.

How can the quality of data collected for claims and crash management be improved? Is there a need for an aftermarket device?

This points directly to one of the big benefits of smartphone telematics - there are hundreds of millions if not billions of drivers with smartphones in their pockets. By using the scale of data to constantly improve the machine learning AI that detects crashes ... when adding in data from 8 million tags we've shipped worldwide, we're looking at the largest corpus of data that's constantly improving. No other technology can offer that kind of accuracy and scale.

Secondly, while more cars are connected and able to send eCall data, our benchmarking of EDRs suggest aftermarket devices like CMT's Tag can much better detect and analyse crash severity and context, giving insurers access to our claims-ready platform including:

- Crash alert and storyline: a report with raw and contextual data crash info to streamline the claims process,
- Intensity and severity indicators: an added layer of context about the crash indicating the potential severity/urgency of the impact and how severe the crash was from a property damage standpoint.

Where will Cambridge Mobile Telematics' strategic focus be in the coming 5 years?

One area of interest is looking at how connected insurance can benefit the fleet market. Commercial auto brings more risk, and the need to manage that

risk and associated costs. Insurers and fleets are interested in understanding behaviours or context beyond what's captured through mobile telematics. Video telematics builds on the capabilities of mobile telematics, enhancing existing programmes with new features that give a wider view into risks that are happening inside and outside the vehicle.

Video telematics can unlock:

- A complete picture of risk and more granular understanding of loss with data from different sources, not just detection of a single visual event.
- Clear and compelling video evidence of what happened before, during, and after a crash to identify fault and protect against false claims.
- A scalable and secure solution that integrates with the tools insurers already use, surfacing videos to quickly and efficiently investigate a claim and delivering reports with extracted risk events to use in risk assessment.

We consider "video telematics" to be the next generation of "mobile telematics" (a more complete picture of risk), and AI-powered computer vision helps us achieve this.

Connected Auto Insurance Latin America Study 2022 - Glossary

| | | | |
|----------------|--|----------------|---|
| 3G | Third generation mobile networks (also called UMTS) | FNOL | First Notification Of Loss |
| 4G | Fourth generation of cellular wireless standards (also called LTE) | GIS | Geographic Information System |
| 5G | Fifth generation of cellular wireless standards | GNSS | Global Navigation Satellite System |
| ADAS | Advanced Driver Assistance System | GPS | Global Positioning System |
| API | Application Programming Interface | HGV | Heavy Goods Vehicle |
| bCall | Breakdown call, i.e. a call-based roadside assistance service | ITS | Intelligent Transport Systems |
| BOM | Bill of Material | IVR | Interactive Voice Response system |
| CAAS | Car As A Service | IPR | Intellectual Property |
| CAN-bus | Controller Area Network (One of the car's network) | KPI | Key Performance Indicator |
| CASCO | Casualty and Collision (equivalent to comprehensive insurance) | LBA | Location-Based Advertising |
| CEN | The European committee of standardisation | LBM | Location-Based Marketing (e.g. promotional coupons) |
| CLA | Cigarette Lighter Adaptor | LCV | Light Commercial Vehicle |
| CPM | Cost Per Thousand | LTE | Long Term Evolution, aka 4G mobile networks |
| CRM | Customer relationship management | M2M | Machine to Machine |
| CONTRAN | Conselho Nacional de Trânsito (National Traffic Council; Brazil) | MBI | Mileage-based insurance |
| CTR | Click Through Rate | MEMS | Micro-Electro-Mechanical System |
| DAB | Digital Audio Broadcasting | MNO | Mobile Network Operators |
| DAB+ | Approximately twice as efficient as DAB | MTBF | Mean Time Between Failure |
| DMB | Digital Multimedia Broadcasting | MTPL | Motor Third Party Liability |
| DQ | Driver Quotient | MVR | Motor Vehicle Records |
| DSRC | Dedicated Short Range Communications | NCTS | National Computerised Transit System |
| DTC | Diagnostic Trouble Code | NFC | Near Field Communication |
| DVB-T | Digital Video Broadcasting – Terrestrial | OBD | On-Board Diagnostics |
| eCall | Emergency call, the pan-European assistance system that is now integrated in all new EU car models | OBU | On-Board (telematics) Unit |
| EC | European Commission | OEM | Original Equipment Manufacturer |
| ECU | Electronic Control Unit | OS | Operating System |
| EDR | Electronic Data Recorder | OSM | Open Street Map |
| EES | Egis EasyTrip | OTA | Over The Air |
| EETS | European Electronic Toll Service | PAYD | Pay As You Drive insurance |
| eFNOL | Electronic First Notification Of Loss | PC | Passenger Cars |
| EOBD-II | European On Board Diagnostics | P&C | Property & Casualty insurance (incl. auto & home insurance) |
| EOBR | Electronic On Board Recorder | PCB | Printed Circuit Board |
| EV | Electric Vehicle | PHYD | Pay How You Drive insurance |
| FCD | Floating Car Data | | |
| FMD | Floating Mobile Data | | |
| FMS | Fleet Management System | | |

Connected Auto Insurance Latin America Study 2022 - Glossary

| | |
|------------------|--|
| PID | Parameter ID |
| PIP | Personal Injury Insurance |
| PND | Portable Navigation Device |
| POI | Point Of Interest |
| POS | Point Of Sales |
| PPC | Price Per Click |
| PSAP | Public Service Answering Point |
| QoS | Quality of Service |
| RFID | Radio-Frequency IDentification |
| RHYD | Reward How you Drive (discount is replaced with a non-monetary reward) |
| SAAS | Software As A Service |
| SVR | Stolen Vehicle Recovery |
| SVT | Stolen Vehicle Tracking |
| TBYB | Try before you buy insurance schemes (generally using an app to monitor driving risk before underwriting) |
| TCO | Total Cost of Ownership |
| TISA | Traveller Information Services Association, in charge of standardising traffic information services |
| TMC | Traffic Message Channel, a technology for delivering traffic and travel information to drivers (sometimes also called Alert-C) |
| TMS | Transport Management System |
| TPS eCall | Third-Party Service eCall, connected to a private assistance provider (e.g. IMA for PSA or AllianzOrtungs for BMW)) |
| TSP | Telematics Service Provider |
| TTP | Telematics Technology Provider |
| UBI | Usage-Based Insurance |
| V2V | Vehicle to Vehicle |
| VAS | Value Added Services |
| VMS | Variable Message Signs, displaying traffic information on key motorways |
| VIN | Vehicle Identification Number |
| VPN | Virtual Private Network |
| WAN | Wide Area Network (typically the cellular network) |
| WLAN | Wireless Local Area Network (typically a WiFi network) |

PTOLEMUS Consulting Group

About PTOLEMUS Consulting Group

PTOLEMUS

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The first strategy consulting & research firm entirely focused on augmented mobility & automation

Strategy consulting services



Market research services



Fields of expertise

| | | | |
|-------------------------------------|--|---|--|
| Mobility services | Car pooling Car sharing MAAS | Micro-mobility Ride hailing Shared mobility | Smart parking Tax refund |
| Vehicle services | bCall eCall FMS SVT / SVR | Tracking VRM In-car Wi-Fi Parking | Navigation Speed cameras Traffic information |
| New energies | BEV EV charging Fuel cards | Fuel cells Hydrogen | PHEV Vehicle-to-grid |
| 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 | Robo-taxis Shuttles |
| Enabling technologies | Positioning (GNSS / WiFi / cellular) M2M / connectivity | Smartphones Sensors | Telematics devices V2X |

Our clients come from across the mobility ecosystem

Analytics, maps & applications providers



Automotive manufacturers & suppliers



Telematics solution providers



Insurers, aggregators & assistance providers



Mobile telecom players



Fleet & fuel, ITS & regulators



Banks & private equity investors



170 consulting assignments to help our clients define their strategy ...



Defined strategic positioning in insurance telematics value chain



Evaluated UBI market opportunities in Europe, Asia and Latin America



Defined the strategy & business plan of its telematics programme



Helped the company's Board understand the impact of telematics

Insurance group



Defined the scoring & pricing of its PHYD programme

European insurer



Helped the company its EU market entry strategy

Fleet telematics service provider



Appraised future telematics technology & market trends and their impacts



Helped our client define its mobile UBI strategy

Global insurance group



Helped evaluate European OBD market opportunities in FMS, UBI and roadside assistance

Major telematics device vendor



Evaluated the market potential of insurance telematics in Europe



Helped the company define its strategy towards OEMs

Major insurance data provider



Defined its European connected insurance market entry strategy

Consumer electronics group

... perform market sizing, due diligence & business planning projects...



Conducted the commercial due diligence of Octo Telematics



Assisted in the review of the global insurance telematics market

KKR



Helped the client define the strategy & business case of its new telematics business

Automotive tier-1 supplier



Performed a global review of the insurance telematics market

SILVERLAKE



Performed the vendor due diligence of Cobra Automotive prior to its acquisition by Vodafone

INTEK GROUP



Led technology due diligence of Lytx, a US video-based fleet Telematics Service Provider

BainCapital



Evaluated the analytics solution of a global insurance TSP

Private equity fund



Evaluated the impact of telematics on claims losses

French insurance company



Evaluated the EU market for smartphone-based fleet management



Built insurance telematics business plan in 5 EU countries



Led commercial due diligence of ITmobile, a Belgian fleet TSP



Conducted a global review and forecast of the Usage-Based Insurance market

Cinven

... and help them deliver their strategy



Defined & implemented its partnership strategy in the connected vehicle ecosystem



Assisted in sourcing a driving behaviour database across Europe

Global tier-1 automotive supplier



Helped the company build its driver behaviour scoring solution

Telematics Service Provider



Helped the technical team identify valuable OBD data for its future telematics diagnostics offering

Roadside assistance operator



Evaluated the technical & safety characteristics of a telematics solution using an OBD dongle

Mid-sized insurance group



Evaluated the solution of an Irish fleet Telematics Service Provider

Strategic investor

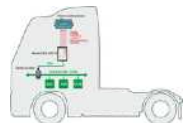


Helped the OEM leverage its data for its insurance telematics strategy



Sourced a large scale driving database to build a global auto insurance risk score

Insurance scoring company



Evaluated the technical solution of a CAN-bus telematics solution provider

Tyre maker



Defined the telematics platform specifications on analytics & driver coaching

Consumer electronics player



Assisted in sourcing an OBD dongle for mass deployment in China

Major connected platform provider



Evaluated the security of the solution of a green driving service provider

Major financial group

We have helped insurance and assistance companies in over 10 countries



PTOLEMUS can help both insurers, OEMs and their suppliers achieve their connected insurance objectives

- **Strategy definition**

- Market entry assistance
- Data strategy and analysis
- End-to-end UBI programme definition
- Mobile insurance strategy development
- VAS strategy
- Data monetisation strategy
- e-FNOL strategy

- **Investment assistance**

- Strategic review
- Commercial due diligence
- Market forecasting

- **Innovation management**

- Insurance policy definition
- Integration with fleet telematics
- Telematics pricing strategy
- Reward strategy
- Value added services (VAS) strategy
- Loss reduction plan

- **Procurement**

- Identification of relevant suppliers
- Selection of telematics technology & suppliers

- **Business development**

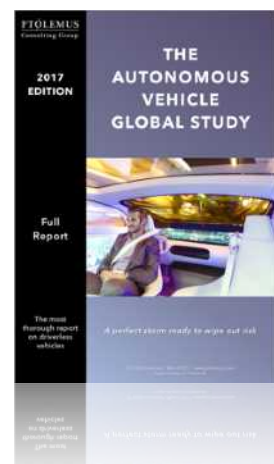
- Partnership strategy definition
- Partnership strategy implementation

- **Deployment**

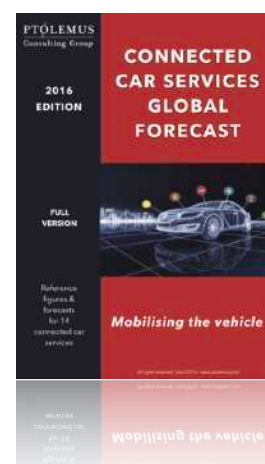
- Data privacy strategy
- Analytics, scoring and pricing strategy
- Specifications of telematics-enabled products
- Design & deployment of telematics platform

Be ahead of competition with our research subscription!

AUTONOMOUS DRIVING



CONNECTED CAR



DIGITAL INSURANCE



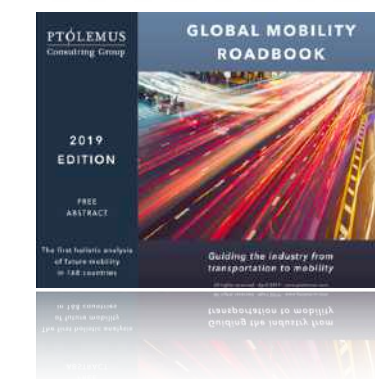
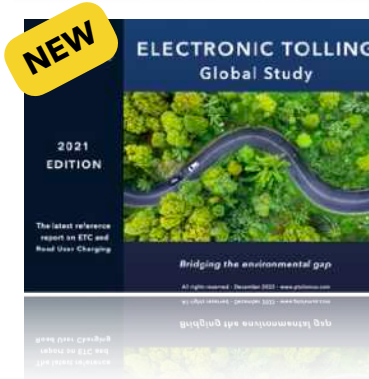
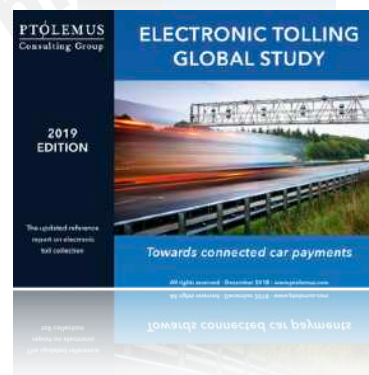
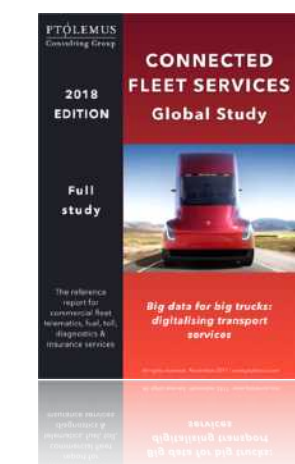
ELECTRONIC TOLLING



MOBILITY



FLEET MANAGEMENT



CONNECTED AUTO INSURANCE GLOBAL STUDY

1

Introduction

2

Status of the global connected auto insurance market

3

How data will be collected in the future

4

Why insurers should adopt connected insurance

5

How the industry will be disrupted

6

Forecasting the market to 2030

7

Conclusions

8

Regional and country profiles

9

Regional company profiles

Status of the global connected auto insurance market

1 An introduction to connected auto insurance

2 The current insurance telematics value chain

3 How COVID-19 has been a catalyst for change

An introduction to connected auto insurance

1 What is connected insurance?

2 What are the types of data available?

3 What are the types of programmes in use?

What is connected insurance?

It is an insurance policy in which an insurer uses **dynamic data** acquired via telematics devices to **personalise and improve its service offering** to a customer.

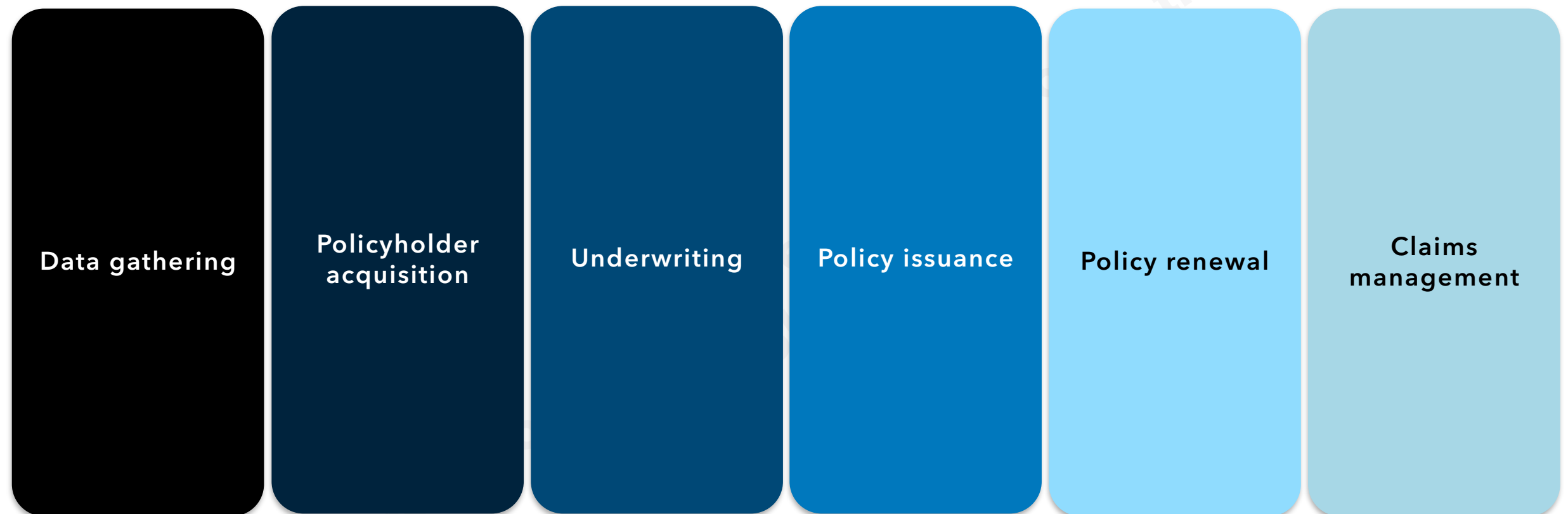
Insurance telematics, also known as connected insurance, enables insurers to **collect actual data** that relates to an individual policyholder.

It enables the insurer to **better understand the risks** directly associated with an individual policyholder, or - with enough data - to refine their overall actuarial calculations.

In doing so, the insurer can **increase its profitability** by mitigating risk exposure, rewarding better driving standards, and improving risk modelling and management.

Traditional auto insurance products can be broken down into 6 core components and rely on the collection of static data

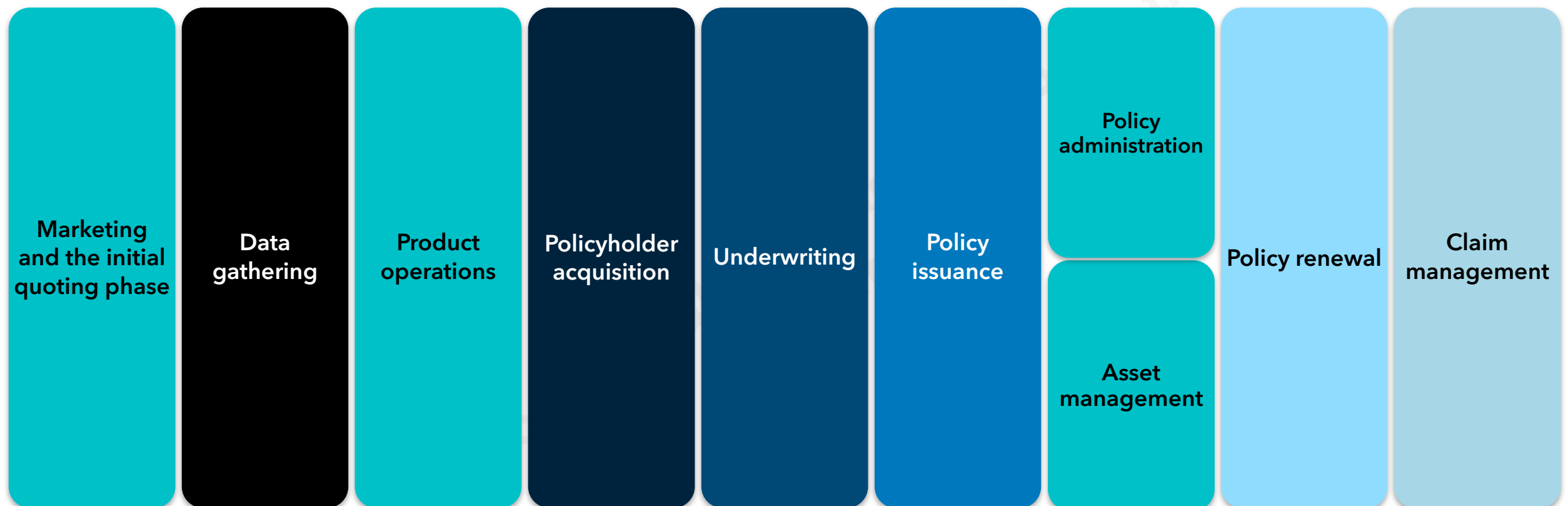
The components of traditional auto insurance



- Traditional vehicle insurance policies estimate risk that is based on **static datasets** including age, vehicle type, garaging location, years without claim, recorded driving convictions, etc.
- As a fixed data set, **it does not change after being recorded** and cannot refresh information in real time and by virtue of the collection process is out-of-date immediately after the date of collection.
- After underwriting, this information is stored **until the renewal date**, when a review of the documentation occurs to validate whether the information is accurate and if there have been any changes to the policyholder's circumstances.
- The data is also reviewed and updated when a claim is made.

By “connecting” auto insurance products to telematics data, the ability to refine and improve customer interaction increases

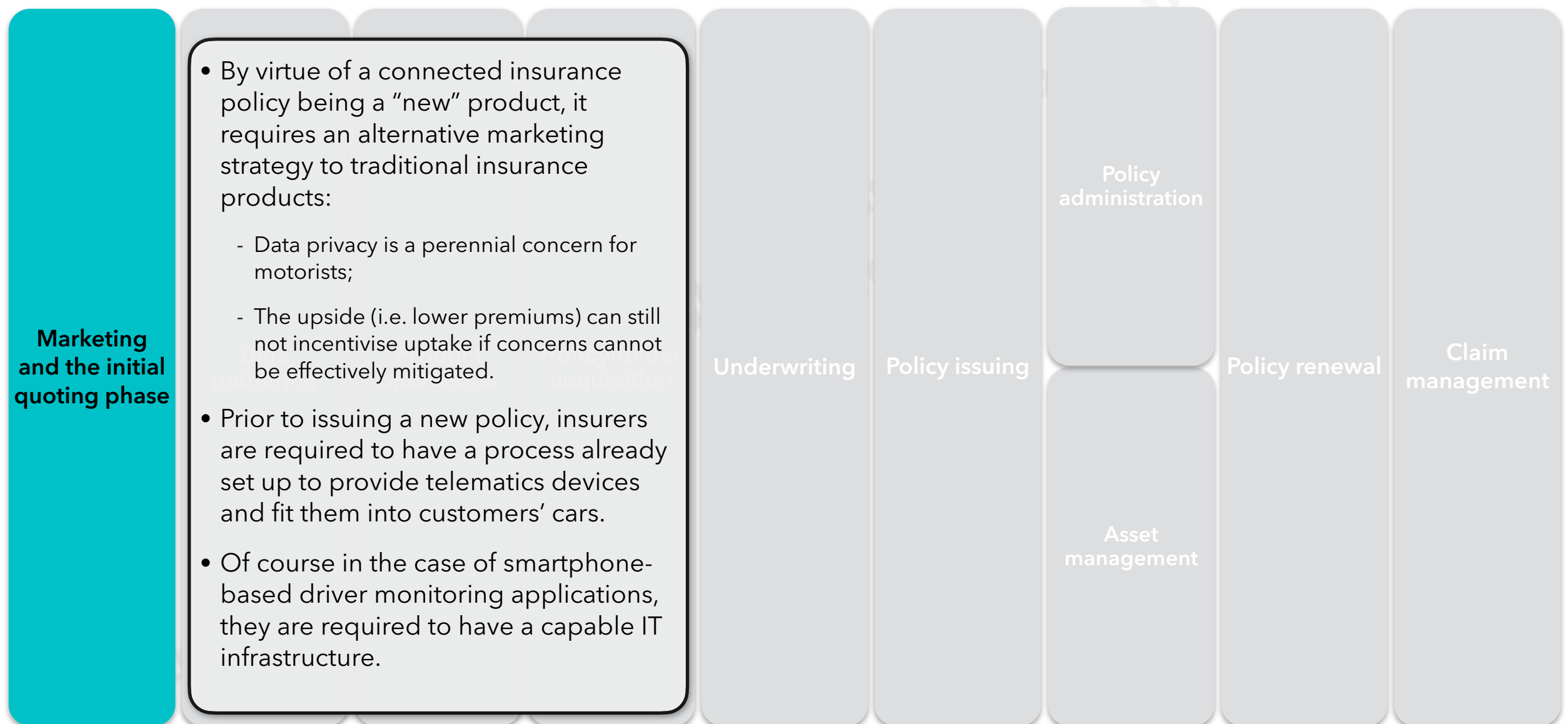
The connected insurance-enabled value chain



- By virtue of being “connected” the number of touch points that can be refined and improved for an insurer increases, thus enhancing policyholder contact points and - hopefully - a stronger customer relationship at the point of renewal.
- **Connected insurance not only depends on static data but also on dynamic data.**
- Dynamic data, by definition, is continuously variable and is liable to change after it is recorded.
- Dynamic data can be considered as any time series data that comes from sensors or monitoring devices and is generated on a second-by-second, or higher, frequency basis.

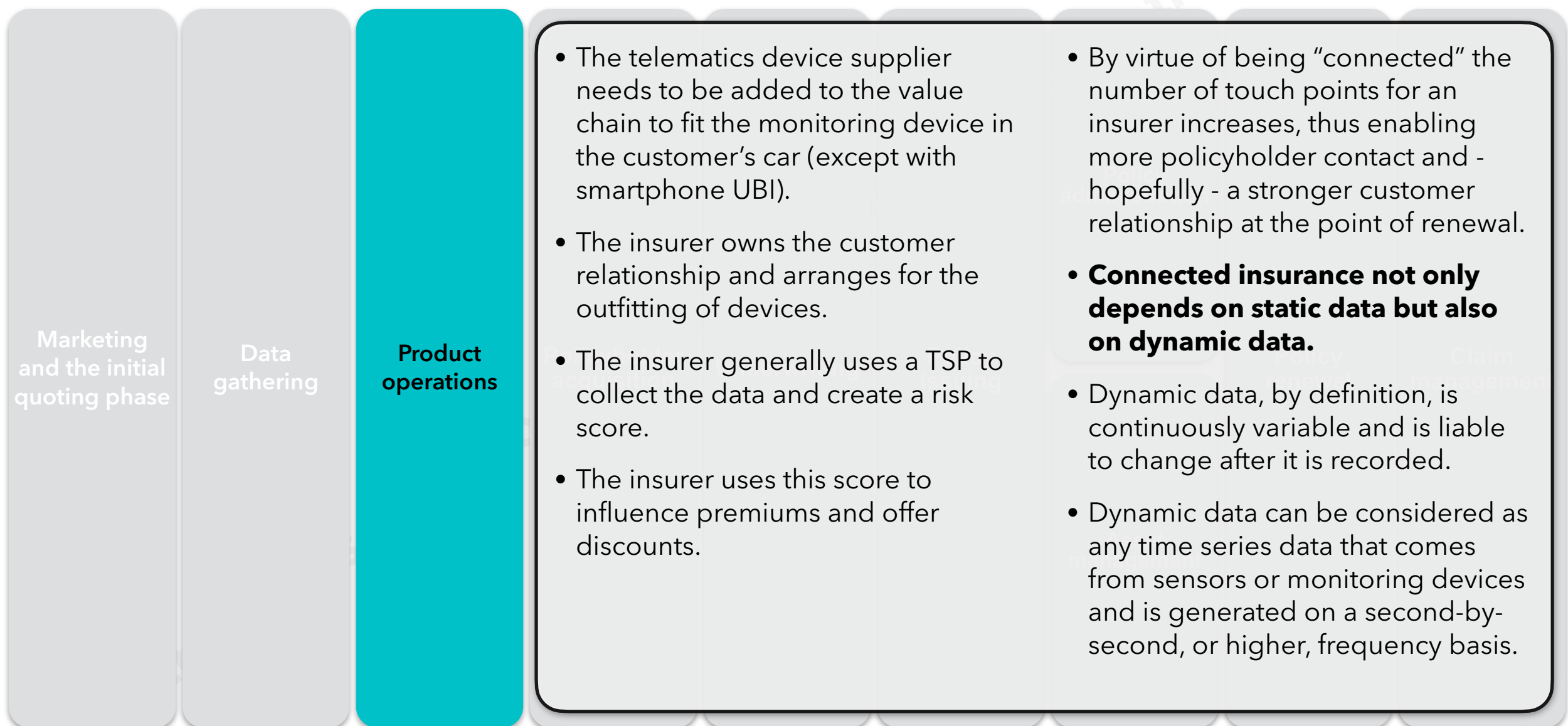
Connected insurance requires alternative marketing strategies

The connected insurance-enabled value chain



Insurance telematics also markedly differs operationally as the insurer must ensure devices are distributed and operational

The connected insurance-enabled value chain



Connected insurance differs from traditional insurance, as the customer must agree to the sharing of personal data

The connected insurance-enabled value chain

- In the case of Try-Before-You-Buy (TBYB), pushing customers to buy the policy at the end is vital.
- The policyholder acquisition stage demands a higher level of customer engagement.
- For instance, insurers can offer a **Try-Before-You-Buy (TBYB)** option whereby the customer has the option to subscribe to or decline the policy.
- In such a model, the insurer must typically collect at least 300 km of the customer's driving data.

Policyholder acquisition

Underwriting

Policy issuing

Policy administration

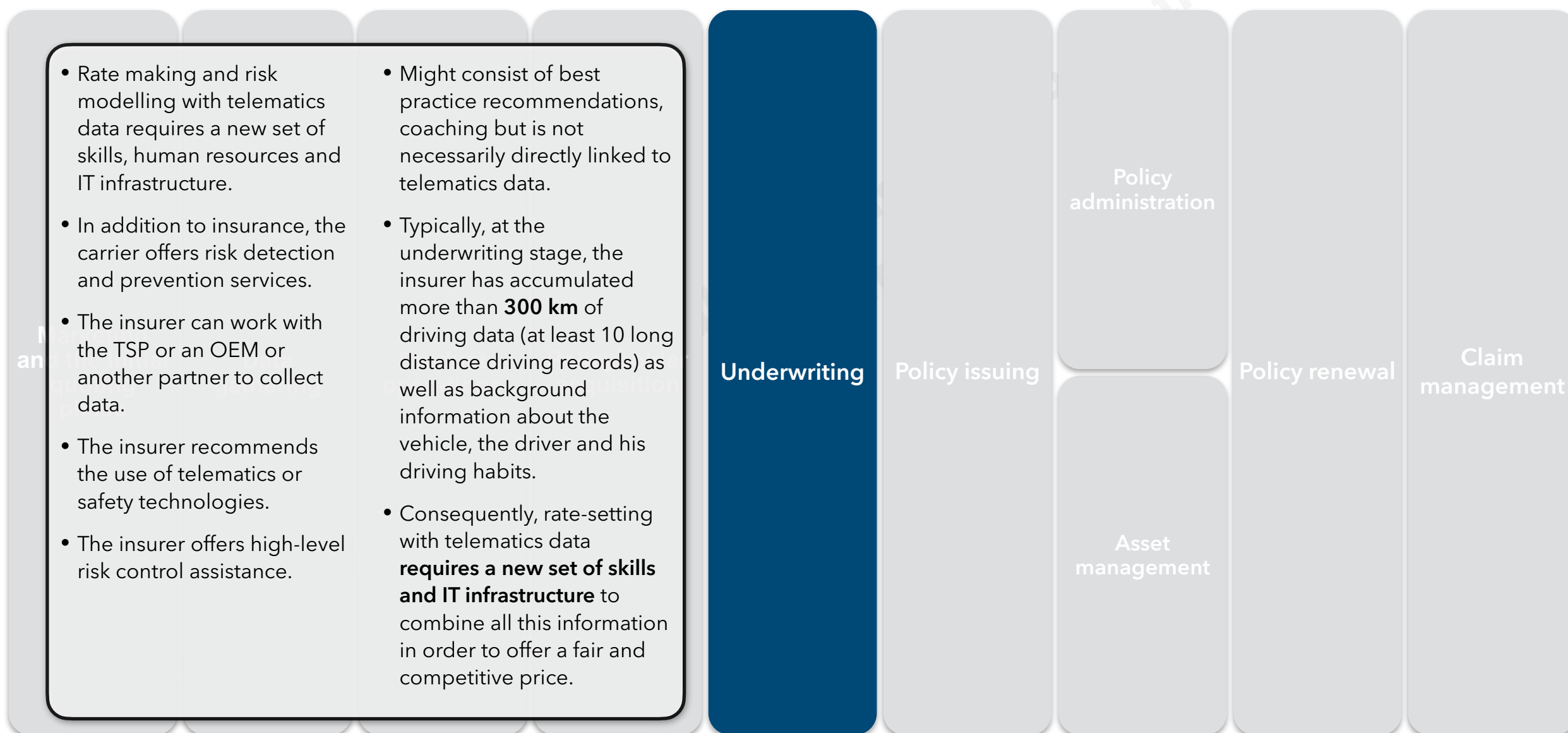
Asset management

Policy renewal

Claim management

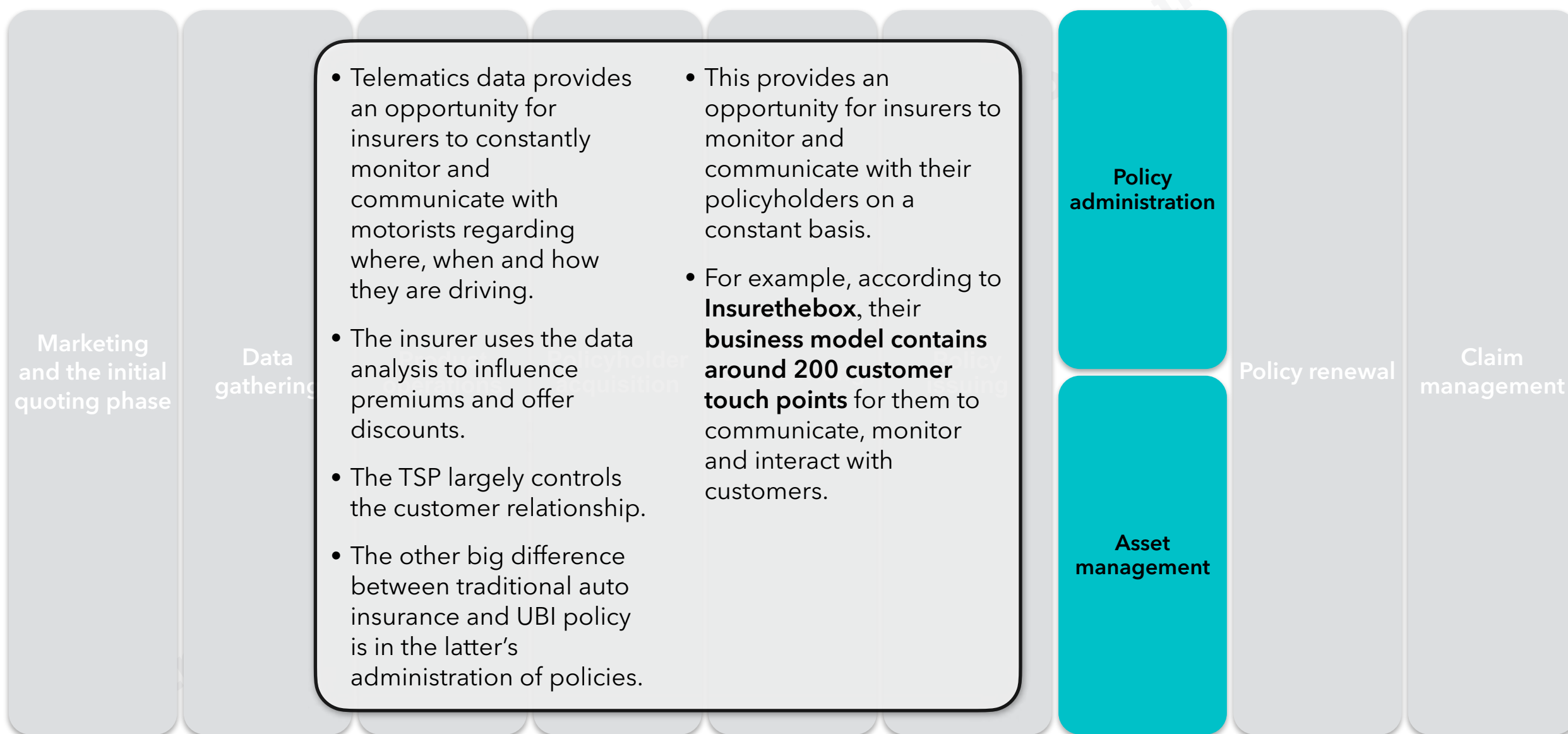
Connected insurance can provide a rich source of data to actuaries enabling enhanced risk assessments to be made

The connected insurance-enabled value chain



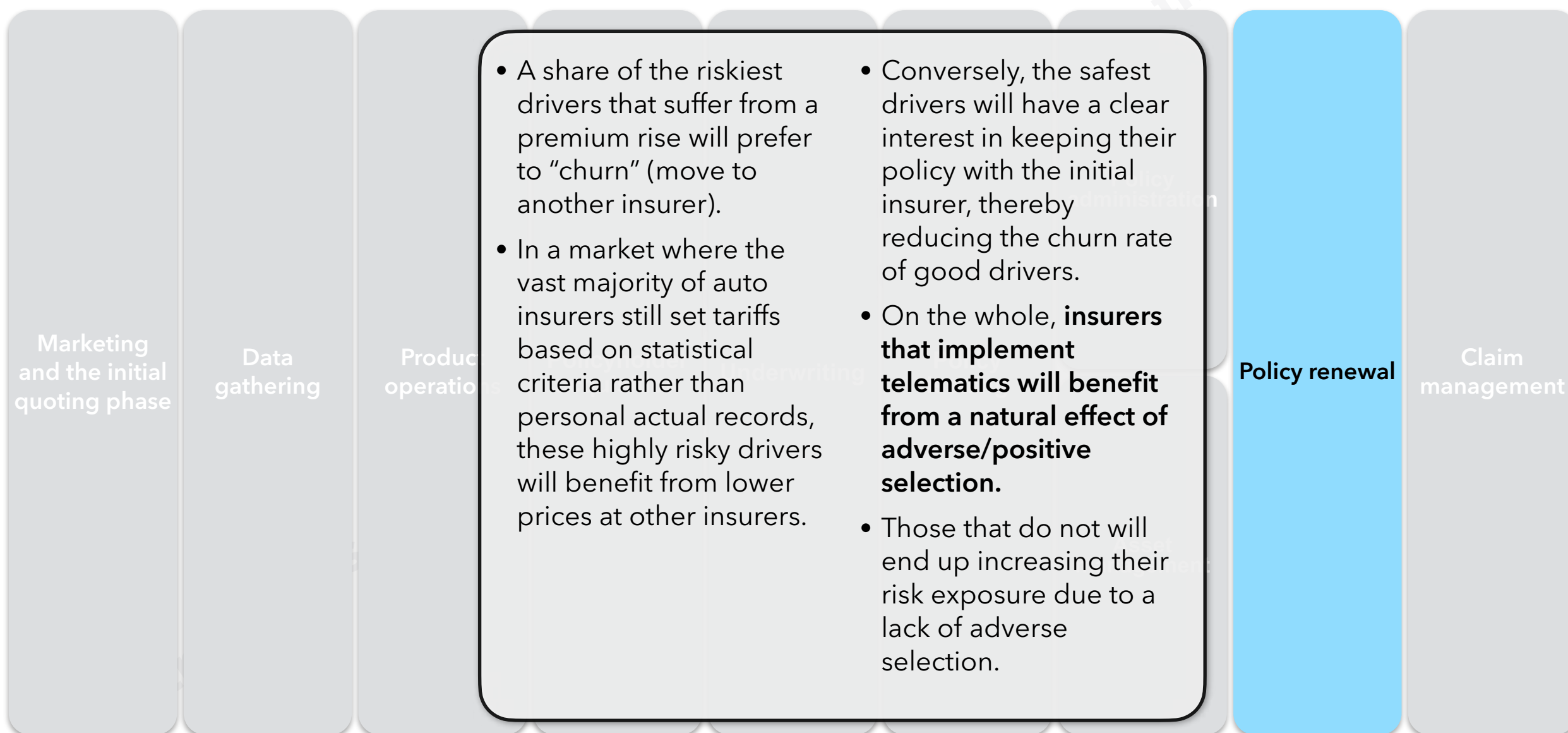
Being “connected” can improve automation of data provision for back office tasks, greatly assisting policy administration

The connected insurance-enabled value chain



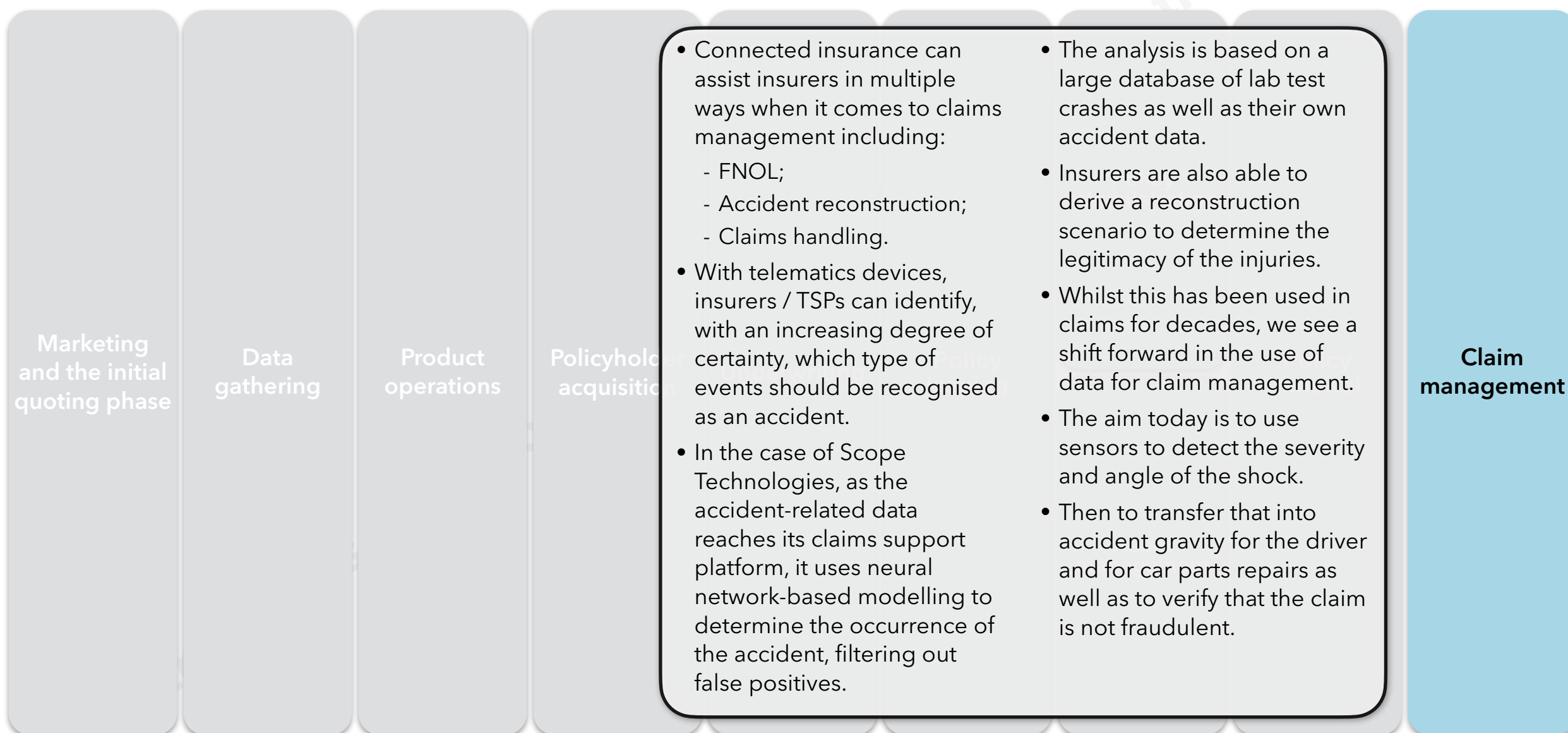
With telematics, positive and adverse selection can happen at the underwriting stage but also at policy renewal

The connected insurance-enabled value chain



With regards to claims processing and provision of emergency assistance, connected insurance can greatly reduce lead-times

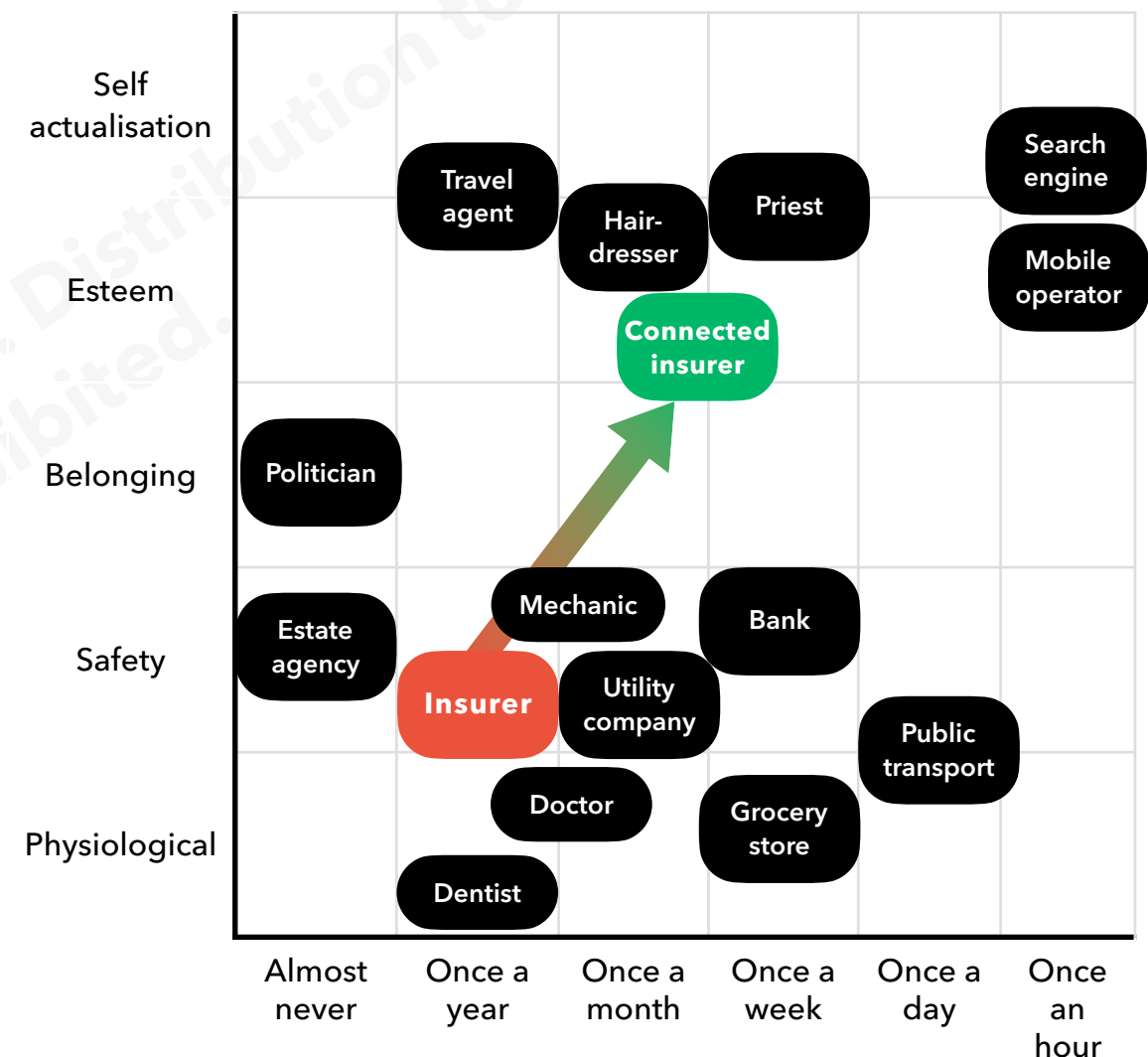
The connected insurance-enabled value chain



By utilising connected insurance, an insurer has the potential to increase customer touch points and build a relationship

- Compared to numerous service industries such as telecommunications, banking or retail, **the relationship between consumers and their insurer has always been relatively limited and made out of negative events:**
 - Generally, customers have a contact with their insurer or broker **once a year at most**. Most of their contacts with their insurance company are generally related to the payment of bills;
 - In many cases, the contract can last several years and it is renewed automatically;
 - On average, their customers **file a claim every 12 years** in the UK **or every 25 years** in France.
- This contributes to make **auto insurance a commodity** because customers have **little intimacy** with their insurer.
- By developing connected insurance products, an insurer has the opportunity to both **provide more responsive "traditional" services** associated with an insurance policy.
- Furthermore, the insurer has the opportunity to **build a relationship** with the policyholder via more frequent - and relevant - contact, which ultimately can influence the decision-making process to **increase customer retention** when the time comes for policy renewal.

Typical contact frequency of commonly-used services



An introduction to connected auto insurance


1 What is connected insurance?

2 What are the types of data available?

3 What are the types of programmes in use?


Connected insurance has historically used aftermarket devices to generate and facilitate the collection of data

The 6 main device types used for connected insurance




Box

A “black box” can be self- or professionally-fit. It can be connected to a vehicle CAN bus (data network) to access additional sensor data, or can be a self-contained unit with all sensor capabilities built-in.




Tag +

Some TSPs also supply a beacon or “tag” which, once paired with the phone, acts to validate the driver’s presence and potentially to augment the data collected and transmitted by the smartphone.



OBD

An OBD “dongle” connects to a vehicle’s onboard diagnostics port to access and transmit data available via the OBD-II communication standard available in all passenger cars* since 1996.




Smartphone UBI apps use the phone’s built-in sensors, accelerometers and data connection.



CLA

A cigarette lighter adapter (CLA) is a driver self-fit device which is powered by the 12 volt auxiliary power supply found in-vehicle.



Vehicles increasingly feature fully built-in (or line-fitted) data connectivity which, whilst not explicitly designed for connected insurance, enables the vehicle sensor suite to providing some datasets an insurer may require for connected insurance.

The data sets that are typically collected by these devices can be static or dynamic

Static data

Driver data

- Name
- Age
- Gender
- Contact details
- MVR records
- Background check
- Etc.

Vehicle data

- Brand / make
- Model
- Year
- Body
- VIN
- Registration
- Engine size
- Power
- Fuel type
- Etc.

Dynamic data

Contextual data

- Exterior temp
- Ambient pressure
- Weather
- Traffic
- Road category
- Time
- Speed limit
- Idling
- Etc.

Vehicle health data

- DTCs
- Maintenance need
- Battery level
- Coolant temp
- Light status
- Oil temp
- Oil pressure
- Tyre pressure
- Fuel level
- Etc.

Driver data (dynamic)

- Claims history
- Fatigue
- Health record
- HoS
- Distraction
- Etc.

Driving data

- Location
- Speed
- Mileage
- Acceleration
- Braking
- Cornering
- Crash
- Etc.

In-cab data

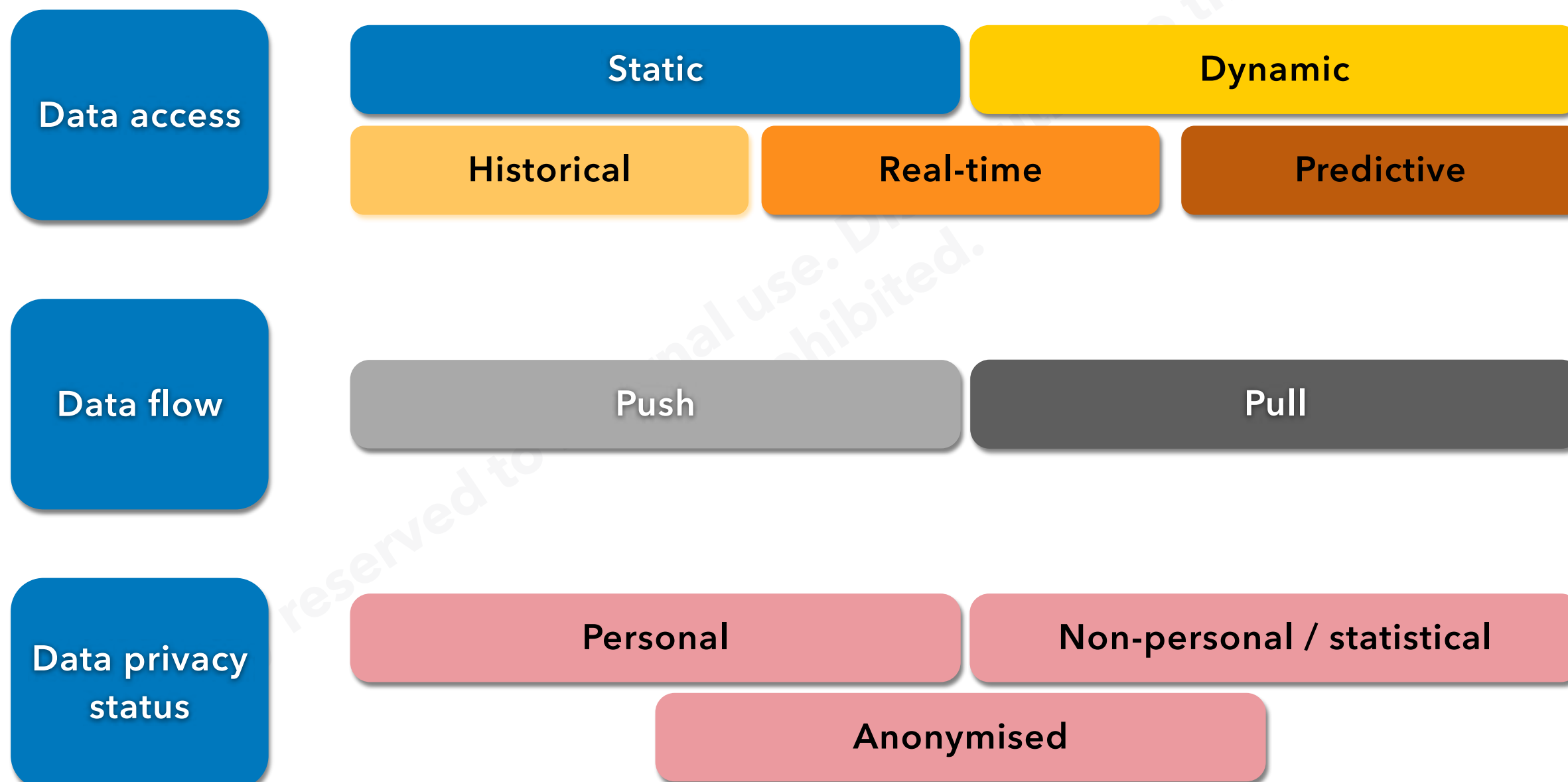
- # passengers
- Navigation
- Seat belts
- Etc.

Transaction data

- Ship from address
- Destination address
- Invoice #
- Order #
- Product code
- Commodity code
- Product description
- Quantity
- Unit measure
- Extended amount
- Freight amount
- Duty amount

Furthermore, data can have multiple access modalities, flows and privacy models

Basic vocabulary used for car data (2/2)



Dynamic data is critical to the functionality of connected insurance

Data access modalities

Static data

- Does not change after being recorded.
- It is a **fixed** data set.

Dynamic data

- May change after it is recorded.
- Periodically updated or changes asynchronously over time as new information becomes available.

Historical

- **About past events** and circumstances.

Real-time

- Captured in (near) real time at a certain **frequency**.
- Transmitted at a certain **latency**.
- Usually timestamped.

Predictive

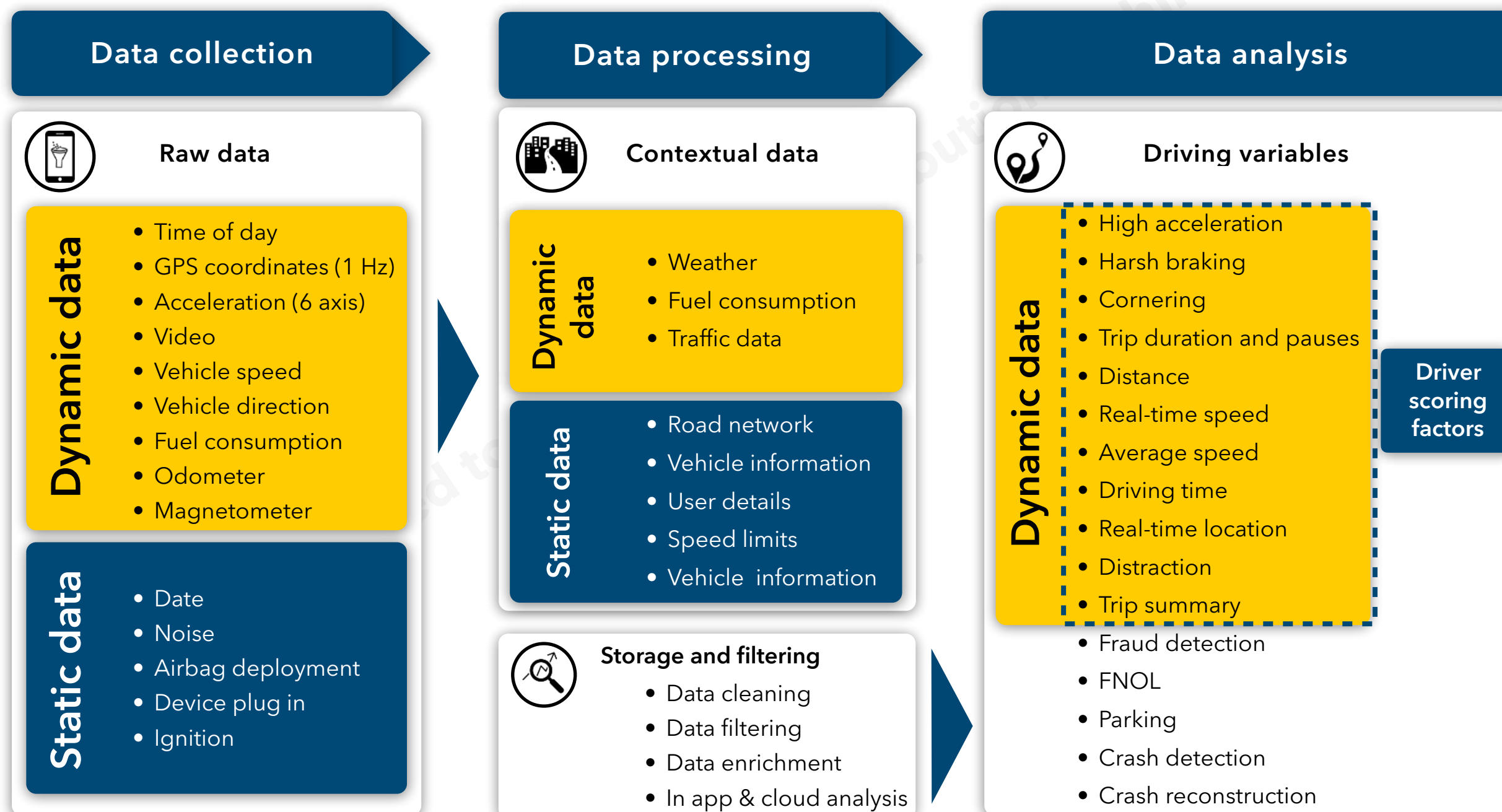
- Usually **based on the analysis** of aggregated historical data.
- **Generally providing the most valuable insights.**

➔ Historical data are very useful to design taxonomy, discover use cases, experiment and test applications before going to development and production

➔ Predictive data can only be produced if historical data are well understood and categorised

TSPs collect a mixture of static and dynamic data to analyse drivers with connected insurance policies

How insurers collect, process and use data to score drivers



Capturing car / policyholder data is not new and numerous suppliers already exist

Static data suppliers

AAADATA

acxiom

COX AUTOMOTIVE

EQUIFAX

Dynamic data suppliers



An introduction to connected auto insurance

1 What is connected insurance?

2 What are the types of data available?

3 What are the types of programmes in use?

There are 5 main usage-based insurance programme types

The 5 models of UBI

PHYD

Pay-How-You-Drive (PHYD) involves a device or smartphone being fitted inside the vehicle and sending driving data to the insurance company. The premium is adjusted based on the driver's assessment/risk rating.

RHYD

Reward-How-You-Drive (RHYD) involves a device/smartphone being fitted inside the vehicle sending driving style data to the insurance company. However, unlike PHYD, the driver specifically earns rewards for good driving behaviour.

SAFETY

Safety-based policies are telematics programmes that offer safety and security services such as emergency calling services (eCall), breakdown recover services (bCall), Stolen Vehicle Tracking & recovery, etc.

PAYD

Also called Pay-As-You-Go or Mileage-based Insurance. A device in the vehicle that sends mileage data to the insurance company. The premium is entirely or partly mileage-based (sometimes combined with location and time data).

Pay-per-mile

As it is not based on telematics, the premium is calculated based on the vehicle mileage reported by the driver, sometimes using a picture of the odometer.

Four of them leverage telematics devices to collect data

Telematics-based UBI models

PHYD

Pay-How-You-Drive (PHYD) involves a device or smartphone being fitted inside the vehicle and sending driving data to the insurance company. The premium is adjusted based on the driver's assessment/risk rating.

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Pay-per-mile

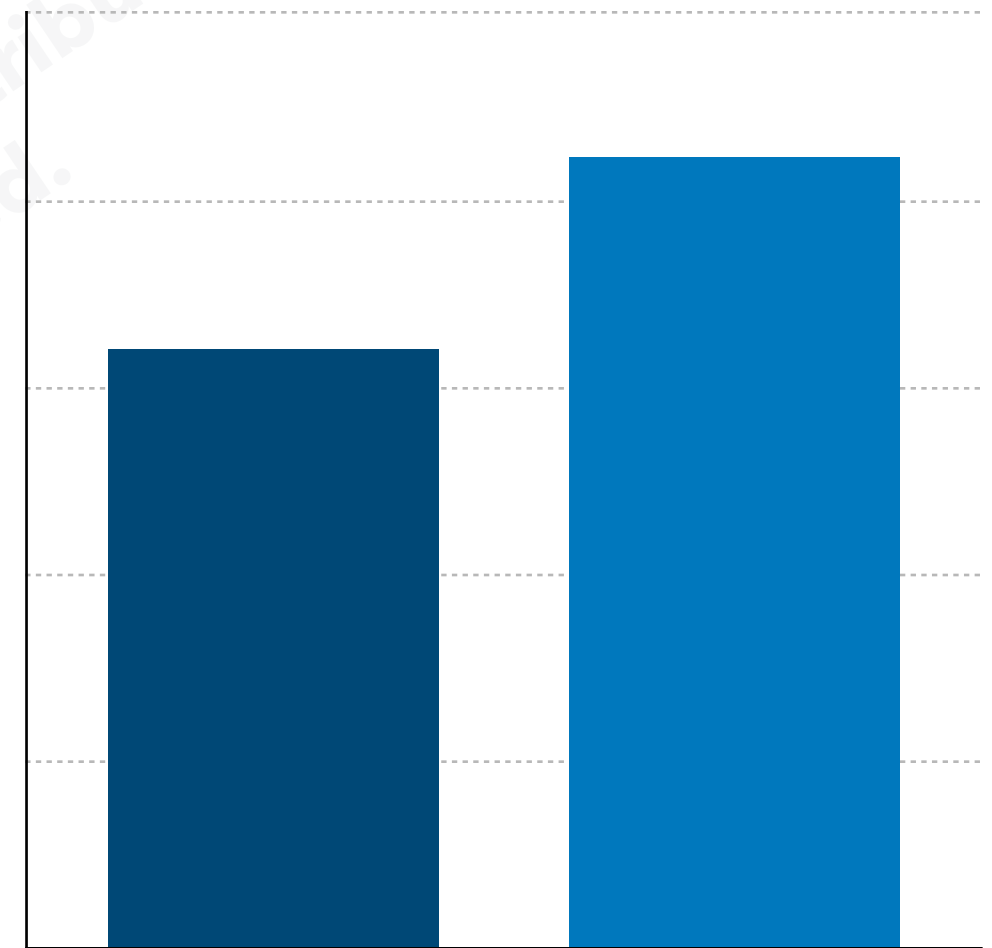
As it is not based on telematics, the premium is calculated based on the vehicle mileage reported by the driver, sometimes using a picture of the odometer.

Customers increasingly use e-commerce channels and demand flexibility and personalisation from their insurance products

Consumer behaviour

- Despite persistent differences between countries, **the COVID-19 crisis has enhanced dynamism in the e-commerce landscape across countries** and has expanded the scope of e-commerce, including through new firms, consumer segments (45+) and products (e.g. groceries):
 - In Europe, retail sales via mail order houses or the internet in April 2020 increased by 30% compared to April 2019, while total retail sales decreased by 10%.

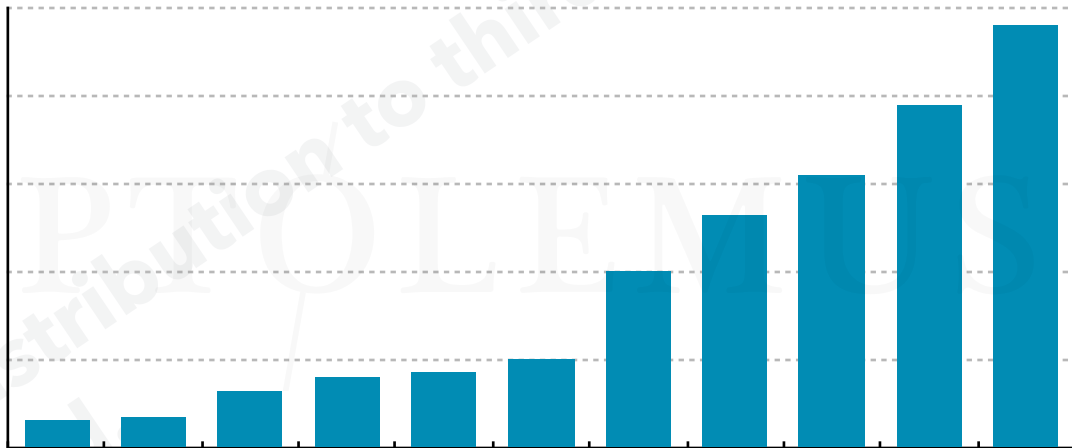
Estimated quarterly U.S e-commerce sales (\$ million)



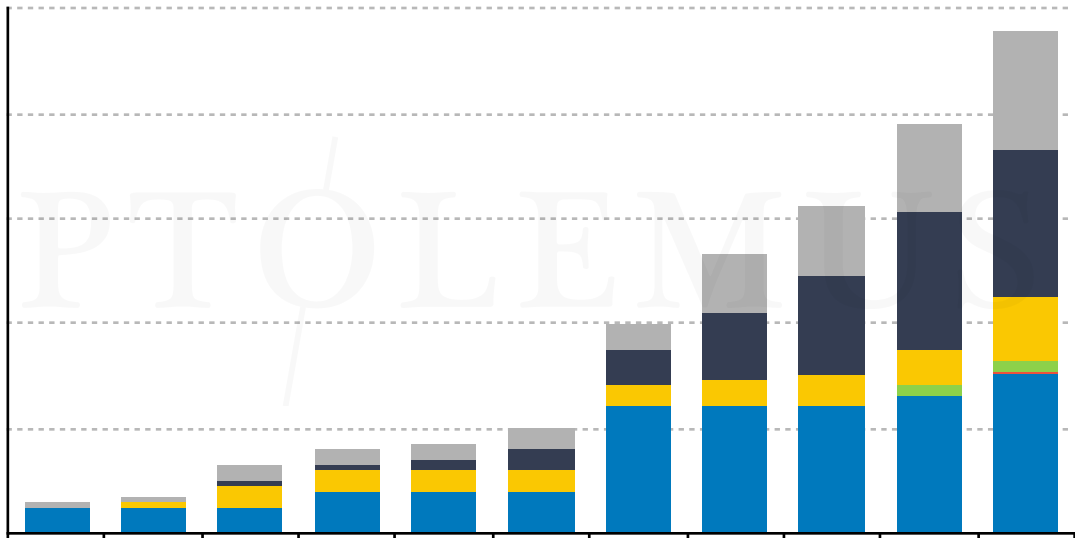
Pay-As-You-Drive (PAYD) programmes are relatively basic but also present an ideal market entry point for insurers

- While remaining simple to understand, PAYD policies reward low mileage drivers, who, in most cases, carry lower risks:
 - This is a big advantage vs. standard policies, which in essence result in low mileage drivers premiums subsidising high-risk motorists;
 - However, PAYD does not take into account the behaviour of drivers, e.g. a very aggressive driver will pay the same as a very smooth driver.
- At the end of 2020, PAYD programmes represented 21% of all active programmes worldwide and 25% of all worldwide active policies:

Number of active PAYD programmes worldwide



Number of PAYD programmes by device type



Pay-per-mile insurance programmes are also simple but not automated and open to fraud

SWOT analysis of pay-per-mile insurance

| Strengths | Weaknesses | Opportunities | Threats |
|--|--|---|---|
| <ul style="list-style-type: none"> ✓ Simple model, easy to explain for brokers and direct agents. ✓ Positive incentive to drive less, leading to lower risks. ✓ Indirect positive effects on the environment (CO₂ emissions, noise, etc.). ✓ Indirect positive effects on fuel consumption. ✓ Low cost as does not require a device / an installation. | <ul style="list-style-type: none"> * Does not integrate other behavioural factors than mileage (e.g. driving times). * Open to fraud as it is largely based on customers' own declarations. * No opportunity to develop direct link with the customer. * Declaration cannot easily be requested more often than on a yearly basis, resulting in 12 months time lag in pricing (an increase of claims in year N leads to increased premiums in year N+1). * No incentive to improve driving style. * Not automated, i.e. requires the driver to report his/her mileage. | <ul style="list-style-type: none"> ★ Increase in petrol prices pushes such usage-based models. ★ COVID-19 restrictions have thrust mileage-based programmes into the "limelight". ★ Large diffusion of smartphones enables insurers to request customers to more easily send a digital photograph of their odometer. ★ Acceptance of traditional risk factors is decreasing as they are increasingly seen as sheer discrimination. | <ul style="list-style-type: none"> ◆ Certain attractive customer segments will still pay more than they should, which could push them towards telematics-based solutions. ◆ Rising costs of insurance for young & senior drivers makes it unaffordable to drive in certain countries (notably the UK), pushing these segments towards telematics. ◆ Increased penetration of connected cars will make telematics-enabled MBI very easy. |

Pay-per-mile

Not telematics-based - The premium is calculated based on the vehicle mileage reported by the driver, sometimes using a picture of the odometer.

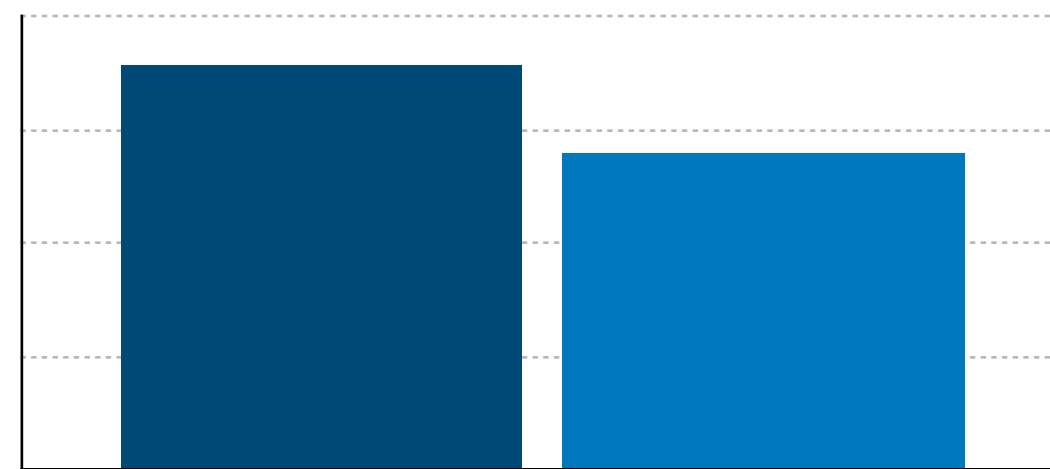
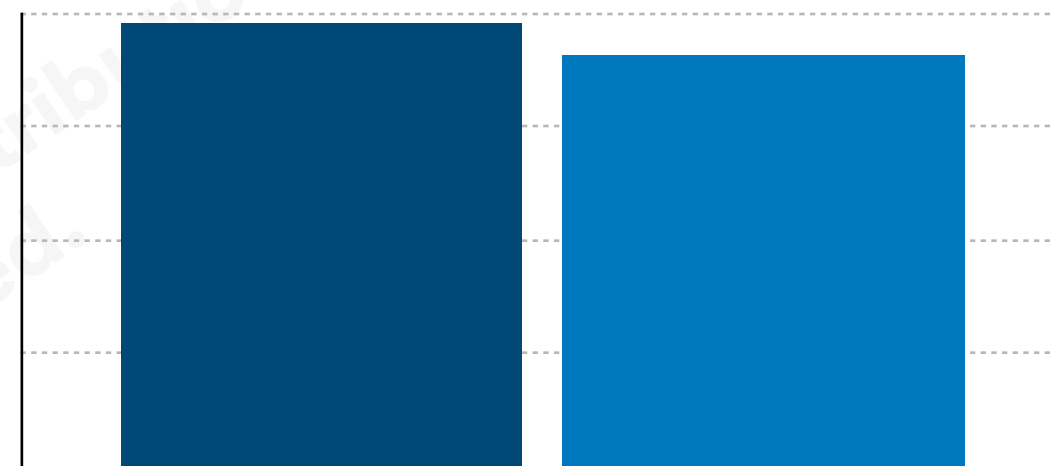
The general decrease in miles driven will boost the interest of both MBI and pay-per-mile insurance

Consumer behaviour

- The number of all miles driven came down by 7% and 21% in the top tier 1 markets of UBI between 2019 and 2020:

- This indicates a continued decrease in the number of miles driven everywhere;
Even after the lockdowns have lifted in many

All vehicle miles driven (billion)



The key strengths of PAYD / MBI are its simplicity and high customer acceptance

SWOT analysis of PAYD insurance

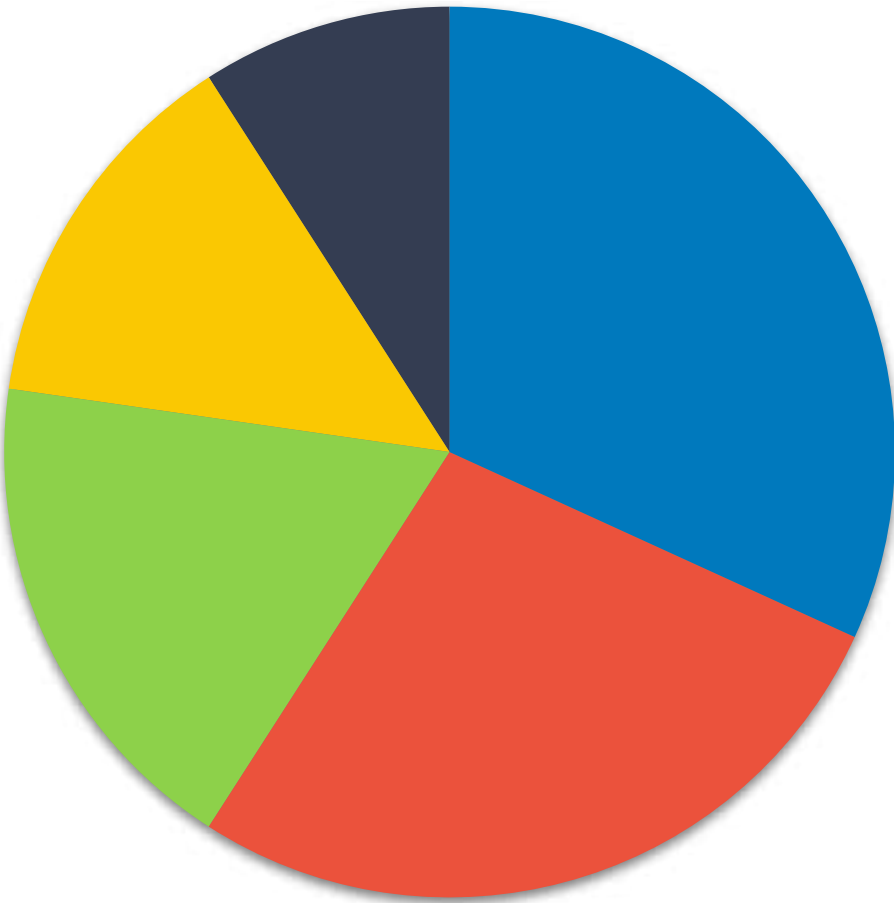
| Strengths | Weaknesses | Opportunities | Threats |
|--|--|---|--|
| <ul style="list-style-type: none"> ◆ Simple model, easy to explain for brokers and direct agents. ◆ Well accepted by customers, which leads to good volumes. ◆ Incentive to drive less, leading to lower risks. ◆ Indirect positive effects on the environment (CO₂ emissions, noise, etc.) ◆ Indirect positive effects on fuel consumption. ◆ Sometimes also takes into account the place and time of driving. ◆ Ability to adjust pricing on a dynamic basis. <p>For models with a black box only:</p> <ul style="list-style-type: none"> ◆ Ability to strongly reduce fraud. ◆ Ability to recover the vehicle in case of theft. ◆ Ability to provide eCall and thus reduce the number of fatalities. | <ul style="list-style-type: none"> ◆ Does not integrate driving behaviour factors. ◆ Little opportunities to develop direct link with the customer (except through smartphone). ◆ Little control over driving risks in case of fleets. ◆ This model requires a device in the vehicle (if only a tag), which makes it more expensive than a mobile-only PHYD programme. ◆ Data provided is less rich and predictive of risks than with PHYD. ◆ Difficult business model in low premium markets. ◆ No incentive to improve driving style. | <ul style="list-style-type: none"> ◆ Increase in petrol prices pushes such usage-based models. ◆ Acceptance of traditional risk factors is decreasing as they are increasingly seen as sheer discrimination (cf. "post-coding" debate between ABI and the Conservative Party in the UK). ◆ More and more data sets are available, making the rating more accurate every day. ◆ Gender ruling and other similar anti-discrimination rulings or European directives could prevent the use of the most useful risk factors (age, postcode, etc.) ◆ Ability to sell VAS (real-time traffic information, vehicle locator, roadside assistance, remote diagnostics, etc.) ◆ Increased penetration of connected cars will make MBI very easy. ◆ COVID-19 restrictions have thrust mileage-based programmes into the "limelight". ◆ The growing proportion of EVs (which tend to drive less) will boost BI. | <ul style="list-style-type: none"> ◆ This model requires a device in the vehicle (if only a tag), which makes it less frictionless than a mobile-only PHYD programme. |

Since 2020, XX mileage-based programmes have been launched

Mileage-based UBI launches worldwide, by geography, since 2020*

- Since January 2020, the global market for MBI programmes has **grown at a CAGR of XX%**.
- Geographically, the distribution of new MBI

Breakdown of mileage-based launches worldwide, by region

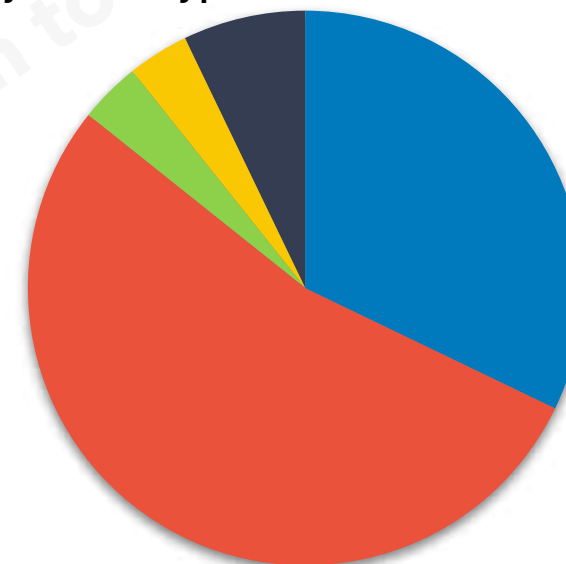


...of which, XX% are based on either smartphone or line-fitted devices, eroding OBD dependency.

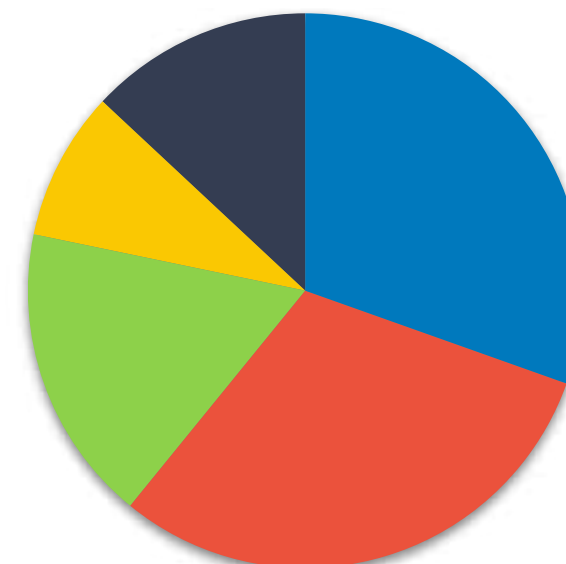
Mileage-based UBI launches worldwide, by technology

- Of the XX programmes launched since January 2020, XX% can be attributed to either **smartphone or line-fitted technology**.
- Tellingly, in the period from January 2017 to December 2019, XX% of XX MBI programmes were based on OBD technology. Smartphone-based launches accounted for merely 4%.

Breakdown of mileage-based launches worldwide, by device type (2017-2019)



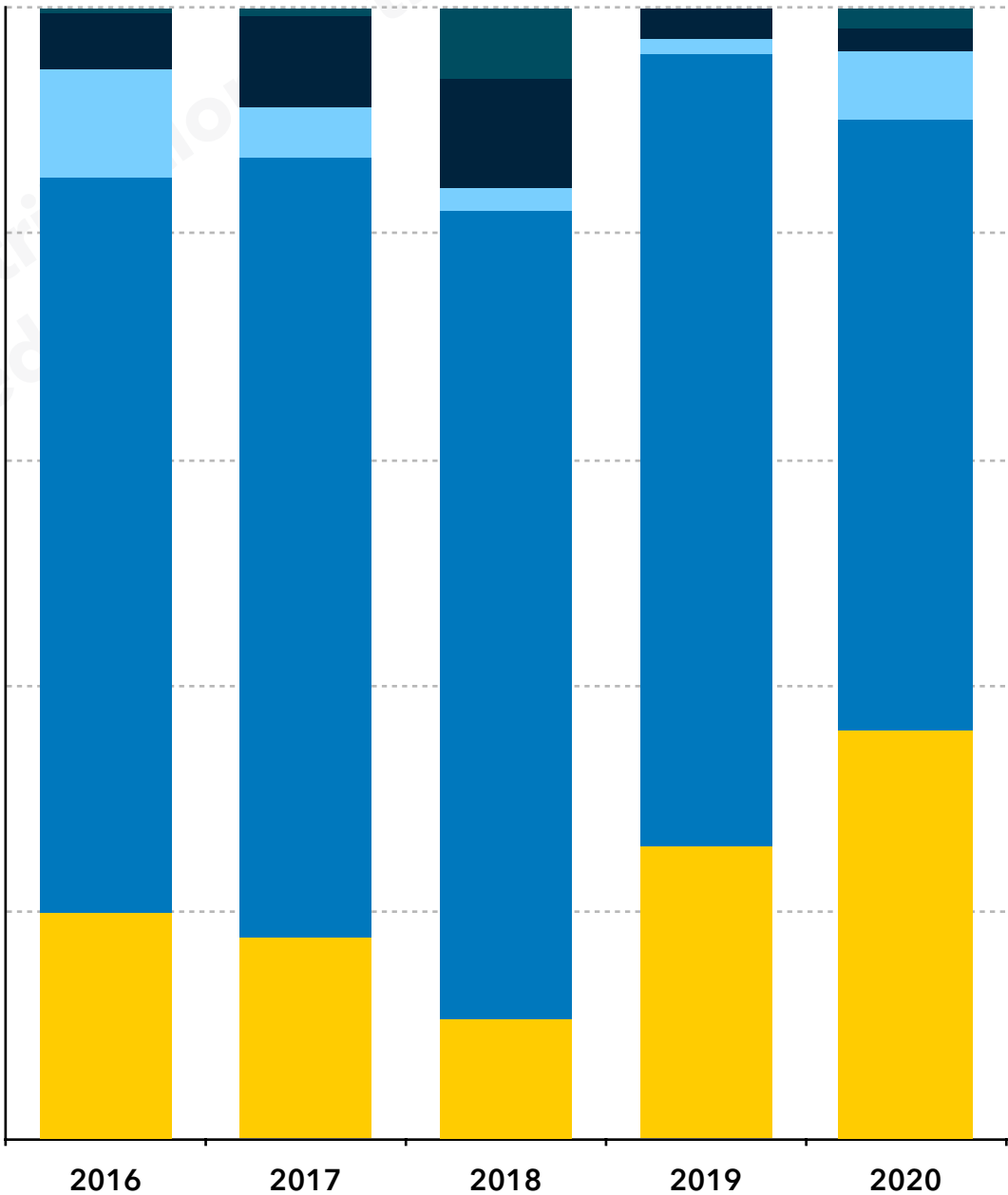
Breakdown of mileage-based launches worldwide, by device type (2020-2021*)



Mileage-based insurance is back in fashion catalysed by the COVID-19 pandemic

Evolution in the breakdown of UBI offerings worldwide

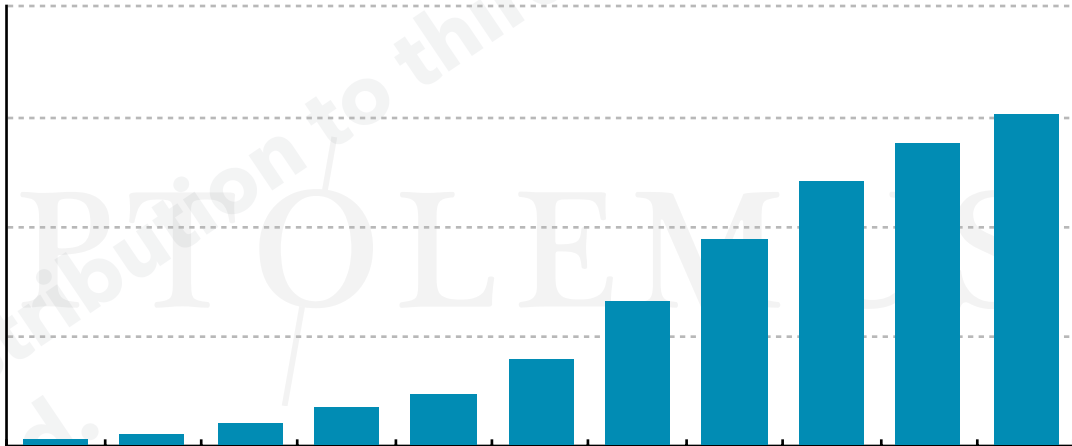
- There has been a notable increase in demand for PAYD programmes around the globe owing to motorists’ growing desire for products more suited to the changing patterns, and frequency of usage:
- The COVID pandemic has both:
 - increased the number of drivers overall



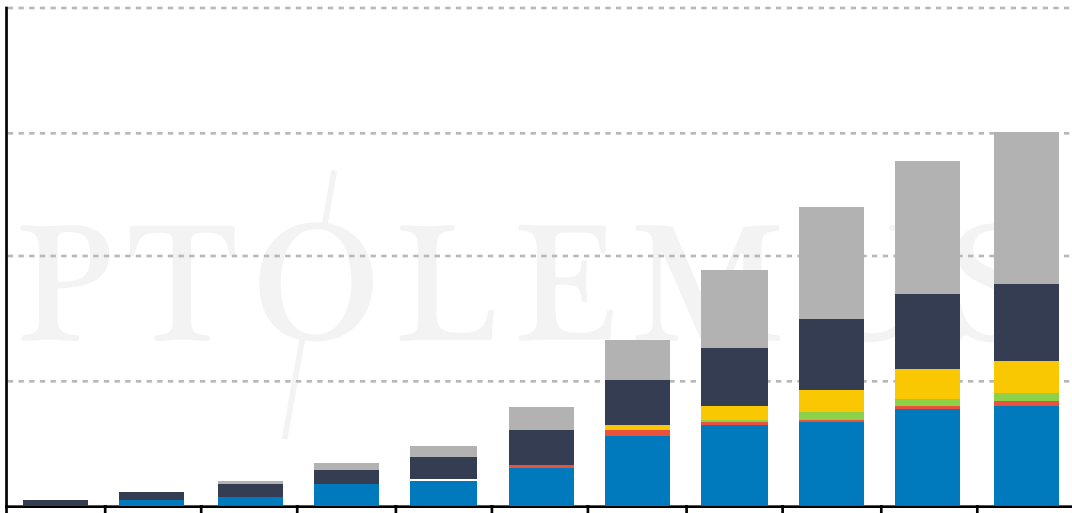
Pay-How-You-Drive (PHYD) is the most widely implemented type of connected insurance programme globally

- Due to the aforementioned shortcomings of PAYD programmes, **Pay-How-You-Drive programmes take other factors than mileage into account e.g. driver behaviour** (harsh braking, speed, etc.):
 - A journey on Saturday night with over-speeding events will cost much more than a smooth ride on Tuesday at 3 PM.
- At the end of 2020, PHYD represented **XX% of all active programmes worldwide** and XX% of of all worldwide policies:
 - 80% of all new drivers and new drivers whilst 75%

Number of active PHYD programmes worldwide



Breakdown of PHYD programmes by device type

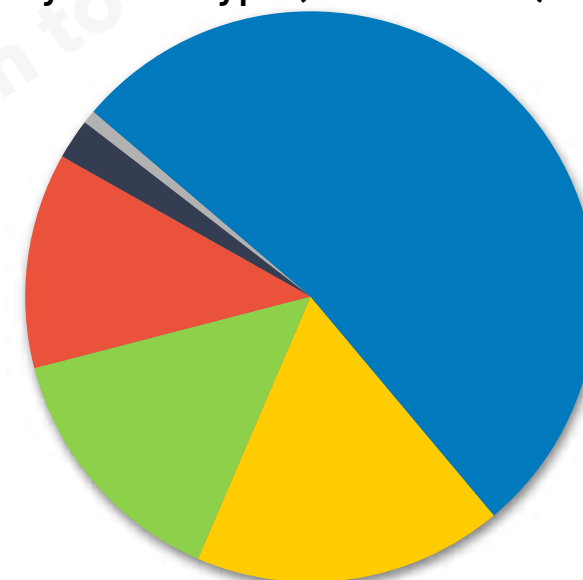


Since 2020, XX PHYD programmes have been launched worldwide with reliance on OBD technology collapsing

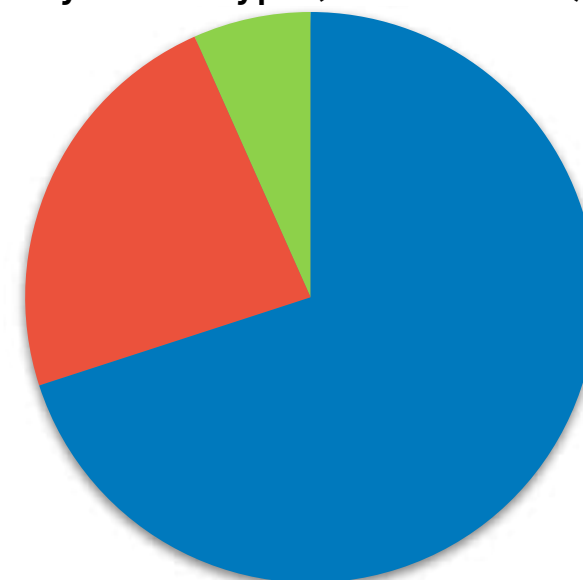
PHYD launches worldwide, by technology

- Similarly to MBI new programme launches the mix of device types is **shifting away from OBD usage**.
- In the period from January 2017 to December 2019, XX% of XX PHYD programmes were based on smartphone devices whilst OBD dongles underpinned

Breakdown of PHYD launches worldwide, by device type (2017 - 2019)



Breakdown of PHYD launches worldwide, by device type (2020 - 2021*)



Behaviour-based schemes (PHYD & RHYD) can be highly personalised, though stigma caused by tracking still remains

SWOT analysis of driver-behaviour based programmes

| Strengths | Weaknesses | Opportunities | Threats |
|---|---|---|---|
| <ul style="list-style-type: none"> ◆ Individual pricing based on actual driving behaviour (mileage, time, place, style, etc.) ◆ Indirect positive effects on the environment (CO₂ emissions, noise, etc.) ◆ Indirect positive effects on fuel consumption. ◆ Ability to provide rich actual driving data to actuarial models. ◆ Strong incentive to improve driving skills and style. ◆ Ability to adjust pricing on a dynamic basis (to the customer's driving behaviour and to market changing patterns). ◆ Ability to retain the safest customers and weed out high the most risky ones. <p>For models with a black box only:</p> <ul style="list-style-type: none"> ◆ Ability to strongly reduce fraud. ◆ Ability to recover the vehicle in case of theft. ◆ Ability to provide eCall and thus reduce the number of fatalities. | <ul style="list-style-type: none"> ◆ Risk of decreasing the overall size of the auto insurance market can be seen negatively by market leaders. ◆ Cost of purchasing and installing the device when an OBU is used. ◆ Difficult business model in low premium markets. ◆ Complex business case for low premium drivers. ◆ Perception of possible infringements on privacy (Big Brother effect). ◆ Complexity to explain scoring factors to consumers. ◆ Necessity for all departments in the organisation to take interest and work together. ◆ Requires experienced actuaries and the recruitment of data scientists. | <ul style="list-style-type: none"> ◆ Decreasing cost and new types of telematics devices. ◆ Better customer acceptance of the use of private data. ◆ Ability to discriminate based on real risks instead of age-based pricing that may become unlawful. ◆ Ability to sell VAS (Real-time traffic information, vehicle locator, roadside assistance, remote diagnostics, etc.) ◆ eCall and other driver services available from a dashboard-mounted solution. ◆ Use of additional CAN bus-related data sets (e.g. number of passengers, seat belt fastened). ◆ Growing penetration of connected vehicles around the world. | <ul style="list-style-type: none"> ◆ Risk of backlash against "customer tracking". ◆ Laws preventing insurers to charge for the rental of the device (e.g. in Italy). ◆ OEMs ability to act as an insurer or broker using their own data. ◆ Google becoming able to score based on smartphone data already collected in the background. |

Safety-centric programmes offer emergency assistance services and are dominated by leave-in devices

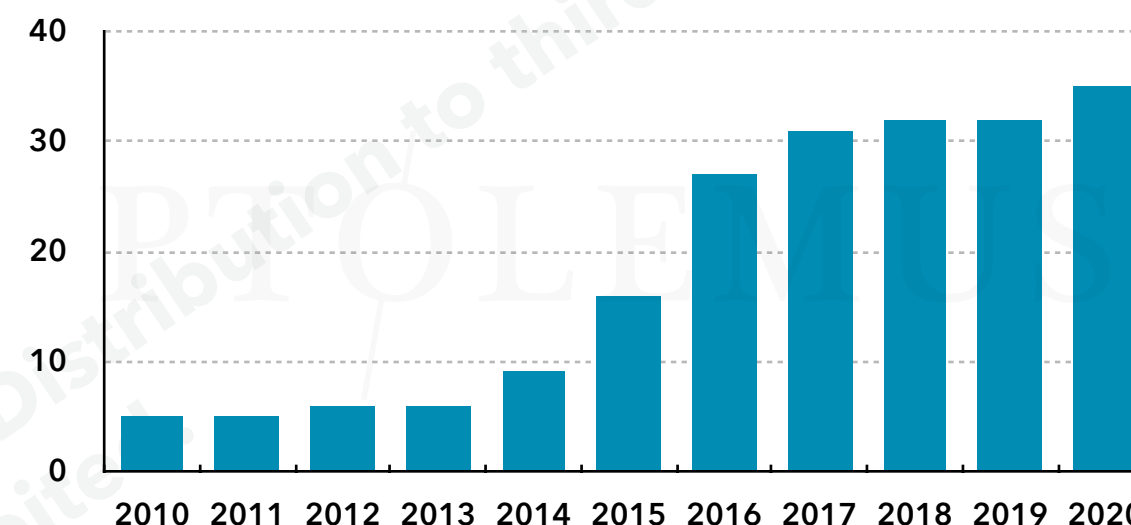
- Safety insurance programmes differ from PAYD or PHYD as they **focus on the provision of additional services** such as:

- Emergency assistance (in the event of a collision) / eCall;
- Roadside assistance (RSA) or bCall;
- Stolen vehicle tracking (SVT);
- Stolen vehicle recovery (SVR);
- Claims management.

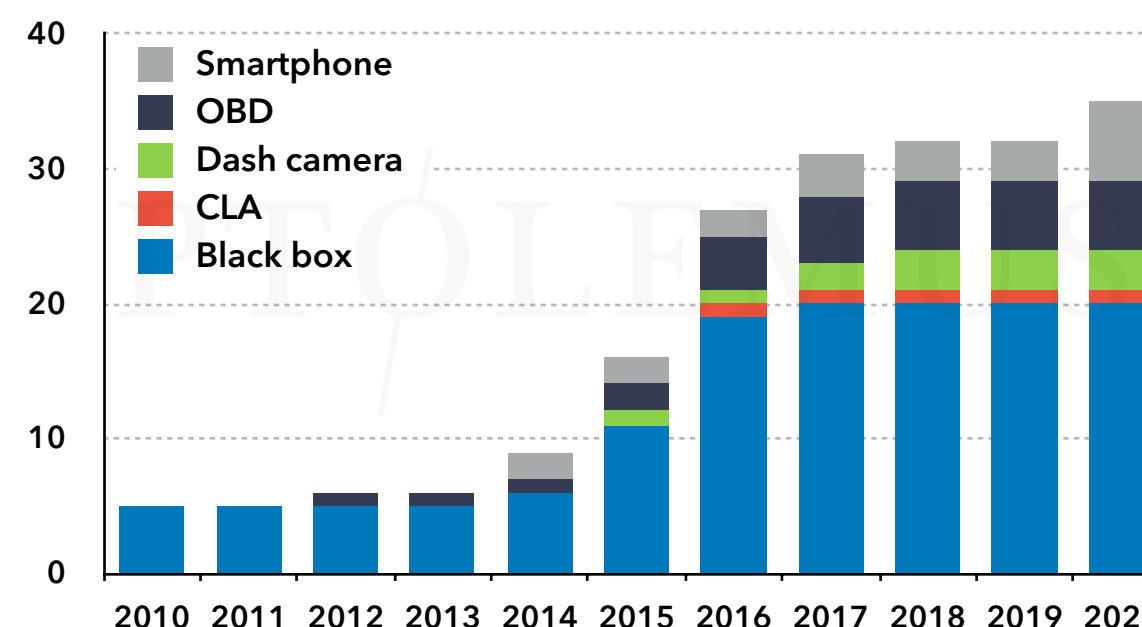
- To benefit from such a policy, customers agree to install a device in their vehicle for the duration of the policy:

Devices are installed using black boxes:

Number of safety programmes worldwide



Number of safety programmes by device type



Safety-based programmes, whilst niche, are easy to understand and popular in countries with significant car crime

SWOT analysis of safety-centric programmes

SAFETY

Safety-based policies are telematics programmes that offer safety and security services such as emergency calling services (eCall), breakdown recover services (bCall), stolen vehicle tracking & recovery, etc.

| Strengths | Weaknesses | Opportunities | Threats |
|--|---|---|---|
| <ul style="list-style-type: none">◆ Pricing is typically fixed as safety programmes are available as a “bolt-on” product.◆ Conceptually easy to understand by the customer as the benefits of the product are obvious.◆ Due to these benefits, these schemes tend not to suffer from the negative perception of privacy invasion.◆ Devices can be simple “self-installable” black boxes.◆ Does not necessarily require constant monitoring, i.e. connection to call centre can only occur at the moment the accelerometers in the device detect a collision. | <ul style="list-style-type: none">◆ Niche product that will only appeal in certain countries / customer or vehicle segments.◆ Cost of purchasing and installing the device when a black box is used.◆ Perception of possible infringements on privacy (Big Brother effect) can still exist. | <ul style="list-style-type: none">◆ Decreasing cost and new types of telematics devices.◆ Better customer acceptance of the use of private data for safety-related purposes.◆ Other driver services available from a dashboard-mounted solution.◆ OEMs have never focused on anti-theft services and are still neglecting these niche services. | <ul style="list-style-type: none">◆ Laws preventing insurers to charge for the rental of the device (cf latest Italian law).◆ Growing market of connected vehicles.◆ eCall capability is now compulsory for all new car models in the EU and Russia. |

There are 3 main data collection models of connected insurance

The 3 data collection models for connected insurance

TBYB

Try Before You Buy (TBYB) is a relatively new model for advertising and distributing insurance. It involves applicants signing-up for a **trial period** during which time they are assessed, with the aim being to "qualify" for the insurance product.

Once the trial period concludes, the insurer assesses the recorded driver-data and either accepts the applicant onto the scheme or denies the applicant and proposes another policy.

Leave-in

As the name suggests, a leave-in distribution model involves the **telematics device being used to record driving data being fitted inside the insured vehicle (or the phone) for the full period of the insurance policy.**

Roll-over

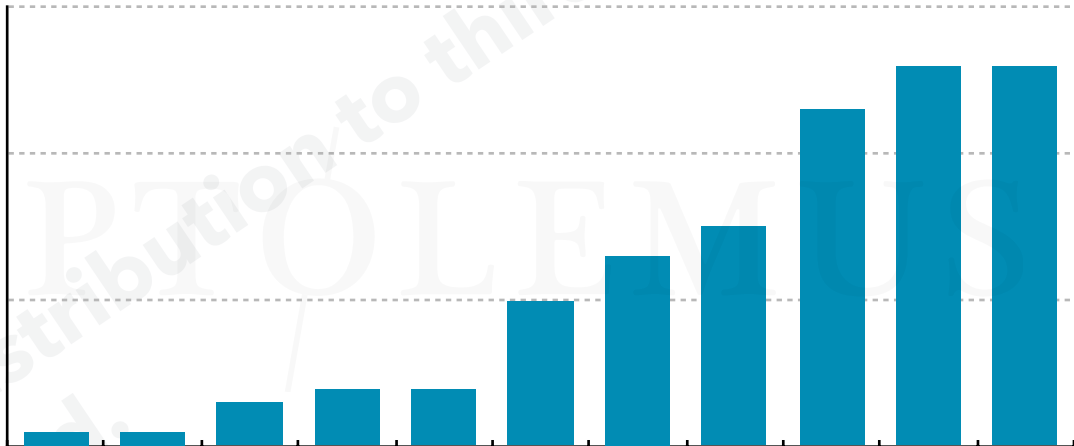
Roll-over programmes involve the telematics device being self-installed in the policyholder vehicle for a temporary period of time (usually between 3-4 months). The policyholder will typically pay up to 50% of the quoted premium at the beginning of the insurance period, with the data collected being assessed by the insurer, and a discount on the remaining 50% of the policy quotation being awarded to the policyholder.

Programmes based on a roll-over model re-use the same device to perform the assessment of multiple drivers (one after the other).

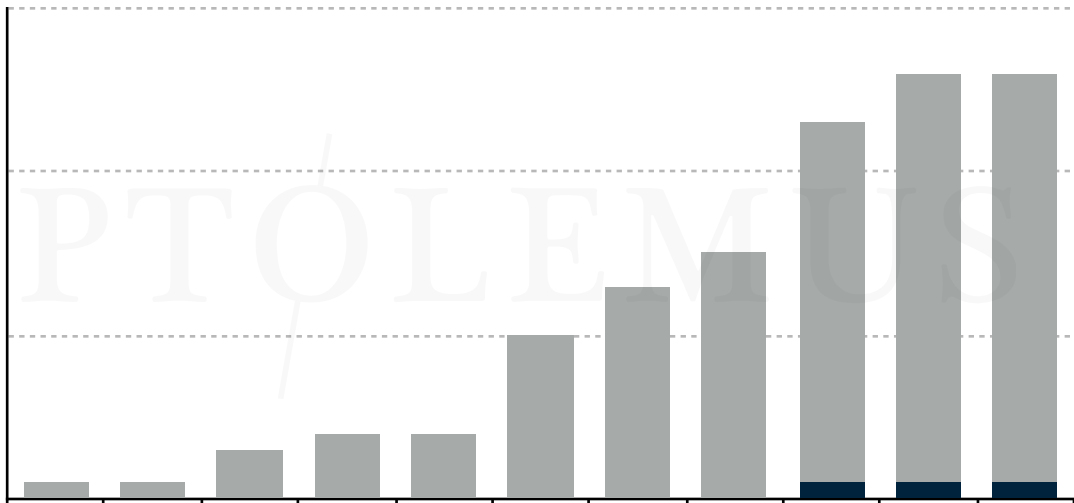
App-based TBYB schemes have grown very fast but have reached a plateau in recent years

- Smartphone apps have made TBYB possible and enticing:
 - The first version was launched by **AXA** in 2009, called **DriveAware**;
 - Since 2014 the number of active programmes has been in constant growth, plateauing at XX programmes in 2020.
- Initially, **most programmes only lasted a year**. Post-launch, many were not supported with the required marketing and communication budget.

Number of TBYB-enabled programmes worldwide



Number of TBYB-enabled programmes by device type

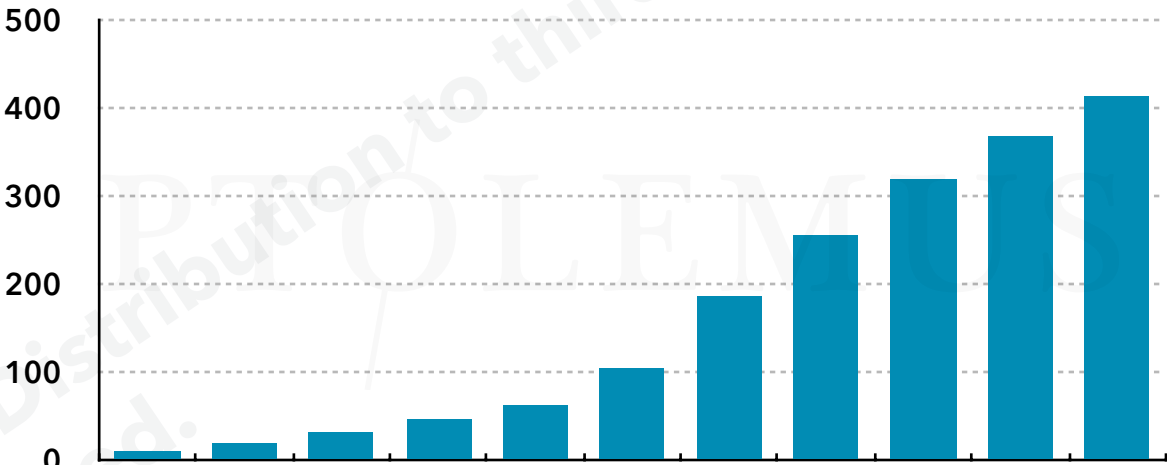


Leave-in programmes represent 90% of all UBI programmes but only 55% of underwritten policies

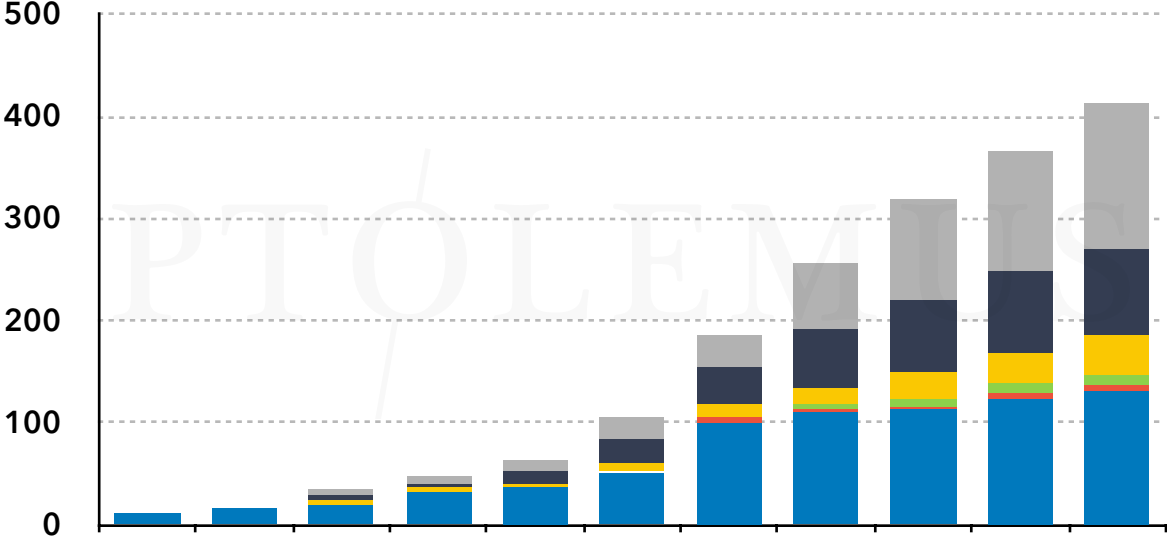
- Leave-in programmes are historically associated with **European insurers** (Italy, UK) and generally involve the fitment of a telematics device for the duration of the policy
 - The first leave-in programme was launched in Italy by **Unipol** in 2003
 - Since then the number of programmes has been in constant strong growth registering a **XX% CAGR between 2005 and 2020**

At the end of 2020, leave-in schemes represented nearly

Number of active leave-in programmes worldwide



Breakdown of leave-in programmes by device type

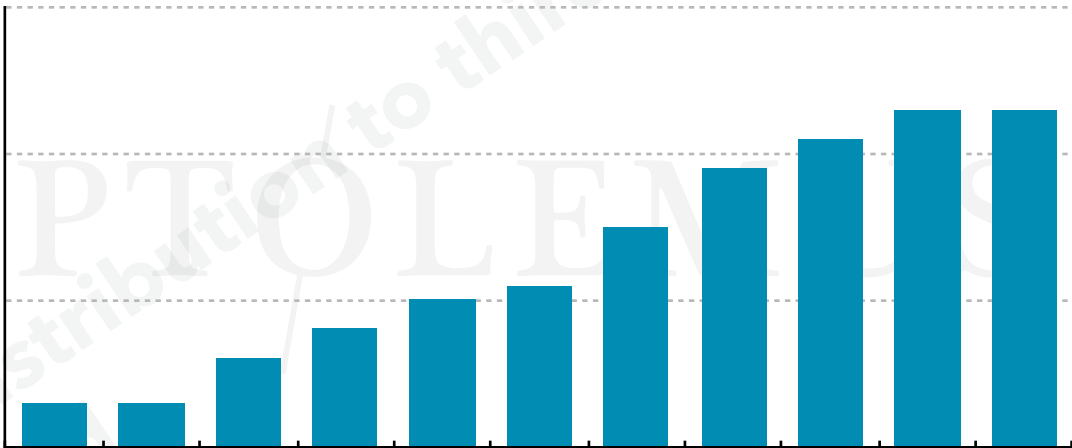


Due to their self-installable and reusable nature, OBD dongles have perennially dominated roll-over programmes

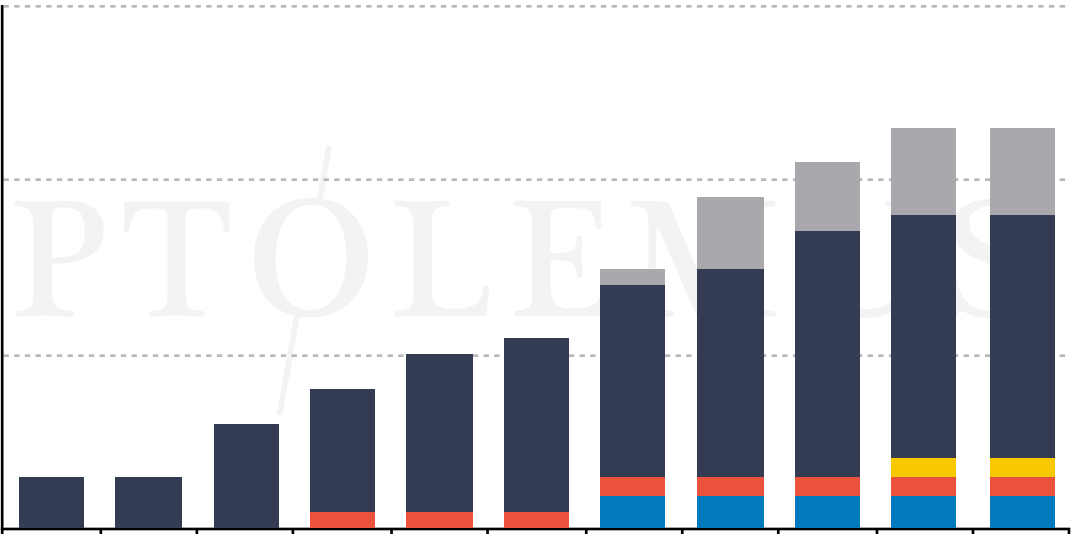
- Roll-over programmes are simple in concept, and involve the temporary installation of a device in the insured vehicle to monitor driving behaviour for a period of 3-6 months.
- The earliest version recorded by PTOLEMUS dates back to 2007, when Liberty Mutual launched Safeco Rewind.

Since then, the number of active programmes has

Roll-over programme active (cumulative)



Breakdown of roll-over programmes by device type



Many large traditional insurance companies have launched successful UBI programmes



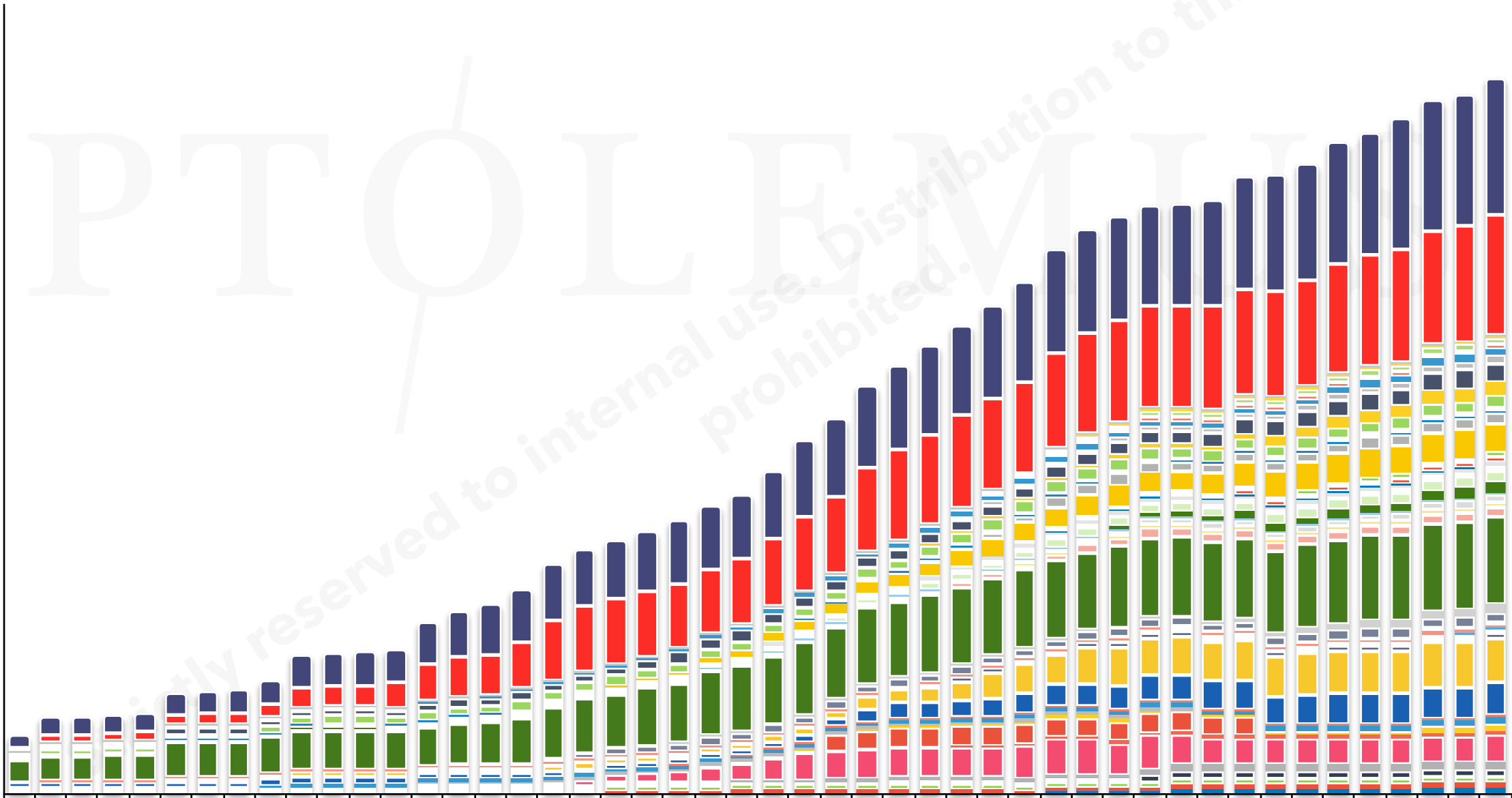
- Allstate launched its **Drivewise** mobile UBI programme in 2014.
- Data is collected through **smartphones** and policyholders can access personalised insights in the



- The number 1 auto insurer in Germany, HUK-Coburg launched its **Telematik plus** UBI programme in 2019.
- Data is collected via a **smartphone** and policyholders can access a personalised

After a period of stagnation from 2017 to 2018, connected insurance is growing globally once more

Number of active UBI programmes worldwide



CONNECTED AUTO INSURANCE GLOBAL STUDY

1

Introduction

2

Status of the global connected auto insurance market

3

How data will be collected in the future

4

Why insurers should adopt connected insurance

5

How the industry will be disrupted

6

Forecasting the market to 2030

7

Conclusions

8

Regional and country profiles

9

Regional company profiles

Regional and country profiles

1

Europe

2

NORAM

3

LATAM

4

APAC

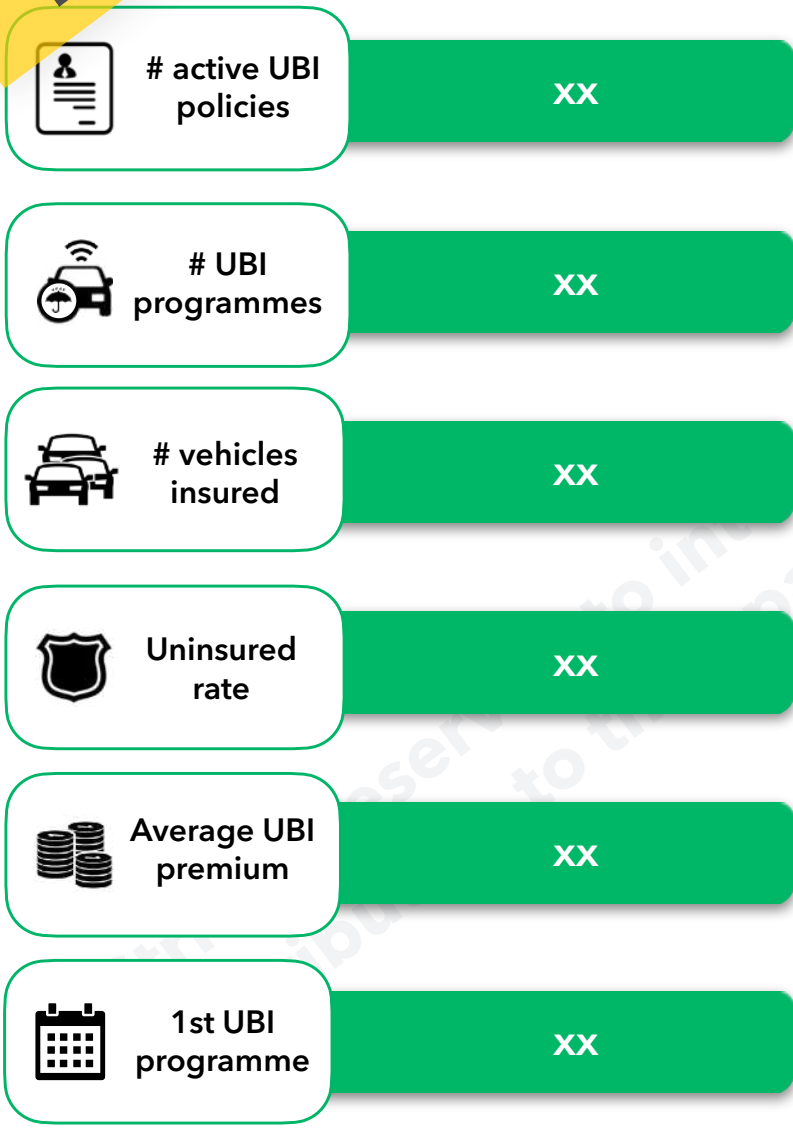
5

Africa

EXAMPLE COUNTRY PROFILE

The LATAM UBI market lacks the conditions for growth, due to

..

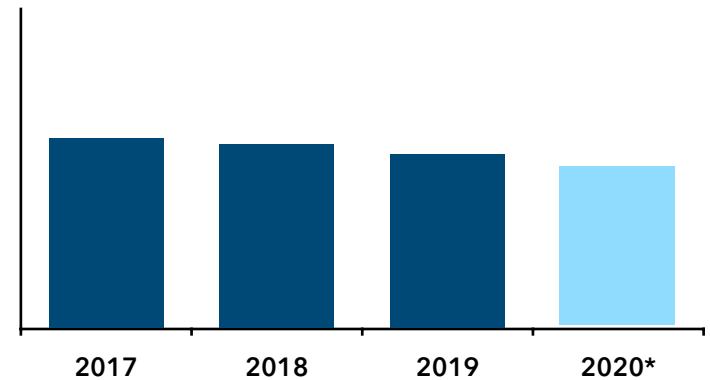
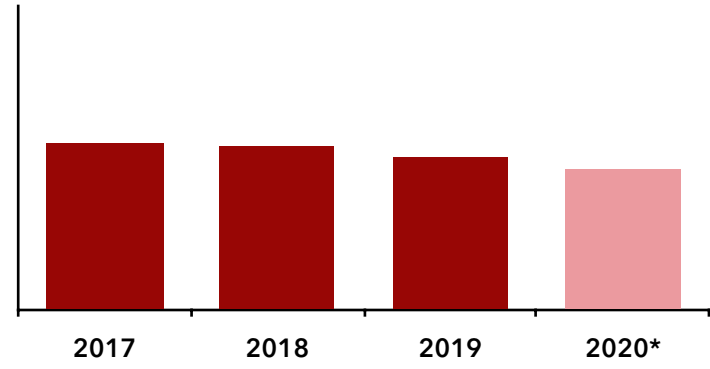
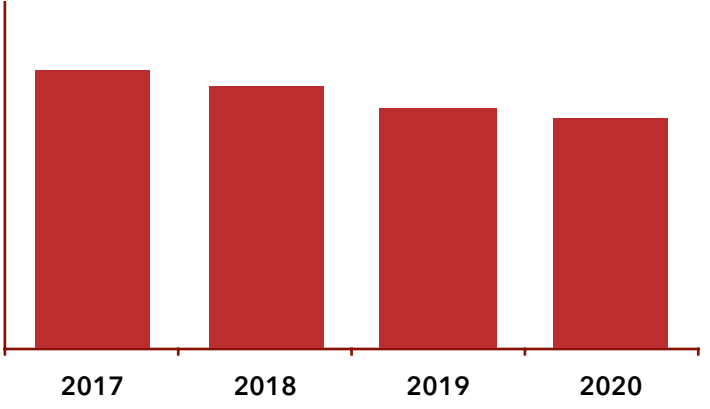


LATAM auto GWPs have been in decline since 2017 as a result of decreasing average premiums

Car insurance overview

- LATAM auto **GWPs** have been in decline, partly due to the reduction in **average premiums**, which saw a **xx%** decrease between 2017 and 2020:
The decline has primarily
- saw a decrease in auto claims, which has contributed to a positive financial year.
- However, some countries experienced a sharp decline in collected auto

Key figures



Porto Seguro provides xx% of the UBI policies in LATAM, and Brazil held the largest share of the market in 2020

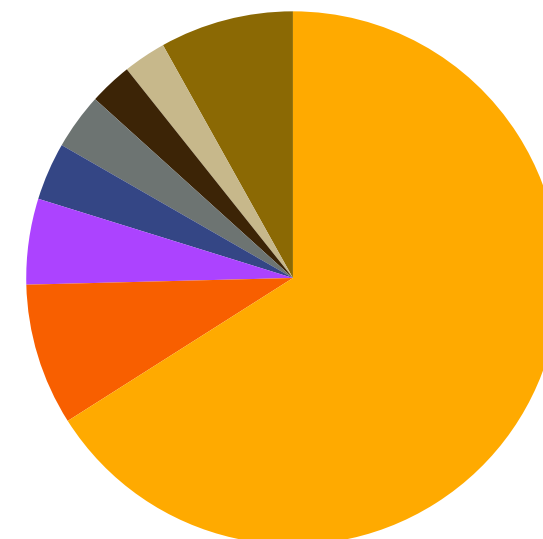


Market trends

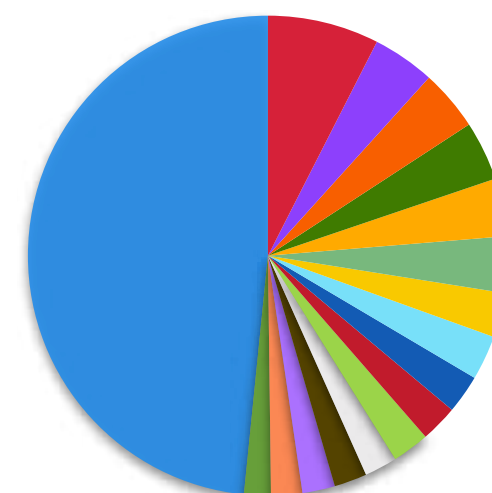
- The total number of passenger vehicles in use in LATAM was estimated at **xx million units in 2020**.
- Due to the lack of regulations allocated in **Brazil** (xx%) and **Chile** (xx%).
- Porto Seguro** is the UBI market leader, representing xx% of the total active number of UBI



Share of active UBI policies of top insurers



Market share of top car insurers



Top TSPs in the market

Source: PTOLEMUS, MAPFRE, Porto Seguro

Despite the initiatives of regulatory sandbox programmes, LATAM UBI market growth is hampered by high uninsured rate

Regulation



Insurance & Finance

- In Mexico and Brazil, **third-party liability coverage is mandatory**, which contributes to the lowering of the uninsured rate in LATAM at around 2% to 8%
- In 2019, the Brazilian insurance association (SUSEP) aimed to reduce

spread of **telematics and on-demand insurance** in Brazil:

- In April 2021, **Liberty Seguros Brazil** launched a pay-per-mile programme, which took advantage of the **SUSEP** regulation
- However, vehicle insurance penetration



Impact on UBI

- The **high uninsured rate** in the LATAM market is a challenge which is being tackled by governments such as Brazil and Mexico but it is still an issue that requires extended efforts by regulatory institutions to increase the penetration of insurance in the auto insurance segment.
- Inter-American Federation of Insurance Companies (**FIDES**) reported that LATAM governments are working to put effective enforcement measures to increase penetration of auto insurance coverage in the future.
- In tandem, according to **Digital Insurance LATAM**, Chile, Argentina and Peru are expected to follow the example of Brazil



Data & Technology

- In 2020, **SUSEP** announced the implementation of a **regulatory sandbox programmes** for Brazilian insurtechs to assist the goal of reducing insurance prices and increasing insurance penetration:
 - Similarly, the National Insurance and Bonding Commission (**CNSF**) implemented **regulatory sandbox**

- Due to its size, Brazil had the largest UBI market in LATAM and hosts over 100 insurtechs, according to **Finnovista**.
- However,, other LATAM countries such as Chile, Argentina and Mexico are emerging as UBI markets, with various players making an impact:

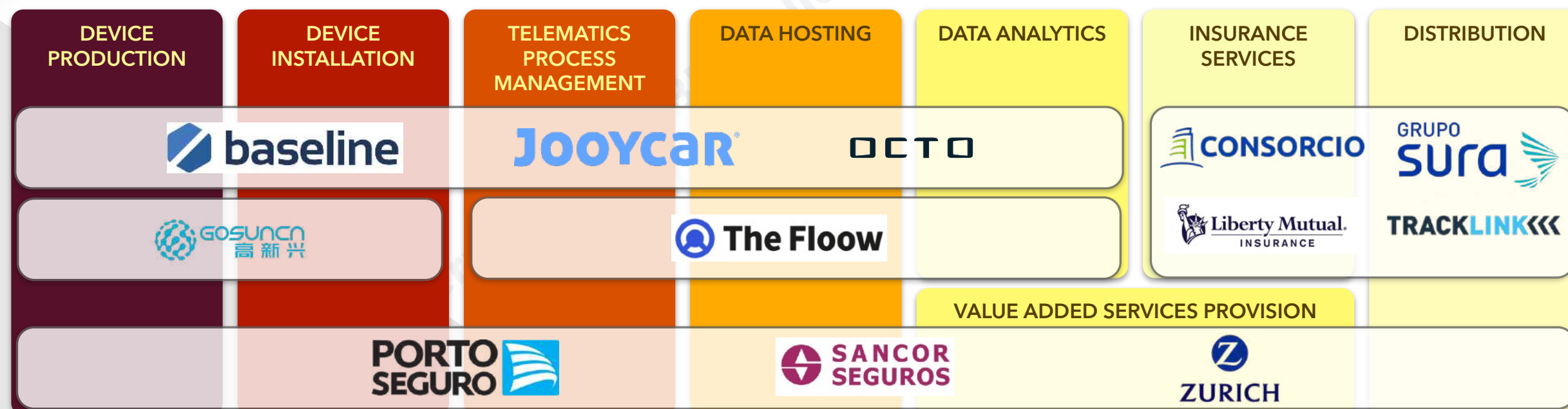
xx% of the xx UBI programmes launched in LATAM since 2015 are based on smartphone (xx%) and OBD dongle (xx%)

Recent timeline of events



Jooycar and MiiTuo supplied over xx% of UBI policies in LATAM at the end of 2020, gaining relevance in the value chain

UBI value chain in LATAM



Key trends in the value chain

- **Porto Seguro** represents over xx% of the active UBI policies in LATAM UBI market and the Brazilian UBI market representing over 77% of LATAM UBI policies.
- Indeed, the moderate competition and regulatory sandbox programmes in the LATAM region could make the UBI market attractive for auto insurers.
- **NEW ENTRANTS:** In LATAM, the entry of new entrants is expected to increase the competition in the UBI market.
- We expect **OEMs** to gain major importance in the UBI value chain in the coming years following the entry of Peugeot in Argentina, Brazil and Mexico in 2018.

CONNECTED AUTO INSURANCE GLOBAL STUDY

1

Introduction

2

Status of the global connected auto insurance market

3

How data will be collected in the future

4

Why insurers should adopt connected insurance

5

How the industry will be disrupted

6

Forecasting the market to 2030

7

Conclusions

8

Regional and country profiles

9

Regional company profiles

Top 25 global company profiles

1

Telematics Service Providers

2

Insurance companies

Arity started as AllState's in-house TSP but now provides services to other insurers too

Active policyholders equipped



Active UBI programmes



Kilometres recorded



2016



Chicago, USA



Staff

xx



Revenue

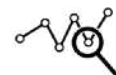
€ xx million



Company introduction



UBI offering



Analytics

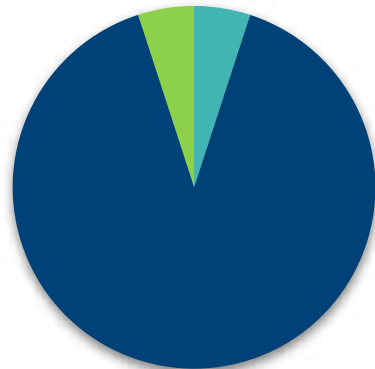


Channels

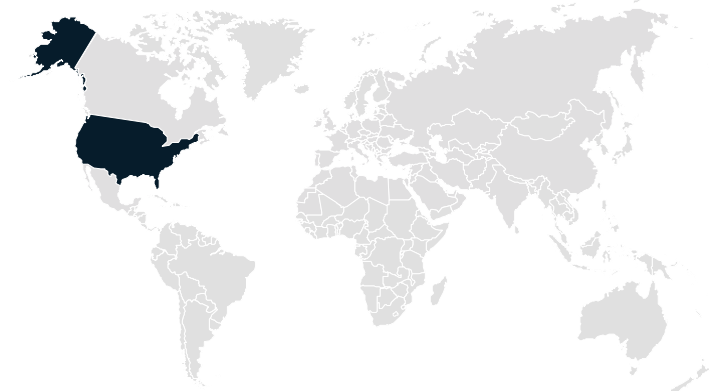
- Arity provides insurance telematics solutions to **Allstate** and **Farm Bureau Insurance** in x solution formats: web-based software tools, white label mobile apps and via the integration of its software modules to customers' app.
- Arity is part of **Allstate Insurance Company** and has analysed more than xxx billion miles of driving data collected through OBD devices, smartphones and other

Arity is focused on the US market and XX% of its customers use a smartphone-based solution

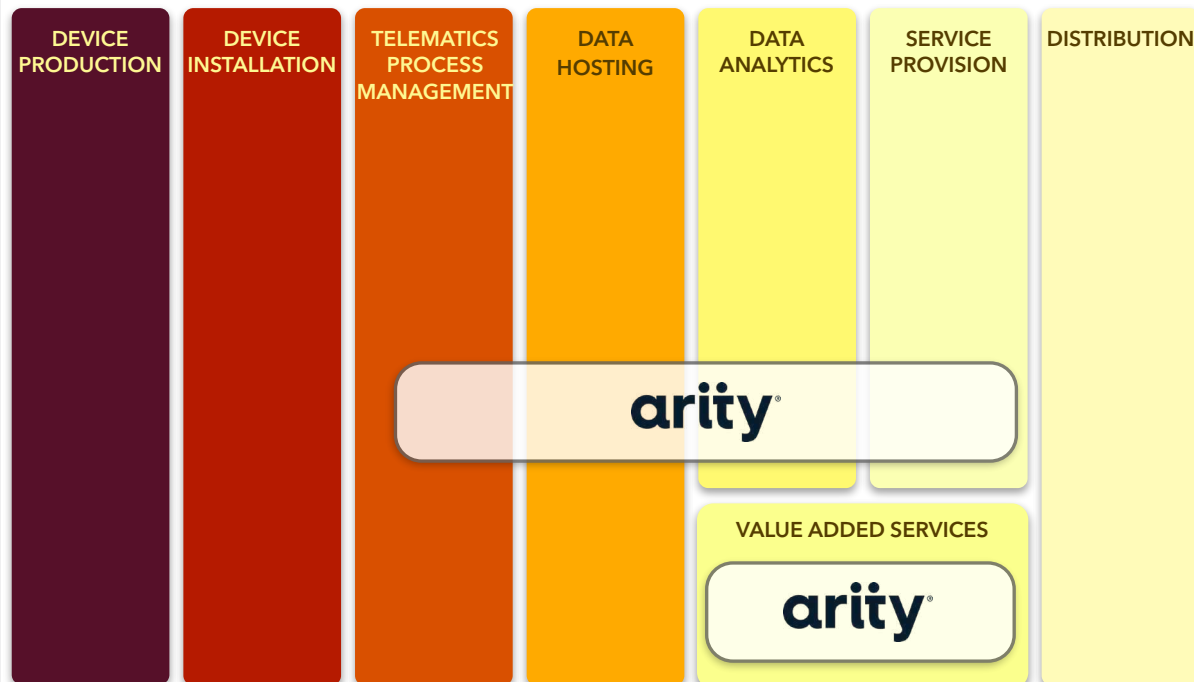
Type of solution



Geographic reach



Value chain positioning



Partnerships

● Launch ● Acquisition/funding

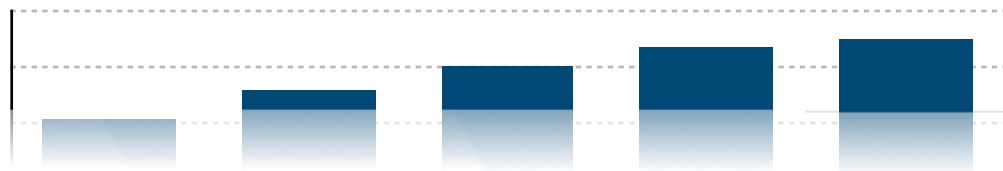
- 05/2021 Arity launches Arity IQ
- 02/2021 Arity partners with Ford to provide Ford connected cars driving scores based on driving behaviour

EXAMPLE COMPANY PROFILE

Arity seeks to expand its customer portfolio by serving non-Allstate carriers



Active policyholders equipped* (Personal lines, million)



App services powered by various devices today

| | | | | | |
|-----------------|----------------|--------|---------|---------|-----------|
| | | | | | |
| Policy services | Quote/renewals | Claims | Banking | Scoring | Value add |

- **Arity's** number of policies grew at XX% CAGR from 2016 to 2020:

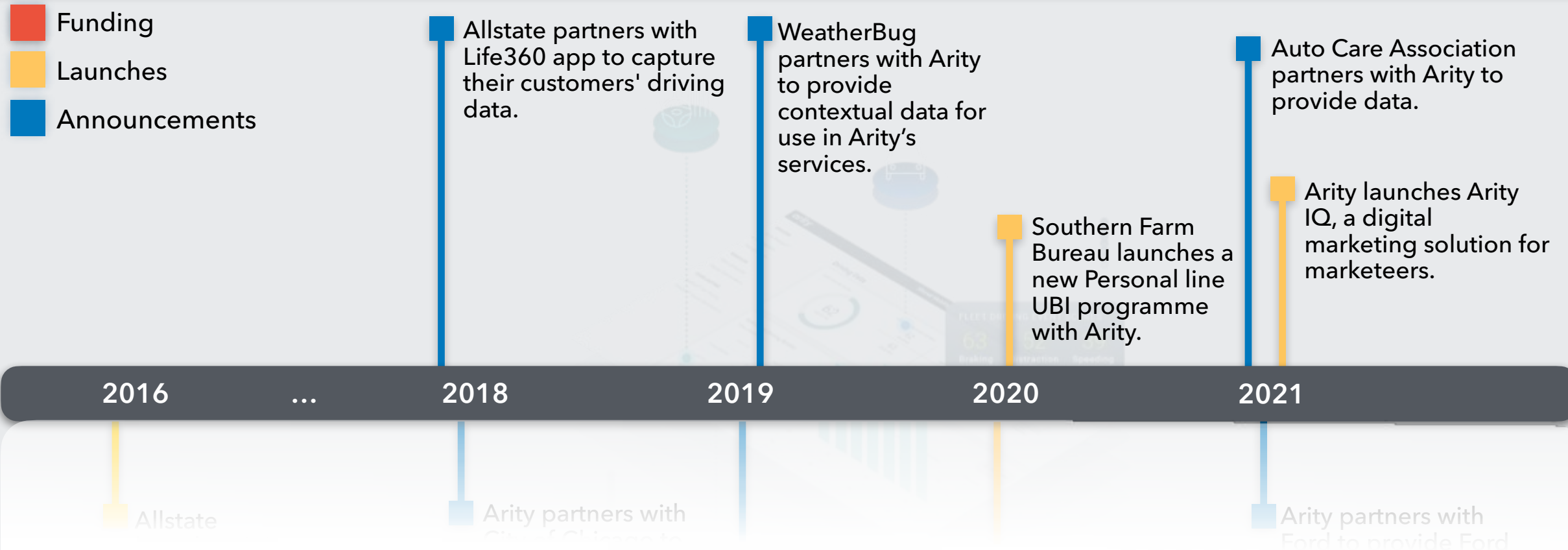
- It represented XX% of the US UBI market share which equated to X million active policies in 2020.

- As a result of **Arity's** extensive driving data knowledge, the **TSP** is able to analyse a wide range of driving parameters;
- Consequently, **Arity** provides XX% of **PHYD** policies for **Allstate** and XX% of **PHYD** policies

EXAMPLE COMPANY PROFILE

Arity has created several partnerships with OEMs such as Ford to provide telematics services

Recent timeline of events



Drive Wise is part of Allstate's mobile app and offers up to XX% discount based on driving habits

Example of programme: "Drivewise" by Arity

- **Drivewise** is part of the **Allstate mobile app**. The app allows users to manage proof of insurance, manage claims, pay policy bills and request roadside assistance.
- parameters to calculate the driving score and cash rewards:
- vehicle speed;
 - braking and



Allstate Mobile - Drivewise

"Drivewise" key features

- **My trips** provides driving feedback based on completed trips:
 - The app does not make a distinction between driving on highways and in urban areas.
- **Phone activity** provides feedback on phone usage behind the wheel to encourage safe driving behaviour.

"Drivewise" ratings



(75.4k ratings)



(674.1k ratings)

- "Allstate's Drivewise programme gives you their best discount for monitoring your speed and braking and for allowing them to withdraw your premium

Arity provides a comprehensive UBI platform via its SDK and off-the-shelf apps

EXAMPLE COMPANY PROFILE



Scoring KPIs monitored

✓ Used for scoring ✓ Collected but not used

| Parameters collected | Events measured |
|--------------------------|-------------------------|
| Speed | Local driving |
| Time of day/ Day of week | Congestion driving |
| Mileage | Short journeys |
| Time driven | Commute driving |
| Smartphone usage | Confidence / Smoothness |
| Acceleration | Cornering |
| Deceleration/ braking | Pace speeding trend |
| Road type | Sun in eyes |
| Weather condition | Night time driving |
| Fatigues (breaks) | Black spots |
| Cockpit noise | Driver distraction |
| Reckless manoeuvre | Sudden lane change |
| Location | Extreme speeding |



Features offered by Arity through its platform

✓ Available features

Events recorded

| | | | | | |
|-----------------------|-----------------------------|------------------------|----------------------------|------------------------------|-------------------|
| Auto-start | Manual trip editing | Driving style feedback | Social network integration | Driver/vehicle pairing (tag) | Psychometric test |
| Driver score feedback | Driver/ passenger detection | | | | |

Distraction monitoring

| | | | | | |
|-----------------------------|---------------------------|--------------------------|-------------------|-------------|--|
| Phone usage differentiation | Hands free detection (BT) | App used differentiation | Holding the phone | Noise-based | |
|-----------------------------|---------------------------|--------------------------|-------------------|-------------|--|

Value added services

| | | | | | |
|------------------|------------------------------|--------------------------|-------------------------------|-------------------------|-----------------------------|
| Trip log | Parental features (geofence) | Vehicle service reminder | Real-time traffic information | Speed camera locations | Turn-by-turn navigation |
| Work/private use | Where is my car? | Parking locator | Fuel prices | Fleet driver management | Roadside assistance (bCall) |

Insurance services

| | | | | | |
|---------------------|-------------------|-----------------------------------|---------------------|-----------------|----------------------------|
| Crash detection | Claims management | Cross line offering | Customer management | Document upload | Pre-registration ID checks |
| Post-crash services | Mobile Payment | Integration with non-motor offers | Policy registration | Renewals | Image analytics |

Gamification

| | | | | | |
|------------------------|-----------------|----------------------------|------------|--------------------------------|----------------|
| Standard for all users | Use competition | Competition within a group | Use badges | Gamified with driving feedback | Benefit varies |
|------------------------|-----------------|----------------------------|------------|--------------------------------|----------------|

Top 25 global company profiles

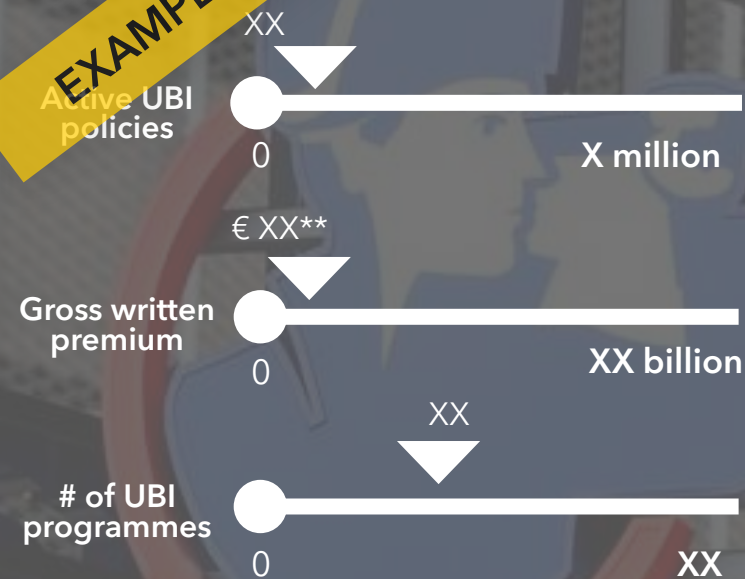
1

Telematics Service Providers

2

Insurance companies

EXAMPLE COMPANY PROFILE



1991



Cardiff, UK



Staff

XX



Revenue

€ XX billion

Admiral is the largest individual provider of usage based insurance, in the UK



Company introduction

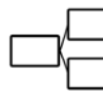


UBI offering

- **Admiral** has been actively providing UBI programmes since 2010 and it currently offers multiple pay-how-you-drive programmes.
- **Admiral** holds **XX%** of the UBI market share in the **UK**.



Targets

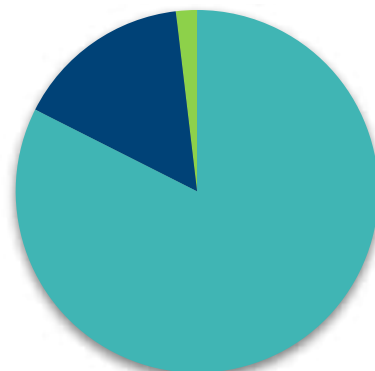


Channels

EXAMPLE COMPANY PROFILE

Admiral has partnered with industry leaders such as Octo Telematics and CMT to offer UBI product offerings

Type of solution



Services



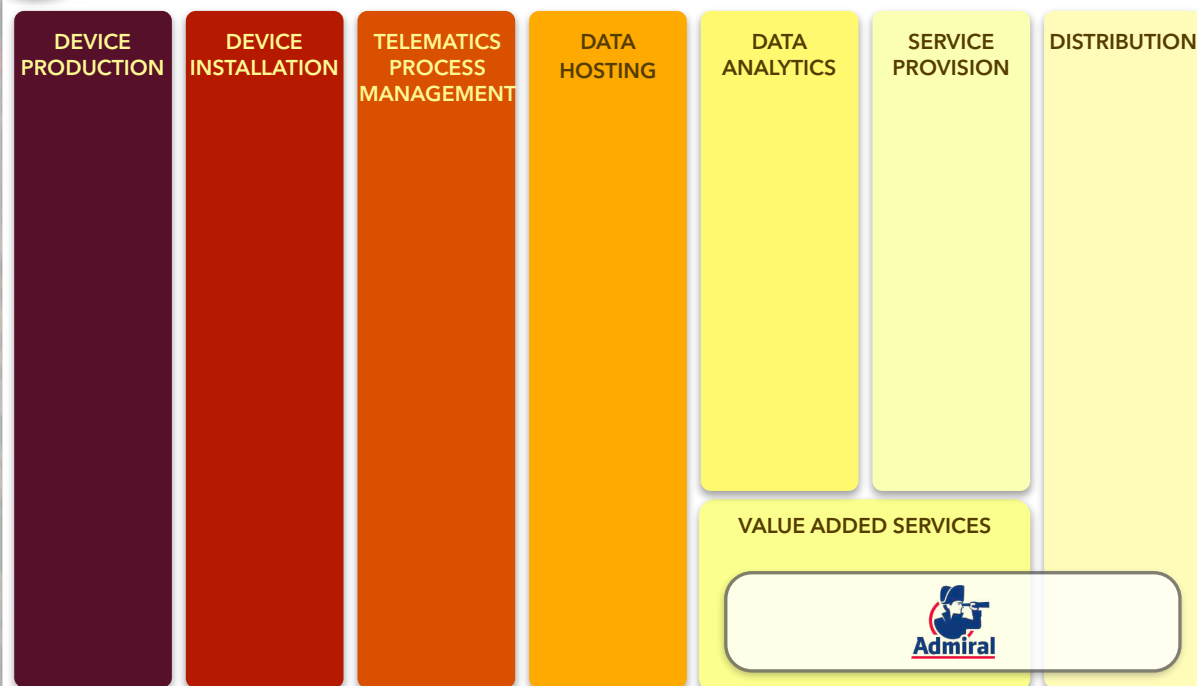
Usage-based insurance



Geographic reach



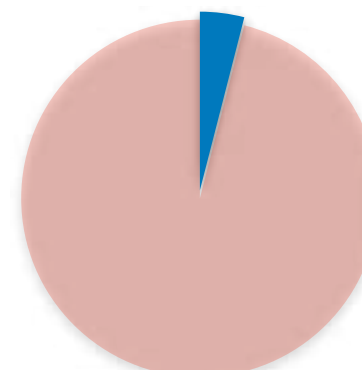
Value chain positioning



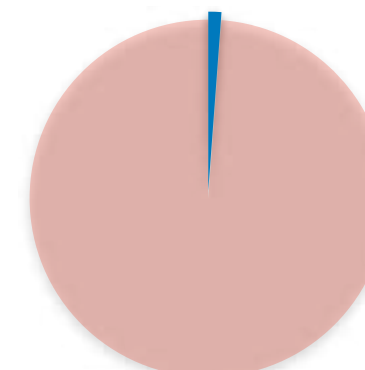
Market share & partnerships

Admiral's regional UBI market share*

Admiral's global UBI market share



Telematics service provider



Telematics technology provider

Admiral is focussing on data analytics in order to enhance its position in the United Kingdom's UBI market



Active policyholders equipped* (Personal lines, million)



Solution provided today & partners



Policy
services



Quote/
renewals



Claims



Banking



Scoring



Value add

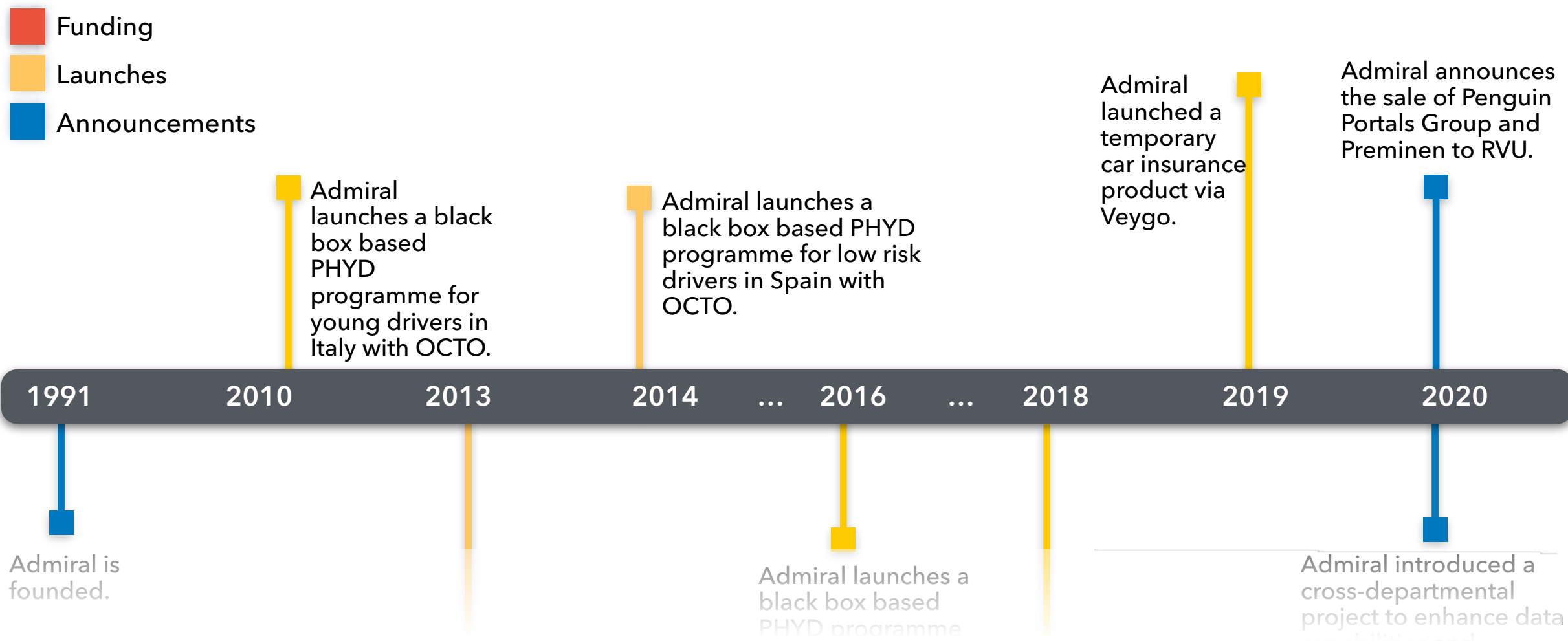
- **Admiral's** number of policies increased by an average XX% CAGR from 2016 to 2020:

- It represented about XX% of UK's UBI market (XXX active policies) in 2020.

- A collaboration with **CMT** in 2018 allowed the insurer to explore **smartphone** based programmes in the UK;
- Furthermore, in 2020, **Admiral** founded a data and analytics department to enhance its data

Admiral has partnered with players such as Octo Telematics, Retail, CMT and Vodafone for its UBI programmes

Recent timeline of events



Little Box is a simple black box based UBI programme which provides a free theft tracking service for stolen vehicles too

EXAMPLE COMPANY PROFILE



Example of programme: "Little Box" by Vodafone

- Little Box is a programme distributed by Admiral in partnership with Vodafone.
- The device records and analyses braking, time of the day and journey length.



Little Box - Black box insurance



"Little Box" key features

- The programme requires the professional installation of a **black box** which is scheduled and vehicle needs to be worth at least £250.
- In addition, the programme offers a



"Little Box" ratings



★★★★★ (3,113 ratings)

- "We went for the plug in box so made it extremely easy to get up and running. Also

Despite being active in the market since 2010, Admiral choses to use a limited number of features for its PHYD programmes

Scoring KPIs monitored

✓ Used for scoring ✓ Collected but not used

Parameters collected Events measured

| | |
|--------------------------|-------------------------|
| Speed | Local driving |
| Time of day/ Day of week | Congestion driving |
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| Time driven | Commute driving |
| Smartphone usage | Confidence / Smoothness |
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| Weather condition | Night time driving |
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| Reckless manoeuvre | Sudden lane change |
| Location | Extreme speeding |



Features offered by Admiral through its platform

✓ Available features

Events recorded

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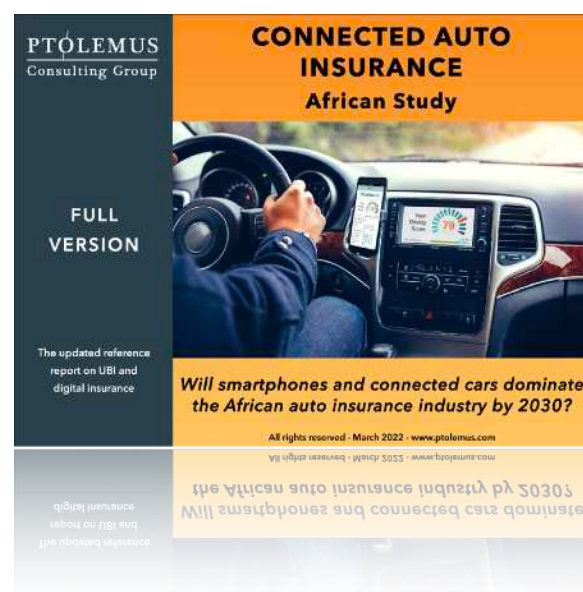
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The study comes with a single, worldwide company licence



The global reference report on UBI and Connected Auto Insurance

| | Report ONLY | | Additional market forecast |
|-----------------------------|--|-------------------------------------|---|
| | Buy direct (Invoice) | Buy online (Visa or MasterCard) | |
| Contents | <ul style="list-style-type: none"> • 360-pages of analysis of the connected auto insurance industry including, strategies, use-cases and geographies • Strategy analysis and assessment of the 4 key routes OEMs have to enter the connected insurance market • A profile of the Latin American region, including details such as: <ul style="list-style-type: none"> - Share of active UBI policies - Market share of top car insurers - Market trends and timeline - Regulatory summary and UBI impact assessment - UBI value chain in Latin America | | <ul style="list-style-type: none"> • Excel file with outputs and charts • Global Forecasts from 2020 to 2030 • Includes, technology splits, revenues by technology, distribution model and region/country, and active policies |
| Company-wide licence | € 3,990 Approx. \$4,160 | € 3,990 Approx. \$4,160 | INCLUDED |
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Strategies for Mobile Companies

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