

UBI Global Study 4th Edition

CONNECTED AUTO INSURANCE

**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 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 Top 26 global company profiles

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- 9 Top 26 global 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?

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

Will OEM telematic solutions challenge existing insurer's business?

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

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

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

In which country will UBI grow the most by 2030?

Which TSPs are leading in the UBI market?



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

- **730-pages of analysis** of the connected auto insurance industry including, strategies, use-cases and geographies, based on:
 - 11 years of constant market surveillance
 - 26 interviews with key stakeholders
 - 6 months of desk research
- Strategy analysis and assessment of the **4 key routes** OEMs have to enter the connected insurance market
- Analysis of the strategies and apps of **26 insurance companies and TSPs** worldwide
- **Profiles of the 15 countries and regions** leading the global connected auto insurance industry:
- **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
- **An in-depth assessment of 26 companies engaged in UBI (14 TSPs and 12 insurers) analysing:**
 - Value proposition
 - Market share
 - Key UBI programme examples
- **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, Baumarc 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 Wayscral'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

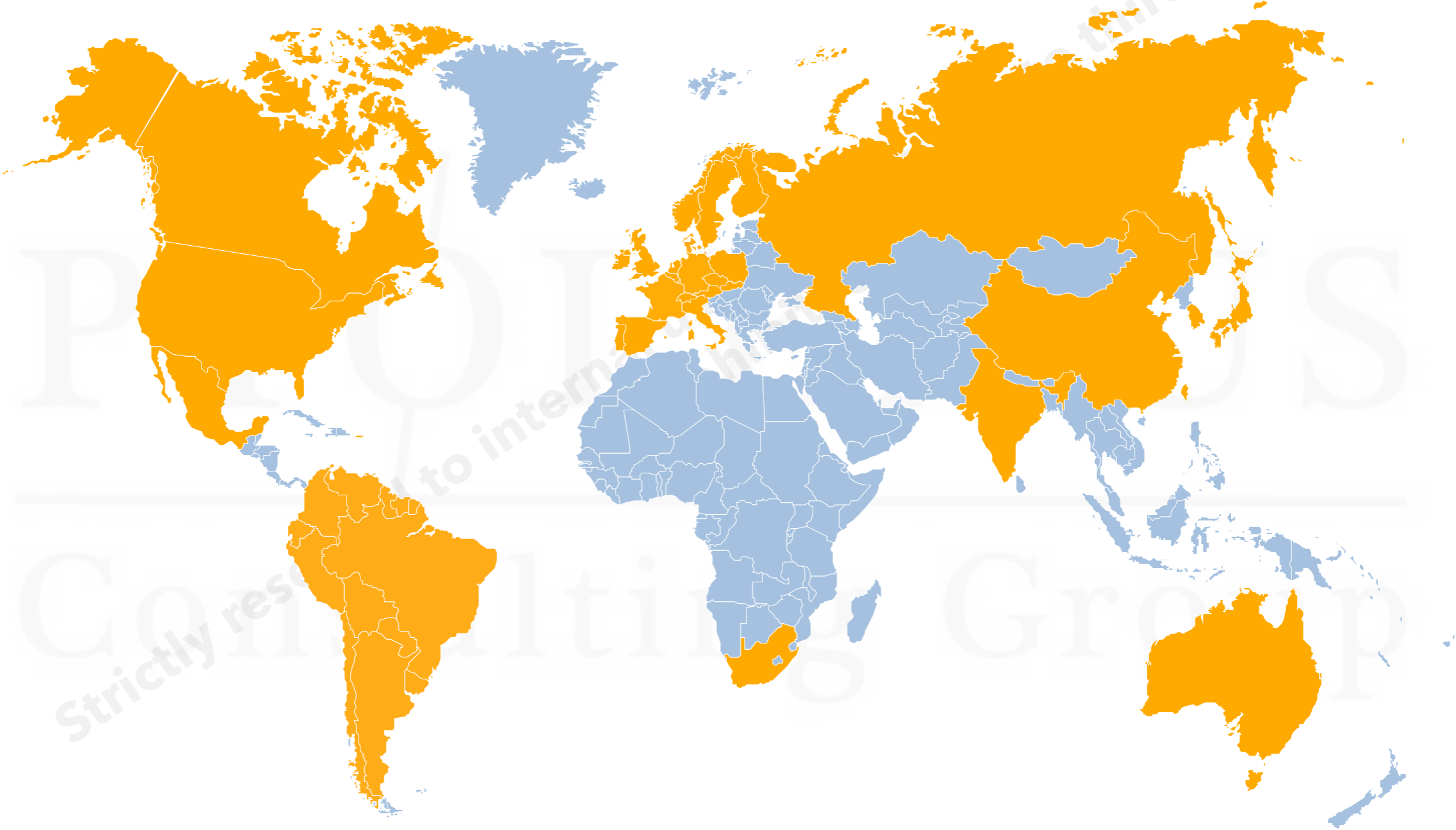
Today, the market for **connected auto insurance represents 26 million active policies across all types of distribution models and technologies, generating €15 billion in premiums**.

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



Discovery differentiates itself with Vitality Drive; a reward-based programme



Ilan Ossin
Head of Telematics,
Discovery Insure
Johannesburg, S. Africa

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

Discovery Insure's Telematic programme is Vitality Drive - an all encompassing shared value model which offers technology, rewards for driving well, and safety feature to our clients.

Discovery Insure uses as its core telematics technology offering smartphone telematics in conjunction with an Internet of Things (IoT) device, which is installed in the client's vehicle, to measure driving behaviour. We have found this to be advantageous compared with using smartphone-only telematics.

In addition, our telematics technology allows for safety features such Impact Alert (which detects a severe impact to the clients vehicle and provides immediate response and medical care, even if we can't get hold of the client).

Our Vitality Drive IoT Sensor is an easy-to-install sensor which is placed on the inside of the client's windscreen, behind their rear view mirror. The sensor connects to the client's mobile device through a smartphone application and monitors driving behaviour and provides immediate feedback after each trip.

This means that clients can see how well they drove in five driving behaviours: acceleration, braking, cornering, speeding and cellphone use. The sensor also detects how long a client drives for and when they drive. In this way, we are able to gain a full understanding of how a client drives as well as give the client the necessary tools to improve their driving behaviour.

Our Vitality Drive Sensor and smartphone app combination provides other benefits - Since the sensor is secured to the vehicle, there is an improved accuracy of driving behaviour data. It's easy installation does not interfere with vehicle electronics and allows clients to install the sensor themselves. We are able to match the sensor to the vehicle so that it is clear when the sensor is used by the primary driver in the insured vehicle. It allows the measurement of cellphone use while driving. Clients are therefore able to earn more Vitality Drive points by not using their cellphone while they drive.

We also have a variant of the sensor which we use for Stolen Vehicle Recovery.

How does Discovery Insure differentiate itself from its competitors?

Discovery Insure offers a unique marketing position due to our product being centred around two factors: insurance that rewards clients for driving well and insurance that cares for clients through valuable, state-of-the-art safety features. We achieve this through the application of our shared-value Insurance model that

states that all stakeholders, such as clients, the insurer and society as a whole, benefit as the system improves.

Through Vitality Drive, our unique driver behaviour programme, we offer clients a unique value proposition by using explicit rewards and incentives. Rewards include monthly fuel cash back into the drivers account, weekly rewards, discounts on Uber, tyres, vehicle servicing and maintenance, guaranteed 0% vehicle premium renewal increase for our best drivers and more.

Rewards are what motivate clients to change their driving behaviour. Rewards programmes are not penal, offer premium certainty and are often more valuable than most premium-adjustment programmes.

Emotionally compelling rewards are effective as they are more likely to be remembered and more likely to influence behaviour change. Our up to 50% fuel cash back is an example of such a reward. Fuel is an emotive expense. Small changes in the fuel price invokes large, negative reactions from consumers. The fuel price has increased in South Africa by over 15% over the past five years and, with up to R800 in fuel spend back each month, Vitality Drive offers clients the highest cash back on fuel spend.

This unique marketing positioning along with our bespoke technology-enabled insurance product platform means Discovery Insure is now the fastest growing insurer in the short-term insurance industry, earning us the place as the top fifth largest insurer in the South African industry in just 10 years.

Telematics in South Africa should become widespread, but privacy concerns linger



Ilan Ossin
Head of Telematics,
Discovery Insure
Johannesburg, S. Africa

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?

Since 2016, there has been an ever-increasing interest and uptake of UBI (usage-based insurance) and InsurTechs. Clients are seeking digital convenience and tailored solutions from their insurance providers. Buzzwords such as big data, machine learning and artificial intelligence have found their way into the insurance space and have the potential to provide significant benefits to both the client and the insurer.

We have seen that technology and digital innovations can be applied to all areas of the insurance process thus making clients lives easier by providing convenience and seamless experiences. Most insurers now make use of smartphone apps that allow clients to engage and interact with their insurance products. From their apps, clients can add and remove items to their plan, submit claims, engage with a chat bot and more.

The advances of machine learning and big data science are likely to lead to more advanced algorithms is assessing risk. Big Data is the

computational analysis of extremely large data sets reveal patterns, trends and associations and machine learning is the capacity of a computer to learn from experience allowing it to modify its processing on the basis of newly acquired information. The combination of these 2 factors means that insurance systems could make better predictions more efficiently and with a higher degree of accuracy making it a powerful tool for pricing. Clients have also become more comfortable over the years in using the technology to obtain benefits such as being rewarded for good driving.

Where does Discovery Insure see the future of insurance telematics heading in Africa and Europe?

We foresee the use of telematics becoming more widespread in the insurance industry. We have already seen Insurtech companies as players in the market, and we think they will adopt better and better technology over time. Since we see the nature of risk as behavioural, we believe that the use of telematics to monitor, measure and understand driving behaviour was a natural evolution - and we expect to see more of it in the future.

After the COVID-19 pandemic which saw a major change in how people live and drive, many are seeking tailored solutions that allow for changes in their lifestyle. For example, there has been an increase in interest in usage-based insurance programmes as many people expect to be driving less in the near future. The use of telematics also provides a competitive advantage in terms of pricing and operational efficiencies. As the use of telematics

becomes an advantage to insurers, others might start adopting a similar approach in order to improve the accuracy of their pricing models. As new players enter the market, there will also be an increase in competitiveness.

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

There are many challenges. Firstly, Africa lags behind many more developed countries in terms of InsurTechs. This is due to high internet costs and limited technology infrastructure which tends to limit innovation. In addition, Africa has a far lower internet penetration of about 39.3% compared with the rest of the world. Another challenge likely to be faced in Africa and Europe is privacy. In general, people have concerns about the amount of information and data their service providers have access to, how this data is used and the safety of this data against cyber attacks.

How is Discovery Insure working to mitigate this challenge?

Discovery Insure offers clients utmost peace of mind when it comes to their security of their private information. It is written in our policy wording that we do not use the client's Vitality Drive telematics device information in the event of a claim, other than to confirm the time and place of an incident. The client may ask us to use the information to help prove that an insured third party was at fault.

Responding to COVID restrictions, Discovery used data to calculate customer rebates



Ilan Ossin
Head of Telematics,
Discovery Insure
Johannesburg, S. Africa

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

There have been many impacts, both financial and socially (for example in our corporate culture). We have had to adapt and come up with innovative solutions to stay ahead of the market.

The overall financial impact was positive since most clients were no longer on the road exposing themselves and their vehicles to risk. One way that we could pass back these savings in claims to clients was by introducing our Dynamic Distance cash back again enabled by the use of our telematics systems and processes, through which we are giving clients up to 25% of their premium back if they have low mileage during the COVID-19 pandemic.

How important is end-user/customer interaction for Discovery Insure? How does Discovery Insure engage with end-users?

Our end-user experience is absolutely critical for our company. Most of our clients are serviced via intermediaries, who interact with their clients to give them the best advice in a complex financial landscape. Brokers help clients understand what they are buying and the risks of not having sufficient cover, especially when considering excluding certain perils. Brokers assist in educating clients on often complex insurance products to help eliminate the

information asymmetry so that clients can make well-informed decisions.

We also strive for a more direct connection. We do this by engaging clients in Vitality Drive and rewarding them regularly. Clients are able to track their trips and rewards on the Discovery app which has been developed to be engaging and intuitive. We also find that through continuous engagement, clients improve their driving behaviour far more rapidly than through once-off events.

This also leads to sustained improvements in driving over time. We also engage with customers through online platforms such as social media, chat bots and we recently created a WhatsApp contact number where clients can find out more about their insurance products with Discovery Insure. Member-based research surveys are sent to clients and brokers at every touchpoint to gauge how they feel about our service. This provides us with considerable insights on where to improve.

Of course, all our product innovations and benefit enhancements are created with our clients in mind. Every innovation was created to meet a specific need. For example, we offer clients up to 25% off Uber to help them stay safe on the roads at night, which is the most dangerous time to be driving. We offer discounts at tyre fitment network centres and vehicle service and maintenance centres to help clients keep their cars in good conditions. At claims stage, we provide the services of a Trauma Concierge who helps clients cope with and overcome the emotional aftershock of a distressing accident, hijacking, burglary or fire. This service is available to affected members of the household, including domestic staff, and each individual receives four counselling sessions.

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

A good telematics service is, firstly, simple. The client should not have a hard time engaging in the programme.

Secondly, the service should not get in the way of the client's life. It should never distract the client - it should rather remain in the background.

Finally, the telematics service should reward the client. Because the client is helping the insurer with more information, the insurer should share that value with the client. We constantly monitor our complaints and feedback from clients and intermediaries in order to gauge the reception of our service and improve our services where possible.

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

We foresee Insurtech becoming even more popular in the near future. There has been a huge take-up of this kind of insurance worldwide, and we expect this will continue. Some of the reasons are that it can offer better benefits for cheaper premiums (because costs are saved), it can be more flexible, and many clients prefer the quick and easy digital journey.

In light of that view, we are streamlining our digital processes and offering a digitally-enabled product range.

One contrast is that we believe firmly in the value of financial advisors in the complex financial landscape. Another programme that has seen increased popularity is pay-as-you-drive insurance.

Discovery has seen driving standards increase in proportion to policy duration



Ilan Ossin
Head of Telematics,
Discovery Insure
Johannesburg, S. Africa

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?

We absolutely believe that telematics-based technology can improve driving behaviour in a lasting manner. Our core purpose is to create a nation of great drivers, and we have certainly seen results along those lines.

The biggest reason for an insurer to introduce a telematics device is so that value can be created and shared. Good drivers are rewarded through our programme, society benefits as its members improve in driving ability, and the insurer can price its risks better and hence charge more attractive premiums.

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

Yes - without a doubt. In the graph, we show the proportion of good drivers in our books over time.

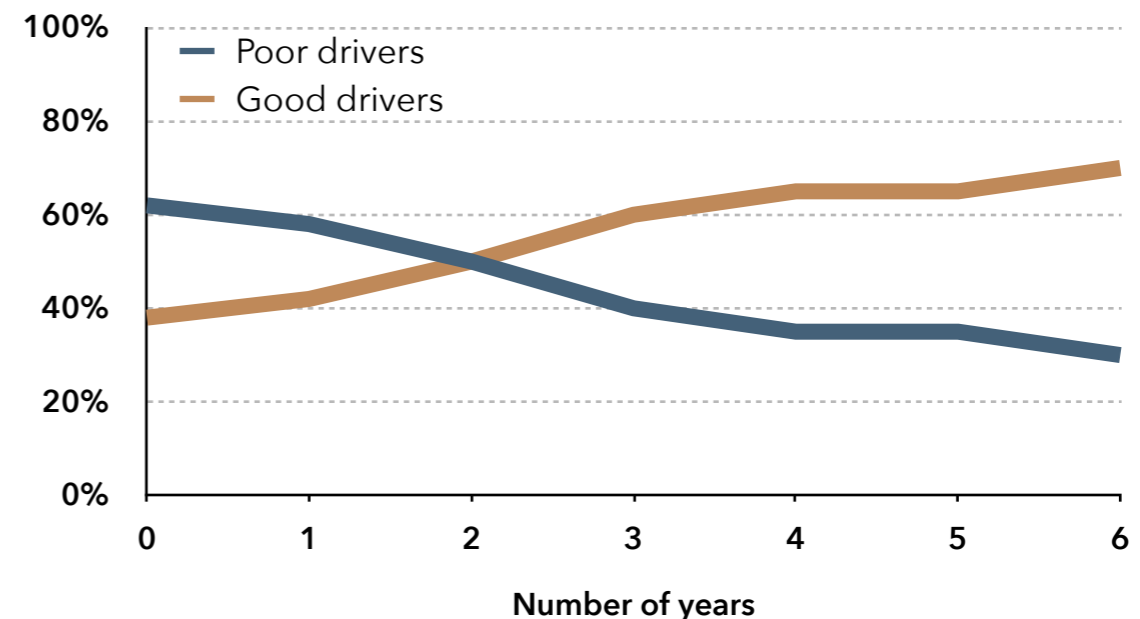
The two main effects here are: people become better drivers over time, and our offering attracts good drivers more than poor drivers. However, even when we take the second effect out of the equation, we still find that on average, drivers have a 15% improvement in driving behaviour within the first 30 days of installing a telematics device. This improvement is sustained over time. We have also seen this effect extend to claims severity and frequency, and indeed

in our clients' road accident fatality rates. As clients improve their driving behaviour (as measured by their Vitality Drive status), we see that they have relatively fewer and less severe accidents.

By combining our telematics data with our claims data, we are able to more accurately predict accident risk. We see that clients who drive better are less likely to get into an accident. Clients who improve their driving behaviour score by more than 300 points in one year, have a 24% reduction in their motor accident frequency, showcasing the efficacy of the model.

We are also proud to share that Discovery Insure clients have a road fatality rate of 13.3 per 100 000, which is 40% lower than that of the current South African fatality rate.

Policyholders' driving standards have improved, the longer they stay on the programme



Discovery is exporting Vitality Drive into new markets



Ilan Ossin
Head of Telematics,
Discovery Insure
Johannesburg, S. Africa

Do you think that the prospect of connected vehicles (with line-fit telematics from the factory) pose a risk to aftermarket black box-based telematics programmes? How is Discovery Insure engaging with the prospect direct data supply from OEMs in the future?

This is an exciting development. There is potential risk to actual aftermarket device/fitments however our Vitality drive programme and technology streams are built to enable data streams from multiple sources.

The programme encompasses a number of elements including technology, actuarial dynamics and rewards to enable a shared value offering to the client and is thus less effected by OEM data potentially becoming the source of the telematics data.

We do believe though that it will still be a number of years before this data is more mainstream and there will still be a mix of devices in the market for a number of years to come. Discovery Insure is keeping abreast of the OEM market is working closely with its technology partner Cambridge Mobile Telematics and engaging with OEMs to understand the potential of

what data is available and would be available from OEM suppliers in the market.

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

For an insurer, using telematics devices can provide quality data for claims and crash management. With our smartphone enabled telematics programme coupled with our Vitality drive IoT sensor and working closely with our technology partner Cambridge Mobile Telematics we are able to generate automatic crash reports.

This is an advancing field with much development still occurring but the results are looking promising. The benefits of this helps to speed up the claims process and provide assistance to clients when there is a third party disputes on the incident. As a rule Discovery Insure does not use the telematics data to repudiate claims.

Furthermore, since we immediately know when a client has had an accident, we can provide huge value to client in terms of safety features (like sending medical assistance if needed). We could also initiate claims before clients report them.

We also believe there is a large opportunity in being able to estimate claims and claims cost using imagery.

Where will Discovery Insure' strategic focus be in the coming 5 years?

This year, we celebrate 10 years of Discovery Insure and our clients have received exceptional value and we have made significant strides in creating a nation of great drivers. Our focus over the next 5 years is definitely to continue to be a product and digital innovation leader in the local market. The last year was a good example of how the environment is constantly changing and we aim to continue to bring relevant benefits for our clients in the future. In addition, we are also focusing on international expansion of the Vitality Drive programme with the aim of creating a world of great drivers. We have already started taking the initial steps with our recent expansion into Saudi Arabia and the United Kingdom. This shows that the Vitality Drive programme is scalable and adaptable to different markets.

Looking at commercial lines, one of our biggest strategic focuses is to help small and medium businesses by offering our newly-introduced tailored insurance products. We have a unique set of benefits for restaurant owners, healthcare professionals, accountants, lawyers, fuel retailers and heavy commercial vehicles. Our product range was specifically crafted to help these clients with the risks that they face, and we embedded a range of benefits in these products at no additional premium.

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 say 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' 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.

By Mile's views the impact of COVID-19 as a watershed moment for auto insurance



Callum Rimmer
CEO,
London, UK

Could you please tell us more about By Miles' telematics solutions?

By Miles was founded in 2016 by myself and James Blackham and we sold the UK's first pay-per-mile auto insurance policy in 2018. Our policies are aimed at lower mileage drivers, where customers pay a fixed annual cost to cover their car whilst it's parked, and they then pay for the miles they drive each month. We're integrated with OBD, connected car and mobile telematics and we've developed most of our technology internally. In 2020, we decided to externalise our technology as a new B2B platform, which we called By Bits. By Bit's goal is to enable other motor insurers to bring more innovative and customer-centric propositions to market in a fast and cost-effective way.

How has the UK market evolved since 2016? What would you say have been the biggest beneficial evolutionary steps taken with

regards to customer acceptance, technology, and legislation?

We chose to develop our technology internally at By Miles since we couldn't find a suitable solution to help us achieve our vision. This was indicative of the position of the auto insurance market at the time - usage-based insurance was still a new concept that relatively few had even heard of. Since then, we've seen a trend towards customer-centricity in nearly every kind of consumer service, but the coronavirus pandemic has shed auto insurance in an unfavourable spotlight. Customer demands for more flexibility and fairer pricing, coupled with the increased prevalence of enabler technology (connected cars, smartphone telematics etc.) means that the industry is finally starting to change.

How does By Miles differentiate itself from its competitors? Especially as it has just recently spun-off its B2B platform, analytics division By Bits?

Being the first provider of real-time pay-by-mile car insurance in the UK, By Miles is

already quite differentiated from the rest of the UK insurance market. Compared to traditional

car insurance policies, the pricing is fairer and more flexible, and puts a driver totally in control of the cost of their insurance. If they drive less, they pay less immediately. Compared to other telematics providers, we are proudly pay-as-you-drive, but not "how you drive", so we don't use driver scoring to change premiums, it's purely

based on miles. So we bring the benefits of telematics out of the youth market, and to older and more experienced drivers for the first time.

Where does By Miles see the future of insurance telematics heading in the United Kingdom and France?

When we started By Miles, we did so with the belief that usage-based insurance would become the norm if consumers could be made aware of its benefits. Now it's no longer a case of if but when, and we're already seeing innovation within the field, including the increase in the ubiquity of connected car data from OEMs, and improvements in the fidelity of data from smartphone-only telematics. Consumers are becoming keener to form a relationship with their data that results in reward, and with it the possibilities for insurance telematics are growing.

Unless insurers change business approach, they risk being left behind by innovative start-ups



Callum Rimmer
CEO,
London, UK

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

In a research report By Bits commissioned at the start of 2021, we found that incumbent insurers are still directing their transformation and innovation initiatives on operating costs and profit margins, rather than on delivering enhanced customer experience. This approach is driving a reticence to change due to the scale of change required (both strategically as well as technologically) to better serve the needs of customers. The slow-moving pace of the auto insurance industry has long been a stymie of innovation in services that are directly related (e.g. connected cars), and insurers need to act now to avoid becoming irrelevant and falling behind.

How is By Miles working to mitigate this challenge?

We started By Bits because we saw an opportunity to address the challenges we experienced when we started By Miles. So that

we can continue to effectively be a part of the inevitable industry transformation, we've externalised our technology to allow other insurers to be less reliant on legacy technology so that they can innovate and go to market faster whilst not distracting from their existing portfolios. In addition to this, at By Miles we're already working directly with other enablers of innovation - we were the first in the UK to connect directly to Tesla and Mercedes for the purpose of UBI, and we're working with other OEMs to do the same in the future.

How has COVID-19 impacted By Miles and the UK market over the last 18 months?

Based on the driving activity of By Miles members we saw a year-over-year drop of miles driven in the UK of 52% in January this year. We had a look at data from the Association of British Insurers and found that due to reduced driving activity, car insurance claims nearly halved (by 48%) in the first pandemic lockdown last year. News of insurers refunding customers have made headlines since, and over the last 18 months the industry has been forced into addressing digital transformation and customer-centricity challenges more quickly than they might have otherwise. As a result, a survey we conducted between February and September 2020 showed a notable increase in the

percentage of people who would consider a pay-by-mile policy (55% - 72%).

How important is end-user/customer interaction for By Miles? How does By Miles engage with end-users?

By analysing how By Miles members use the By Miles app, we've identified a clear correlation between customer engagement and customer retention - the more a driver interacts with their policy over the year, the more likely they are to renew. One of the key advantages of usage-based insurance is that it lends itself naturally to increased customer engagement over more traditional forms of auto insurance, but we also endeavour to provide other value-add services to boost it further. Features such as notifications when a member's car battery is running low or when they've driven through a toll zone, or reminders when an MOT is due, ensure our customers receive a more personalised service that they benefit from.

By Miles believes UBI will be the predominant auto insurance product in the UK within 5 years



Callum Rimmer
CEO,
London, UK

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

Fast and accurate information, that's at the fingertips of the end-user, so they can

actually benefit from seeing it and make better decisions. And that's not just about

how fast they're driving - they already knew that! The opaque and mysterious "black box" nickname telematics has earned, and the reputation for being like "big brother watching you" is unhelpful - but it's a fair one. For too long, insurance companies have created a feeling of mistrust with drivers, permanently gluing and wiring devices into cars, and pricing based on a number of mysterious factors (with their road speed limit data often frustratingly inaccurate and penalising people unfairly). There's so much data that telematics offers that can help make drivers' lives easier and more rewarding. Focus on how you can provide that - we know from our user feedback and Trustpilot reviews that this is what drivers want.

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

I recently wrote an opinion piece on the use of artificial intelligence (AI) in insurance where I stressed that the key to bringing it to mass market was by starting small, and I think the same applies to telematics. The technology and its potential are shrouded in buzzwords like 'gamification' and 'intelligent FNOL' but this has the risk of scaring off consumers and insurers alike. The programmes that will become most popular over the next 5 years will be ones that make the rewards most obvious to drivers, and do not take excessive resource for insurers to manage.

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

Since we firmly believe that UBI will become the predominant auto insurance offering in the next 5 years, we're working hard now to innovate and build the infrastructure needed to help enable consumer adoption and insurer integration. We want to ensure that the industry isn't slowing evolution in the automotive space by not being ready to accommodate new technologies. Auto insurance should never be a blocker of innovation and our focus is to never be in a position where we're limiting consumer choice when it comes to mobility options.

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 By Miles working with its OEM partners to get direct data into the market for insurers? When do you think this will become a mainstream data alternative?

Auto insurers are most likely to be the first mainstream adopters of direct data feeds from OEMs, and it's likely they'll become the biggest consumers of the data when it is mainstream. The rewards for insurers and consumers will be numerous, so it makes sense to put the effort in to drive the technology to mass market. OEMs are also incentivised to work with insurers since auto insurance stands to become the second most expensive facet of car ownership in the world of electrification (currently it falls short only to fuel costs). Car manufacturers can add to their list of USPs if they can innovate in a way that reduces insurance prices, or adds value to the service.

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?

Even at a less data intrusive level like pay-per-mile, telematics gives insurers the ability to make drivers more conscious of their driving behaviour. At By Miles we regularly get feedback from our members to tell us that after coming on board, they've started avoiding unnecessary journeys more often (like walking to the post office instead). It's a double whammy - they've saved money, and we've reduced our risk exposure. At a more macro level, insurers are in a position of influence in relation to the environmental and social responsibilities that come with car ownership and driving. Telematics provide a unique opportunity in providing insights that promote awareness and increase engagement in these areas.

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 Global Study 2021 - 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 Global Study 2021 - 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

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

Mobile telecom players

Fleet & fuel, ITS & regulators

Telematics solution providers

Device & location suppliers

Insurers, aggregators & assistance providers

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

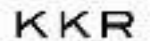
... perform market sizing, due diligence & business planning projects...



Conducted the commercial due diligence of Octo Telematics



Assisted in the review of the global insurance telematics market



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



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



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



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



... 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

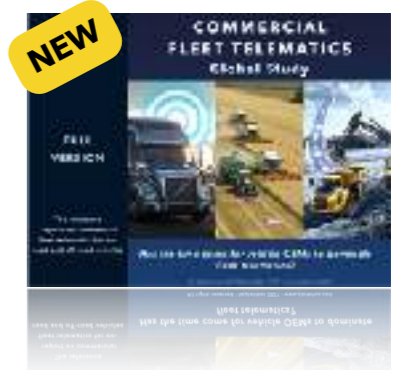
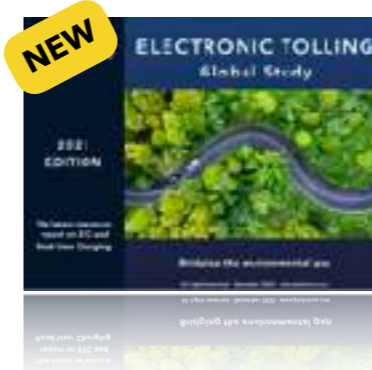
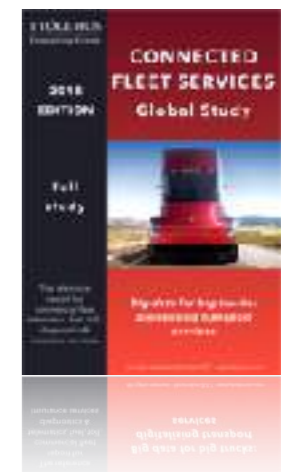
CONNECTED CAR

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 Top 26 global 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.

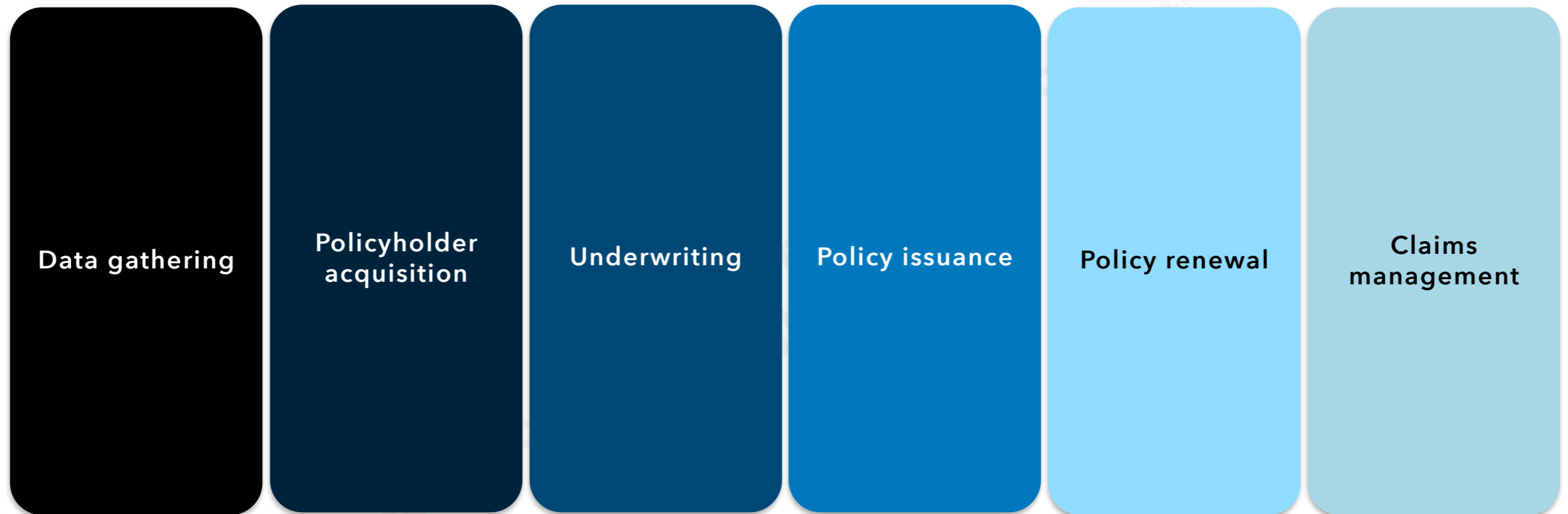
Insurance telematics, also known as connected insurance, enables insurers to **collect actual data** that relates to an individual policyholder.

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

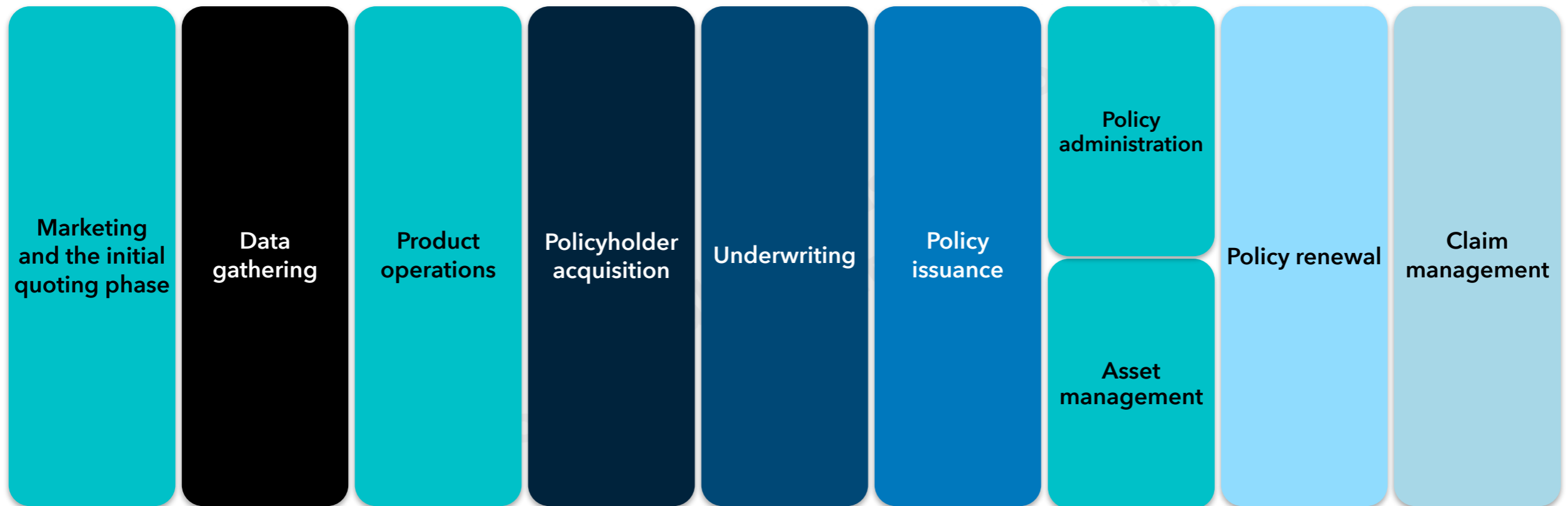


- Traditional vehicle insurance policies estimate risk that is based on **static datasets** including age, vehicle type, garaging location, years without claim, recorded driving convictions, etc.
- As a fixed data set, **it does not change after being recorded** and cannot refresh information in real 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

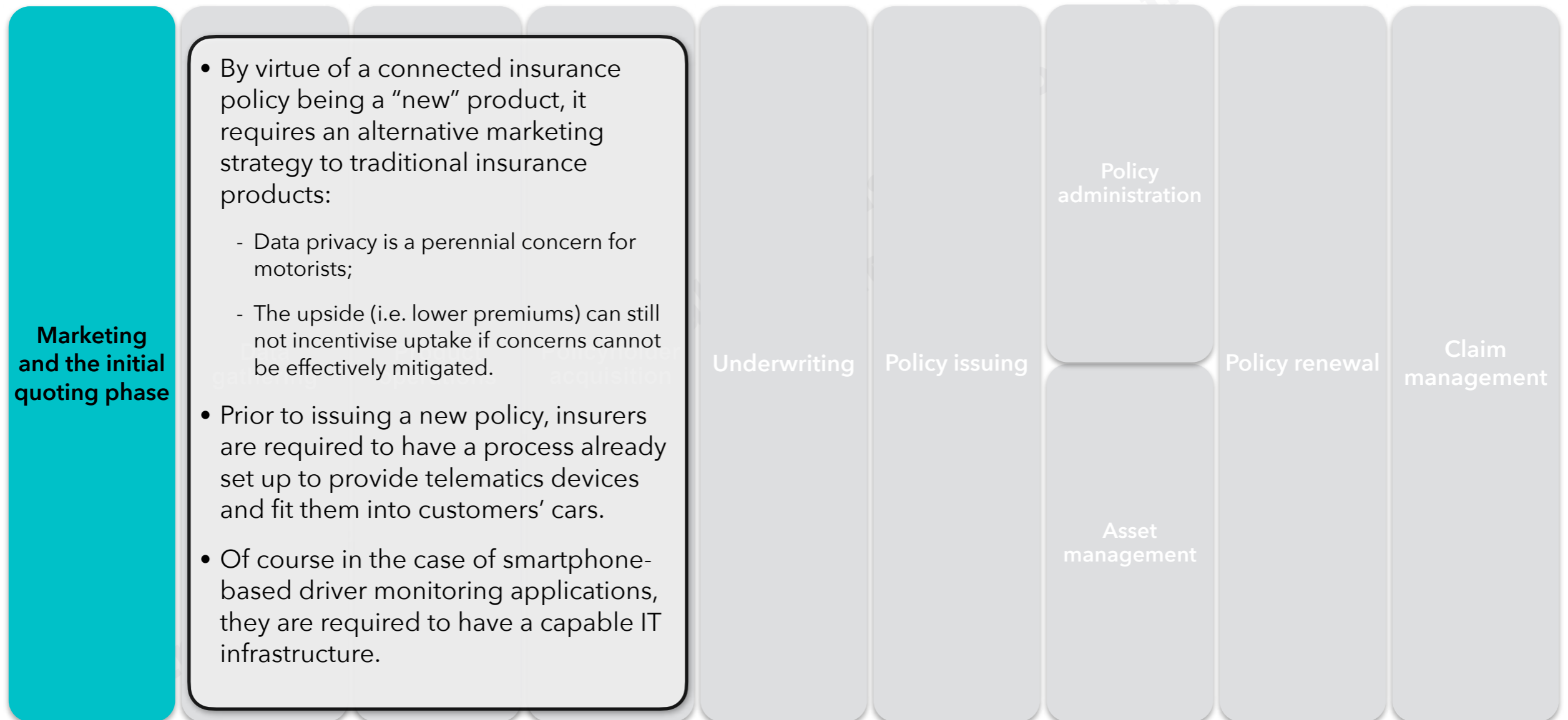


- By virtue of being “connected” the number of touch points that can be refined and improved for an insurer increases, thus enhancing policyholder contact points and - hopefully - a stronger customer relationship at the point of renewal.
- **Connected insurance not only depends on static data but also 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.

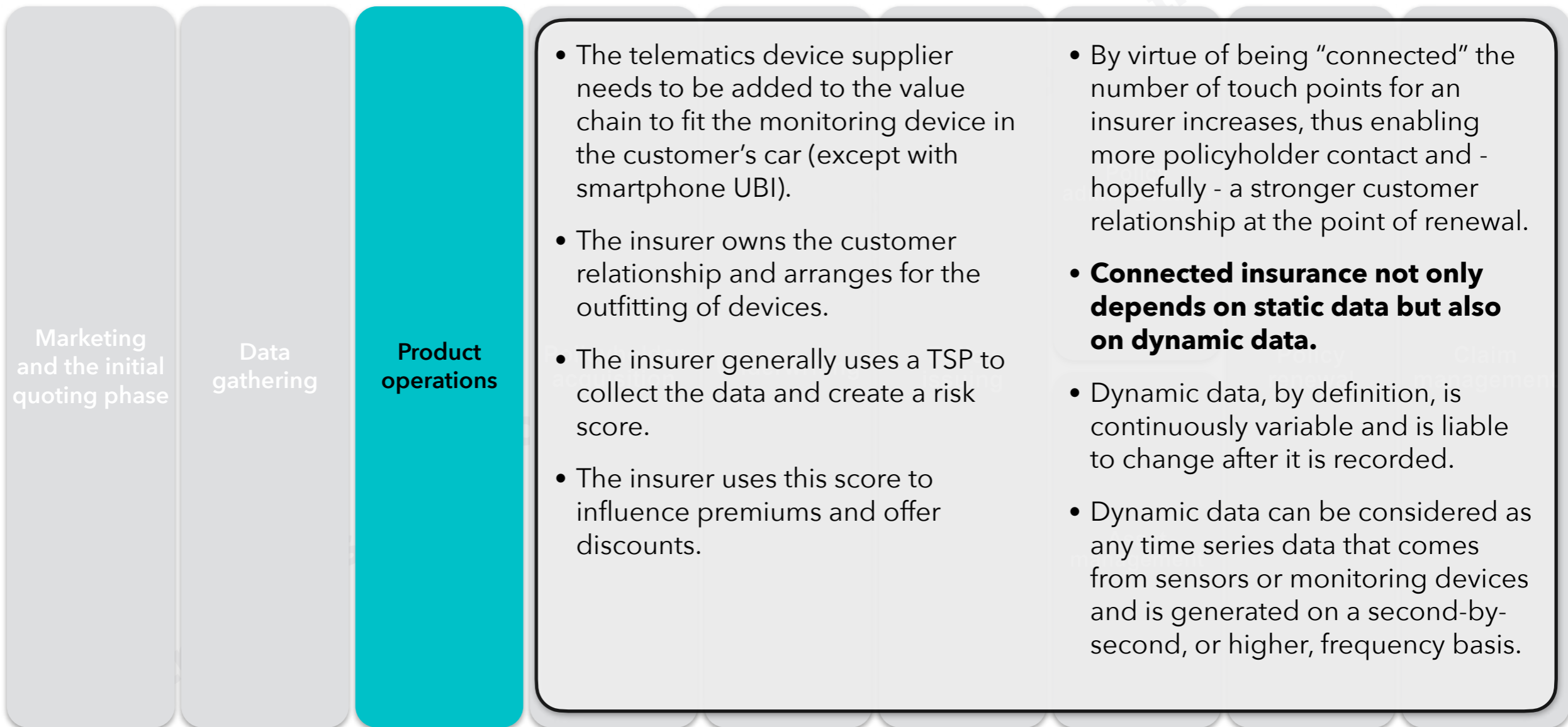
Connected insurance requires alternative marketing strategies

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

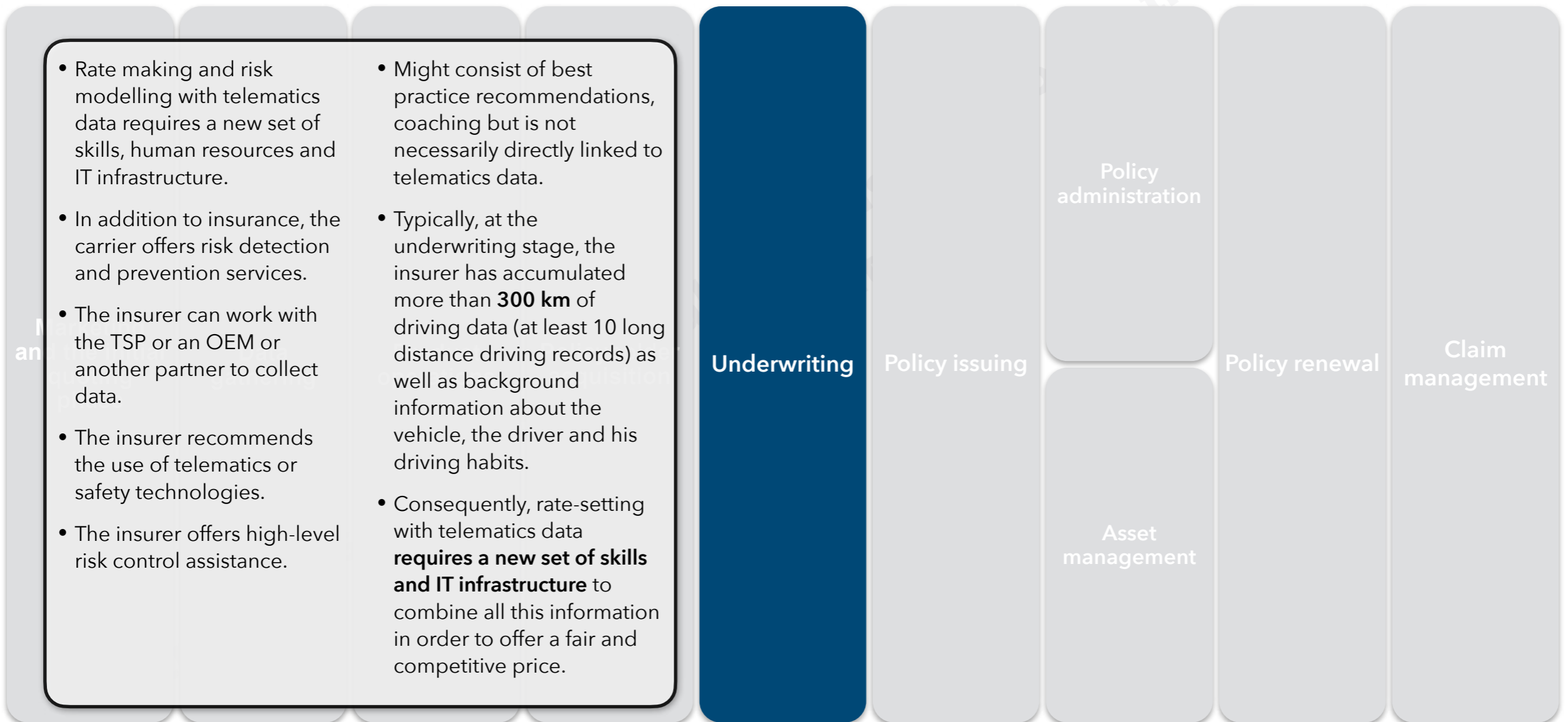
Asset management

Policy renewal

Claim management

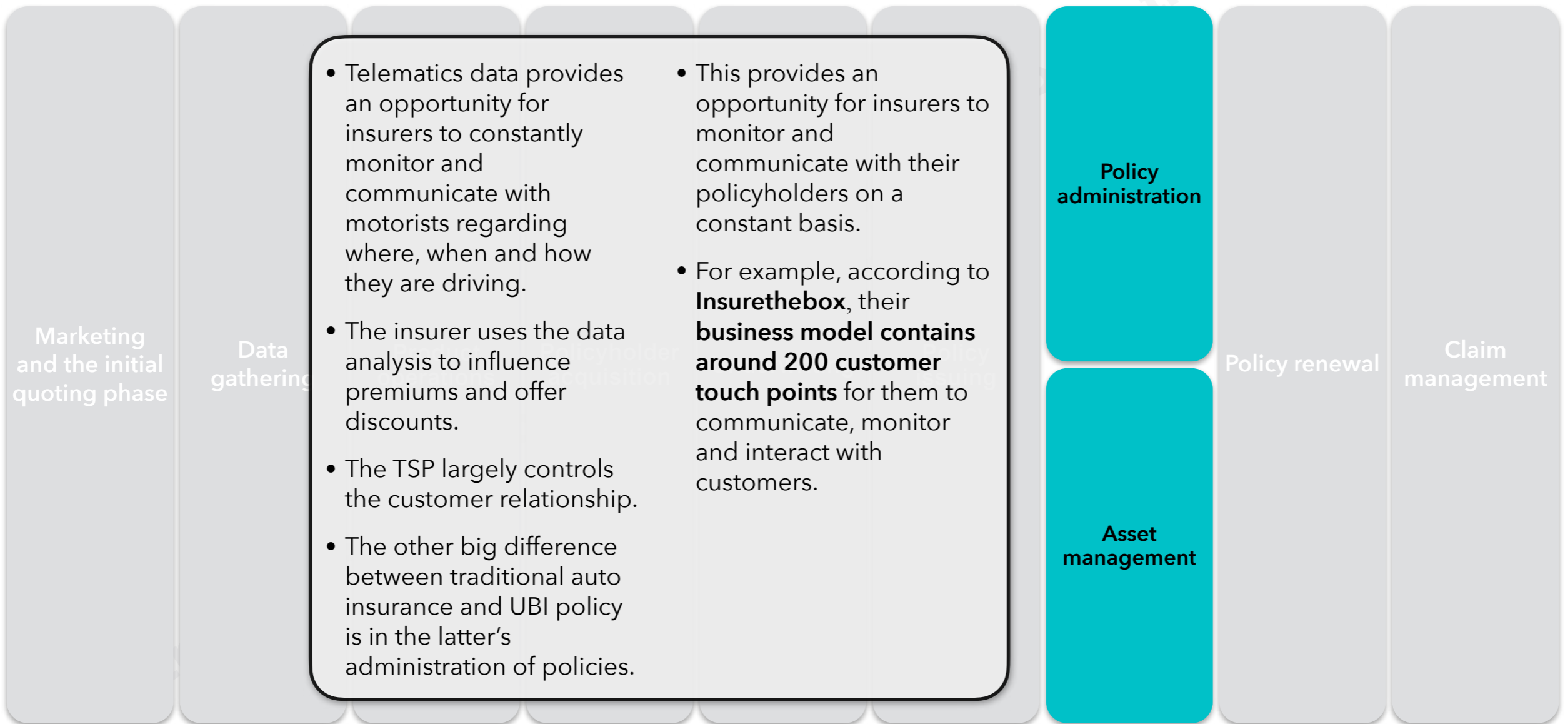
Connected insurance can provide a rich source of data to actuaries enabling enhanced risk assessments to be made

The connected insurance-enabled value chain



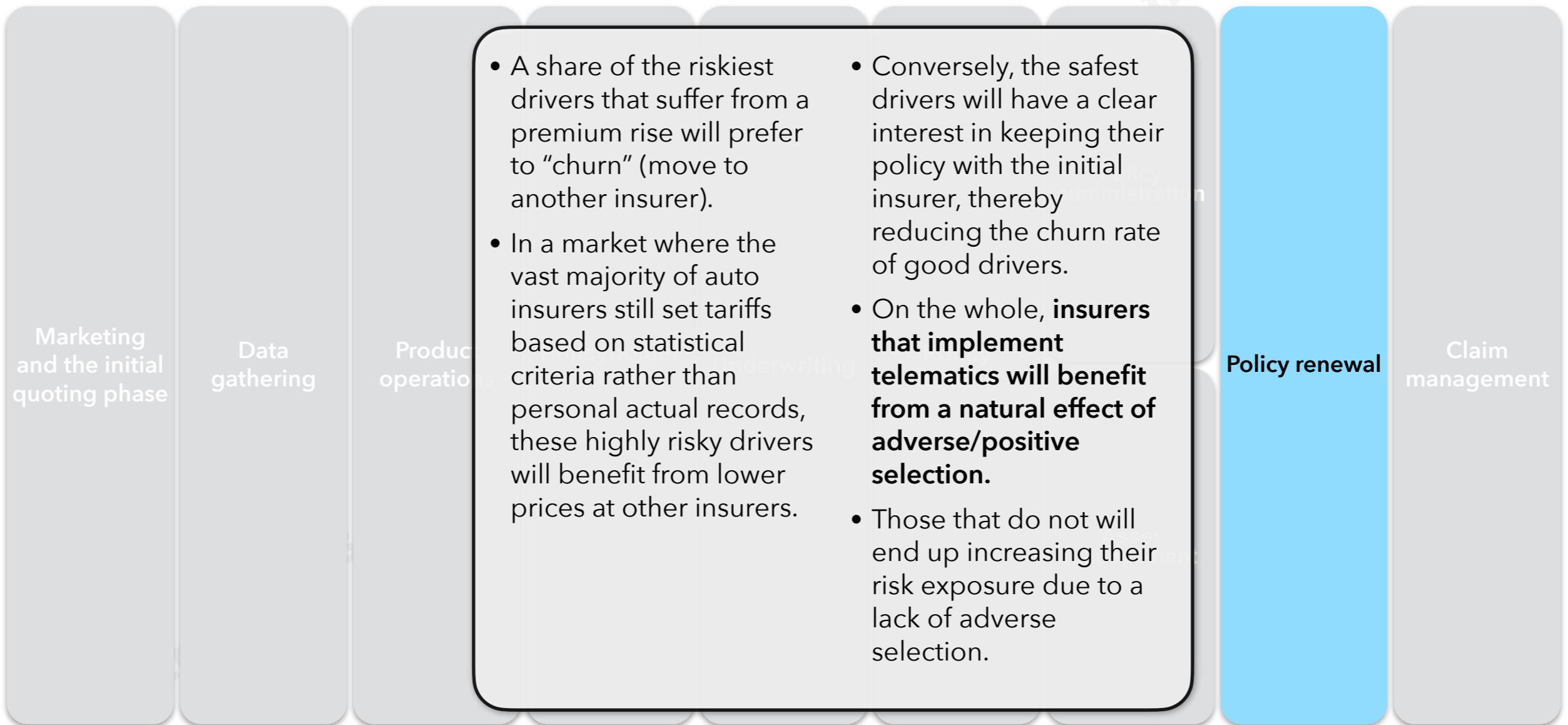
Being "connected" can improve automation of data provision for back office tasks, greatly assisting policy administration

The connected insurance-enabled value chain



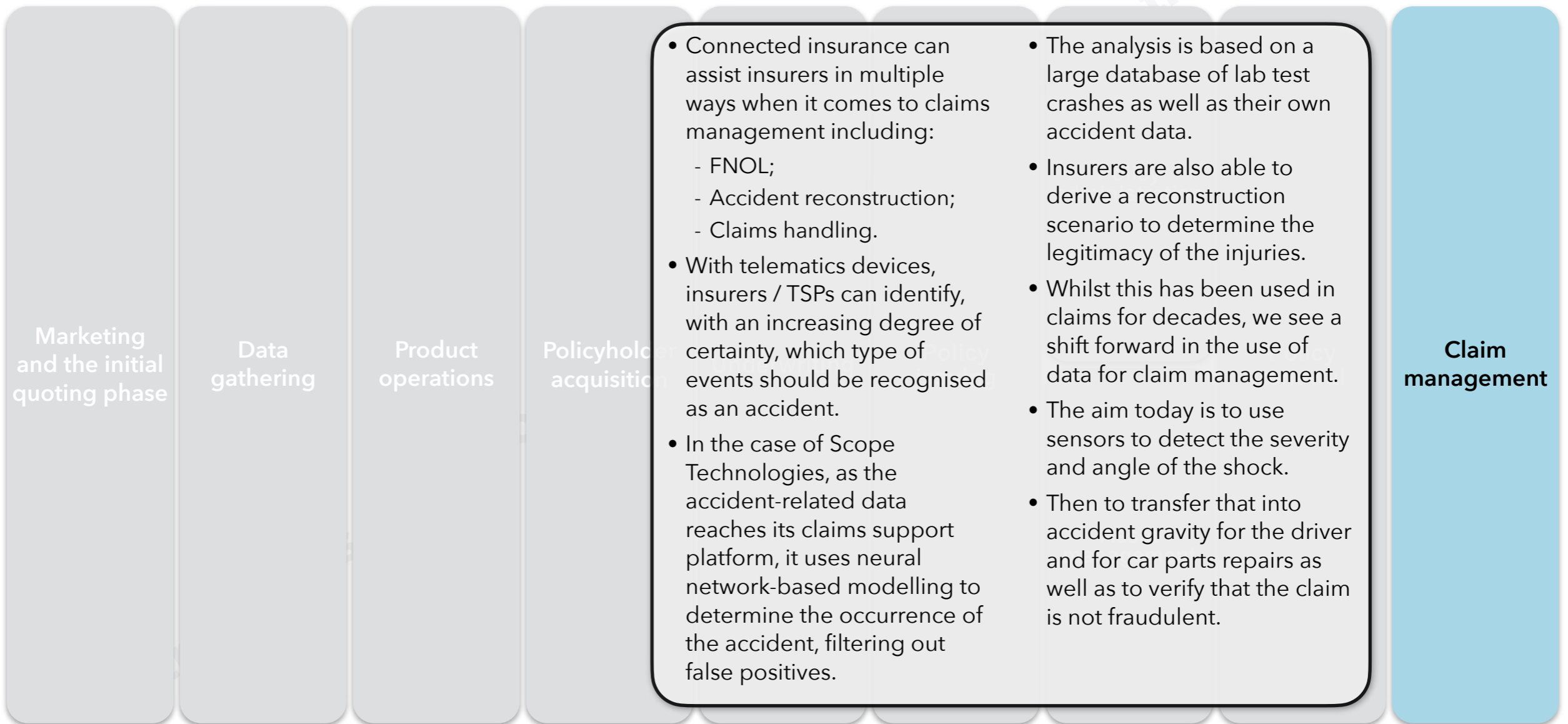
With telematics, positive and adverse selection can happen at the underwriting stage but also at policy renewal

The connected insurance-enabled value chain



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

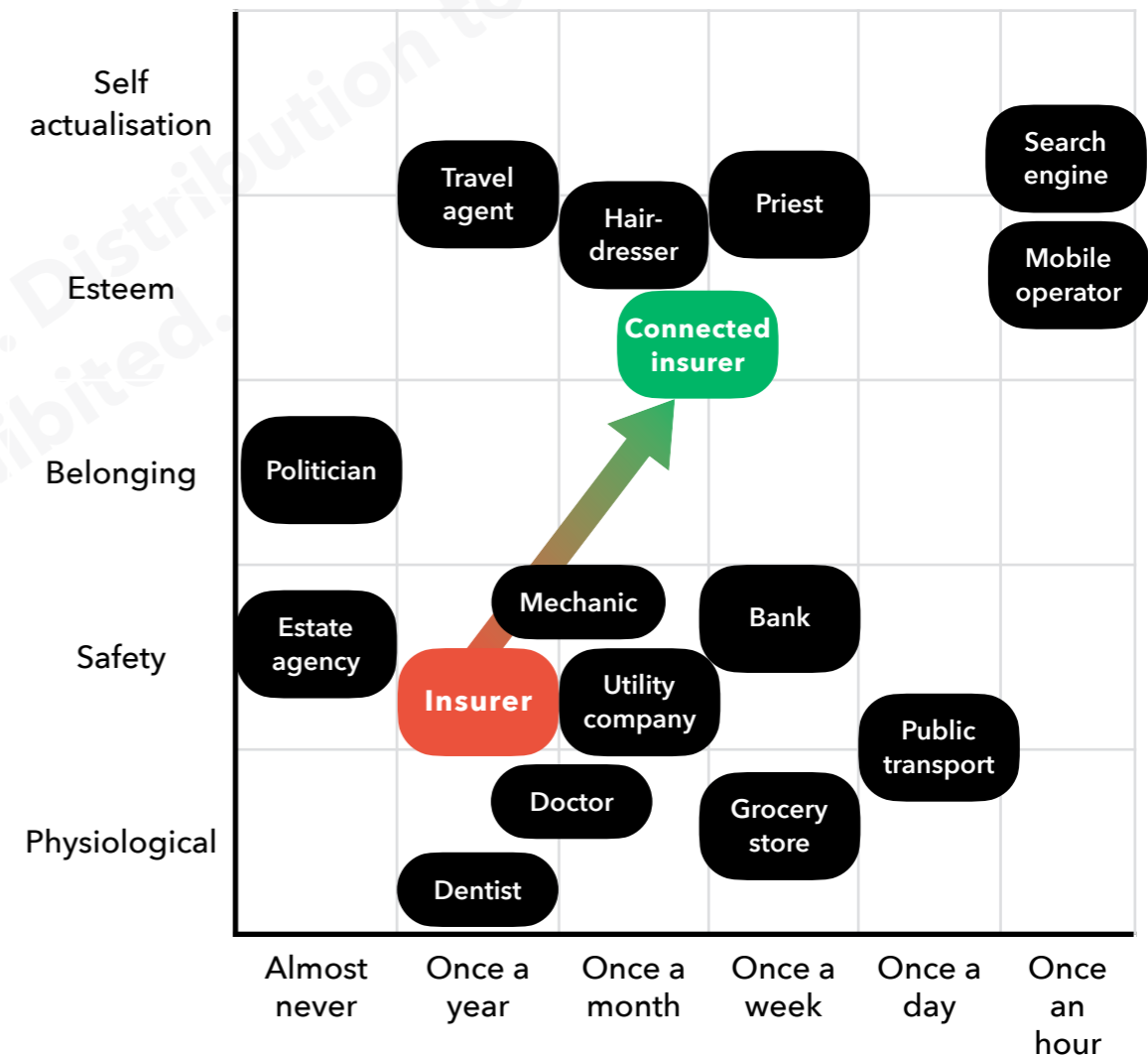
The connected insurance-enabled value chain



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

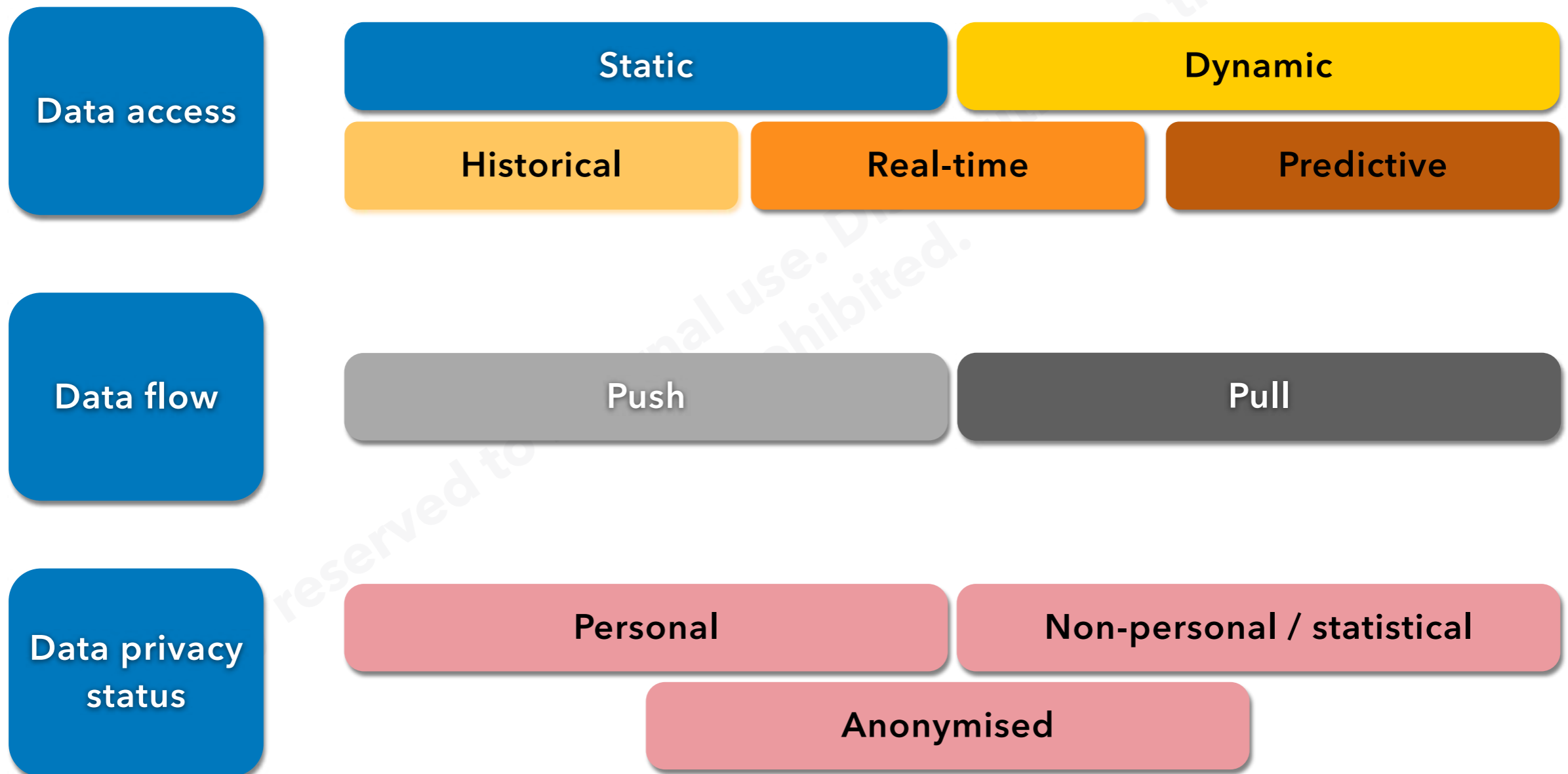
- # passengers
- Navigation
- Seat belts
- Etc.

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

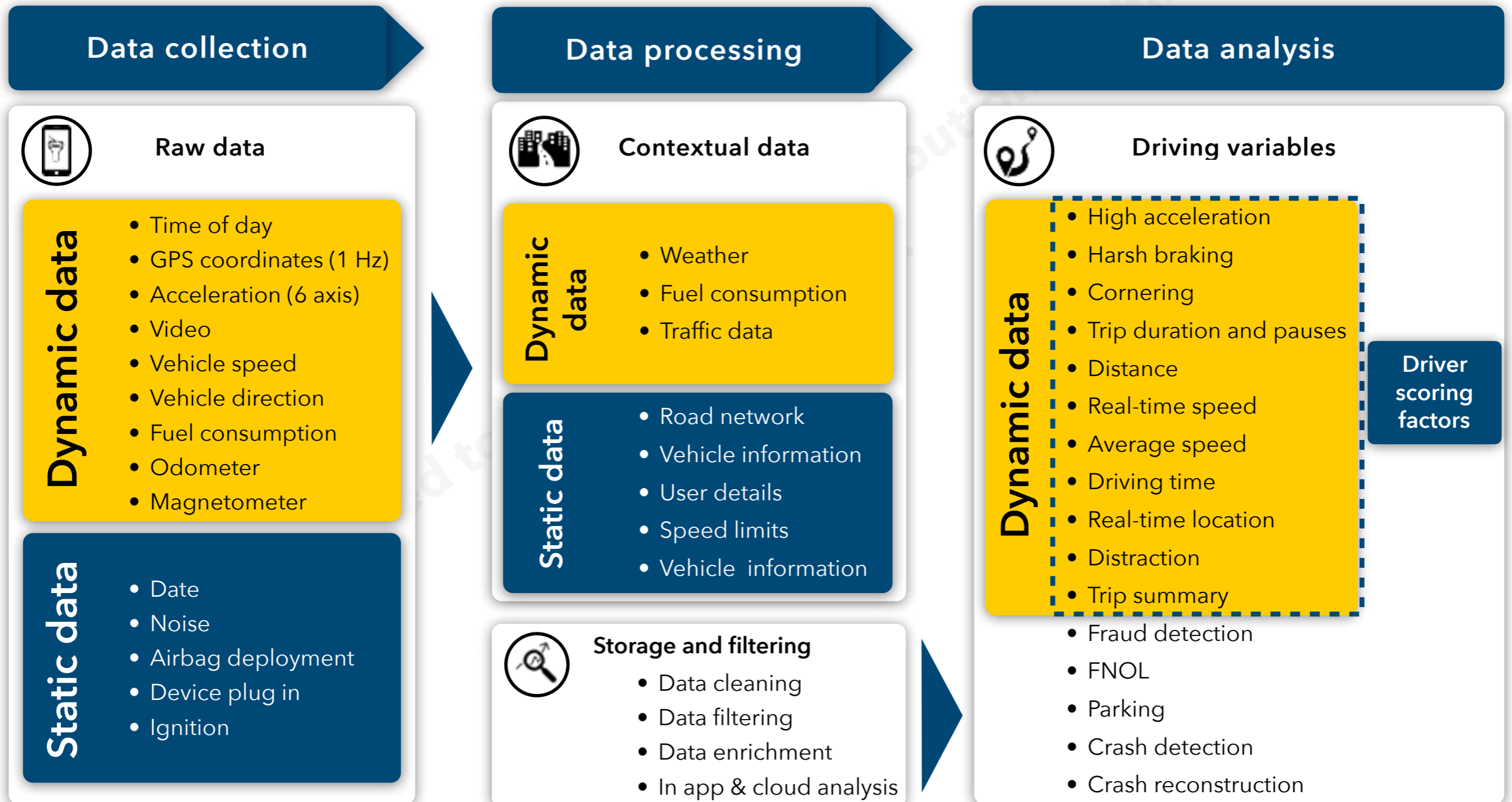
- Usually **based on the analysis** of aggregated historical data.
- **Generally providing the most valuable insights.**

➔ 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

Mercedes me



An introduction to connected auto insurance

1 What is connected insurance?

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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

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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.

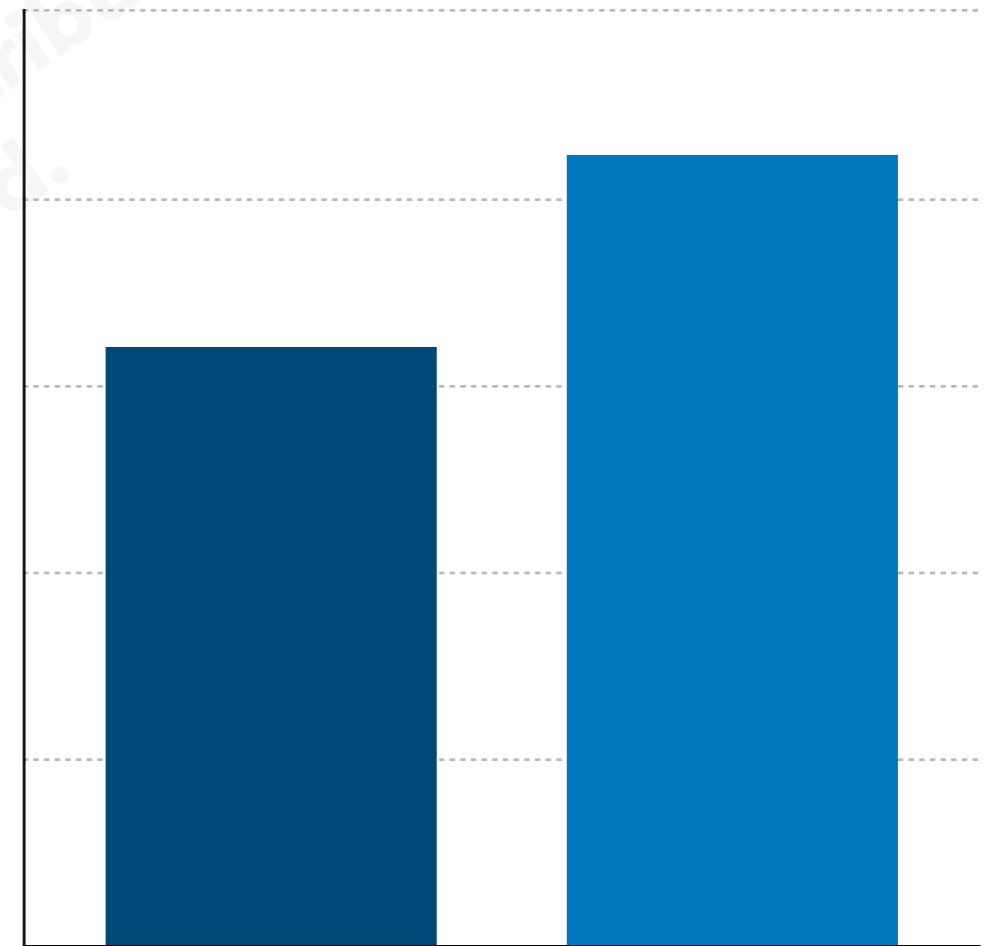
Customers increasingly use e-commerce channels and demand flexibility and personalisation from their insurance products

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

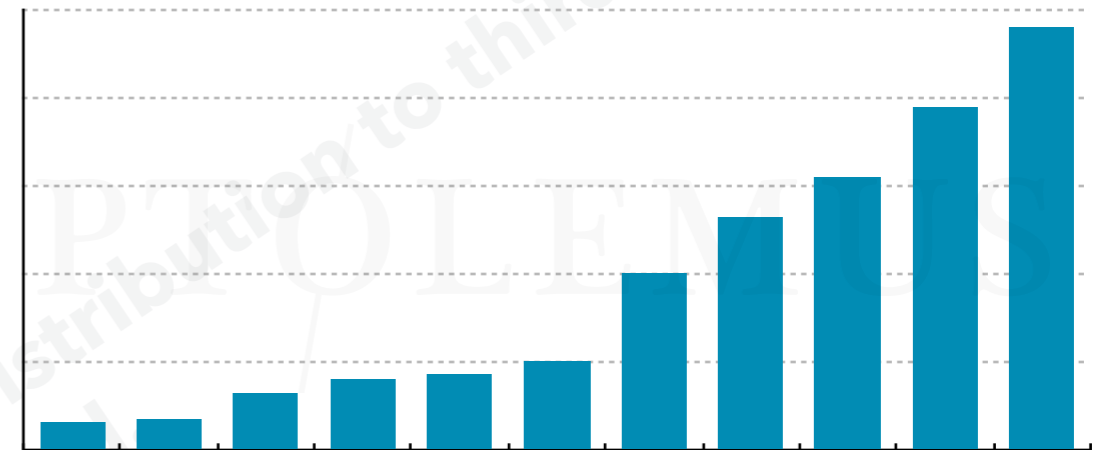
Estimated quarterly U.S e-commerce sales (\$ million)



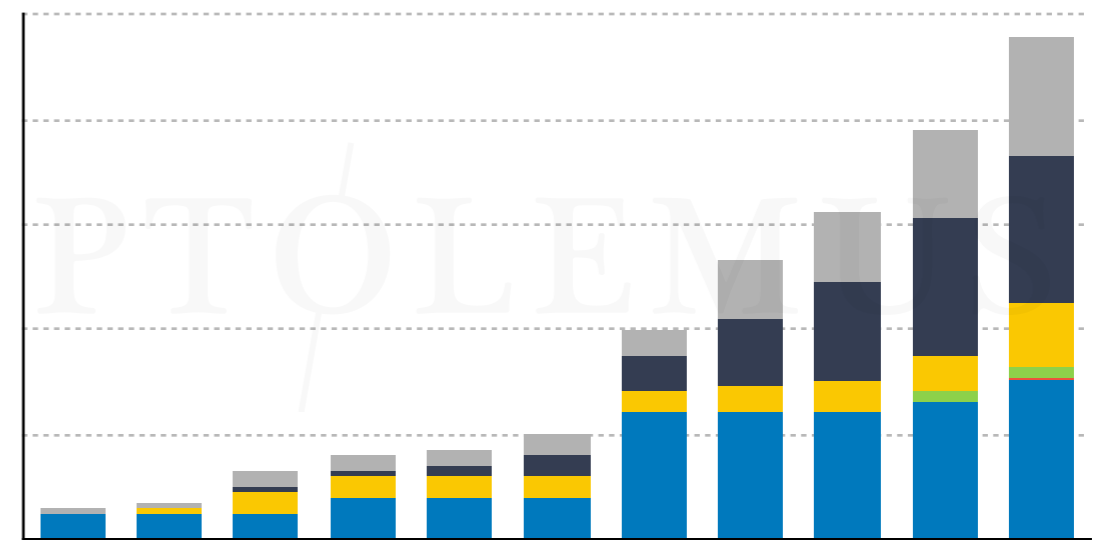
Pay-As-You-Drive (PAYD) programmes are relatively basic but also present an ideal market entry point for insurers

- 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.

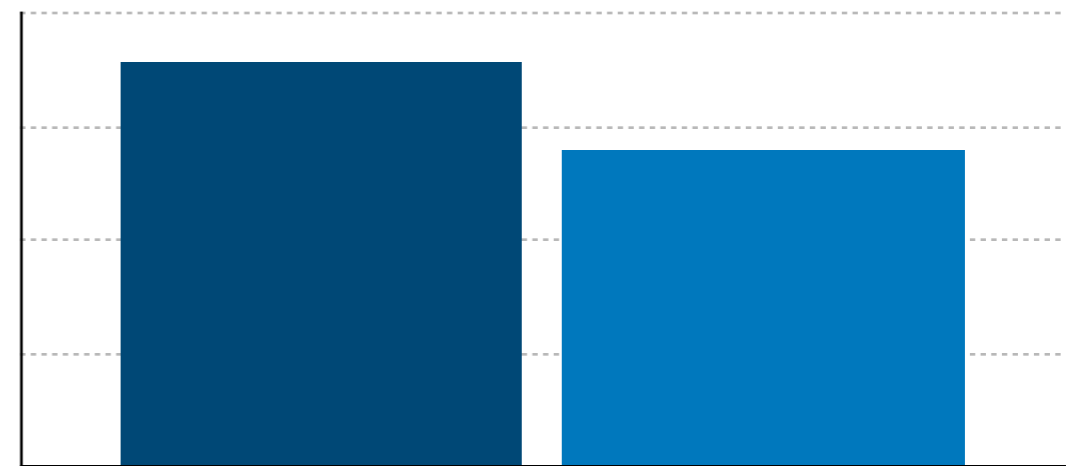
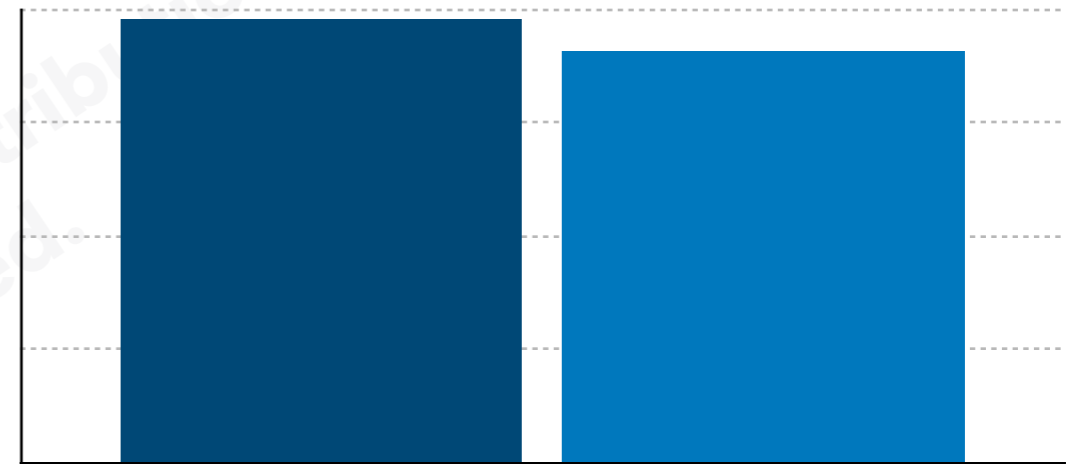
The general decrease in miles driven will boost the interest of both MBI and pay-per-mile insurance

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

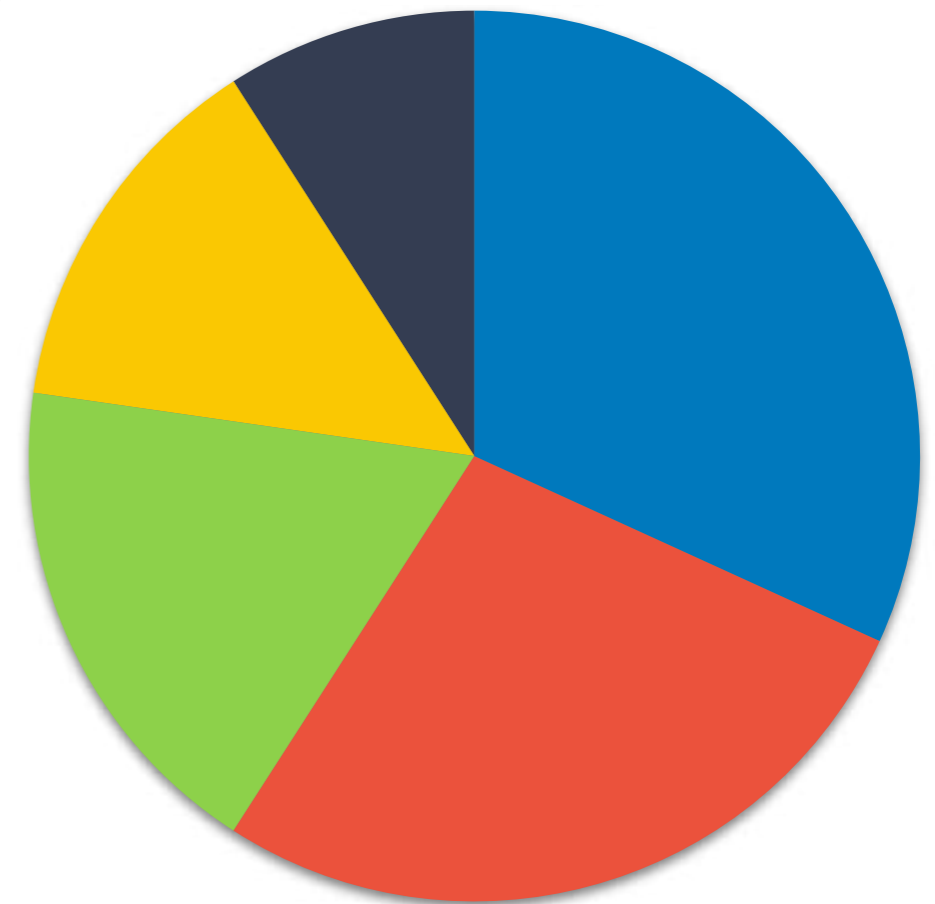
Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> ◆ Simple model, easy to explain for brokers and direct agents. ◆ Well accepted by customers, which leads to good volumes. ◆ Incentive to drive less, leading to lower risks. ◆ Indirect positive effects on the environment (CO₂ 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

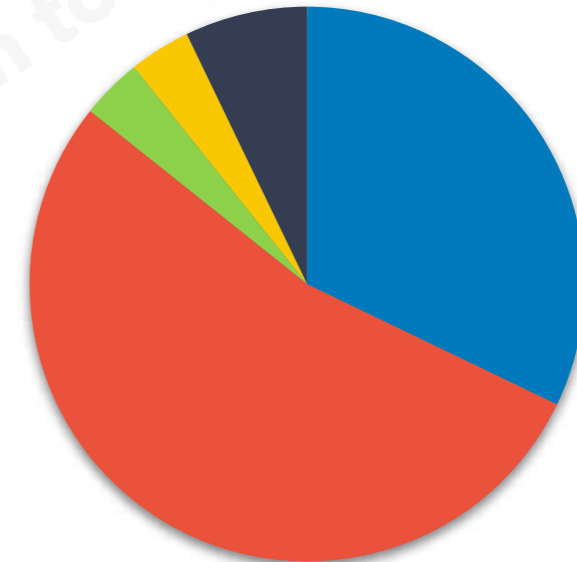


...of which, XX% are based on either smartphone or line-fitted devices, eroding OBD dependency.

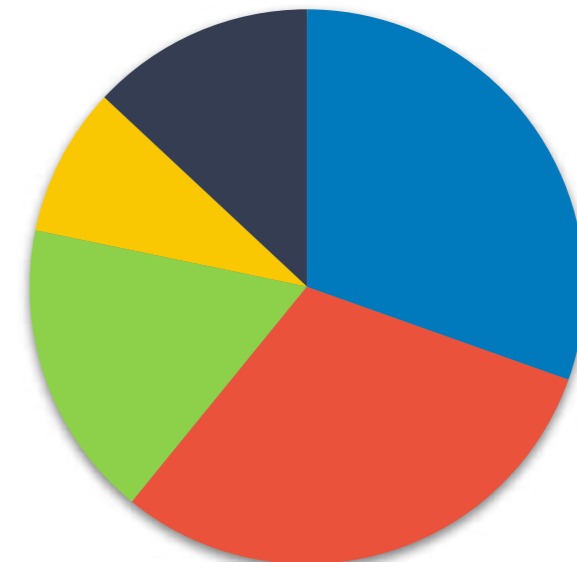
Mileage-based UBI launches worldwide, by technology

- 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, which accounted for merely 4%

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



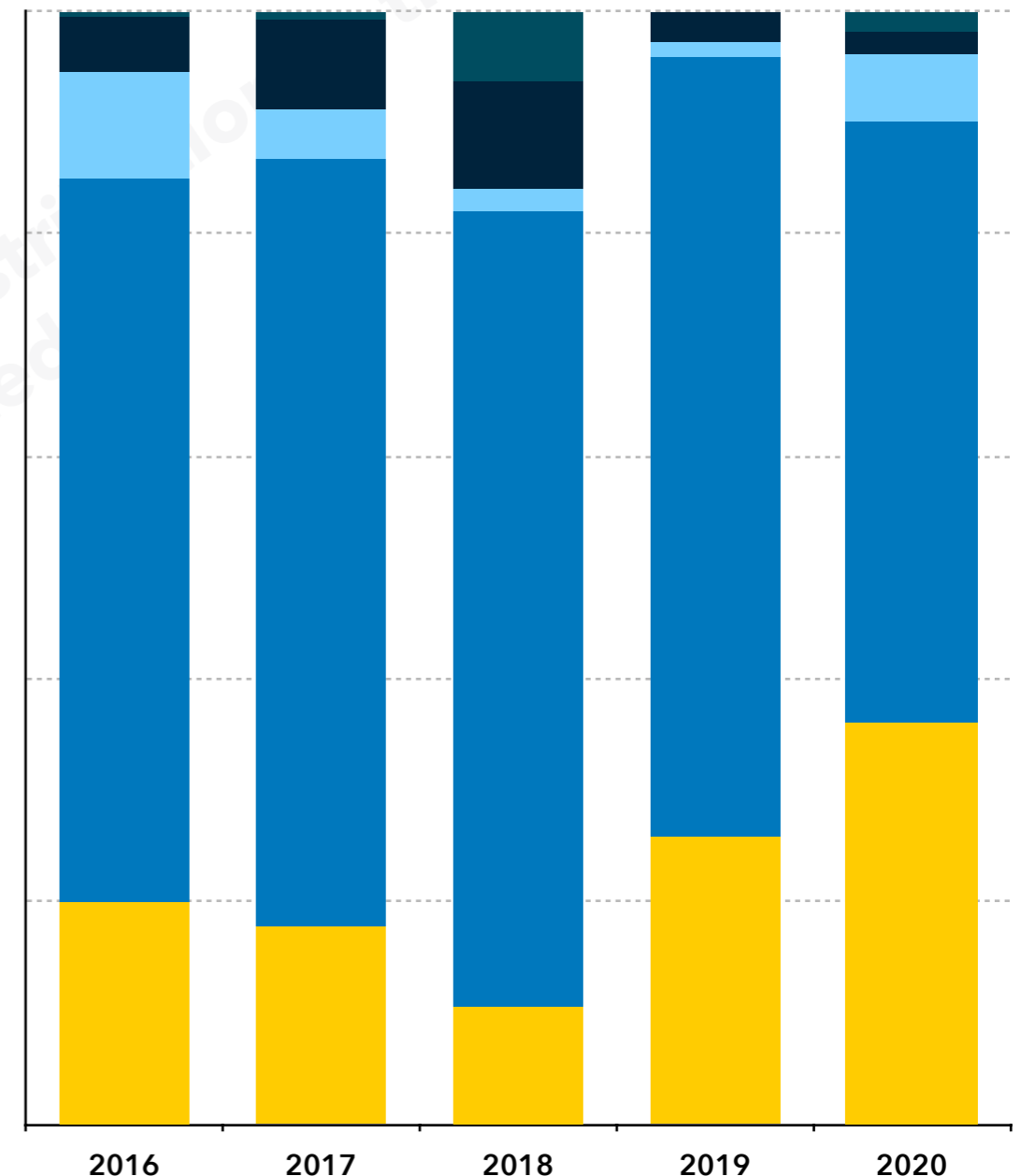
Breakdown of mileage-based launches worldwide, by device type (2020-2021*)



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

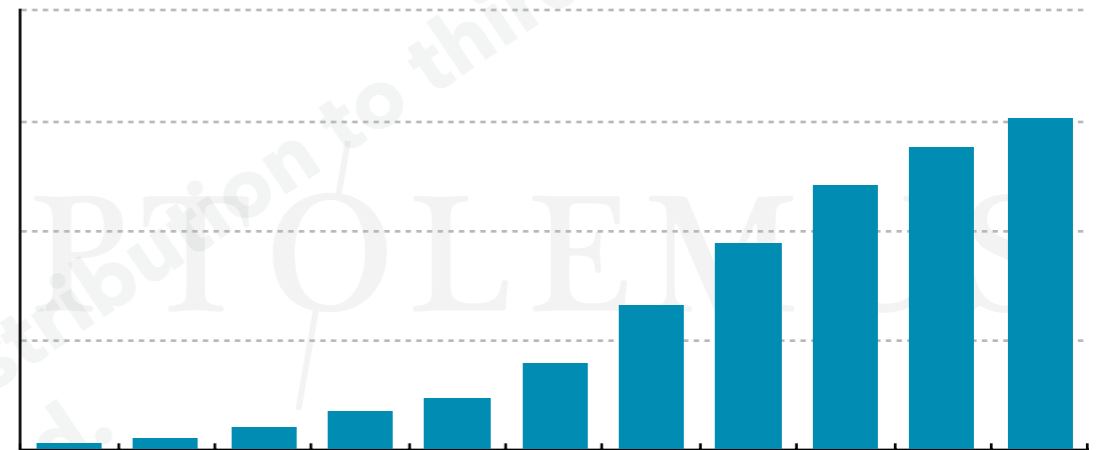
- Due to the aforementioned shortcomings of PAYD programmes, **Pay-How-You-Drive programmes take other factors than mileage into account e.g. driver behaviour** (harsh braking, speed, etc.):

- A journey on Saturday night with over-speeding events will cost much more than a smooth ride on Tuesday at 3 PM.

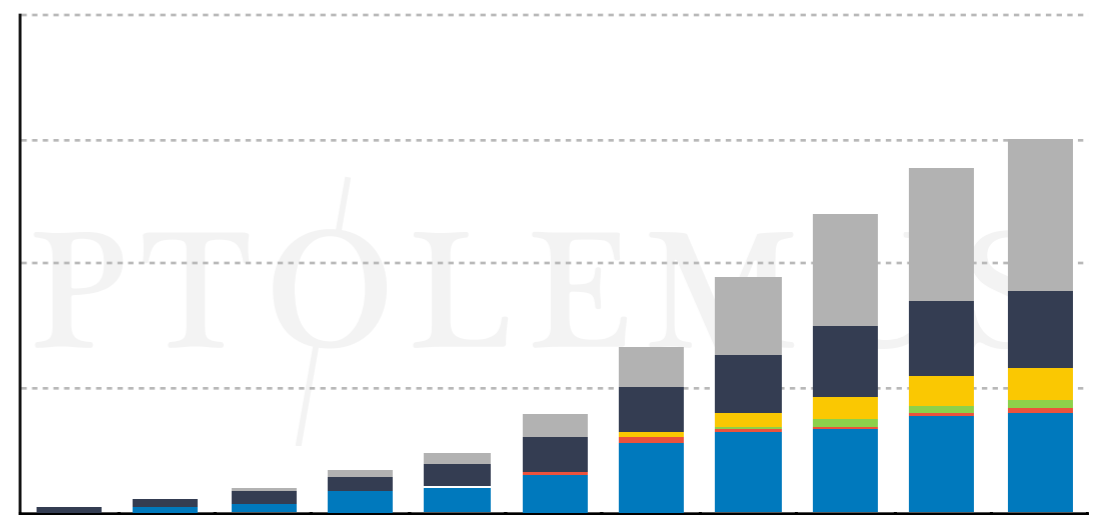
- At the end of 2020, PHYD represented **XX% of all active programmes worldwide** and XX% of of all worldwide policies:

75% of all active drivers whilst 75%

Number of active PHYD programmes worldwide



Breakdown of PHYD programmes by device type

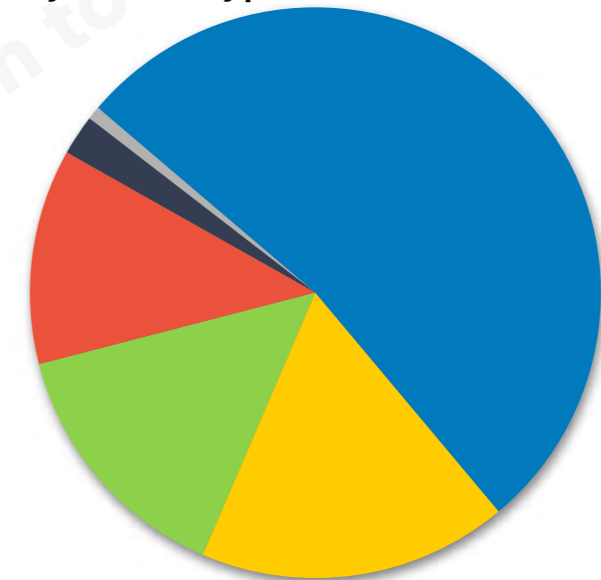


Since 2020, XX PHYD programmes have been launched worldwide with reliance on OBD technology collapsing

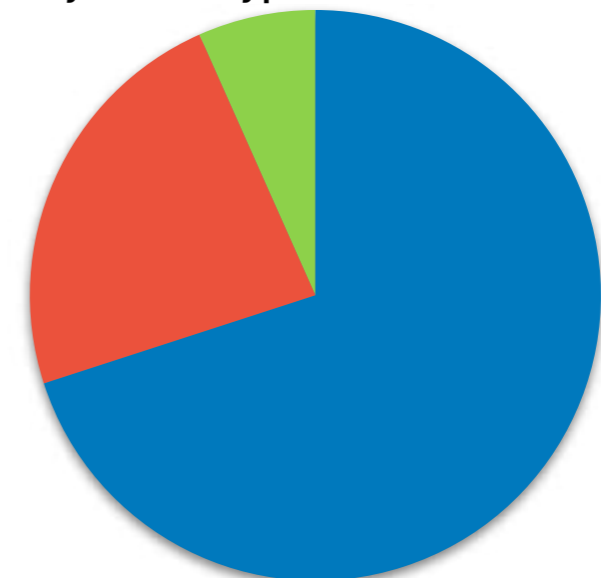
PHYD launches worldwide, by technology

- 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

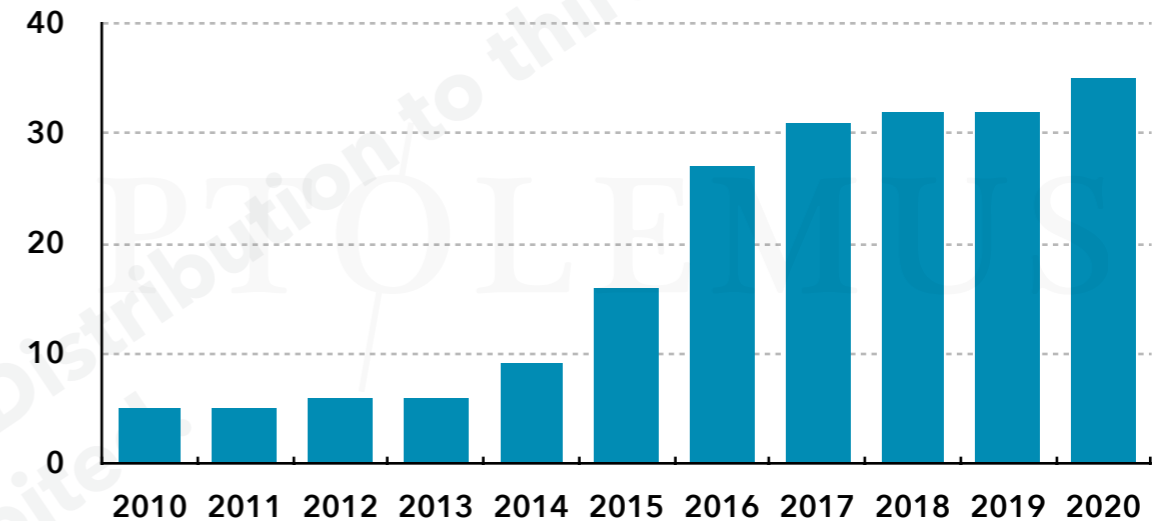
SWOT analysis of driver-behaviour based programmes

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.

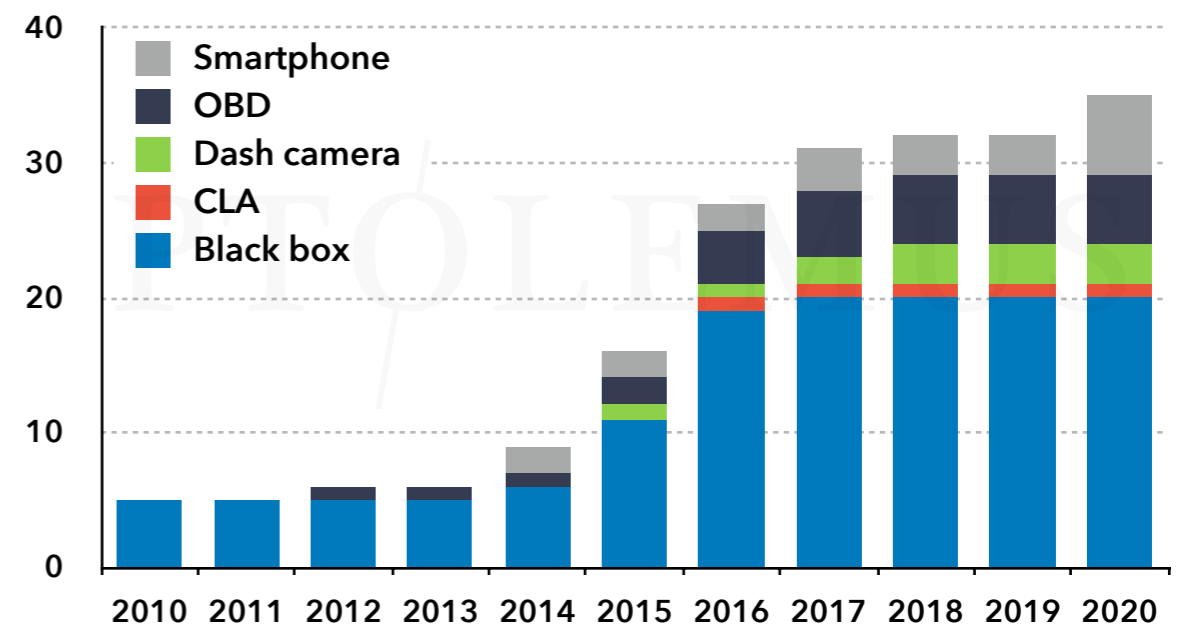
Safety-centric programmes offer emergency assistance services and are dominated by leave-in devices

- 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:

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

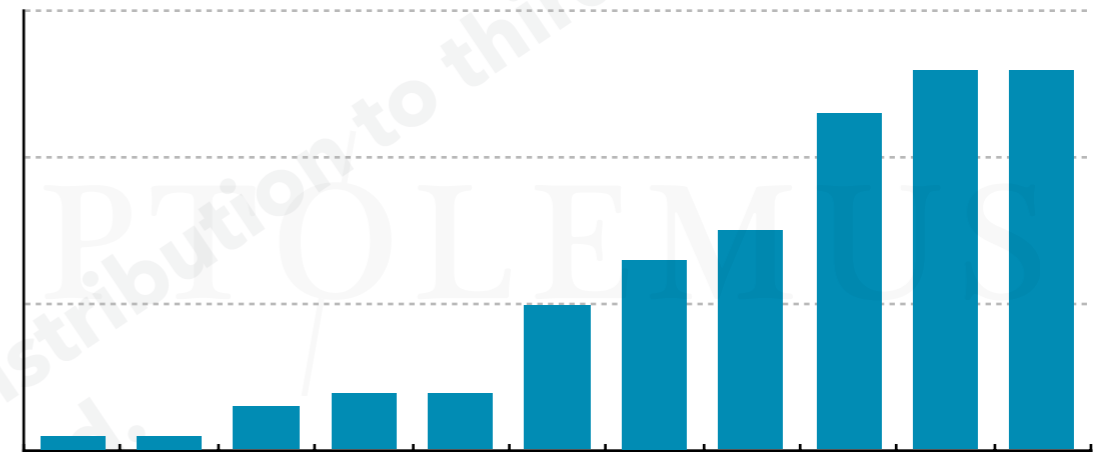
Roll-over programmes involve the telematics device being self-installed in the policyholder vehicle for a temporary period of time (usually between 3-4 months). The policyholder will typically pay up to 50% of the quoted premium at the beginning of the insurance period, with the data collected being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

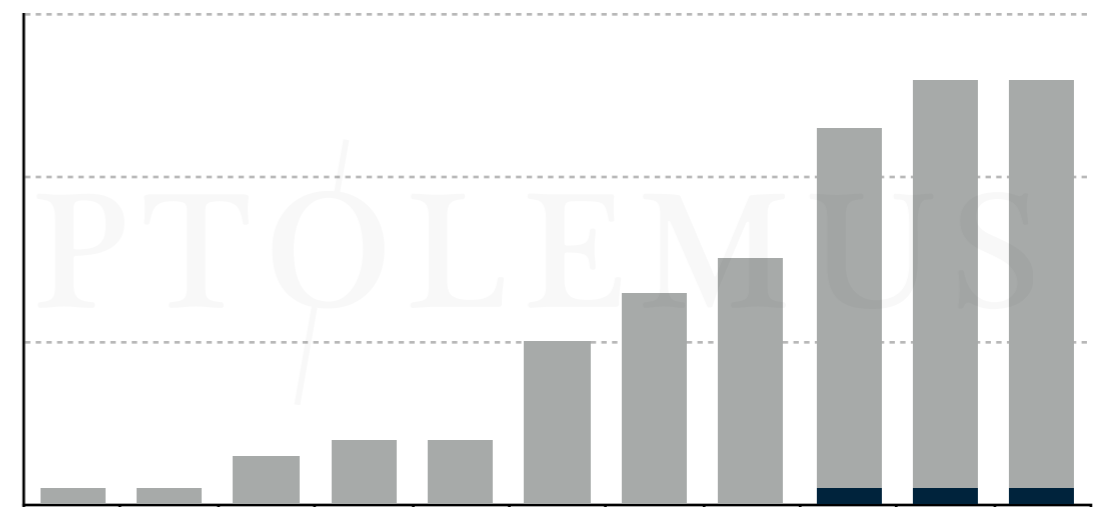
App-based TBYB schemes have grown very fast but have reached a plateau in recent years

- 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 promotion budget.

Number of TBYB-enabled programmes worldwide



Number of TBYB-enabled programmes by device type

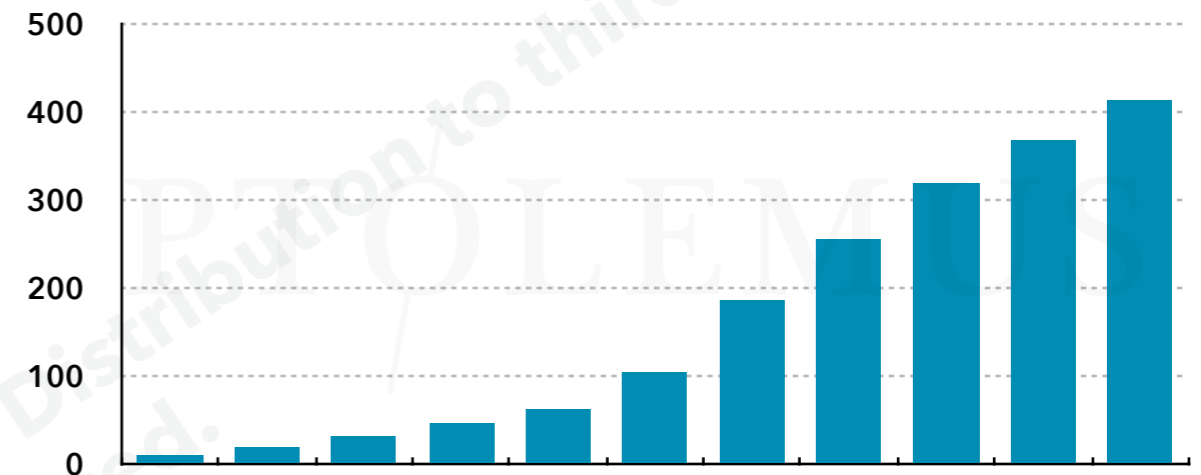


Leave-in programmes represent 90% of all UBI programmes but only 55% of underwritten policies

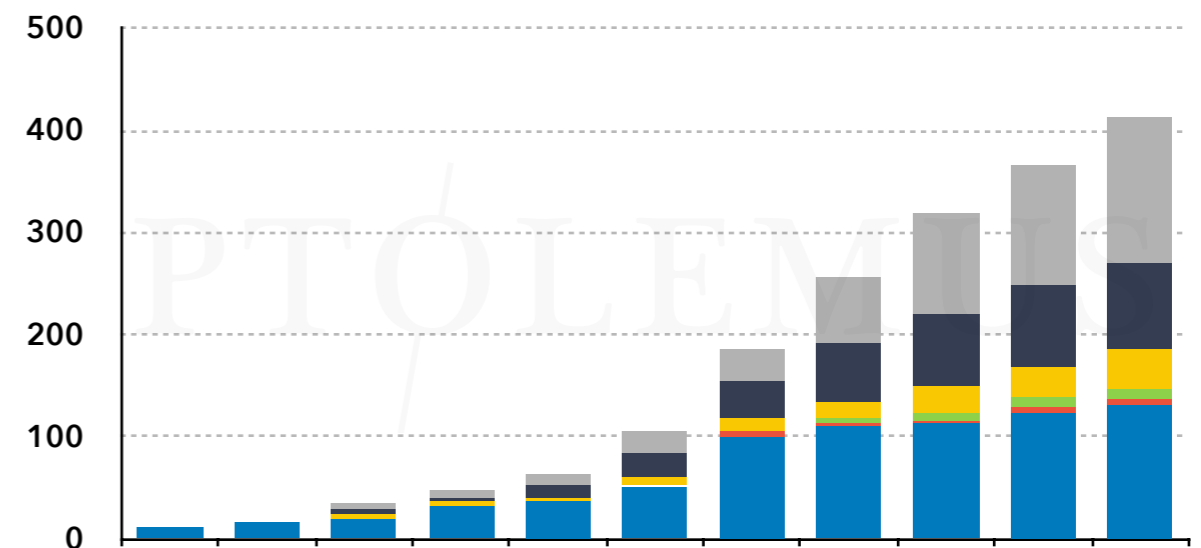
- Leave-in programmes are historically associated with European insurers (Italy, UK) and generally involve the fitment of a telematics device for the duration of the policy
 - The first leave-in programme was launched in Italy by Unipol in 2003
 - Since then the number of programmes has been in constant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

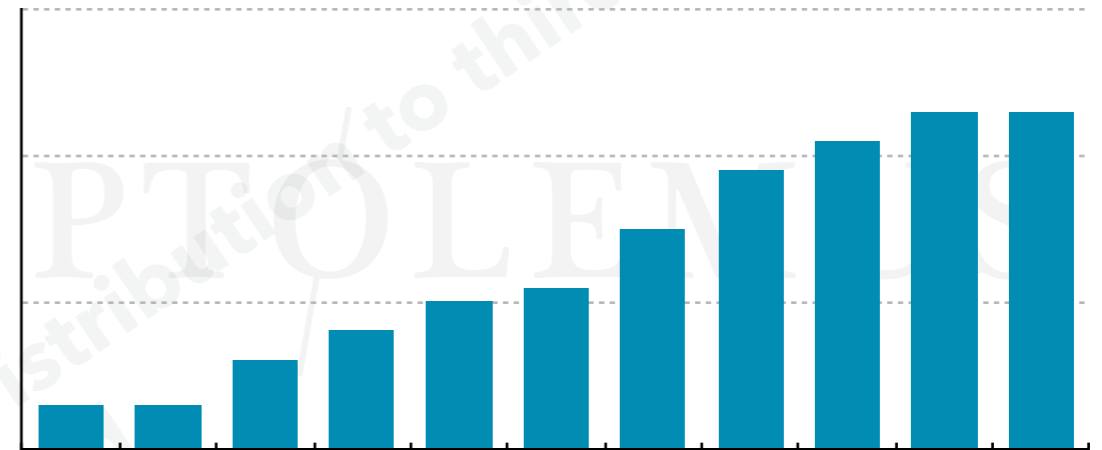


Due to their self-installable and reusable nature, OBD dongles have perennially dominated roll-over programmes

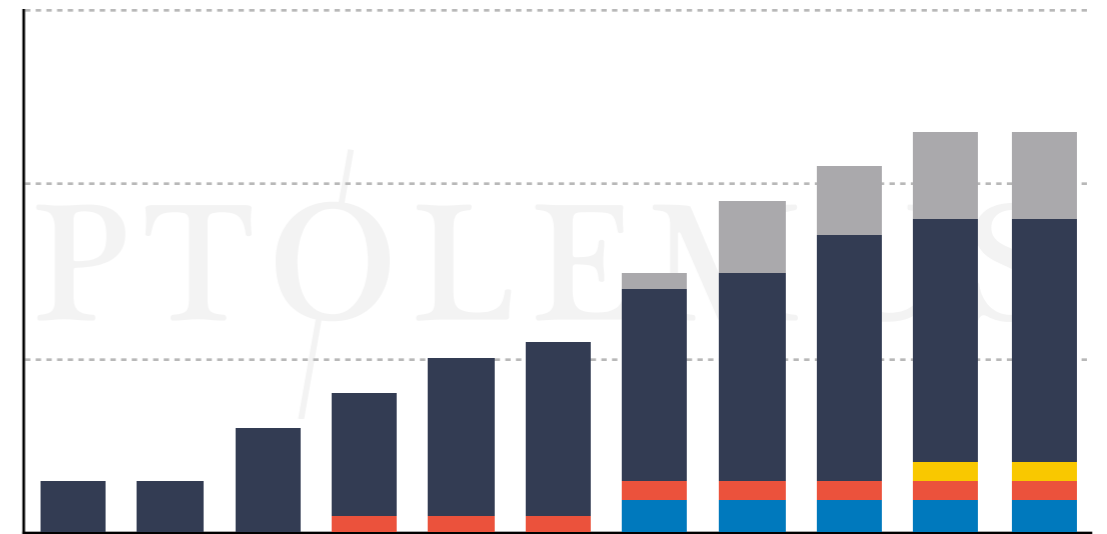
- Roll-over programmes are simple in concept, and involve the temporary installation of a device in the insured vehicle to monitor driving behaviour for a period of 3-6 months.
- The earliest version recorded by PTOLEMUS dates back to 2007, when Liberty Mutual launched *Safeco Rewind*.

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



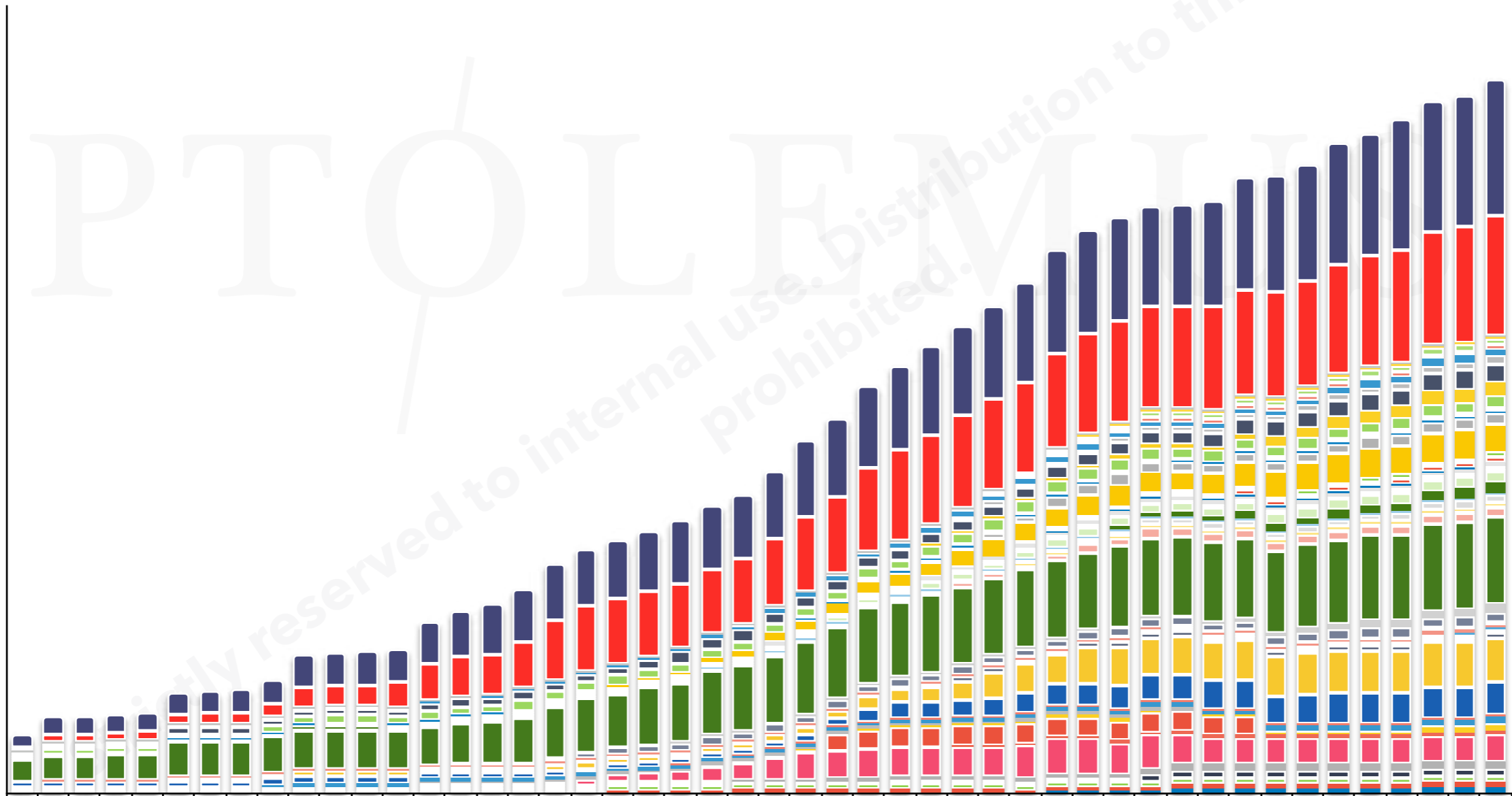
- Allstate launched its **Drivewise** mobile UBI programme in 2014.
- Data is collected through **smartphones** and policyholders can access personalised insights in the



- 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 Top 26 global company profiles

Regional and country profiles

1

Europe

2

NORAM

3

LATAM

4

APAC

5

Africa



South Africa is the largest UBI market in Africa, despite being constrained by an incredibly high uninsured rate



active UBI policies

XX



UBI programmes

XX



vehicles insured

XX



Uninsured rate

XX



Average UBI premium

€ XX



1st UBI programme

XX





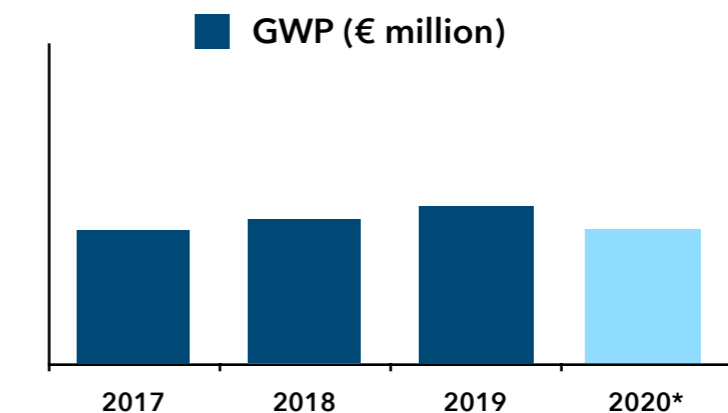
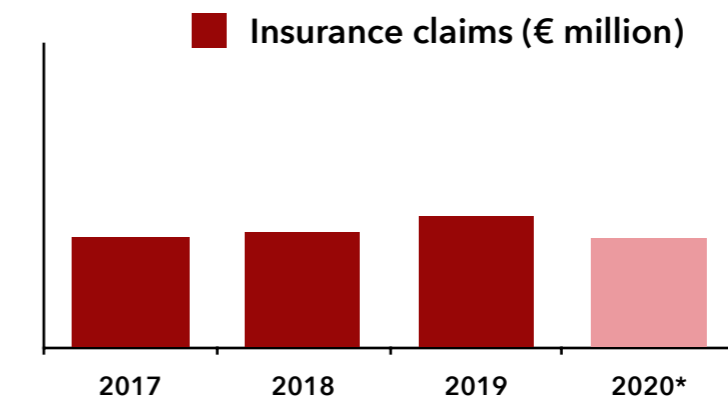
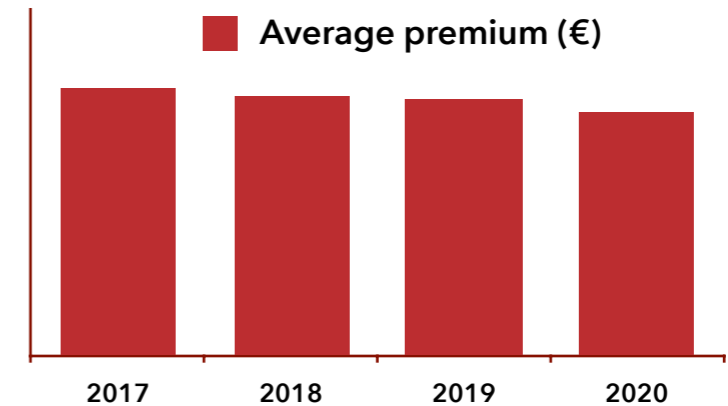
EXAMPLE COUNTRY PROFILE

South African motor insurers reported a greatly improved loss ratio, despite of high fraud, theft, and uninsured rate in 2020

Car insurance overview

- Due to competition in the South African auto insurance market, **average premiums** have been **declining** at **xx%** between 2017 and 2020.
 - On average, South African motor insurers maintained a **stable loss ratio** at **xx%** between 2017 and 2020.
- Africa, with more than xx million annual accidents:
- **Claims for road accidents represent xx% of the country's GDP**, a high share compared to the world average (xx%).
 - Furthermore, South Africa has the **highest uninsured rate (71%)** among the analysed countries.

Key figures





EXAMPLE COUNTRY PROFILE

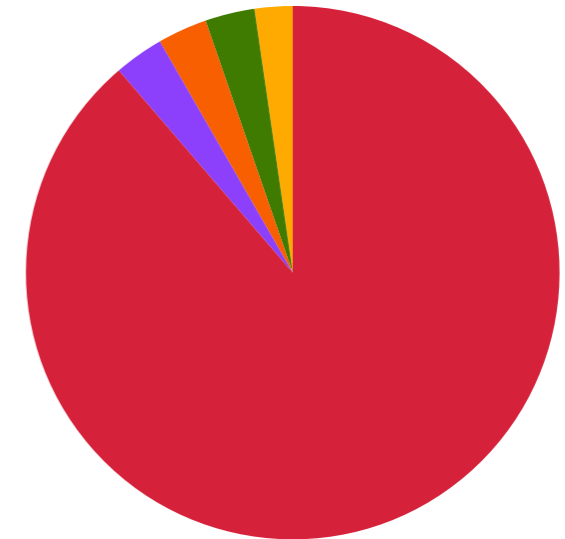
Discovery Insure accounts for 89% of UBI policies in South Africa

Market trends

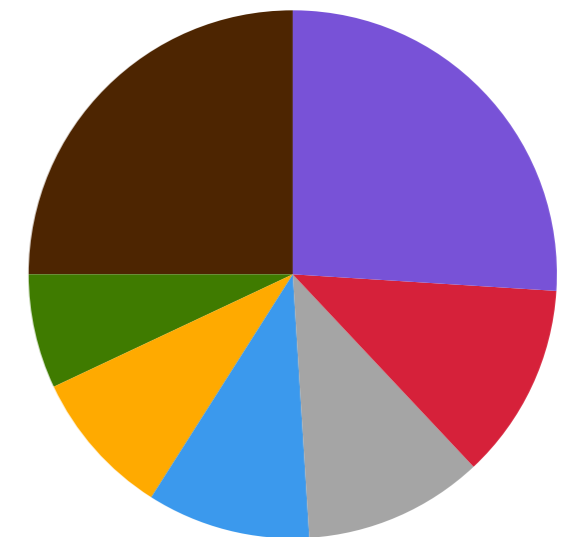
- The total number of passenger vehicles in use in South Africa was estimated at **XX million units in 2020**.
- Due to the lack of regulations and majority of these policies assigned to **low risk drivers**.
- Discovery Insure** is the UBI market leader, serving over **XX%** of the active number of UBI policies in South Africa.



Share of active UBI policies of top insurers



Market share of top car insurers



Top TSPs in the market



EXAMPLE COUNTRY PROFILE

South African authorities have tried to tackle the extremely high uninsured rate with the Insurance Act of 2017

Regulation



Insurance & Finance

- FSCA (Financial Sector Conduct Authority), implemented the **Policyholder Protection Rules** in January 2019 to simplify and standardise information transmission to policyholders regarding claims processes and premium calculation.

with a loan from a bank, which leads to a low penetration of auto insurance.

- With the **Insurance Act of 2017**, South Africa observed a new micro insurance licensing category, which could increase penetration of auto insurance:

The advent of UBI via insurance companies



Impact on UBI

- **Longstanding high uninsured rates** in South Africa represents a large deficit for both insurers and the state.
- Therefore, without an adequate **regulation mandating compulsory auto insurance, or insurance products** that target low-income customers, insurers will forgo a large addressable market by serving only a small part of the population.
- The advent of **Insurance Act of 2017** is expected to bring change in the South African auto insurance market as the proliferation of micro insurance, in form of affordable UBI products, could



Data & Technology

- **POPIA** (Protection of Personal Information Act) introduced principles for companies (including insurers) regarding personal data processing, enforced starting July 2020.
- **POPIA** gave South African companies 1 year (until July 2021) to be fully compliant with the rules, including processing limitations and

Regulator if the subject deemed their data was mistreated.

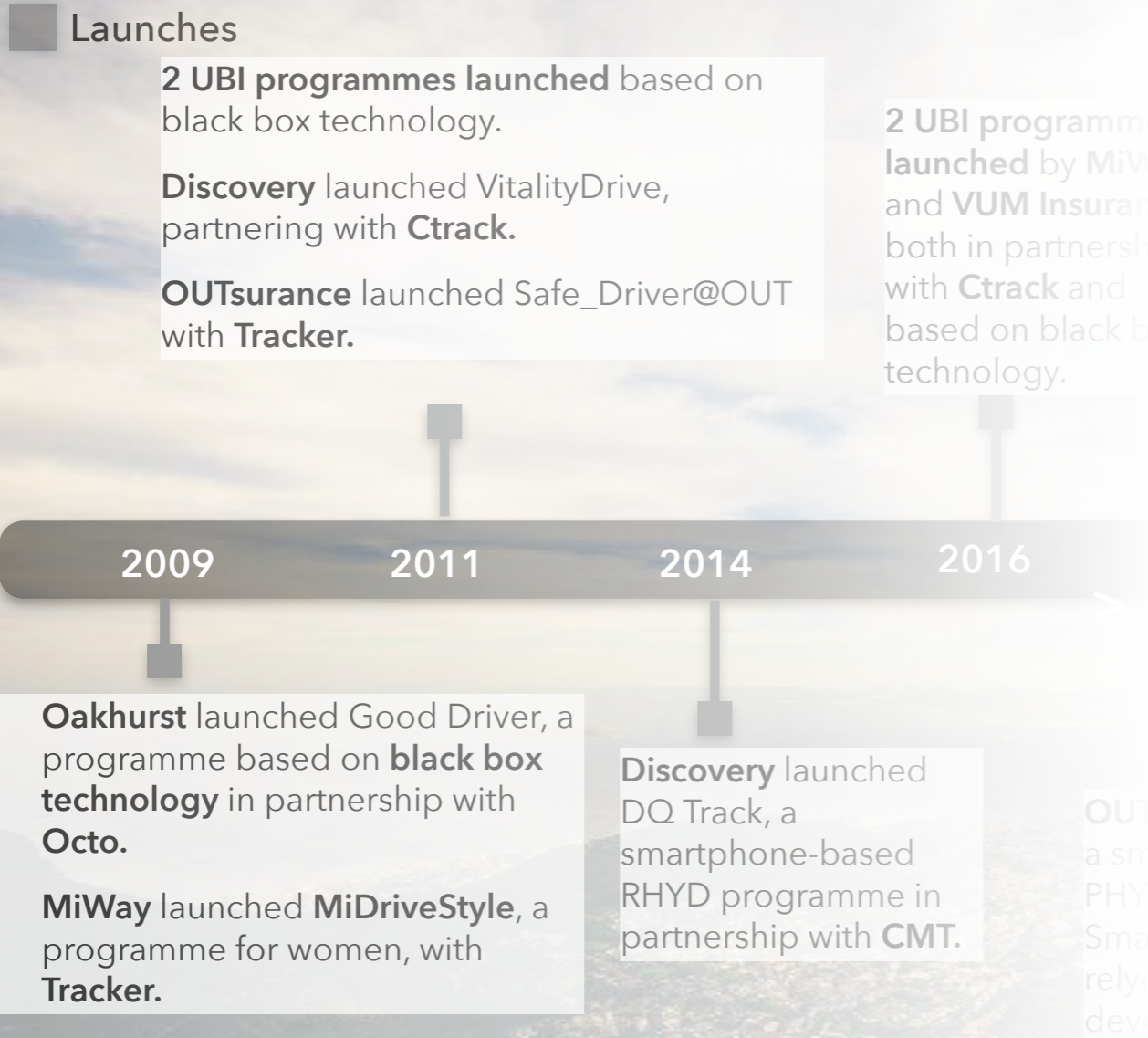
- The **fundamental difference** between **GDPR** and **POPIA** is that **POPIA** includes organisations in its definition of data subjects, while **GDPR** limits its definition to individuals.
- Thus, South African companies may collect information directly from



EXAMPLE COUNTRY PROFILE

50% of the 8 UBI programmes launched in South Africa since 2015 are smartphone-based

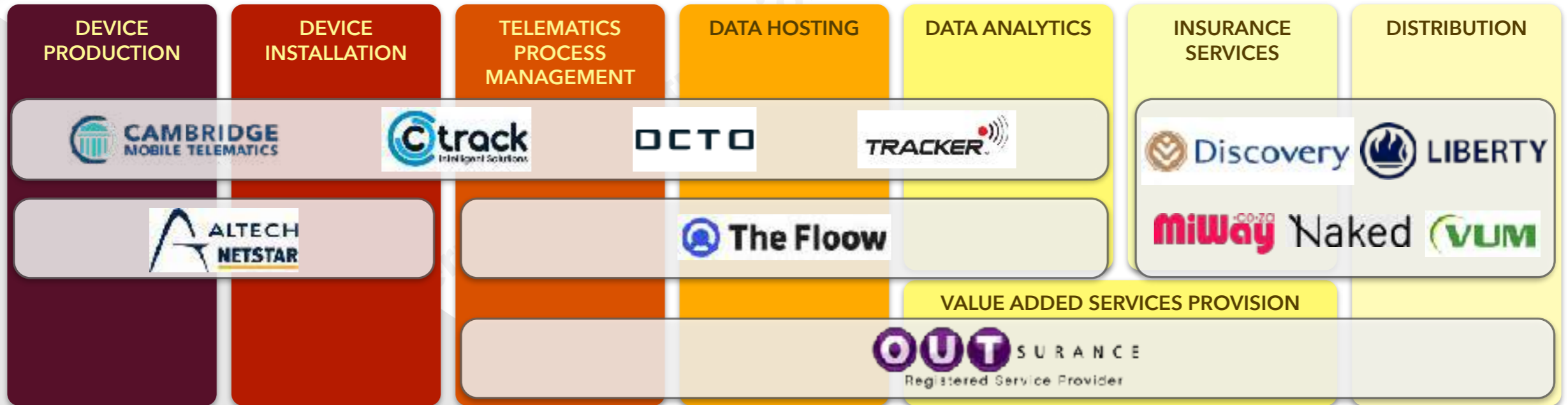
Recent timeline of events





COVID-19 has brought changes to consumer habits, and South African insurers have capitalised by launching UBI programmes

UBI value chain in South Africa



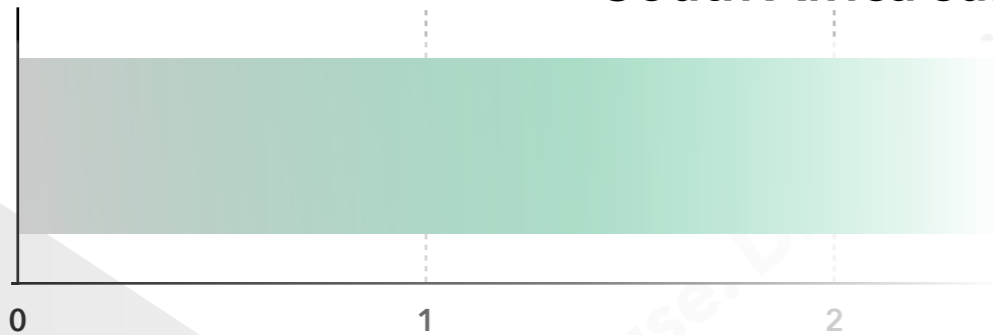
Key trends in the value chain

- Motor insurance stakeholders are discussing the strengthening of regulation for mandatory auto insurance policies with legislative authorities.
 - The enforcement of the compulsory auto insurance will require time as economic inequalities will stymie the reduction of the
- However, the South African market is more suited to UBI than many other developed countries, as drivers are accustomed to sharing vehicle data (such as for SVR features) according to primary research conducted by PTOLEMUS.
- **COVID-19:** According to the primary research conducted by PTOLEMUS, the COVID-19 outbreak was the biggest disruptor in the South African auto insurance market along with regulatory changes.
- The pandemic paved the way for new driving

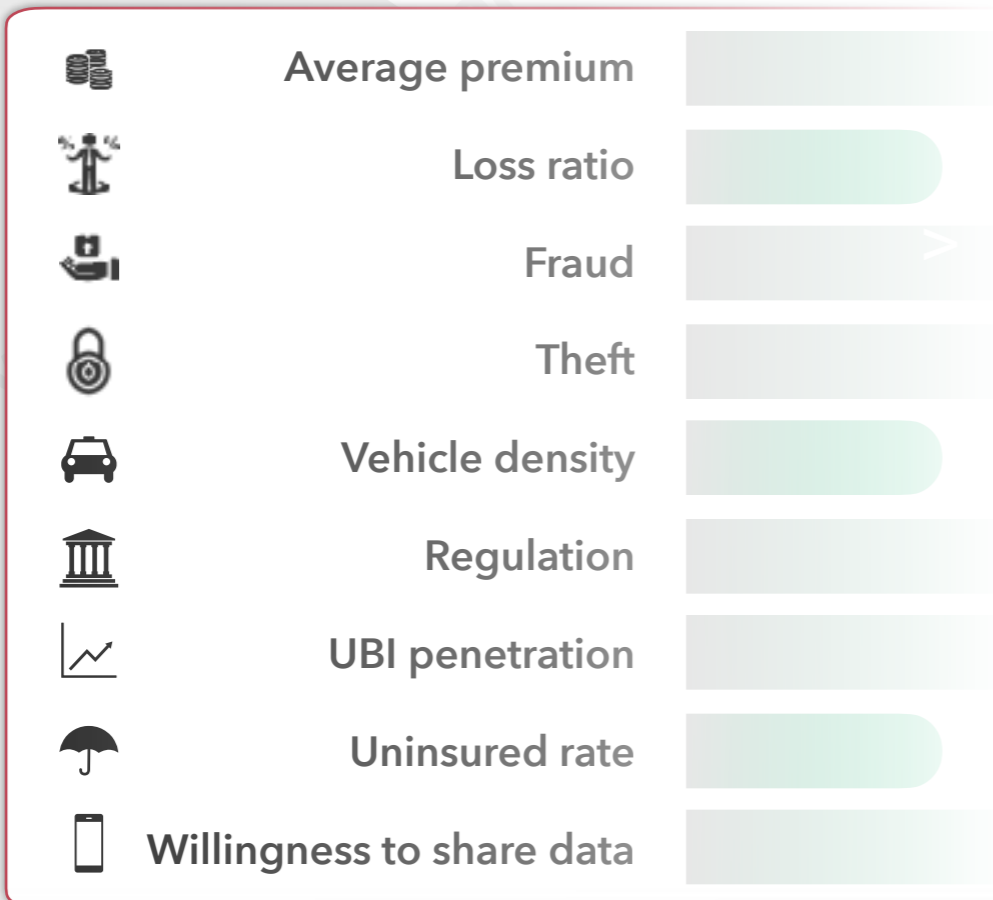


Due to high fraud and theft, the South African UBI market has strong potential for SVR/T featured UBI programmes

South Africa suitability index



Variables used to calculate the suitability index



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Top 25 global company profiles

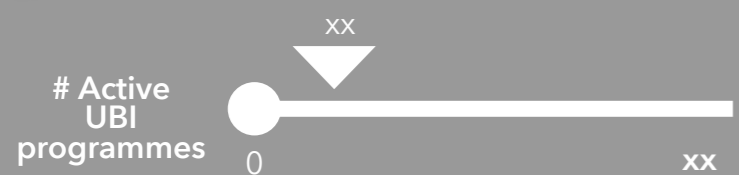
1

Telematics Service Providers

2

Insurance companies

EXAMPLE COMPANY PROFILE



Creation 2016

HQ Chicago, USA

Staff xx

Revenue € xx million

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

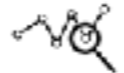


Company introduction



UBI offering

- 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.



Analytics

- 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

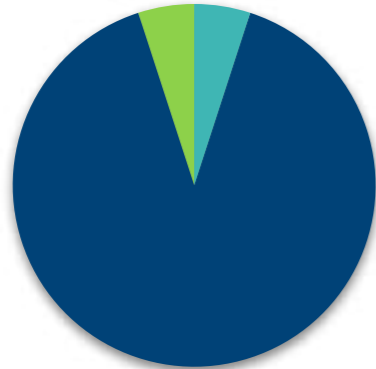


Channels

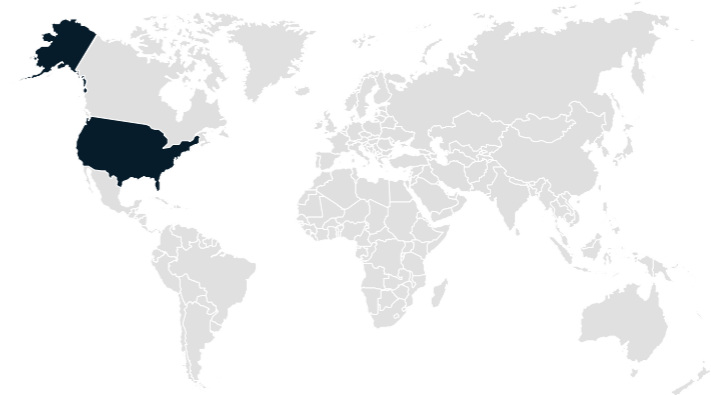
EXAMPLE COMPANY PROFILE

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

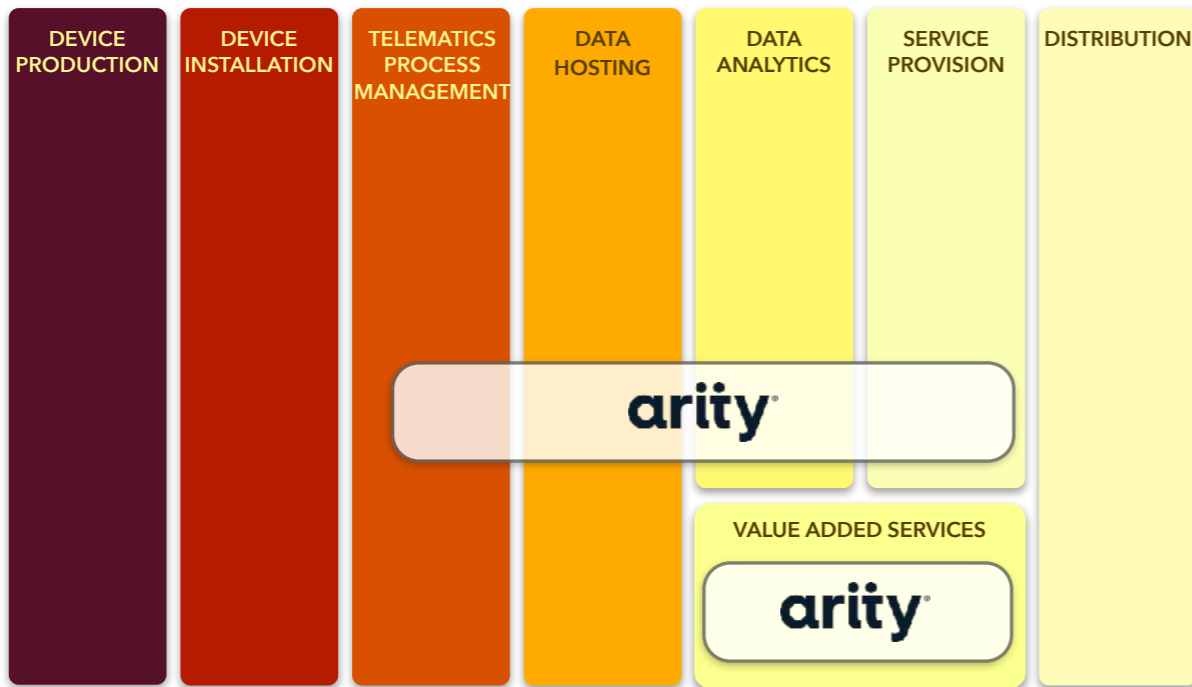
Type of solution



Geographic reach



Value chain positioning



Partnerships

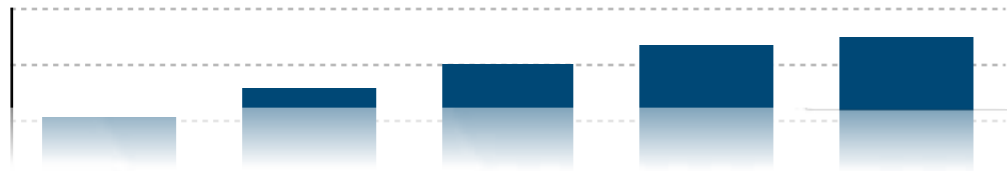
- Launch ● Acquisition/funding
- 05/2021 Arity launches Arity IQ
- 02/2021 Arity partners with Ford to provide Ford connected cars with driver scores based on driving behaviour

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:

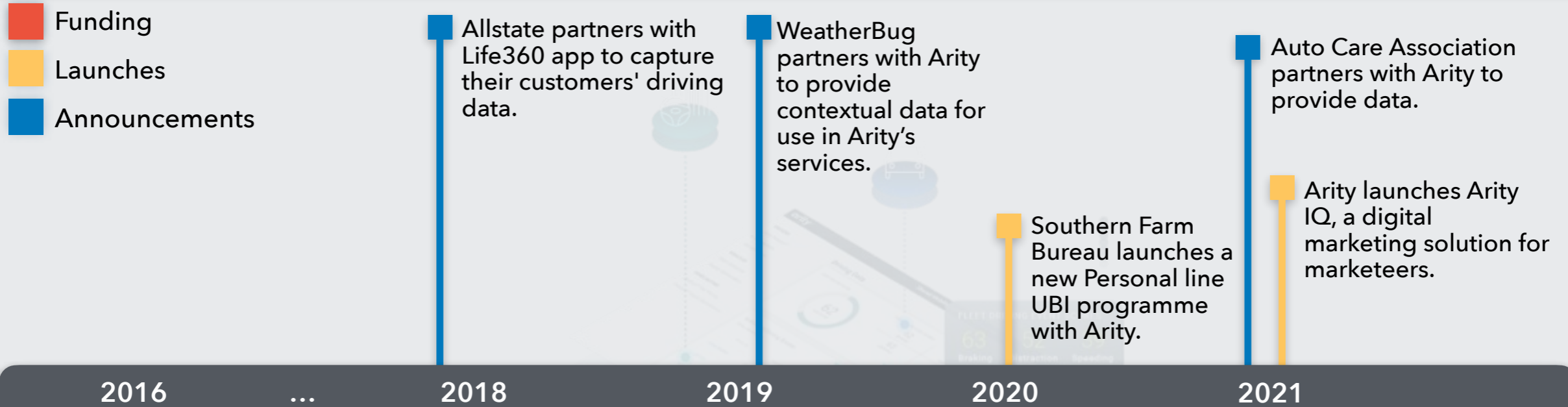
- It represented XX% of the US UBI market share which equated to X million active policies in 2020.

- 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



2016

...

2018

2019

2020

2021

Allstate

Arity partners with Life360

Arity partners with Ford to provide Ford

EXAMPLE COMPANY PROFILE

Drivewise 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 but on
- **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

EXAMPLE COMPANY PROFILE

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

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

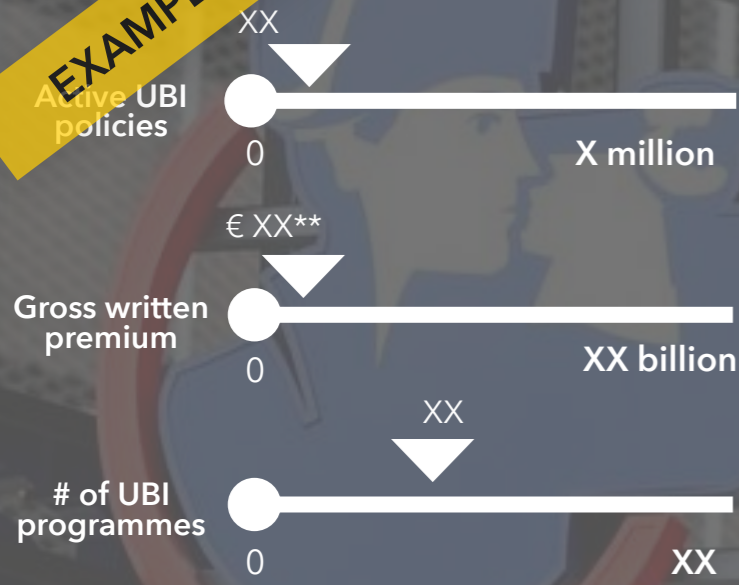
1

Telematics Service Providers

2

Insurance companies

EXAMPLE COMPANY PROFILE



Creation 1991

HQ 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.

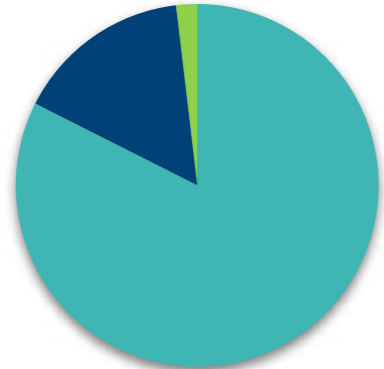
Targets

Channels

EXAMPLE COMPANY PROFILE

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

Type of solution



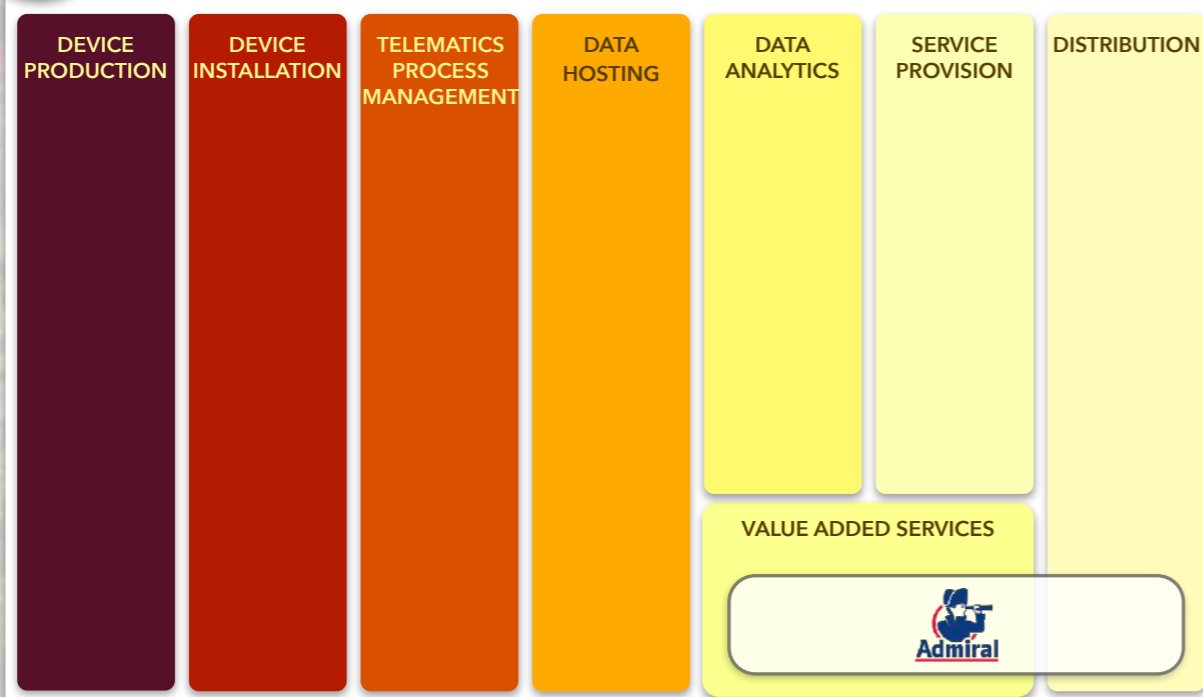
Services

Usage-based insurance

Geographic reach

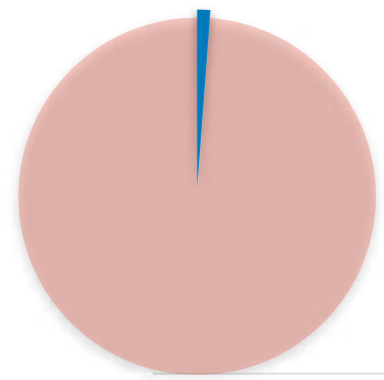
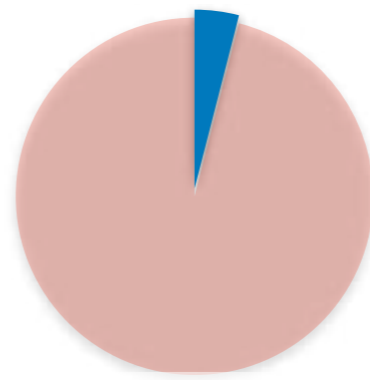


Value chain positioning



Market share & partnerships

Admiral's regional UBI market share* Admiral's global UBI market share



Telematics service provider

Telematics technology provider

EXAMPLE COMPANY PROFILE

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)



- **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



Solution provided today & partners



Policy services



Quote/renewals



Claims



Banking



Scoring

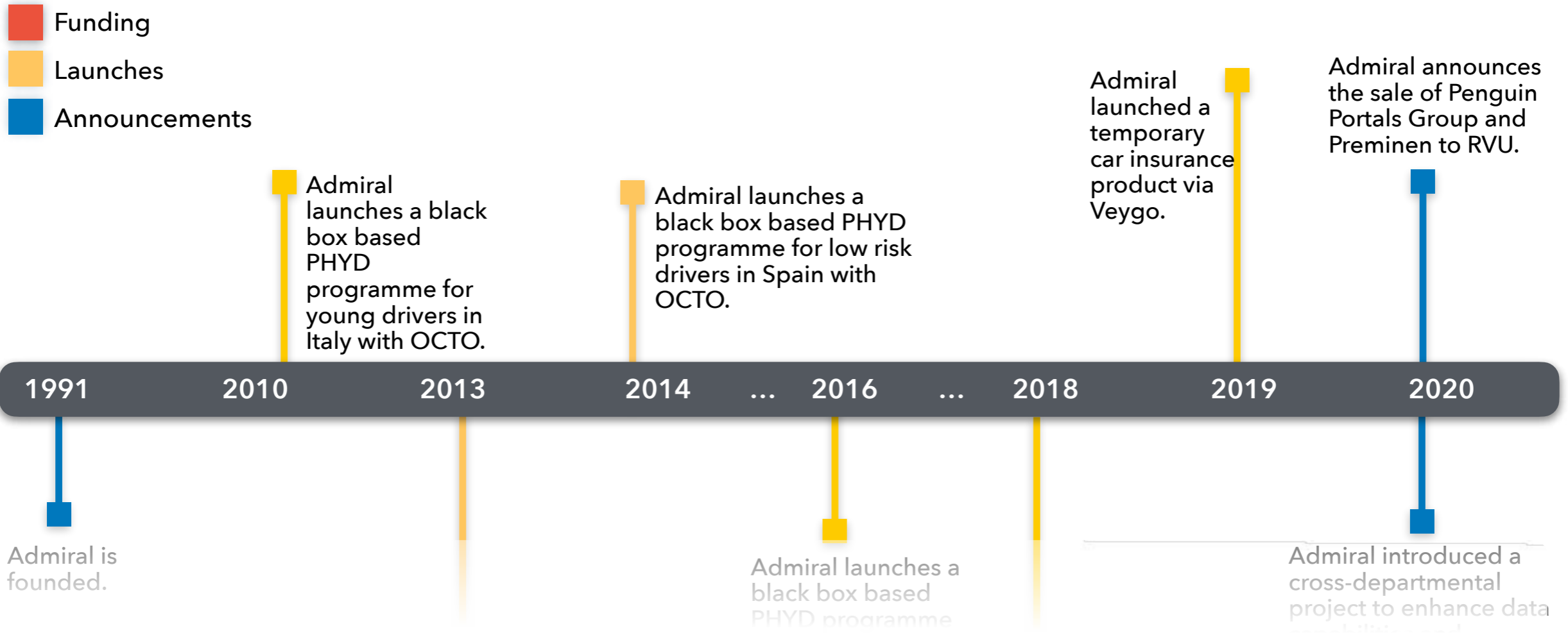


Value add

EXAMPLE COMPANY PROFILE

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" 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..."

EXAMPLE COMPANY PROFILE

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

The study comes with a single, worldwide company licence



The global reference report on UBI and Connected Auto Insurance

	Report ONLY		Additional market forecast	FULL Report & market forecast
	Buy direct (Invoice)	Buy online (Visa or MasterCard)		
Contents	<ul style="list-style-type: none"> • 730-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 • Analysis of the strategies and apps of 26 insurance companies and TSPs worldwide • Profiles of the 15 countries and regions leading the global connected auto insurance industry 		<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 	Includes all report and market forecast content as described
Company-wide licence	3.995 €		1.495 €	4.995 €
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