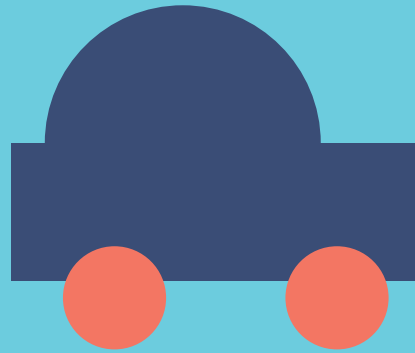
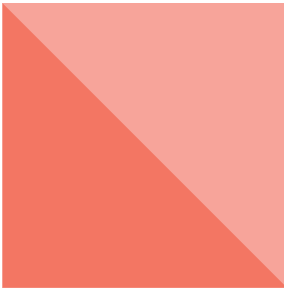


# The Auto Dilemma



# Contents.

In this document we present our understanding of how relevant industries such as insurance and Auto are living a joint metamorphosis where emerging technologies will be the main accelerators to solve today's and tomorrow's most ambitious challenges.

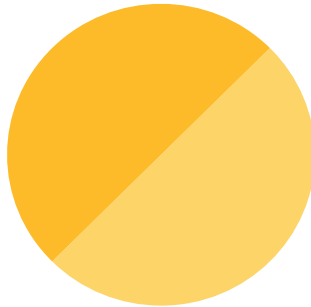


## The customer chase: telematics on perspective.

The rising need for the customer-centric approach Telematics moves standard risk profiling to behavioral models.

The modern telematics application creates a better user experience that goes beyond the driving scope, breaking traditional Auto insurance paradigms and forcing a new dynamic among smart mobility players.

A holistic view of customers opens new opportunities, but odd competitors will surge from this transformation.



## Riding together in a smart way.

Smart Mobility is moving faster than ever. The experience of moving from point A to point B has changed with the continuous appearance of new tech-savvy options that connect with personas' lifestyles and behaviors.

Both the automotive and insurance industries are on their way to collaborate in the Smart Mobility ecosystem, one which is attracting significantly the attention of relevant and diverse actors.



## Redefining the Insurance Industry in the Wheels of Autonomous Vehicles

From Levels 1 to 5 of autonomy, connected cars are no longer a feature of a common Sci-Fi movie. They are more real and closer than ever, and about to transform the whole paradigm of the automotive and insurance industries.

The interest is increasing among the various players of the ecosystem. Insurers, however, are of the actors to be most transformed by the AV disruption, posing new challenges but raising new opportunities of business models.

# The customer chase: telematics on perspective

## CONTENTS

### Our vision

A practical overview on Mobile Telematics

### The Glimpse

Telematics: the new approach to the short-term mobility

### Startup radar

Top 3  
DriveEasy: GEICO's bet for Telematics

### On numbers

Telematics as a trend

### Food for thought

Conclusions and key ideas

The rising need for the customer-centric approach Telematics moves standard risk profiling to behavioral models.

The modern telematics application creates a better user experience that goes beyond the driving scope, breaking traditional Auto insurance paradigms and forcing a new dynamic among smart mobility players.

A holistic view of customers opens new opportunities, but odd competitors will surge from this transformation.

# Our vision.

Telematics has been present in the mobility ecosystem for years, applied in different businesses and products. This technology raises essential to improve usage-based insurance models, on-demand coverage and fleet management. In fact, such is its importance that several Insurtechs of the sectors are currently implementing telematics within their business models. Metromile and Root Insurance, for instance, are two relevant examples of the use of telematics in initiatives as Pulse and Root Test Drive, respectively.

Notwithstanding, the rising need for the customer-centric approach has divided telematics into B2B and B2C/B2B2C segments. This latter incorporates smartphone sensors (mobile telematics) with the black boxes (electronic devices that measure car status, acceleration, breaking, location among other variables). This modern usage of telematics allows players across the Smart Mobility ecosystem to be more integrated data-wise and use it to reach additional touch points in customers' journeys.

In regards to B2B, telematics has been proven a great fit in fleet management, car sharing models and other B2B businesses. Telecoms, for instance as Verizon Telematics, insurers and other tech player explored this technology for more than 10 years, making telematics a known topic in the sector. Nevertheless, the current trend to mix both mobile telematics and black box seems to be gaining traction in the United States recently posing a whole new different and unique business: the first being used to understand customer's mobility routines and contexts and the second to monitor, track, make

more efficient and optimize their operations.

Black boxes are suitable to understand what happens in the car; it expanded the opportunities with large and unique sets of data like vehicle motor status which could be monetized with vehicle maintenance services and prevention. Additionally, the decreasing costs of this technology also accelerated the market adoption, making black boxes a relevant innovation in the mobility sector.

However, Insurers might see mobile telematics through smartphones sensors as an opportunity to expand their offering of services and products, while creating a better user experience that goes beyond the driving scope. Furthermore, mobile telematics are frictionless, scalable and have a lower initial investment need, making the adoption faster and easier. Hence, insurers may be interested in this technology and advocate the broader reach of it.

Discount on premiums and personalized coverage are going to be the default state in the insurance market. In Auto, the additional value will go beyond personalization, making telematics a temporal competitive advantage and the customer's information outside the vehicle scope an increasing necessity. From home to work, players will compete and collaborate differently searching for the best angle to collect actionable customers' data to add unique value in their products and services. Given the limitation of vehicle as an asset perspective, the mobility ecosystem will be more integrated and customer-centric inevitably.

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**Insurers might see telematics through smartphone sensors an opportunity to expand their offering of services and products.**



# Our vision.

“

**Customers are willing to share their data if you give them something valuable in return.**



**VITO  
TRECCARICHI**  
Insurance Partner  
at everis

# Telematics: the new approach to the short-term mobility

Telematics, the pay as you drive model, opens new doors: new services, customer data and empowerment force a different dynamic. The technology approach to the mobility ecosystem short term future.

Throughout the years, we have seen the evolution of business models and technologies to follow the constant societal and economical changes, breaking traditional Auto insurance paradigms. Moving from standards risk profiling to behavioral models, in which businesses try to understand deeply customers and possible touch points in their mobility routines, we could observe that this market is not about the means people use to move, but people themselves, expanding the previous vision of a customer as just an asset owner.

The black box and complementary electronic connected devices provide a complete overview of the vehicle's information: location, kilometers, engine status and velocity. Not only this corroborates the great value of this new approach and the B2B business opportunities it enhances, but do also funding. Investments in this technology evidence that black boxes are important; for instance, Bridgestone acquisition of Tomtom telematics for almost \$1B and Verizon acquisition of Fleetmatics for \$2.4B.

However, when dealing with the B2C segment, what matters is not only what happens during a customer's car trip, but also in every other aspect of their mobility routines. The usage of telematics through customer's smartphone sensors give more contextual and behavioral information. It can evaluate if someone is alone in the car or if there are other members of the family, or whether if the driver stops at school before going to work. This creates a holistic view of customers' daily routines, improving the quality of actionable data to enhance the customer experience. Plus the driving scores – that calculates driving risks such as phone handling and aggressive acceleration- that allow better segmentation, attract better drivers, and perform more efficient claims, fraud detection, more accurate and agile underwriting.

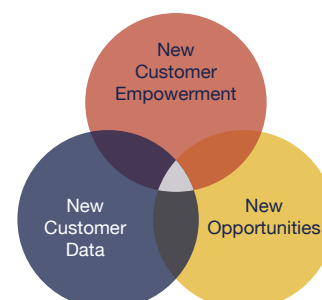
Therefore, customer data not only becomes the core

variable in the ecosystem, but also who owns it. The fierce competition for data was translated into new customer approaches joining customer's empowerment and technology. To give the decision power to consumers to choose exactly what they want has been proven valuable for both customer and businesses, allowing insurers to collect trustworthy information and provide more value for their clients that are willing to exchange specific data sets for valuable products, services or insights (known as "Nudge Me" or "Augment Me").

**The telematics is the means to expand business opportunities, but it comes with challenges as the market shift to pursue the substantial indirect value of this technology.**

## Telematics and insurance position

Telematics seems to have a very high potential to change how Auto insurance is understood nowadays and the impact in its players. Mobile telematics, especially, allows insurers to develop new business models with high scalability, as it is basically an app in the consumer's phone, improving overall customer relationship and product design.







(1) Who owns customer's data: This is crucial to understand customer's lives to personalize and develop services and products, enhance customer experience and unlock potential customer positive touch points.

(2) New opportunities—services: More data and customer information opens opportunities to new businesses. New services are an option to expand traditional business models, using actionable data to offer additional value from existing products.

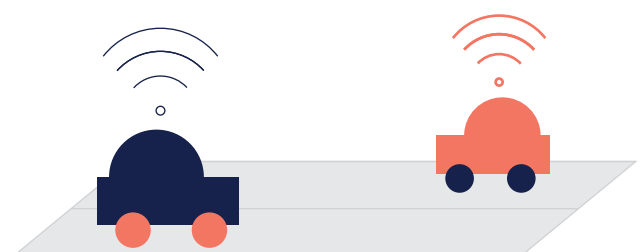
(3) Customer empowerment and holistic view: this goes hand by hand with mobile telematics functionalities such as the customer decision to use it. The detailed information on customer mobility expands the business scope and cross-selling opportunities.

Coming from the vehicle-as-an-asset perspective, insurance companies have the opportunity to apply a customer-centric approach, collecting and using data to improve every aspect of their business and attend different necessities through new customer datasets. However, companies in the soft spot must use customer data to create value for the end user in order to keep high engagement and healthy data exchange to solidify this relationship.

### On trend

Investments in telematics has been relevant, attracting large resources. Cambridge Mobile Telematics received \$500M around 2019 and counts with large partners such as UBER and MS&AD Insurance Group Holdings in order to collect information from the end user.

Another examples include Car Manufacturers and Telecommunication companies that have been investing in companies related to telematics: Verizon investments in Telogis and Fleetmatics, AT&T in Fleet Complete and GM investment in Nauto. In 2018, the European Union made ecall Systems mandatory in new vehicles to speed up the accident response time in EU roads with telematics solutions, showing how this technology can support smart cities on the future and the long-term return from telematics.



In the American Auto Insurance landscape, we can see clearly the trend:

| Telematics initiative | Company                        | Focus black box / Mobile Telematics |
|-----------------------|--------------------------------|-------------------------------------|
| Snapshot              | Progressive                    | Mobile                              |
| Drive Sense           | Esurance / Allstate            | Mobile                              |
| Safeco Right Track    | Liberty                        | Mobile + Black Box                  |
| DriveEasy             | GEICO / Berkshire Hathaway     | Mobile                              |
| Vantage 360 Fleet     | NationWide                     | Mobile + Black Box                  |
| IntegiDrivers         | The Travelers Companies        | Mobile                              |
| Drive Safe & Save     | Sate Farm Mutual Insurance Co. | Mobile                              |
| Safepilot             | USAA                           | Mobile                              |
| Signal                | Farmers                        | Mobile                              |

The market is using both approaches, with more focus depending on the segment. In fact, CEO of Allstate, in 2018 earning call said: “I believe that, in the future, (telematics) will be the primary driver of insurance pricing in auto insurance, because it’s every bit as powerful as credit and those who have been hanging around auto insurance like I had for a

while credit, sort of, ripped through the industry and pricing in the early part of the 2000 and this is a little harder to implement because it requires the customer to do something rather than just buying data from TransUnion or some like that, but it’s equally as powerful. So, it will happen.”

**Progressive's snapshot**

In line of Allstate, Progressive, one of the largest Auto insurers in USA, points telematics on their core Auto products mentioning in the 2019 annual report: “Another key component of our 8.6 product release was to enhance our Snapshot® usage-based insurance (UBI) program...” and the fast Snapshot traction: “During 2019, more than a million new customers enrolled in our Snapshot program. This new offering elevated to 12 states during 2019 and will continue to roll out throughout 2020, which will further expand our UBI footprint and help more drivers save money by switching to Progressive.”

Whilst, the company pointed in a 2018 report that “Every year, we collect billions of additional miles of driving data, which helps us advance our segmentation and pricing sophistication” and in 2017 the company claimed to collect 22 billion miles of driving data. The telematics initiative has been mentioned as key element of Progressive’s last reports and it helped financial results in Personal lines to reach more than 30 billion dollars in both net Premiums earned and net Premiums written.

The Telematics topic has been around for 10 years, but the aforementioned movements demonstrate that increasing efforts are direct to have a broad usage of this technology in the mobility ecosystem. This fact is an evidence that the ecosystem might be transforming and getting ready to widely accept this technology and Insurers may lead the way given the American example.

Recent customer centrist movement and business models that has great telematics application such as UBER, non-American Insurers are also moving forward to apply this technology in their businesses. For instance, Zurich partnership with Greater than –

SaaS platform based on mobile telematics – to implement telematics in its partners and Zego with Abax (UK telematics solutions with drive scoring and vehicle tracking), illustrated other regions efforts around telematics.

Moreover, the COVID-19 pandemic and its consequences (explored further in the section dedicated to smart mobility) that changed the mobility habits, business models such as car sharing, lower car sales projections, fleets tracking and data collection allowed by use of mobile telematics, strengths the power of this technology on the coming years.

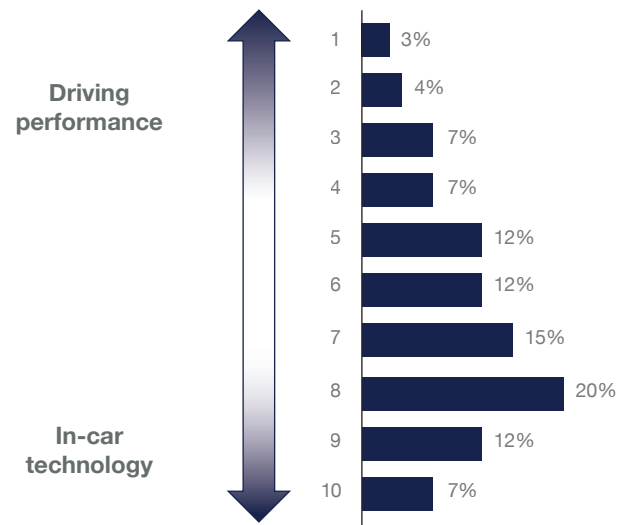


**The new perspective**

Connected cars will give a brand new perspective in the meaning of vehicles and M2M segment, in which machines and connected devices exchange information with each other. Telecoms, TechGiants, Car manufacturers and integrators will compete in the mobility market as technology inside vehicles becomes more important than driving performance.

Companies like Waymo by Google, Tesla and Verizon are three odd competitors that will surge from the new perspective that will endure the competition in mobility and close the gap between Property and customer that was previously explored. This new framework can turn telematics application as the market knows obsolete and transform it completely, pressuring insurers to make efforts to be more customer-centric and so adapt themselves to this transformation. A new paradox is leveraged, then.

**Driving performance vs. in-car technology preference (% of respondents)**



Source: Delta Partners Group



Telematics is on rise, the fast transformation of mobility will bring both challenges and opportunities with the same intensity. As pointed out in NTT DATA & everis' Insurtech Global Outlook 2020 report, the auto dilemma:

Due to changes in VUCA (volatility, uncertainty, complexity and ambiguity) framework and constant shift in customer's preferences, Insurers have the challenge to find new ways to collect customer data and reshape their products and services with portfolio diversification, underwritten and pricing optimization based on customer's relevant data. The new exponential technologies enable Insurance Companies to attend all of these challenges, but it implies to acquire new capabilities, or integrate these capabilities from others, along with its traditional

value chain. This mobility ecosystem will incorporate new actors. And those existing to date will have to give up part of their value chain to be transferred to the new ones. In this scenario, startups and companies that offer value through new technologies will occupy a relevant space in the ecosystem. What is certain is that many companies will have to change their current focus and move from offering their traditional portfolio to become value service providers for the new consumer.

The constant changes are better understood when we use the concept of living ecosystem, where the movement of agents are not restricted by their current respective business model and the traditional Value Chain vision does not exist.

# What's new?

A selection of startups that are innovating and doing things differently in the field of mobile telematics:

## sentiance

This startup offers different solutions based on end user's data that helps clients to become more customer centric. Sentiance provides to its clients end customers insights, analyzing contextual and behavioral data that allows prediction models, personalization of services, crash detection and driving scores. Its technology and analytics have a holistic view of the user measuring what happens inside and outside the car, creating solutions for the mobility market, wellbeing and general commerce in a unique way.

The proposed value allows insurers to improve risk management, settle claims and reduce fraud. On the other hand, it facilitates having a better understanding of its clients, which makes insurers have better interactions with clients.

**\$29.6M**

Total Funding



**B2B SaaS**

Business Model

**Product Design & Development, Marketing & Distribution, Pricing & Underwriting.**

Areas of Value chain

**IoT, Data&Analytics.**

Technologies

**Not available (Revenue 2018: 88 M USD)**

Total Funding



**B2B SaaS, Data monetization**

Business Model

**Pricing & Underwriting, Marketing & Distribution**

Areas of Value chain

**Big Data & Analytics**

Technologies

## arity®

"Allstate's venture founded in 2016, Arity leverage eight years of telematics driving data. The company have built a business unit to monetize all collected data, selling to insurers and connected industries. In 2018, Arity reported an 88M USD revenue, adding a relevant revenue stream for Allstate.

Arity uses different sources of data origination and edge technology to enhance driving behavior, risk prediction and consequently decrease claims expense and improve loss ratio. Arity collects mobile data, black box (OBD-II) and third-party data, delivering a comprehensive users' insights for its clients. Furthermore, the company platform has a broad application from marketing optimization to fleet management embracing not only Insurers solutions, but also shared mobility businesses.

## ZEGO

An offering though for professionals, businesses and individuals (offered to companies like Uber or deliveroo). Its online platform allows customers to quote and hire insurance products that includes smart pricing, pay-as-you-go coverage for electric scooters, cars and vans among other products. Zego also offers Logistics and fleet management enterprise solutions.

The B2B segment has ABAX - telematics solutions company that tracks, monitors and optimizes fleet operations- as a key partner. ABAX's technology enables ZEGO's usage-based insurance model and a flexible pricing via accurate vehicle data collection and processing. Thus, the information powered by ABAX allows ZEGO to help its clients to improve risk management and operational efficiency.

**\$51.7M**

Total Funding



**Platform Ecosystem, B2B SaaS**

Business Model

**Marketing and Distribution, Pricing & Underwriting**

Areas of Value chain

**AI and IoT**

Technologies

# DriveEasy: GEICO's bet for Telematics

The American Insurance case: GEICO current customer approach through telematics. Using mobile application and the pay how you drive model, the company collects millions of miles of driving data to provide customers insights such as driving score and improve pricing modelling.

“DriveEasy, StartDriving and KeepSaving” is GEICO’s premise for the Smart Mobility scenario. Their app-based program aims at detecting driving, calculating premiums in accordance and making roads safer.

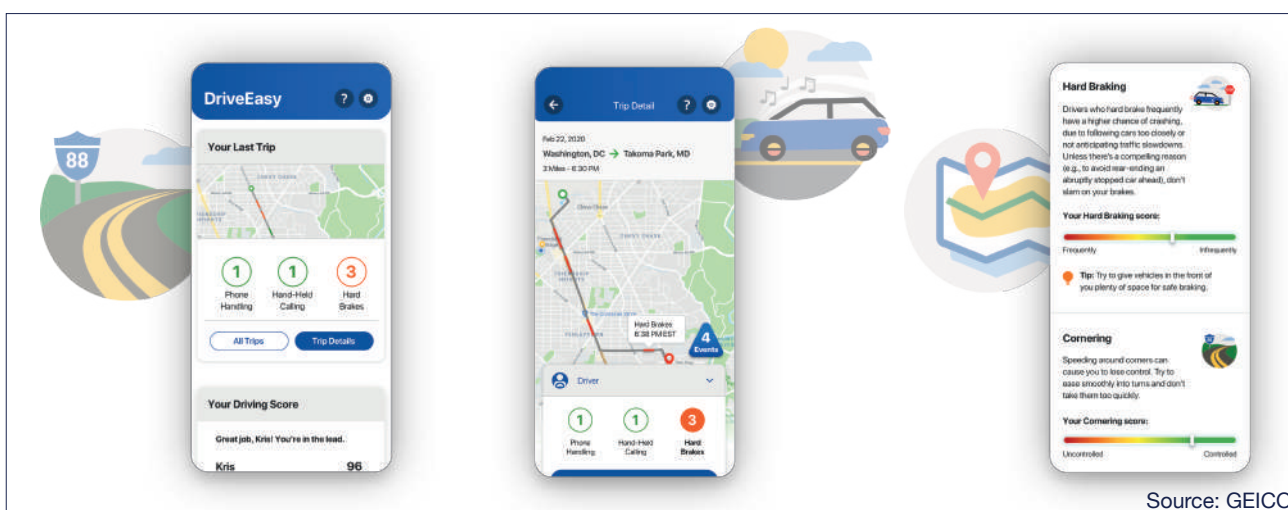
According to NTT DATA’s latest Insurtech Global Outlook 2020 report, 78% if the investment of startups in this ecosystem was concentrated in three main companies: Root Insurance, Cambridge Mobile Telematics and Friday. Observing these three, one characteristic raises as common, that of “Pay How You Drive” mode of serving. Two companies with a pay-per-kilometer model were ranked in the top five, something that clearing shifts the way insurance was used to function. Travelers or transport companies are now, with these applications, to receive directly from their service provider a personalized insurance offer according both to their behavior and needs.

GEICO, standing for Government Employees Insurance Company, was born in 1936 as an idea from Leo and Lillian Goodwin to offer insurance services for government and military workers. Their offer certainly expanded throughout the years and despite they still launch several programs to support

the military servers, they have opened up their range of insurance products to a wider audience.

In 1996, GEICO was acquired by Warren Buffet’s Berkshire Hathaway, becoming other of the many subsidiaries of this giant investor. The action has been even denoted as one of “the most admired Property & Casualty insurance operation in the United States”. From then on, the company has been marked with A++ rating by A.M. Best and AA+ rating by Standard and Poors, a position only earned by 5% of the companies in the country.

Since its beginnings, GEICO has been strongly concerned about driver safety, partnering even with local, regional and federal agencies to support legislations that protect drivers, and, mainly, build public awareness on the safe driving message. In their intent to achieve this goal, Warren Buffet’s Berkshire Hathaway started the telematics program: DriveEasy. This initiative by GEICO measures the driver’s behavior through its mobile app. Throughout the mobile application and a especially-developed algorithm, the real-time driving behaviors of customers is estimated and based on how risky or safe it is, the premium is calculated.



Source: GEICO



## DriveEasy: GEICO's bet for Telematics

The premise seems simple, but there are several implications across the insurance value chain. Not only underwriting becomes a tailored process to each insured profile, but new products can be designed on the premise “Pay How You Drive”. The more real-time data the company collects from its drivers, the more accurate the risk management model is.

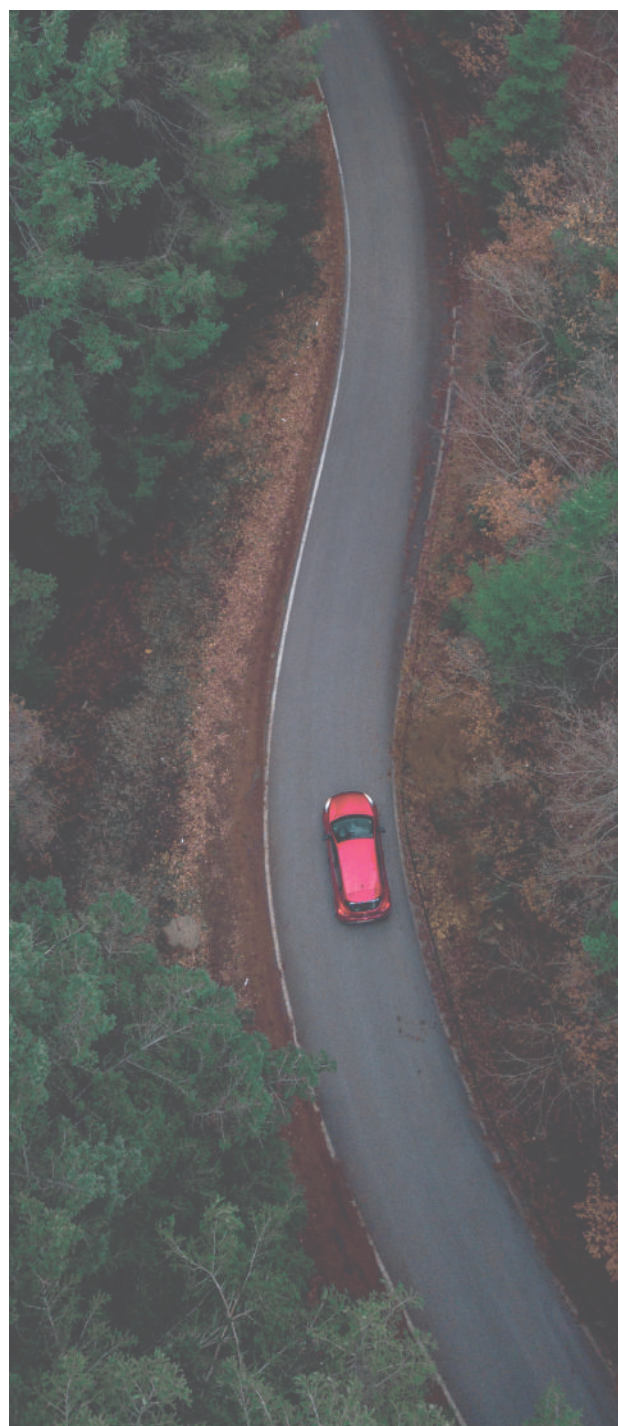
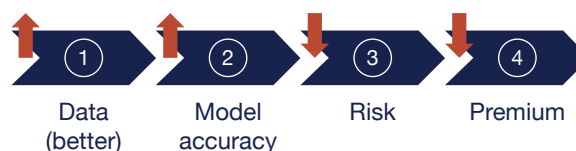
Likewise, the DriveEasy model guarantees information symmetry between the insurer and the policyholder, an ethical problem that has for years haunted the insurance industry. It is not only about lowering premiums throughout a more efficient risk-pricing and customer segmentation, but to add significant value to the user, widening the scope of traditional interaction driver-insurer. Also, the Pay How You Drive model analyses aspects of driving habits such as speed, break style or aggressive acceleration, encouraging customers to driver safer and pressuring a reductions in claims. At the distance of a click, you have your driving score measured, maps and driving logs, positive touch points and drive-better incentives. “It is just one of the ways we make saving on your car insurance easy”.

Telematics is evidently becoming one of the increasing uses of sensors data in insurance, as its applications allow insurers to track their insured and collect valuable data on their driving performance. This will lead to companies like GEICO –which is currently serving more than 17 million auto policies and 28 million vehicles– to reduce loss costs, manage claims better and charge more appropriate coverages.

Nevertheless, it is just one of the many moves carried out by Berkshire Hathaway to deploy this technology within its insurance operations. The firm launched as well in 2019 an insurance product for small businesses called THREE, which aims at protecting these from worker compensation, liability coverages, property and auto.

This demonstrate not only the Group's but the whole auto sector fast growing interest for innovative technologies, acknowledging their advantages in the today fast moving industry. GEICO's telematics app DriveEasy is one of the many steady progresses conducted across the insurance and reinsurance businesses to provide solutions that adequate their offer to the “customer-centric” more and more vital trend.

### Simple overview of telematics impact in insurance Value Chain





DriveEasy: GEICO's bet for Telematics

GEICO's case is an additional detailed illustration of Auto Insurance landscape, the relevance of this market can be analyzed to collect insights and visualize some trends. Apart from the telematics usage from top Insurers the current landscape also signals the strength of American Insurance sector, in 2018 the P&C net income reached 58 B USD translating the 10.5% boost in net premiums compared to the previous year.

The sector is moving fast to transform its business to follow the Smart mobility ecosystem changes. It can be observed the insurance industry moving to improve their business and follow the trends. According to J.D. power, an online car sales platform, customer centric solutions will strongly come from carriers and startups. Partnerships, indeed, has been one of the rising tools insurers use to perform certain parts of value chain, automation and business processes.

In 2020, Cambridge Mobile Telematics launched the Safest driver platform, that is an initiative sponsored by Progressive and Uber to reduce risky driving behavior. The app provides incentives with rewards through a competition among users and provides valuable insights on users' driving behavior.

Moreover, 74% of American insurers developed mobile apps to empower policy holder providing relevant coverage information, allowing their coverage management and self-services. The customer experience is the main variable to young driver adoption, in fact, Globaldata shows that 22,3% of UK drivers between ages 25 and 29 purchased a UBI policy in 2019. Hence, the data shown evidence the traction and size of customer centric approaches including telematics in the near upcoming years.



**risk** **sentiance**

"Sentiance technology to introduce the next generation of UBI solutions by incorporating behavioral and contextual data. First generation UBI products focused on analyzing car data. The Sentiance-RISK solution also takes into account the broader behavior and context of the person driving the car." Sentiance quote.



**ZURICH**

"With a common goal to increase safety and driver influence in the car rental industry, the partners will implement Greater Than's AI-based, digital risk assessment platform" Greater than quote.



**Nationwide®**



**CAMBRIDGE MOBILE TELEMATICS**

"Business Owners Combating Distracted Driving with Telematics Technology. Nationwide is launching Vantage 360 Fleet, one of the most comprehensive telematics solutions on the market and one of the first available with a mobile monitoring feature to detect phone distraction." – CMT quote.

**ZEGO**



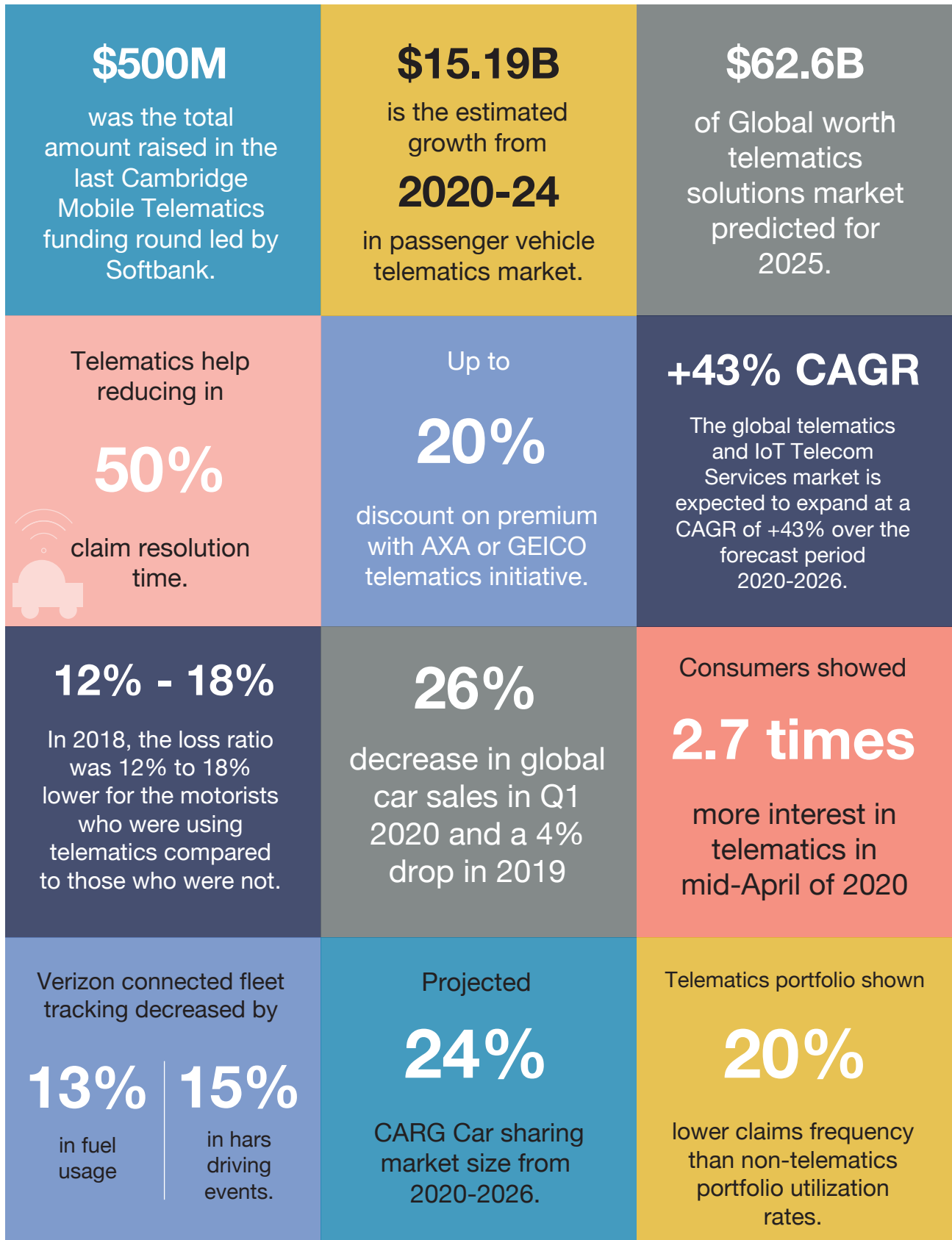
"Zego partners with ABAX to offer flexible, usage-based cover backed by the biggest names in insurance. At Zego, we offer flexible, usage-based cover to keep your fleet on the road. Choose the policy length, cover level and excess that best suits your needs." Zego quote

**arity**



"Emerging technologies and business models, like ridesharing, are disrupting existing systems and rapidly changing the way people get around. Born from insurance, Arity is uniquely positioned to predict and manage risk through data and insights. We find the meaning in the data, so you can grow your business well into the future." – Arity quote

# By numbers.



# Key ideas.

## THE INTANGIBLE VALUE OF TELEMATICS

The new application of telematics brought new opportunities to engage and interact positively with clients, while improving the risk modelling and segmentation. Even though in the past the goal from telematics application were optimization and loss ratio reduction, mobile telematics broaden the business applications and opportunities provided by this technology.

## CUSTOMER CENTRISM

Telematics allows valuable customer-centric approach, compared to traditional models. New business models and new services and products as “Pay How You Drive” creates valuable relationship in every segment.

## DISRUPTION ON SIGHT

New technologies and connected cars can substitute telematics in the near future and create new challenges for insurers, opportunities to other mobility players as well as new competition and different partnerships.

## TRACTION

Telematics is not a complex technology, the traction of this technology in the sector will pressure the market to follow the trend and turn the usage a default state.

## KEEP AN EYE ON

Belgium-based startup Sentiance goes one step further in terms of telematics application. The new customer-centric approach might being already disrupted.

# Riding together in a smart way

## CONTENTS

### Our vision

A practical overview of the smart mobility ecosystem

### The Glimpse

Moving forward and smarter: how smart mobility is smoothing out the auto road

### Startup radar

Top 3  
Interviewing NTT  
DATA's Manufacturing  
IT Innovation Sector

### On numbers

Smart mobility as a trend

### Food for thought

Conclusions and key ideas

Smart mobility is moving faster than ever; the experience moving from point A to point B has changed with the continuous appearance of new tech-savvy options that connect with personas' lifestyle and behaviors.

Both the automotive and insurance industries are on their way to collaborate in the smart mobility ecosystem in ways we have not seen before in an ecosystem that is attracting relevant and diverse actors.

# Our vision.

**Moving smart, moving fast.** This is the only road towards changes, and so how the automotive and the insurance industries have been trying for the last years to overlook a new way of driving, where what matters is not only the vehicle, but the wide range of possibilities around the car concept.

New ideas on how to move from point A to point B see the light of day thanks to the collaboration of not only the OEMs (Original Equipment Manufacturers), but of the entire ecosystem around mobility and the Auto industry. Toyota Connected and NTT DATA recently announced a business alliance, with the objective of increasing the functions and services of the Mobility Service Platform (MSPF) offered globally by Toyota Motor Corporation to expand connected car markets and countries, increase software development capabilities and broaden operations.

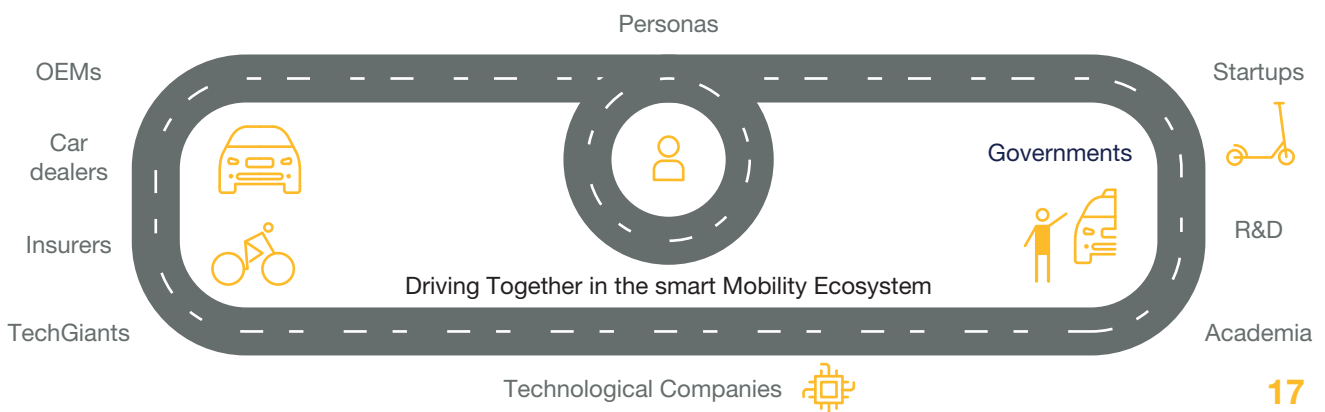
Smart mobility is not going anywhere, it is here to stay. It is important to highlight the ease with which companies in the sector have been able to adapt to the current COVID-19 crisis the world is experiencing, in which the way we are moving now is not the same as before. New trends have become popular in these times to guarantee social-distancing, such is the case of the last-mile – any distance that is too close to drive but too far to walk. These mobility spaces can be solved by the use of bikes, electric scooters, mopeds and other micromobility solutions.

The Auto insurance has not lagged behind in the ongoing mobility transformation. Before COVID-19 arrived, it had already seen new models such as Usage-Based Insurance (UBI), Pay As You Drive (PAYD) or Pay How You Drive (PHYD), were gaining traction is a matter of not only focusing on the car coverage, but also on the vehicle movement and personas. In a mid-term projection, Auto insurance will insure everyday life events putting in the center personas and not the vehicle, becoming increasingly more personal.

Mobility comes with flexibility, in the vehicles to be used, in the schedules, in the journeys and their frequency. However, there is always a common point: the person who is moving. The insurance will evolve towards this new framework to cover the risks of a person or a group during the different trips. The vehicle is the axis that supports this offer but not the only one; we have to take into account the increasingly real possibility of not being the owner of the vehicle but only a user of it.

From everis we envision that smart mobility is helping bridge different relevant actors to coexist in an ecosystem environment where relationships are increasingly liquid and where collaboration is necessary to offer the best mobility options adapted to personas and cope with unexpected events where the way of moving can become radically different.

## New relationship models emerge as a natural cause of the transformation in the auto industry.



# Our vision.



**JULIÁN  
GARCÍA-CIAÑO**

Head of P&C  
Competence  
Unit  
at everis

“**Auto insurance policies will change, will not only offer the vehicle’s coverage, but also to the vehicle’s movement and personas.**”



**VITO  
TRECCARICHI**

Insurance  
Partner  
at everis

“**Events like the COVID-19 have shown a big change on our behaviors on how we move from A to B. However does that change our behavior and lifestyles forever or are we returning back to our old patterns.**”

# Moving forward and smarter: How Smart mobility is smoothing out the Auto road

An eyesight on how both the automotive and the insurance industry are driving together in the transformation road to become relevant in the smart mobility ecosystem. Disruptive technologies powering up mobility options and tech-savvy drivers on the front seat are letting mobility ride faster.

**A is for Auto.** One of the top and more classic industries and which has and will be experiencing continuous changes, some of them according to its own natural flow and others forced by personas (users).

The idea of designing, manufacturing vehicles and parts, defining risk premiums, processing claims according to a target considered as possible buyers is part of the past. The spotlight has shifted for OEMs, parts manufacturers and insurers; the real target is now on what personas demand around the whole auto concept, what is called “mobility” and if it is possible to develop it in a smart way.

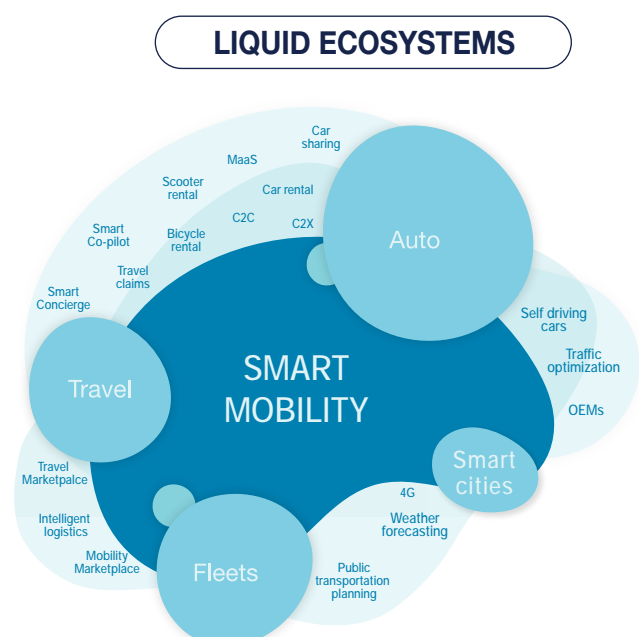
The fast rise of the smart mobility ecosystem

New relationship models emerge as a natural cause of the aforementioned transformation in the automotive industry. Interactions occur between OEMs, car dealers, insurers, startups, TechGiants, technological companies, R&D companies, academia and governments in a liquid ecosystem basis to meet the mobility requirements of empowered personas who are expecting a seamless and fluid mobility experience.

According to everis and NTT DATA's Insurtech Global Outlook 2020 report, the understanding on the Smart Mobility Ecosystem is not reduced to just thinking that mobility is the use of vehicles or commuting, but with all the time that people spend outside their homes or workplaces and how they decide to move between different points. It doesn't matter if the trip lasts 1 minute or 10 hours, nor if it is done in a private vehicle, in a commercial vehicle or traveling with unknown people. The mobility concept keeps changing for different factors such as regulatory

matters, car ownership high costs, and environmental awareness. Needless to say, this is the reason all these users demand the appearance of disruptive mobility models.

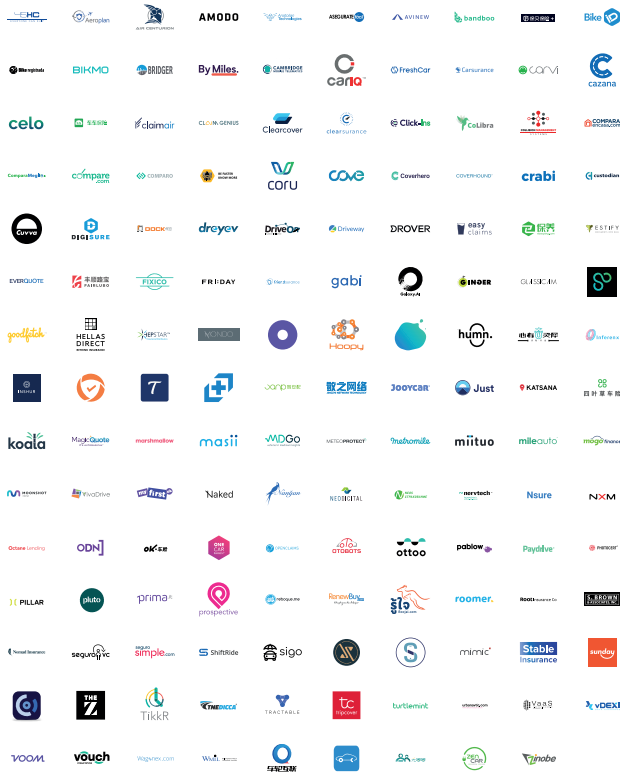
**The spotlight has shifted for OEMs, parts manufacturers and insurers; the real target is now on what personas demand around the whole auto concept.**



Source: Insurtech Global Outlook 2020, everis & NTTDATA



**From A to Z in Smart Mobility in Insurance**



Source: Insurtech Global Outlook 2020, everis & NTTDATA

**The relevance of the smart mobility ecosystem is all ready impressing new actors, who are willing to plug in and understand how through collaboration, available disruptive technologies and data from persona’s mobility needs can happen.**

For all the actors involved in this ecosystem there is a common premise: facilitate mobility from point A to point B. This results as a mix of different innovative business models powered by disruptive technologies committed to generate faster, cheaper and friendlier experiences.

Data and connected technology are powering up the Smart Mobility ecosystem. By collecting and sharing data, an increase of efficiencies can address the real needs of personas. A significant connected technology that plays a key role in the Smart Mobility ecosystem is vehicle telematics, used to monitor vehicle diagnostics and movements.

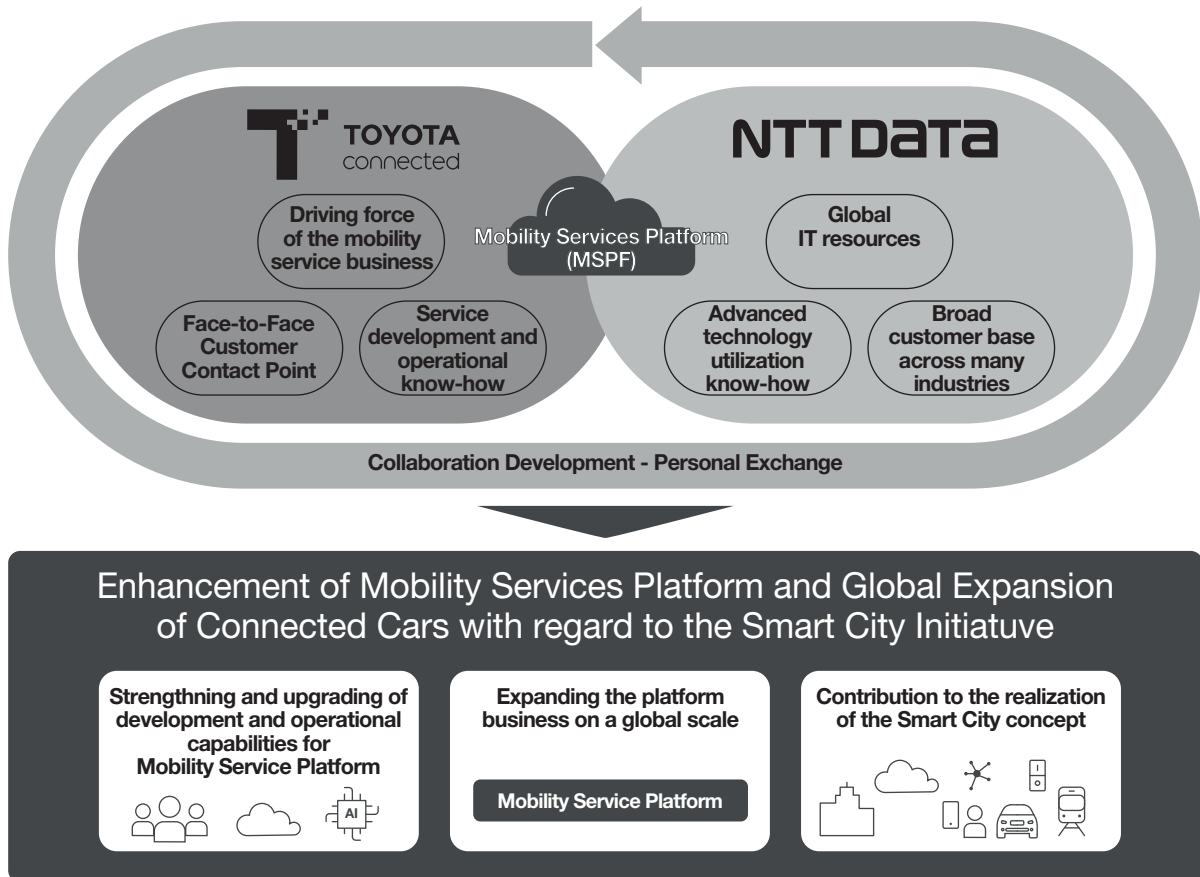
The information collected is analyzed by several actors in the ecosystem, such as insurance companies or government agencies to enhance sustainability, predict traffic patterns, monitor carbon emissions, optimize urban projects and even analyze driving behaviors. An example of a connected car platform is DriveSync, from IMS –leader company in insurance telematics solutions, which is designed to improve the safety on the road through to the advanced soft-computing techniques that analyze driving behavior and intuitively deliver actionable feedback to the driver with safety as the highest priority.

The Insurtech Global Outlook 2020 has a representation of the main Smart Mobility startups that have a strong focus on insurance. A total of 153 companies are present in this framework and a 78% of the investment in the startups of this ecosystem in the last two years was concentrated in four relevant names: Root Insurance, Cambridge Mobile Telematics, Octane Lending and Friday.

Collaborations in the Smart Mobility ecosystem are happening between big company names from the Auto sector, startups, insurers and TechGiants. A recent collaboration startup/insurer is the case of the global leader in shared mobility solutions Lime and Allianz Partners dedicated to assistance and insurance solutions, who have worked in a recent global strategic partnership focused on improving the safety of micromobility. This program will provide Lime riders personal accident Insurance and liability Insurance at no extra cost.

On the other hand, another strong and relevant business alliance was formed on April 2020 by NTT DATA and Toyota Connected, with the aim to increase the functions and services of the Mobility Service Platform (MSPF) offered globally by Toyota Motor Company in order to expand connected car markets and countries and increase software development





Source: NTT DATA

capabilities and expand operations.

In the TechGiants arena, it is important to mention that Alphabet is a leader in this ecosystem by investing in companies focused on the development of autonomous cars, ride-hailing, food delivery, micromobility and fleet management systems. In parallel, Chinese Giant Baidu is committed with this ecosystem with the Apollo Project, where they are connecting services for mass-produced cars and having been already used by 130 partners around the world.

The relevance of the Smart Mobility ecosystem is already impressing new actors, who are willing to plug in and understand how through collaboration, available disruptive technologies and data from persona's mobility needs, an improvement on the way we move today can happen.

### Insuring mobility

Smart Mobility may be something new and innovative, but let's not forget that there is an element that should be always present: the handling of an associated risk. There are several insurance companies who are already transforming their role and relationship model with startups, drivers, vehicle

owners and with autonomous vehicles themselves, but there is still some way to go in this field.

According to the Swiss Re Institute, insurers have a key role in the new mobility model. With the emerging digital risks new protection gaps are created and new business opportunities around cybersecurity, IoT risk, counterparty risks and business interruption are raised.

Insurers have a key challenge on the new mobility scenario, and it is not about evolution, but about a model transformation by positioning themselves in the first line of the value chain and working together with companies dedicated to mobility and technology. The model transformation should include new services associated to the vehicle usage, as these can help insurers position better themselves inside the market by having relevant data on the vehicle and personas.

### Moving on after COVID

The exceptional situation that we have to live now due to the COVID-19 has changed many of our habits, lifestyle and priorities in a fast and radical way. For the Auto industry, the effect of coronavirus has touched several points. The most critical is the

TechGiants riding the Smart Mobility Ecosystem

Alphabet



amazon



facebook



Alibaba.com



Apple



Baidu 百度



Tencent 腾讯



Rakuten



temporary or definitive closure of manufacturing operations, as well as the significant drop in car sales, being this last effect directly related to the decline in the sale/use of auto insurance.

With the de-escalation, the population will use mobility as it is something necessary from day to day. However, by not taking some safety measures, the fact of using transportation options where we cannot maintain social distance could increase the risk of contagion (e.g. public transportation, carpooling, transportation, mopeds).

One of the options to consider not only in de-escalation but also in the long term, according to the group of Smart Mobility companies in Spain, is micromobility, meaning scooters, bicycles, skateboards, cargo bikes, rickshaws, among others, as a fundamental ally to maintain social distancing.

Car owners may be also asking themselves “why am I paying for car Insurance if I’m not driving?”. In an analysis prepared in collaboration by Sentiance and RISK Insurance regarding data from their users Pre and Post-Corona period came up some interesting insights that are relevant for the Auto insurance industry.

One insight is regarding the premium reduction by offering discounts, refunds or compensations to customers; companies like GEICO, Progressive, Admiral, Liberty Mutual, State Farm, Allstate and Nationwide are already working on this way.

Another relevant insight is on the Usage-Based Insurance (UBI) and how the personalization of insurance packages for each customer by either Pay As You Drive (PAYD) or Pay How You Drive (PHYD) can make rates fairer for their customers. Around the UBI concept, hot investments were detected in the Insurtech Global Outlook report during 2019 from companies like Cambridge Mobile Telematics, Root Insurance and FRIDAY.

Also relevant collaborations happen in the ecosystem. Such is the case between the car API developers, Smartcar and the car insurer Paydrive. Both companies are working together in bringing fair and affordable mileage-based insurance to electric vehicle owners in Sweden.

Mileage-based insurance models are becoming more personalized for drivers in which they only pay for the mile they drive and the practice of sharing driving data can provide a more accurate risk.

Data will continue to be on the spotlight, in this case for solving claims faster due to the social distancing

situation, by motion sensor data of the mobile phone and associated contexts. Important deals from Screenshot or Tractable were ranked in the Top 5 of the Insurtech 100 global index.



### Road under construction

The Smart Mobility ecosystem will not only help the auto and insurance industry survive the changes that will come but embrace them and make them part of their new business models, products/services, customer experience strategies and ecosystem relations.

Thinking about the future, personas will easily change from one option of transportation to another according to their mobility needs and of the service portfolio. For this, the Smart Mobility actors must act fast and develop customized offerings throughout digital, seamless and savvy experiences.

# What's new?

A selection of startups that are innovating and doing things differently in the field of Smart Mobility:

## TIER

Based in Berlin, TIER Mobility is the first micromobility company to be fully climate-neutral, currently located in 55 cities across 11 countries. Their vision is to lead the way towards seamless and sustainable mobility joyful for everyone.

The startup is offering easily-accessible and affordable mobility services by partnering up with municipalities, public and private organizations as well as other transportation providers. During 2019, TIER collaborated with AXA through an exclusive insurance partnership in which the insurer provides the mandatory liability insurance for the entire TIER'S scooter fleet.

**\$131M**

Total Funding



**Mobility-as-a-Service (MaaS)**

Business Model

**Product Development & Design, Distribution**

Areas of Value chain

**Cloud, IoT**

Technologies

**\$190.2M**

Total Funding



**Mobility-as-a-Service (MaaS)**

Business Model

**Product Development & Design, Distribution.**

Areas of Value chain

**Cloud, Mobile Application**

Technologies

## CLUNO

Munich-based car subscription provider that offers new mobility concept. Cluno thinks all car-related processes completely digitally and innovatively, helping customers to find the right mobility solution for their lives. Clients can book a car online for a fixed, monthly package price that includes everything except refueling. Compared with purchase, financing and leasing, there is no long-term commitment and the notice period is three months.

During 2019 the startup signed a partnership with the sports car manufacturer Porsche; Porsche inFlow allows drivers the exclusive use of Porsche cars for a transparent monthly price in a fast and simple way without having to purchase the vehicle.

## FREE2 MOVE

Free2Move is a young, simple and innovative application that is leading vehicle sharing at a global level.

As part of PSA Group, the second largest automotive company in the world (formed by Peugeot, Citroën, DS and Opel), they are investing in disruptive technologies that can generate value in the mobility ecosystem.

Recently the company partnered with the leading insurance platform Trov by adjusting insurance premiums based on data in real-time from every of Free2Move's connected vehicles.

**\$1.4M**

Total Funding



**Mobility-as-a-Service (MaaS)**

Business Model

**Product Development & Design, Distribution**

Areas of Value chain

**Cloud, Mobile Application**

Technologies

# Business collaborations on the Smart Mobility Ecosystem

Recently, NTTDATA and Toyota Connected announced a business alliance to strengthen and advance their global development and operation capabilities through collaboration and personnel exchanges in the mobility services business.

**Interview with Hisashi Takahashi**, Senior Manager of Manufacturing IT Innovation Sector at NTT DATA and **Keisuke Uehara**, Business and System Development Deputy Manager at NTT DATA

**Insurtech:** How was the Alliance between NTT DATA and Toyota born? What were the purposes behind this agreement?

**Hisaashi Takahashi and Keisuke Uehara:** NTT DATA has been played a leading role in the Connected Car R&D between overall Toyota Motor Corporation & NTT since 2017, that trust which has been built up led to the business alliance between Toyota Connected & NTT DATA with the strong endorsement of Toyota Motor Corporation.

**Insurtech:** What attracted your companies the most to start investing on the Mobility scenario?

**Hisaashi Takahashi and Keisuke Uehara:** Connected and Mobility services between vehicles and beyond vehicle no doubt will boom up in coming 10 years, and NTTDATA is sure to contribute on TOYOTA's mobility strategy by the cutting edge ICT technologies.

**Insurtech:** How did you transform the knowledge you already had in the sector to develop this technology?

Which roles did each of you (Toyota, NTT

DATA) play in this process?

**Hisaashi Takahashi and Keisuke Uehara:** Now is on the team building stage at the beginning of the strategic partnerships between TOYOTA Connected & NTTDATA. Mixing know-how and technologies in the AUTO & Telecom industries help NTTDATA to accelerate providing mobility platform technologies.

**Insurtech:** How do you think OEMs and insurers can take advantage of this new "mobility concept"?

**Hisaashi Takahashi and Keisuke Uehara:** TOYOTA Connected supported by NTTDATA will provide various types of API for many mobility services on top of Mobility Service Platform (MSPF) which would be open to the external Servicers, and that APIs enable insurers to joint their own insure services.

**Insurtech:** Which would you say are the greatest challenges for the automotive industry within the smart mobility ecosystem?

**Hisaashi Takahashi and Keisuke Uehara:** The shift to the "Software First" from the



## Business collaborations on the Smart Mobility

manufacturer of the Vehicle and establishing "car association" which share non-competitive area each other.

**Insurtech:** How does this alliance contribute to the development of smart cities?

**Hisaashi Takahashi and Keisuke Uehara:** Toyota Connected and NTTDATA hope to contribute to the areas such on transportation, logistics, and mobility.

**Insurtech:** How do you see the risk of making the decision of investing in technologies like these that are expected to bring results just in the mid and long term?

**Hisaashi Takahashi and Keisuke Uehara:** In a rapid speed evolution of technologies, feasibility of technology, profitability of business, and long lasting maintenance/support services.

**Insurtech:** Which are the threats of developing this kind of technologies? Is it related to the legal framework, ethical implications or competitors?

**Hisaashi Takahashi and Keisuke Uehara:** Too many localization/customization may impact on the sustainability of this type of platform business.

**Insurtech:** Talking about ethical implications, which role does privacy play on your solutions? What do



**Hisashi Takahashi**, Senior Manager of Manufacturing IT Innovation Sector.

**Keisuke Uehara**, Business and System Development Deputy Manager.



The attentive customer services in which privacy information much included will be a key for the success of mobility service, therefore the data protection & security are essential when providing those services.

you do with the huge amounts of data that it delivers?

**Hisaashi Takahashi and Keisuke Uehara:** The attentive customer services in which privacy information much included will be a key for the success of mobility service, therefore the data protection & security are essential when providing those services.

**Insurtech:** Do you think cities, markets and personas are ready to coexist in the smart mobility ecosystem?

**Hisaashi Takahashi and Keisuke Uehara:** It will be a step by step approach to unite into one existence.

**Insurtech:** In the case of insurers, what's your opinion on their role of insurers in the smart mobility ecosystem and on response on the current challenges that the automotive industry is living?

**Hisaashi Takahashi and Keisuke Uehara:** Insurers must keep keen eyes not only on the autonomous technologies but also on the safety ones which OEMs invest on.

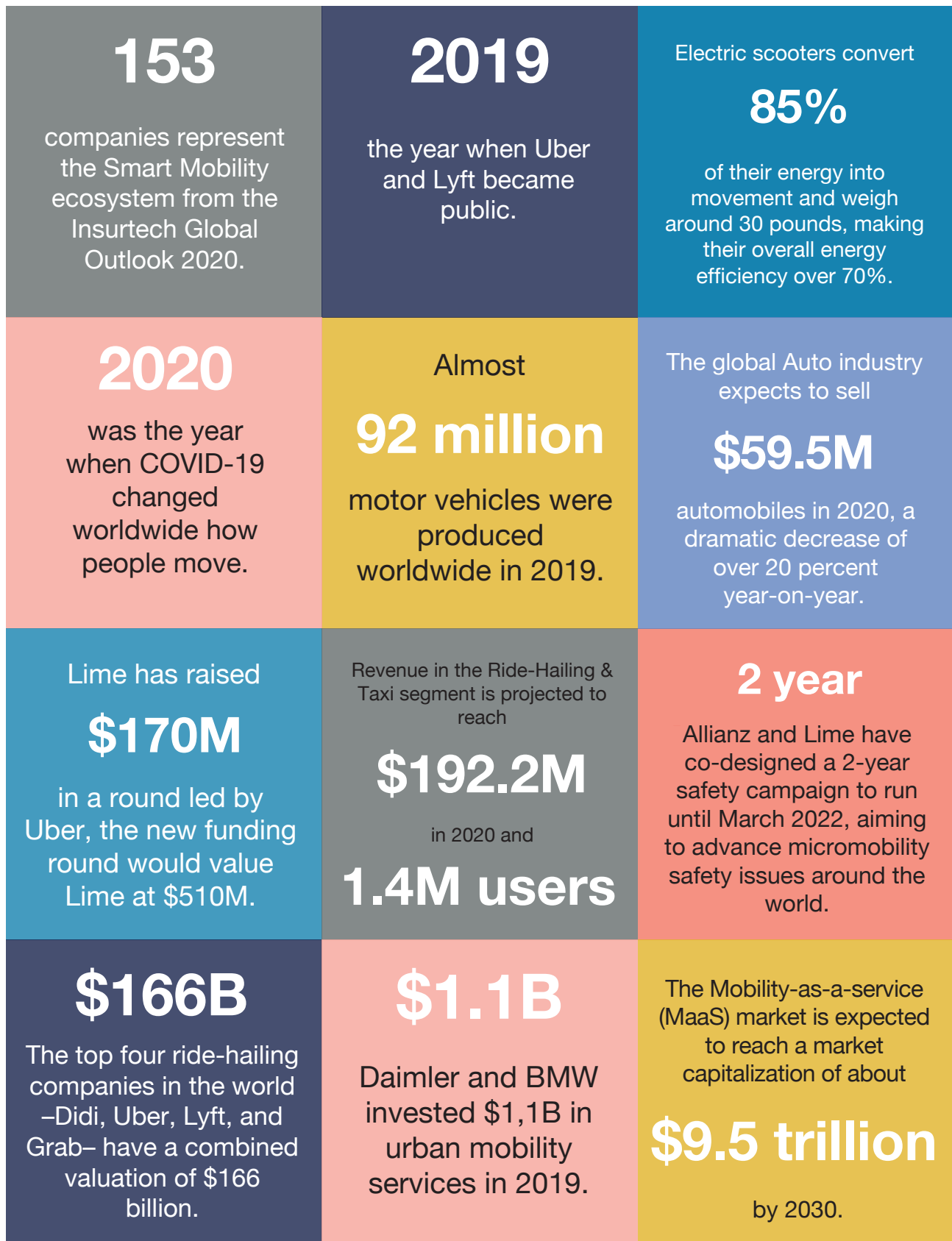
**Insurtech:** Do you think you could deploy your technology to solve insurance issues that arise from the smart mobility challenges? How do you see the collaboration of big Corps as yours with the Insurance sector?

**Hisaashi Takahashi and Keisuke Uehara:** Yes, now the big data center is storing detailed driver, drive & vehicle data, which must be utilized by insurers for the optimized insurances.

**Insurtech:** Finally, how do you envision the future of mobility?

**Hisaashi Takahashi and Keisuke Uehara:** That will enrich the quality of life and solve social problems.

# By numbers.





# Key ideas.

## SMART MOVEMENT

Mobility-as-a-service is here to stay. Moving from point A to point B will not change, the difference is how new ideas and disruptive technologies generate new mobility products and services committed to generate faster, cheaper, friendlier and more sustainable experiences.

## OEMs DRIVING TOGETHER

OEMs are on the driver's seat on the mobility ecosystem and are knowing how to relate in this environment. Models like MaaS offer opportunities for these Auto giants as new ways to anticipate and adapt their offer to current mobility needs.

## MICROMOBILITY IS THE SAFE WAY

In pandemic times our daily life has changed, including the way we move. Micromobility is an interesting safe option that is growing and should be part of the resilience-mobility plan for cities where it can be implemented.

## INSURANCE WILL NEVER BE THE SAME

Evolution is not the option for insurers, but changing traditional models is. The relevance of insurers in the Smart Mobility ecosystem is a must, working together offering new products and services around the vehicle concept.

## KEEP AN EYE ON

Munich-based Cluno, which is revolutionizing mobility through a digital car subscription model that will change consumer behaviors, where usage is more important than ownership. Thinking on driving a Porsche car some months without buying it? With Cluno you can.



# Redefining the Insurance Industry in the Wheels of Autonomous Vehicles

## CONTENTS

### **Our vision**

A practical overview on the autonomous car

### **The Glimpse**

Assuming control of the roads: self-driving cars

### **Startup radar**

Top 3  
Interview with Gestoos

### **On numbers**

Autonomous car as a trend

### **Food for thought**

Conclusions and key ideas

From Levels 1 to 5 of autonomy, connected cars are no longer a feature of a common Sci-Fi movie. They are more real and closer than ever, and about to transform the whole paradigm of the automotive and insurance industries.

The interest is increasing among the various players of the ecosystem. Insurers, however, are of the actors to be most transformed by the AV disruption, posing new challenges but raising new opportunities of business models.

# Our vision.

“You don’t own the car anymore”. Strong statement, but accurate to the reality we are to be facing sooner rather than later. The autonomous vehicle has been in the discussion for some years but has lately come to change the paradigm of the whole Smart Mobility ecosystem and has somehow put upside down as well the insurance industry.

AV are not simply driverless cars. There is a progressive transition between the different levels of autonomy that will likely end up in a fully sufficiently-driven vehicle. For now, assistance technologies are playing the starring role within this modality and are leading to strong improvements in transportation efficiency, reduced traffic congestion, lower pollution and, mainly, decreased accidents. As these vehicles enter the roads, however, traffic, software and public infrastructure face a new challenge.

Challenges mean changes and these inquiries. Who holds responsibility? Whose property is the vehicle of? Will insurance still be needed? What will be the role of the driver? The penetration of these vehicles into the automotive industry raises a new business model within the ecosystem. Car ownership will no longer be the normal and so many doubts gain importance for manufacturers, sellers, and also insurers.

These actors, along with others as TechGiants and startups have to reinvent their value propositions, whether by joining one another in

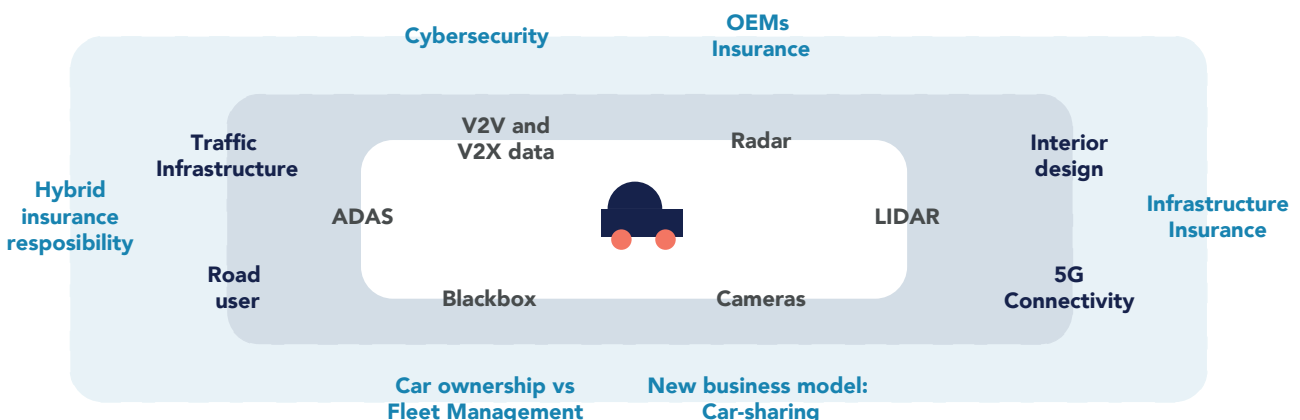
partnerships or integrating vertically their businesses to offer a response to these questions and so to the new needs of consumers. Companies like Alphabet’s Waymo or Baidu Apollo are just some of the many who have found a possibility to deploy their knowledge into the automotive sector.

Also Amazon, who recently bought startup Zoox, demonstrate the increasing interest that technological mobility and autonomous vehicles leverage.

Tesla, likewise, has took advantage of the information they control as manufacturers and launched Tesla Insurance for guaranteeing a more accurate risk management. This is just the beginning of a model that will certainly take power over the following years, as insurance companies will have to upraise themselves to the level of car manufacturers or these latter will assume the role of insurers.

From everis we envision a smarter and safer mobility industry. Despite there is still much to be developed and the scenario is yet raw in terms of regulations and responsibilities, autonomous vehicles are surely going to take over the roads. The investment gathered by them evidences it. Whether it is in 2020, 2050 or 2060, AV are going to disrupt completely the Auto market, transforming it and all those implicated within it neither for better nor worse, just different.

## THE AUTONOMOUS VEHICLE ECOSYSTEM



# Our vision.



**Autonomous cars,  
due to its nature,  
will definitely have  
an impact on auto  
insurance and in the  
mobility ecosystem.**



**JULIÁN  
GARCÍA-  
CIAÑO**

Head of P&C  
Competence  
Unit  
at everis

# Assuming control of the roads: self-driving cars

A close look into one of the top trends that will disrupt Auto and Insurance industries in the short, medium and long term. Autonomous cars will put upside down the legacy held so far in the sector and shine light on a better solution for mobility environment and society wise.

Sit, stay, drive. Autonomous vehicles have been in the mobility scenario already for a while, whereas in the research, development or testing areas. Nevertheless, they still remain as a recent technology, something new and as so, where there are yet some points to be connected. The automotive industry is going through one of the biggest disruptions so far faced, and the Auto insurance sector seems to be in front of its greatest dilemma: new needs, new challenges, new opportunities.

Autonomous vehicles (AV) are not necessarily self-sufficiently driven. The National Highway Traffic Safety Administration (NHTSA) gives definition to the autonomous car in function of five degrees of autonomy, which vary according to the penetration of Advanced Driver Assistance Systems: (1) assisted driving, (2) partially automated driving, (3) automated driving, (4) highly automated driving, (5) fully automated driving. The AV modality, then, goes all the way from a car with assistance technologies to a driverless mode of driving.

## Hitting the roads, changing the society

With the continuous development of autonomous technology, mass-produced self-driving cars will progressively hit the roads, changing traffic, ecosystems, and our lives. This is not a simple technological transformation, but a change of paradigm in the way we perceive the smart mobility ecosystem.

AV not only reduce the travel time and transportation costs, as well as make it more effective, but they mainly help in reducing traffic congestion, lowering fuel consumption, reducing CO2 emissions, and most importantly, reducing accidents. In simpler words, autonomous cars are already facilitating transportation, at the same time that they have come to improve social, environmental and legal frameworks.

NTT DATA in their report *When the car takes over* proposed a glimpse into what was about to come in the future for autonomous driving. In their accordance, three scenarios can be foreseen: one for around 2020, other for 2050 and the last one for 2060. In the first one, AV would be sold commercially, but still not widely used. This share would increase significantly for the second proposal, in which this model will predominate in the roads. Finally, only by 2060 fully-automated cars will be the only type of vehicles available.

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**The autonomous vehicle will disrupt gradually according to the development of the suitable infrastructure, but is foreseen to be impacting significantly the insurance industry.**

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## Testing the future of AV

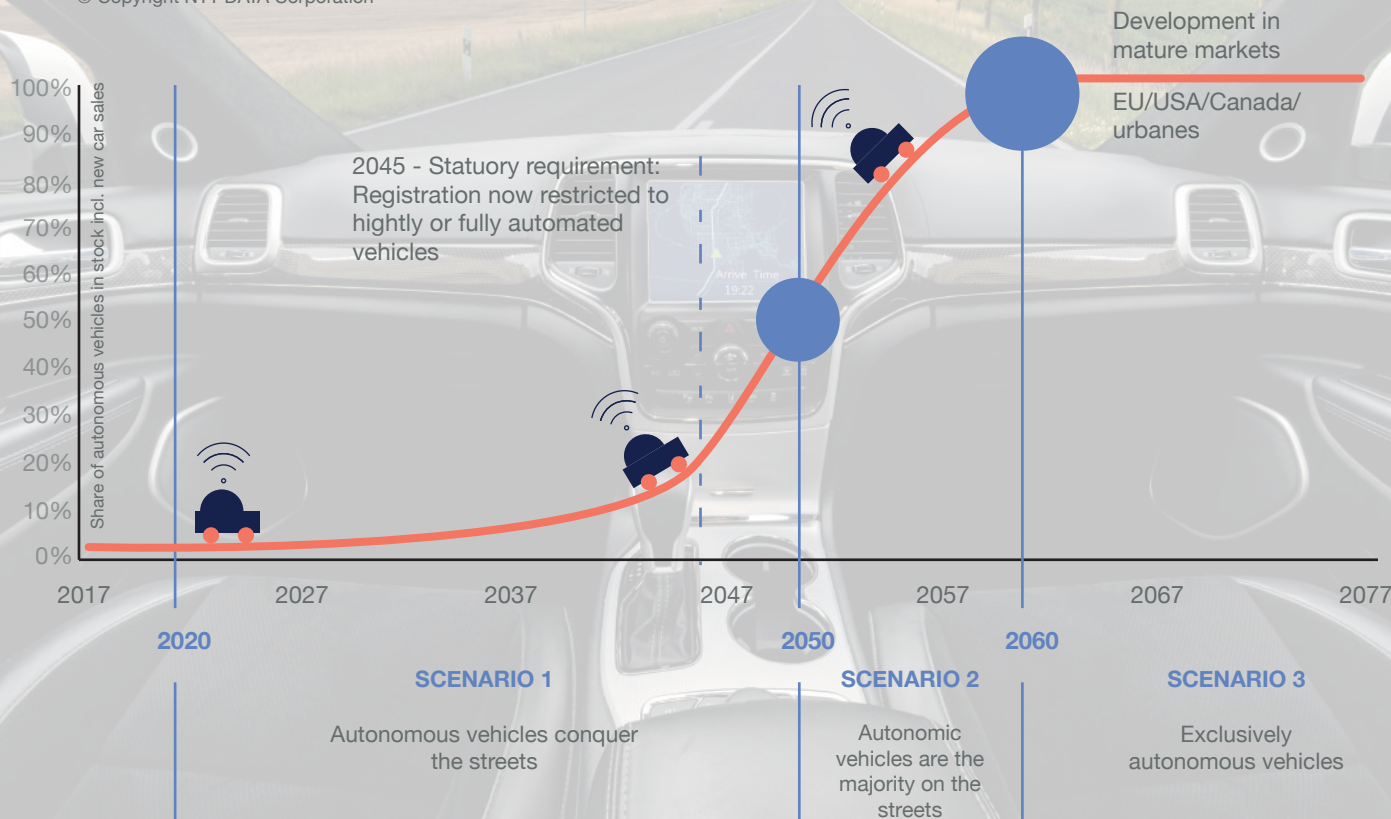
These proposals weren't far from reality. Neither was that of one of the biggest tycoons of the sector, Elon Musk, who predicted in 2014 that self-driving vehicles would be on the streets around five to six years after. That means today. He did not envision wrong, as several enterprises, startups and even TechGiants are strongly investing in this technology. Waymo, Alphabet's self-driving unit, has already carried out successful trials of AV in the United States, testing these for a new business model.

Furthermore, according to NTT DATA & everis latest *Insurtech Global Outlook 2020* report, while Google's parent company keeps the leading role within the Smart Mobility ecosystem, other Giants as Alibaba and Baidu are also strongly investing in the



## When the car takes over

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autonomous cars disruption. In fact, this latter Asian Giant launched Baidu Apollo, a \$7.47 million government contract to provide autonomous driving solutions for a road-testing project in Chongqing, in Southwest China. This Level of autonomous vehicle-road coordination system pretends to increase the capabilities of the car to understand the surrounding road conditions as a result of an interaction between smart road infrastructures and self-driving cars.

In the same line of events, Toyota Research Institute-Advanced Development, Inc. (TRI-AD), Maxar Technologies, Inc. and NTT DATA Corporation joined forces in 2019 for the building of automated HD maps for autonomous vehicles. Using high-resolution satellites imagery and TRI-AD's software Automated Mapping Platform, these enterprises have started to create a AMP for a determined area in Tokyo, but have opened up the possibility of supporting automated mobility in all roads in the future on a "fast, scalable and cost-effective basis".

Likewise, General Motor's subsidiary Cruise intended to start deployments in New York, but safety concerns and lack of regulatory approvals generated delays. The problem lays on the thin line that exists between human intervention, known as

"disengagement", and failure of the autonomous system. In order to get approved by law, all companies testing self-driving cars on public roads are required to disclose the number of miles driven and the frequency in which human safety drivers are forced to take control of the AV. Cruise's incident occurred when one of its self-driven cars ran a red light in San Francisco once the safety driver took control to avoid blocking a crosswalk.

### Where does the legal standards sit?

New liability issues need to be held in order for AV to penetrate as foreseen the market. In Europe, 74 countries have signed the Vienna Convention on Road Traffic that, until 2014, forbid any self-driving vehicles in the roads. After its amendment, the use of autonomous vehicles is allowed with the condition that the driver can take control at any times. In simpler words, these countries remain in level 2 or 3 of autonomy. The priority for European countries remains to be data protection, so the acceleration and implementation of these technologies will have to adequate firstly to the ethical parameters to be able to penetrate the industry.

In China, on the other hand, the government has declared national priority to become leaders in the autonomous technology, and that is why it is the

country which currently has the leading role in miles ran with AV systems. Likewise, in the United States, despite each state establishes its own laws on the use of autonomous vehicles and, since 2012, only a few of them have considered this new modality of mobility in their legislation, the interest of American-based companies on this technology seems to be speeding up the process.

### Technological prerequisites

Safety, and therefore regulatory approvals, comes hand by hand with technological requirements. There is a whole world surrounding autonomous cars; what NTT DATA's report calls The Self-driving Vehicles Ecosystem. From the traffic infrastructure, to the automobile interior design, the 5G mobile radio needed and the road users, there are some technologies that are indispensable for this modality to develop correctly.

Firstly, already mentioned, 5G connection is the most adopted technology for direct car-to-car and vehicle-to-everything communication. Better networks with higher performance capability will enable IoT in autonomous cars. These will be equipped with sensors that make them smarter and that generate, at the same time, huge amounts of data. The higher the quantity of data, the faster the network needed for processing and analyzing it.

Additionally, these data must be stored, and no amount of computers in the world are able to do it. As a matter of fact, the estimate of storage requirements resulting from radar, LIDAR (Light Detection and Ranging) and camera is between 4 to 10 terabytes per day. Thus, Cloud technology becomes imperative. A MIT design shows that data flows from the sensor information to the cloud platform, where it is first mapped to plan the path for the car, and then sends it back to the vehicle where the controller executes the received data.

### A new insurance paradigm

The greatest dilemma among the technological disruption on the Auto insurance ecosystem is how insurance will be needed if with all these advancements accidents are reduced and driving will become safer. Nevertheless, is just a shift in the needs. The autonomous vehicle will disrupt gradually according to the development of the suitable infrastructure, but is foreseen to be impacting significantly the insurance industry.

On the one hand, although it is predicted that AV will reduce accidents, these will still occur as long as humans are involved. Therefore, particular insurance will have to adequate to the possibility of covering the different levels of autonomy driving: fully

autonomous or semi-autonomous. Furthermore, if with autonomous vehicles the driver does not own anymore the car, why should he, then, hold liability? As the ecosystem moves from car-ownership to mobility-as-a-service, risk assessment slides off the hands of the driver and auto insurance turns more fleet-oriented.

Hence, it is not just an upgrade in terms of technology, but a shift in the business model. With autonomous driving a whole new insurance panorama is born in which vehicles play part but do also infrastructure and OEMs. Therefore, not only new products will need to be launched as for clarifying insurance issues, but all the different actors of the ecosystem will have to play together. There will no longer be a linear structure from manufacturers to sellers to insurers; rather, these will either have to work jointly or vertically integrate their businesses. Tesla, for instance, launched in 2019 Tesla Insurance, which with the information they control as manufacturers in regards to technology, safety and serviceability, can quantify the risk more precisely and offer lower prices, saving drivers up to 30% off in comparison to regular insurers.

On the other hand, cybersecurity will play an important role firstly because of the relevance of cloud solutions. In this sense, insurers must guarantee the Product Liability Insurance in those cases in which the cloud delivers software glitches. In parallel, new damage coverage policies will have to be created to protect against unauthorized entry into vehicles or ransomware attacks. This will lead to a change in the business model, as insurance companies will need a new infrastructure, architecture and application model to deliver agility, flexibility, scalability and security in their cyber coverages.

### Neither better nor worse, different

Scared to the dilemma of Auto insurance and the possibility of being threatened by new technologies, insurance companies must work hand by hand with TechGiants, startups and other agents of the ecosystem to adapt themselves to the new reality. The only way to survive to the markets demands is to turn the challenges of this new panorama into opportunities.

These steps will represent an improvement for everyone involved in the Smart Mobility scope, from the manufacturer and the insurer, to the end user. Autonomous vehicles will in a short, medium or large term turn the mobility scenario upside down, bringing new possibilities of transportation and newer business models across industries.

# What's new?

A selection of startups that are innovating and doing things differently in the field of autonomous cars.

## gestoos

Originally called Exipple Studio, Gestoos is an Artificial Intelligence platform that aims at “humanizing technology”. This 2015-founded software recognizes, understands and responds to what their cameras and sensors capture from people’s behavior in order to improve user experience. Whether in the digital signage, the consumer electronic or the automotive sector they have lately invested strongly in, Gestoos’ technology allows users to interact with any device, software solution or application.

Their product compounds infotainment interaction, but especially driver awareness and passenger monitoring that in the autonomous vehicles scenario allows to detect when to transition control between the car and the driver.

**\$2.6M**

Total Funding



**B2B, B2C**

Business Model

**Product Design & Development,  
Pricing & Underwriting**

Areas of Value chain

**Artificial Intelligence, IoT,  
Machine Learning**

Technologies

**\$92M**

Total Funding



**B2B SaaS**

Business Model

**Product Design & Development,  
Marketing & Distribution, Pricing  
& Underwriting**

Areas of Value chain

**IoT, Machine Learning,  
Data&Analytics**

Technologies

## DEEPMAP

This Series B funded american company’s solutions pretend to solve HD mapping and localization for Levels 4 & 5 autonomous vehicles (AV’s). They offer centimeter-level, real-time localization and scalable high definition maps for various types and driving conditions.

With blue-chip investors of the standing of Accel, Andreessen Horowitz, NVIDIA, Generation or Goldman Sachs, their team works with Google (Earth & Maps), Apple Maps and Baidu Maps. They have also provided other companies with their self-sufficient driving fleet data. DeepMap uses real-world data, not models, and true LIDAR intensity to incorporate 3D landmark features and environments, in order to deliver hardware tools, software solutions and field data collection services that address the needs of AV’s.

## NURO

“The self-driving vehicle made for local goods transportation”. That’s how this company, founded in 2016, defines itself. Their offer consists of a fully autonomous, on-road vehicle, designed to transport goods in a quicker, safer and more affordable way. Their approach takes advantage of the benefits of robotics and aim to translate them to everyday, real life, with a no-driver-nor-passenger car designed exclusively for the delivering of any kind of errands, to anyone, anywhere and anytime.

It was founded by leaders in robotics Dave Ferguson and Jiajun Zhu, who also worked as Principal Engineers in Alphabet’s Waymo autonomous project. They saw the need for a new company focused on making robotics available for everyone as they envision a future where everything comes to you, on-demand, for free.

**\$124M**

Total Funding



**Platform Ecosystem /  
Marketplace**

Business Model

**Underwriting**

Areas of Value chain

**Big Data & Analytics**

Technologies



# Communicating through gestures

Based in Barcelona, Spain, Gestoos uses Artificial Intelligence technologies to recognize, understand and respond to human behaviors in order to deliver a greater user experience whether in the automotive, consumer electronics or digital sectors.

**Interview with Germán León**, founder of Gestoos

**Insurtech:** Hello, Germán. Welcome and thank you very much for joining us in the Startup Radar Podcast. So Gestoos's original offer was targeted to the digital and consumer electronics sectors. Which opportunities did you see in the automotive industry to deploy your technology within it?

**Germán León:** When we talked about the automotive industry, we realized that we have what we call a very powerful tool to detect any human in a vehicle and understand any behavior, any gesture or any shape. Also we realized that in automotive, particularly with gesture recognition, we had an option; people were really interested in acquiring the technology and, because there's already the concept of ADAS, we didn't have to fight it, which was completely different for retailers.

**Insurtech:** And then, how does your technology differ from one sector to the other? Which implementations of your technology could you tell us about?

**Germán León:** Let's start with the premise that ultimately what we are building, in terms of technology, is a semi-human. The concept is called "multimodal experience", which means using all sorts of natural touch, voice, gesture interfaces combined, just like a

human being. I mean, we are building experiences, which actually help us to kind of merge different technologies together to create that true understanding. We are working in helping car fleets, companies that have fleets, to improve the safety of the driver and the passengers, and to allow these fleets to be operational at all times.

Our main customers are car fleets and they use this, in combination with the insurance companies, to lower the premiums of the insurances, to provide a better service. Our Anomalous Detection Assistance Modality software (ADAM) is basically like a live guardian angel that is on the car fleets to support the user, help the company to keep the car operational and provide eyes for them to see and understand what is happening with each vehicle at all times.

**Insurtech:** In this sense, have you thought of collaborating with the insurance sector? Do you think your technology could help providing a driver risk score?

**Germán León:** I think insurance companies would be ideal partners for us. We're just not set up to work with insurance companies because we are not the end product, we are just one part of the puzzle.

We need to work through companies like everis, like NTT DATA that can complete the ecosystem because you understand what's the product that they need to do.

The reason why insurers are important for us is because, when you have the data or how this person is behaving or how this person is, for instance, driving or what activity that person's doing, you can tailor that insurance to give a better proposition to that consumer. Insurance companies would benefit a lot from having computer vision technologies allowing them to score drivers, to have on-the-spot, real-time, accident information, to provide supporting services around, not only accidents, but preventing them and, many different anomalies that could happen when you're in this space.

And you don't have to wait for the autonomous car to come into play; you can do that today with the car-sharing companies or companies that have fleets, because if you have a smart insurer that is able to see and understand what is happening with the driver and the passengers, you can do a "Pay As You Go". And ultimately that means a better service and a better service means more business.

**Insurtech:** This idea of "humanizing technology" delivers huge amounts of data. How do you collect and store these data and what do you do with them?

**Germán León:** Data strategy is the key point for the winning company. What we do is that we use synthetic data and other mechanisms to really create that unique experience, with low data quantities.

When it comes to privacy of these data, it's anonymized, so we only need to keep the metadata of the vectors of the movement of the people, and that's knowledge is what is kept. In this sense, it allows, from a GDPR point of view, the users to have their own data, access it, erase it if they want to, but from knowledge point, we keep the algorithm and we keep all the information around. And that's the key aspect. We do not plan to sell the data, we plan to sell the knowledge, that's our business model.

**Insurtech:** We love touching things, papers, food, materials and specially screens, but with Gestoos we're avoiding this kind of essential human sense. Do you think it is an entry barrier for the users just to base our interaction on gestures?

**Germán León:** When it comes to active interaction, it is something completely new. These are learned

**I'm very optimistic that the autonomous industry will eventually happen, it's just going to take some time.**





behaviors. Touchscreens have existed for many years, but before the iPhone there was not such large adoption of using this technology. So, gesture technology is something that we will learn and it will come.

What we need to find is that specific interaction or that specific vehicle that gives that right level of robustness and also experience in order for people to really adopt it. And that's our mission, that's basically what we want to do. When it comes to passive interaction, that's completely different, because it is about us understanding humans and so in that sense it's about how we respond, and that second step is much more intuitive because you start to see that things are responding to you and that actually has no entry barrier.

So those are the two challenges: in active interaction, it's about teaching people on how to interact with gestures; in passive interaction it's kind of like "wow, this space gets me, this car understands what's going on, it's helping me". And specifically now with COVID-19, we believe that people are starting to understand that distancing and not touching services is important and they almost expect a new type of interaction beyond touch.

**Insurtech:** So let's move forward to the autonomous cars section. It is something still very raw. Do you think there's still this resistance of autonomous cars as a new way of mobility?

**Germán León:** Yes, of course. There's two aspects to this answer: one is from a technical standpoint and a second is from policy and social point of view. The first one is about technology and maturity; autonomous driving and autonomous vehicles require a lot of data, and they are biased, so they will only learn the data that they generate while driving and this is a process that has a timeline, and we'll get there, eventually.

The second area is more tricky because is about all the people that work in the mobility space: bus drivers, taxi drivers and, everyone that is in this area, which is a really huge amount of people, will have no jobs. And for that, governments require to do more policies and companies that will be operating the fleets of these vehicles will require to recycle this amount of folks that will probably be without jobs.

So these two events are starting to collide, and I believe some companies are preparing themselves for this. Some also, car companies, will see a huge impact because they will not be selling cars the

typical way they are doing today and they are going to have the majority of sells to fleet owners. The customer journey of the mobility experience is evolving and is changing and so the concept of ownership will change and that will impact business models. So, that's what I believe what's the problem right now: there's a lot of legacy.

We have car dealerships selling vehicles, we have a lot of taxi drivers, we have a lot of bus drivers, we have unions, we have different elements that are kind of stopping that adoption to happen much faster. But it'll happen ultimately because, it's better for the environment, it's better for the world, and ultimately people will find a solution. I'm very optimistic that the autonomous industry will eventually happen, it's just going to take some time.

**Insurtech:** Do you think that also other companies, even the market, are ready for it? How do you see it's going to evolve the consumption of this technology?

**Germán León:** I think the key question is user adoption. The expectation from users is extremely high and because of that expectation, adoption is tricky, people are not willing to go through the process of these technologies evolving to that level of robustness. So that's going to take time. The beginning will have early adopters, primarily in the audio space, using audio technologies, voice technologies, to interact with different devices. Now we've seen the introduction of gesture technology particularly in the virtual reality space, and with some nuances in the automotive with BMW series 7 cars which have just a control. Slowly we will see that that adoption is coming, users will start using this technology, and that's ultimately what's going to drive the fundamental economics behind us, companies developing and building these technologies, to do that and also to add services around it.

**Insurtech:** How is Gestoo's technology implicated within the AV solutions?

**Germán León:** Huge. It's one of the areas where we are working closely with a lot of OEMs, and this is the reason mainly we got funded. Why is this so critical?

The first thing is because the model of interaction in the car will change completely. ? In an autonomous vehicle, you will always have to be strapped in the car because you will have, you're still moving from A to B in a, you know, reasonable speed, and then you cannot always be touching different elements. You

## Communicating through gestures

need to start using voice interactions and gesture interactions to interact with your HMI, the human machine interface of the vehicle. The second aspect is, within the mobility space, having smart computer vision technology, allows us to see and understand before, during and after any anomalous event.

Now we have a very smart AI that is able to see when that accident happens and helps you immediately. So the entire journey of the mobility experience has different touchpoints but all of them require smart vision, they all require something or someone that sees and understand what's going on in every specific use case. We're part of that, we're big, we're working really hard to complete these future scenarios.

**Insurtech:** Which would you say are the biggest challenges in regards to your technology and the whole Smart Mobility ecosystem?

**Germán León:** We have three main challenges. The first one, we call it "Time to Revenues". As a startup we depend on obviously having some traction but we need money. So, in order for us to be able to get the money, we need to be funded through a long period of time while these technologies get embedded and supported.

The second challenge is from a technology

standpoint; we need to be able to embed our software in a very low-cost camera that can be distributed in hundreds of thousands of vehicles around the world.

The third thing, is obviously adoption and primarily in the car, in the mobility space, what we see problematic has always been privacy. People are still afraid of having a camera seen them at all times. So, this is why we have the concept of "Privacy by Design" and this is why we anonymize all the data that comes out of that video stream so that no one's able to hack it. But that's going to take some time for users to get educated about what "Privacy by Design" means and also for users to feel comfortable about using or having cameras at all times.

**Insurtech:** It is said, though, that the important is to turn these challenges into new opportunities. How do you think this revolution will open a door for new business models?

**Germán León:** Many business models, the possibilities are endless. The cars and vehicles will become canvases of new businesses and new opportunities. So, not only about paying for moving from A to B, it's about paying for the experiences that happen in there. Everything can be done with technology in that vehicle. And you can solve tons of problems with





that, you can change many models, you can improve experiences in a way we have not even imagined. And it's good for the environment, first of all, because you would have a more optimized way of moving from A to B, it's good for the economy because it's going to create a flourish of different types of businesses that we can't even foresee that they exist and it's also great for humanity in general because it's actually allowing us to be more flexible. Less ownership means better services and it means more variety. That's what changes.

**Insurtech:** Let's move to the future. Are you expecting to be a company to be acquired or would you like to become the "Netflix of Genomics"?

**Germán León:** We wanted to be the "Netflix of Genomics" and still want to. I think that is something that will come, depending on how is going the future, depending on how are going the projects, depending on a lot of factors and now I cannot evaluate it. But we'll see, both paths can be okay. If we start to play the game of the investors, we are playing the game of the investors, but maybe we can also be the next Netflix of Genomics, this is something that will come to the table in the right moment.

**Insurtech:** Has Gestoos joined other startups, enterprises or even TechGiants? Have you thought of becoming a sales channel?

**Germán León:** It's always super important to collaborate but we want to be a TechGiant so one day we can hopefully power a lot of other businesses. Obviously TechGiants will try to do that by themselves,

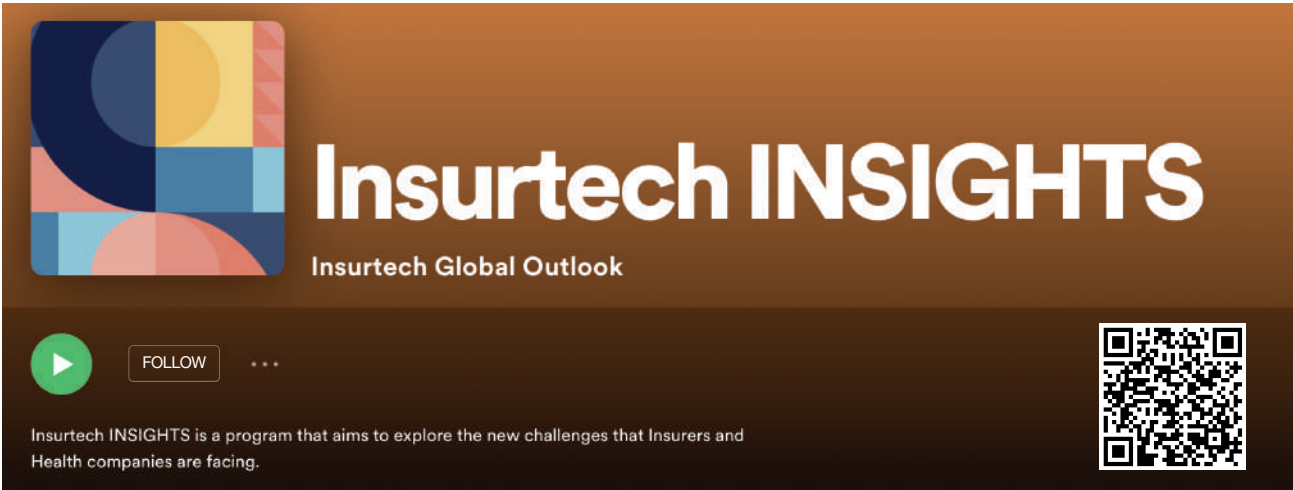
they will try to be leaders in this space, but because it's about speed up these technologies, it's about robustness, it's about getting the right experience and that's already a process that we hope to be first.

As a data enabler, or as a data producer company, there could be things that might be interesting for different industries. We get to see what the things they like or dislike and there's a certain appetite within the advertising industry to basically cater for those needs and offer specific advertising to those things. It's something small and niche at the moment, but this is growing to an interesting service for the future. We don't want to sell people's data, that's not the point. What we want to do is to improve their lives and if we can be that channel and do it in a correct and ethical way, we're happy to do that.

**Insurtech:** Finally, let's talk about the future. Do you have plans of moving into other industries? Which projects are in sight for Gestoos?

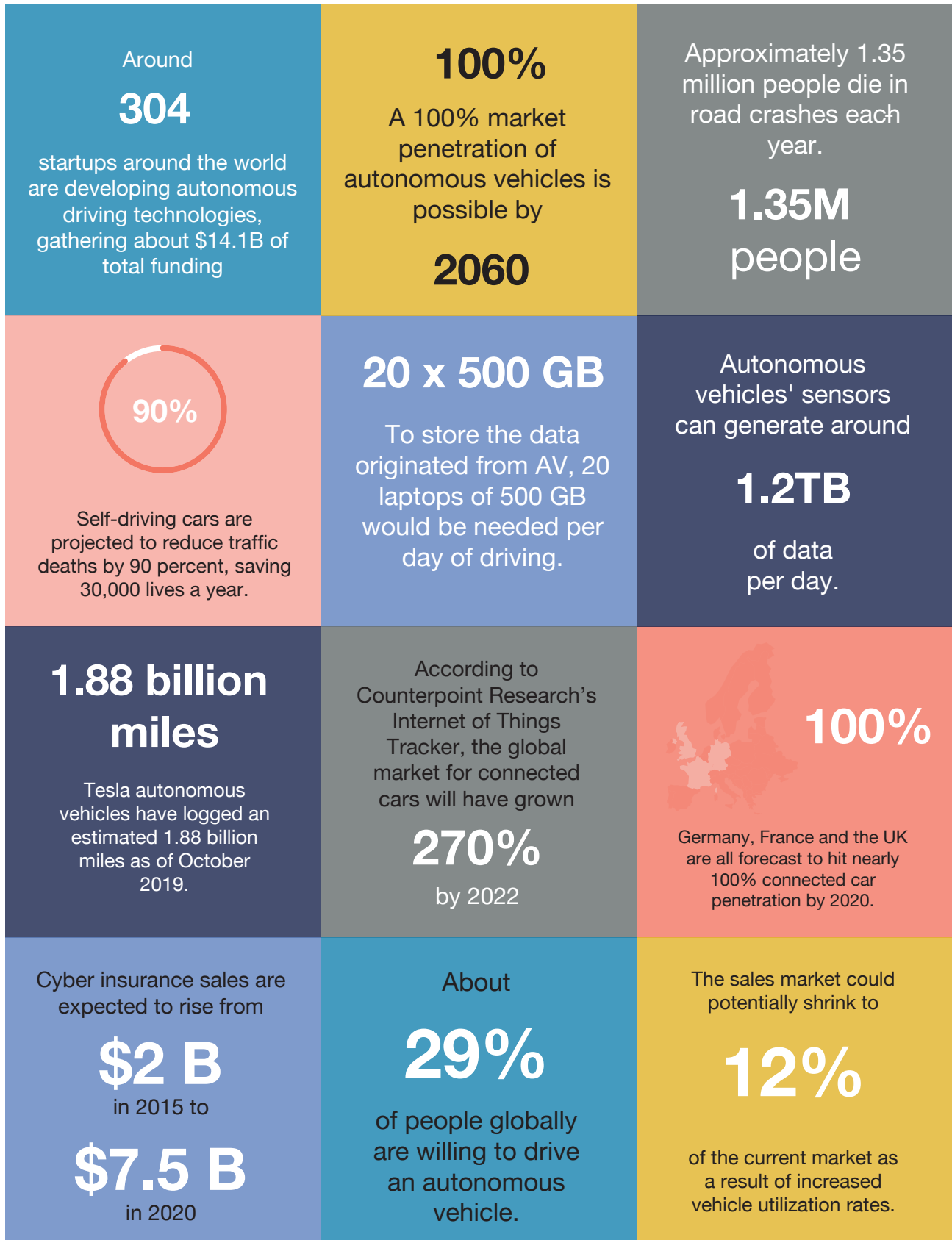
**Germán León:** At the moment, we have been focusing on autonomous vehicles. Car industry is being the biggest part of our work. We also have a smaller piece of the pie in what we call retail and physical spaces but we see a great opportunity in terms of industrial setups. And now with COVID we see the whole hygienic space expanding so eventually we will get to the health space and other areas, once we have the capability, obviously. From a technological standpoint, we're ready; it's more about, we're not enough folks to tackle all the different markets so we need to keep focused. But the answer is yes and in the future.

Listen to the live version of this interview. [Discover our Startup Radar Podcast.](#)



The banner features a colorful abstract logo on the left, the text "Insurtech INSIGHTS" in large white font, and "Insurtech Global Outlook" below it. At the bottom left, there is a play button icon, a "FOLLOW" button, and three dots. At the bottom right, there is a QR code. A small text box at the bottom left reads: "Insurtech INSIGHTS is a program that aims to explore the new challenges that Insurers and Health companies are facing."

# By numbers.



# Key ideas.

## TRANSFORMING SOCIETY AND ENVIRONMENT

From Level 1 to 5 of autonomy, AV represent a change in the way we perceive mobility. Reducing traffic, CO2 emissions and, most importantly, accidents, autonomous cars are facilitating not only in terms of transportation but socially and environmentally.

## INCREASING INTEREST AMONG INVESTORS

The share of autonomous cars on the roads is foreseen to increase widely in the following years. Several enterprises, startups and big investment groups are betting for this technology as a new business model to be impacting .

## TECHGIANTS PLAYING KEY ROLES

So are TechGiants, who are supporting and even founding their own autonomous driving solutions. Apple with drive.ai or GetCruise, Alphabet with Waymo or Baidu with Apollo are just few examples of the role these Giants are playing among this ecosystem. These have also partnered with automotive manufacturers like Apple with Volkswagen or Baidu with Toyota as to take advantage of their knowledge in the sector to build technologies that will lead the sector.

## SHIFT IN THE INSURANCE NECESSITIES

While many think that with lower rate of accidents insurance will become dispensable, it is just a change of the paradigm. New needs emerge from these solutions, especially those relating car ownership and cyberprotection. Additionally, insurers become attracting actor for companies deploying these technologies, and some are even interested in partnering or developing insurance solutions for their consumers.

## KEEP AN EYE ON

Barcelona-based Gestoos is to be “humanizing technology”. Using gestures as the only command, their platform allows users to interact with any device and this to recognize and respond to their behavior. They will be revolutionizing the automotive sector, turning mobility safer and smarter.

# References.

## Telematics, the next revolution for Auto and Insurance industries

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Crunchbase. Cambridge Mobile Telematics.

<https://www.crunchbase.com/organization/cambridge-mobile-telematics#section-investors>

Analysis on Impact of COVID19-Passenger Vehicle Telematics Market 2020-2024 | Regulatory Mandates to Improve Vehicle Safety to.

<https://www.bloomberg.com/press-releases/2020-05-19/analysis-on-impact-of-covid19-passenger-vehicle-telematics-market-2020-2024-regulatory-mandates-to-improve-vehicle-safety-to>

Telematics Solutions Market Worth \$62.6 Billion by 2025 - Exclusive Report by MarketsandMarkets™.

<https://www.bloomberg.com/press-releases/2020-04-06/telematics-solutions-market-worth-62-6-billion-by-2025-exclusive-report-by-marketsandmarkets>

How telematics is revolutionizing claims.

<https://www.insurancebusinessmag.com/us/news/commercial-auto/how-telematics-is-revolutionizing-claims-94510.aspx>

What You Need To Know About Telematics Motor Insurance.

<https://www.axa.com.my/What-You-Need-To-Know-About-Telematics-Motor-Insurance>

GEICO. Drive Easy.

<https://www.geico.com/driveeasy/>

UBI is a failure. But Telematics Insurance Is Working Extraordinarily Well!

<https://future.inese.es/ubi-is-a-failure-but-telematics-insurance-is-working-extraordinarily-well/>

IoT Telecom Services Market is Thriving Worldwide with top key players like AT&T, Inc. (U.S.), Ericsson (Sweden), Verizon Communications, Inc. (U.S.), Deutsche Telekom AG (Germany), and Huawei Technologies Co., Ltd. (China)

<https://coleofduy.com/news/2020/06/16/iot-telecom-services-market-is-thriving-worldwide-with-top-key-players-like-att-inc-u-s-ericsson-sweden-verizon-communications-inc-u-s-deutsche-telekom-ag-germany-and-huawei-tec/>

2020 (March) International: Global Car Sales Market Analysis

<https://www.best-selling-cars.com/international/2020-march-international-global-car-sales-market-analysis/>

The recession in global car sales shows no sign of ending.

<https://edition.cnn.com/2020/01/20/business/global-auto-recession/index.html>

COVID-19 Has Made Pricing Car Insurance Even More Difficult.

<https://www.cmt telematics.com/blog/covid-19-has-made-pricing-car-insurance-even-more-difficult/>

GEICO Gets Progressive, Joins Auto Insurers Offering Telematics.

<https://www.insurancejournal.com/news/national/2019/08/05/534817.htm>

Berkshire Hathaway's GEICO launches first telematics program.

<https://www.reinsurancene.ws/berkshire-hathaways-geico-launches-first-telematics-program/>

Cambridge Mobile Telematics Partners with Duck Creek Technologies to Provide Telematics-Based Solutions to P&C Insurers.

<https://www.businesswire.com/news/home/20191113005668/en/Cambridge-Mobile-Telematics-Partners-Duck-Creek-Technologies>

Unraveling the predictive power of telematics data in car insurance pricing.

<https://rss.onlinelibrary.wiley.com/doi/epdf/10.1111/rssc.12283>

Capturing value from your customer data.

<https://www.mckinsey.com/business-functions/mckinsey-analytics/our-insights/capturing-value-from-your-customer-data>

The Future of Auto Insurance. everis.

<https://www.linkedin.com/pulse/future-auto-insurance-jorge-carlos-zunino/?trackingId=nFfaxwM5Ha8eZHRXjSswtg%3D%3D>

Progressive. 2017, 2018 and 2019 annual report.

<https://investors.progressive.com/financials/default.aspx>.



# References.

## Riding together in a smart way

---

everis & NTT DATA. Insurtech Global Outlook 2020.

<https://insurtechnttdata.everis.com/ReportSmartMobilityENPage>

Allianz. Allianz and Lime jointly address safety needs in micromobility industry.

[https://www.allianz.com/en/press/news/business/insurance/200527\\_Allianz-Lime-jointly-address-safety-needs-in-micromobility-industry.html](https://www.allianz.com/en/press/news/business/insurance/200527_Allianz-Lime-jointly-address-safety-needs-in-micromobility-industry.html)

Plug and Play. Rise and rebirth of shared mobility.

<https://www.plugandplaytechcenter.com/resources/rise-and-rebirth-shared-mobility/>

Swiss Re Institute. Mobility ecosystems striving towards a seamless interface for customers.

[https://www.swissre.com/dam/jcr:7762f0e7-6ee7-4cf6-b4d0-a3d21d023dc0/ZRH-19-03239\\_Mobility\\_Ecosystems\\_Expertise\\_Publication\\_FINAL\\_WEB\\_III.pdf](https://www.swissre.com/dam/jcr:7762f0e7-6ee7-4cf6-b4d0-a3d21d023dc0/ZRH-19-03239_Mobility_Ecosystems_Expertise_Publication_FINAL_WEB_III.pdf)

ADIGITAL. La vuelta a la normalidad tras el COVID-19 nos obligará a repensar el modelo de movilidad urbana.

<https://www.adigital.org/la-vuelta-a-la-normalidad-tras-el-covid-19-nos-obligara-a-repensar-el-modelo-de-movilidad-urbana/>

Institute for Transportation & Development Policy. As the Impacts of Coronavirus Grow, Micromobility Fills in the Gaps

<https://www.itdp.org/2020/03/24/as-the-impacts-of-coronavirus-grow-micromobility-fills-in-the-gaps/>

Sentiance. How will Covid-19 impact the auto insurance industry?

<https://www.sentiance.com/2020/05/06/covid-19-impact-auto-insurance/>

NTT DATA. TOYOTA Connected and NTT DATA Announce New Business Alliance to Collaborate on Mobility Service Business.

<https://www.nttdata.com/global/en/media/press-release/2020/april/toyota-connected-and-ntt-data-announce-new-business>

Insurtech 100 Global Index. [www.sonr.global](http://www.sonr.global)

IMS - Insurance & Mobility Solutions. How Telematics is helping build smart cities. <https://ims.tech/opinion/smart-cities-telematics-technology/>

Coverager. "Smartcar and Paydrive bring pay-per-mile insurance to EV owners in Sweden"

[https://coverager.com/smartcar-and-paydrive-bring-pay-per-mile-insurance-to-ev-owners-in-sweden/?utm\\_source=Coverager](https://coverager.com/smartcar-and-paydrive-bring-pay-per-mile-insurance-to-ev-owners-in-sweden/?utm_source=Coverager)

SEAT Mediacenter. "SEAT presents SEAT MÓ, its new urban mobility brand, at the official inauguration of CASA SEAT".

<https://www.seat-mediacycenter.com/newspage/allnews/company/2020/SEAT-presents-SEAT-MO-its-new-urban-mobility-brand-at-the-official-inauguration-of-CASA-SEAT.html>

Shared Mobility. "Five promises of micromobility".

<https://www.sharedmobility.news/five-promises-of-micromobility/>

Statista.

"Worldwide Automobile production since 2000". <https://www.statista.com/statistics/262747/worldwide-automobile-production-since-2000/>

"International car sales since 1990". <https://www.statista.com/statistics/200002/international-car-sales-since-1990/>

"Mobility Services Worldwide". <https://www.statista.com/outlook/263/100/mobility-services/worldwide>

Statista. "Mobility-as-a-service".

<https://www.statista.com/topics/4664/mobility-as-a-service/>

Pitchbook. "Uber reimagines bet on scooters, leads \$170M investment in Lime".

<https://pitchbook.com/news/articles/uber-reimagines-bet-on-scooters-leads-170m-investment-in-lime>

Techcrunch. "Daimler and BMW invest 1.1 billion in urban mobility services".

<https://techcrunch.com/2019/02/22/daimler-and-bmw-invest-1-1-billion-in-urban-mobility-services/>

TIER Mobility. <https://www.tier.app/>

Urban Transport News. "TIER Mobility and AXA start their own European Cooperation for scooters"

<https://www.urbantransportnews.com/uber-tier-and-axa-mobility-start-their-own-european-cooperation-for-scooters/>

CLUNO App. "Cluno partnership with Porsche"

[https://assets.cluno.com/2019/02/20190228\\_PressRelease\\_Cluno-partnership\\_with\\_Porsche.pdf](https://assets.cluno.com/2019/02/20190228_PressRelease_Cluno-partnership_with_Porsche.pdf)

TROV. "We've jumped in the front seat with our new partner groupe psa's car-sharing service, free2move"

<https://www.trov.com/blog/weve-jumped-in-the-front-seat-with-our-new-partner-groupe-psas-car-sharing-service-free2move>

# References.

## Redefining the Insurance Industry in the Wheels of Autonomous Vehicles

---

When the car takes over.

<https://us.nttdata.com/en/-/media/assets/white-paper/mfg-autonomous-cars-white-paper.pdf>

TRI-AD, Maxar Technologies and NTT DATA collaborate to build high-definition maps for autonomous vehicles from space.

<https://www.nttdata.com/global/en/media/press-release/2019/april/build-high-definition-maps-for-autonomous-vehicles-from-space>

Road Safety Facts.

<https://www.asirt.org/safe-travel/road-safety-facts/>

5 Top Autonomous Vehicle Startups Out Of 300 In Mobility.

<https://www.startup-insights.com/innovators-guide/5-top-autonomous-vehicle-startups-out-of-300-in-mobility/>

everis & NTT DATA. Insurtech Global Outlook 2020.

<https://insurtechnttdata.everis.com>

The Future of Auto Insurance. everis.

<https://www.linkedin.com/pulse/future-auto-insurance-jorge-carlos-zunino/?trackingId=nFfaxwM5Ha8eZHRXjSswtg%3D%3D>

The opportunity for connectivity in AVs is growing as tech giants push further into the space.

<https://www.businessinsider.com/tech-giants-make-progress-in-developing-autonomous-vehicles-2020-3?IR=T>

The Real Challenges of Insuring the Driverless Car Driver.

<https://www.youtube.com/watch?v=Yqt-vMo4lyM> <https://mse238blog.stanford.edu/2018/07/david-myr/how-cloud-computing-contributes-to-autonomous-driving-a-thought-experiment/>

Driving forward: What's the state of autonomous vehicles today?

<https://www.orange-business.com/en/blogs/driving-forward-whats-state-autonomous-vehicles-today>

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