The fast moving world of Insurance Telematics

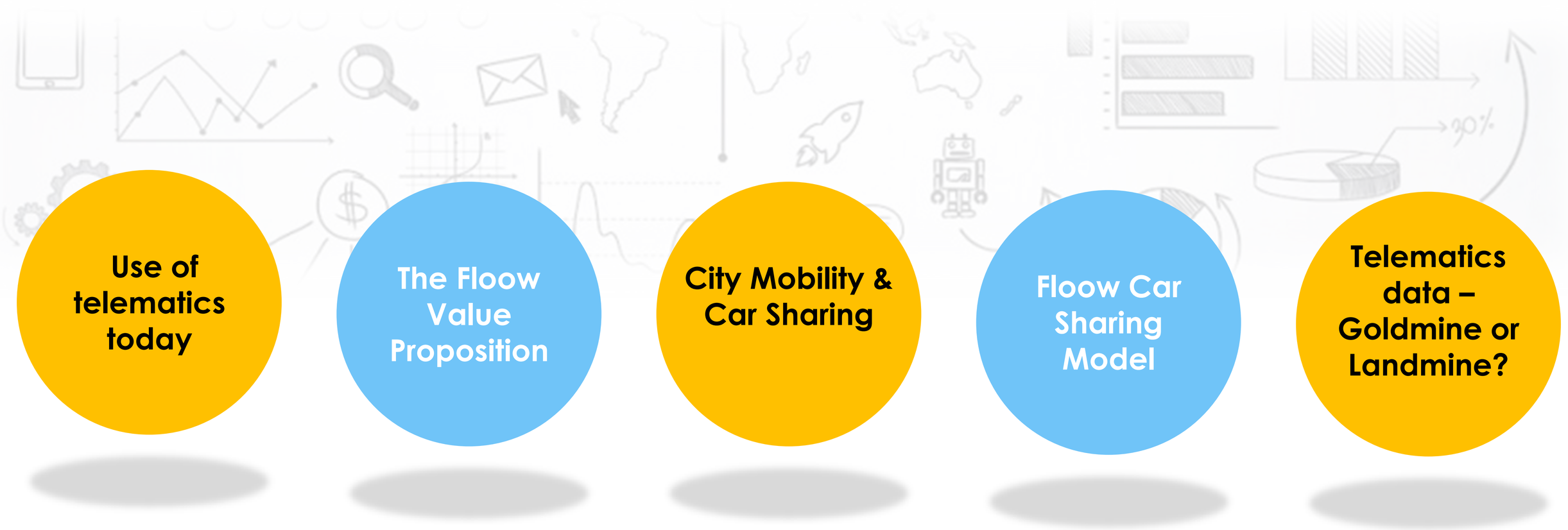
...with a scenic detour into car sharing.

Brian Foley – ProAct Consulting
Andy Goldby – The Floow

Presentation to the Society of Actuaries in Ireland

May 18th 2018

Telematics presentation roadmap



Use of telematics today

The Floow Value Proposition

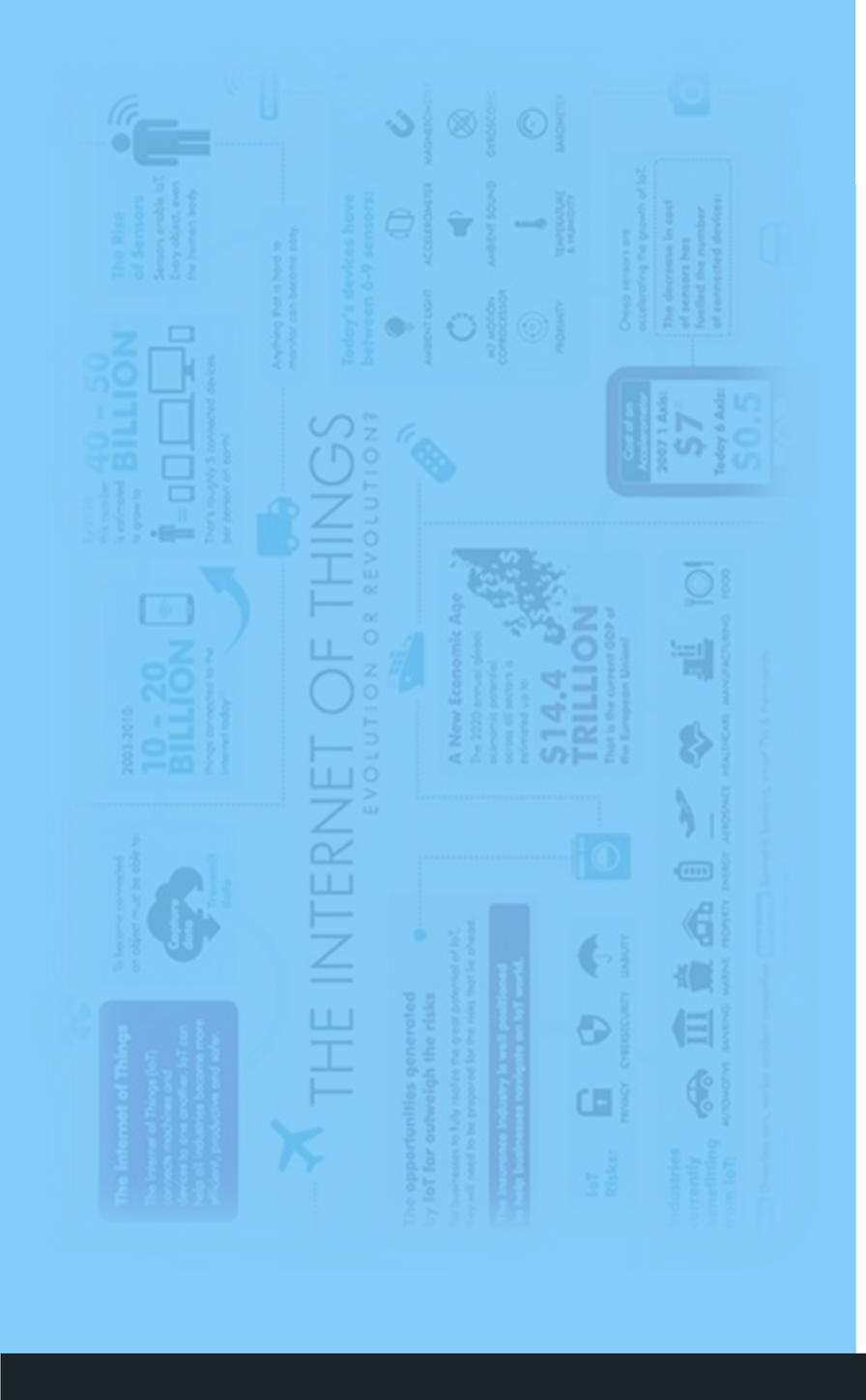
City Mobility & Car Sharing

Floow Car Sharing Model

Telematics data – Goldmine or Landmine?

Telematics Background

Use of telematics today



Telematics 101

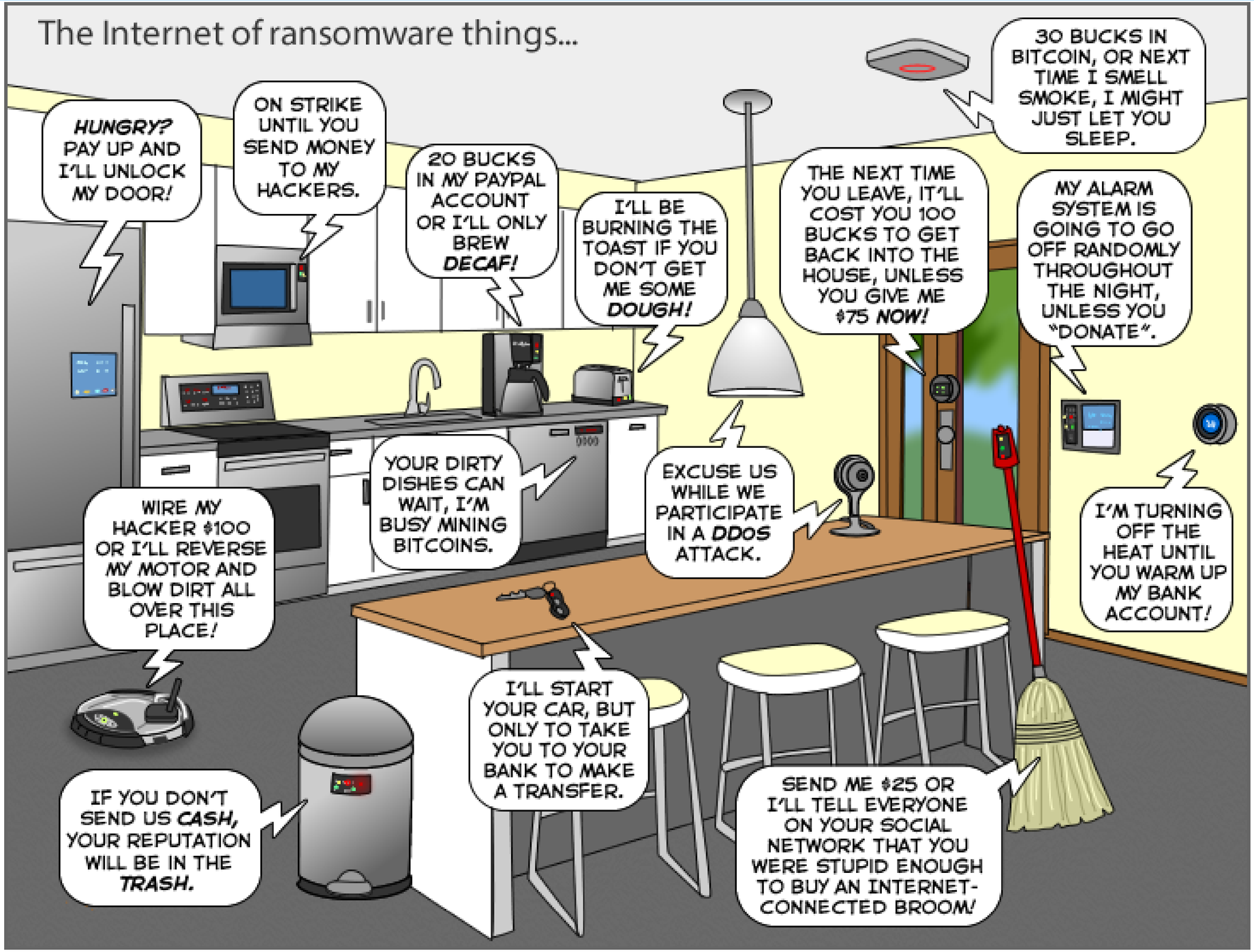
Automotive telematics is the most visible element of **Internet of Things (IoT)**

- Tele + metry = Distant + measurement

- Tele + matics = Distant + thinking

IoT devices and insurers

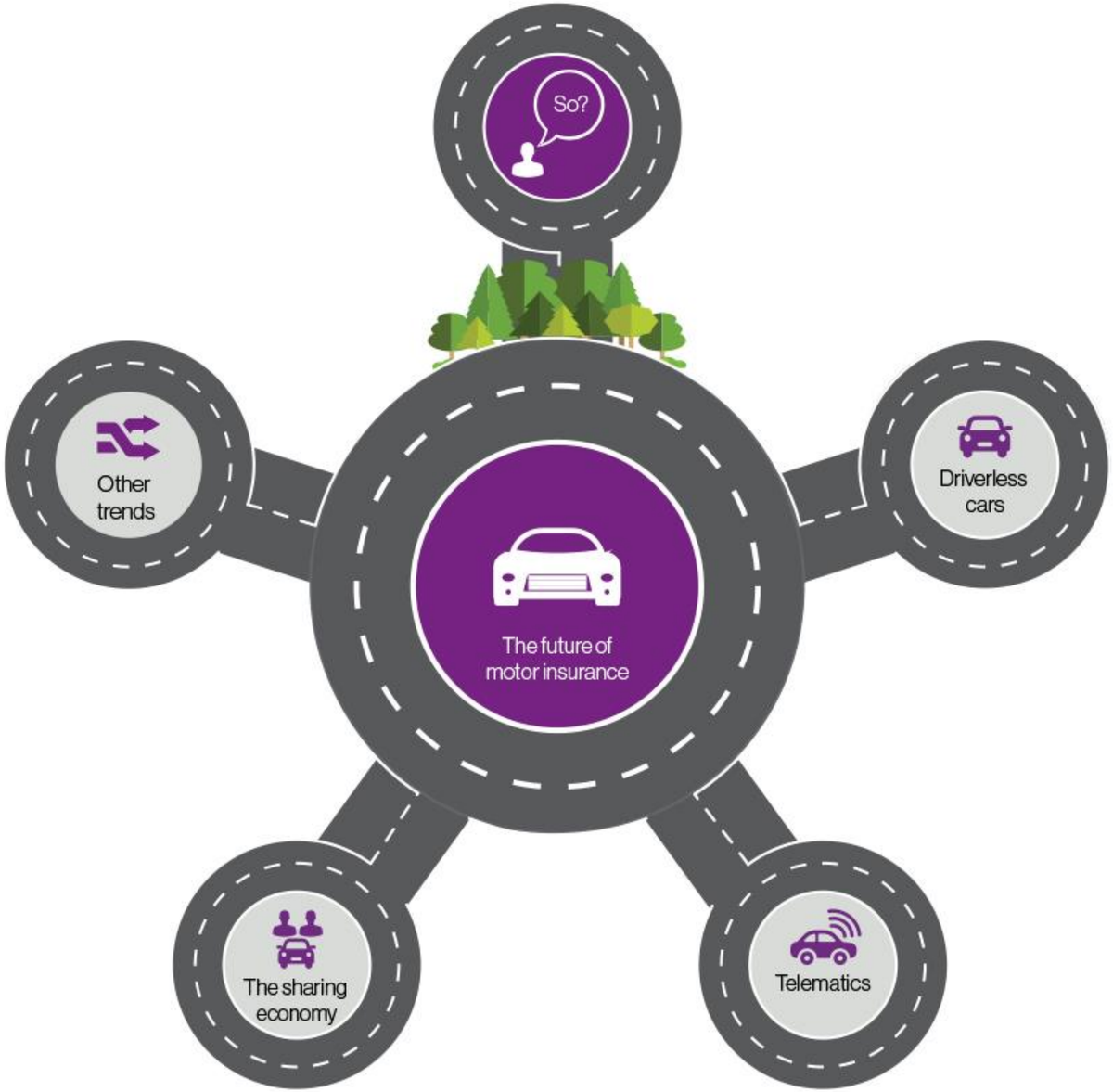
- Fitbits
- Smart Homes (Nest devices)
- Insurers: Trov, Fing, Lemonade



joyoftech.com

The Joy of Tech™ by Nitrozac & Snaggy

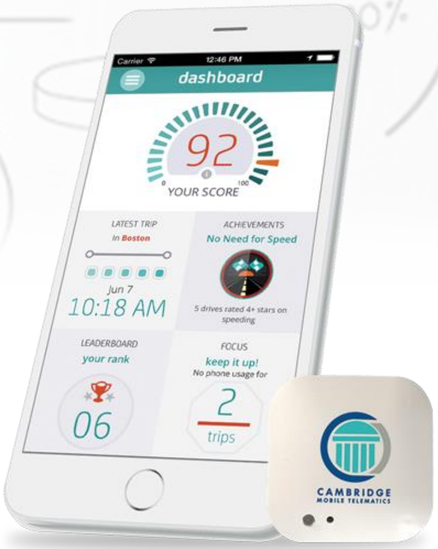
Factors influencing the future of motor insurance



Source: Willis Towers Watson, Emphasis, March 2016

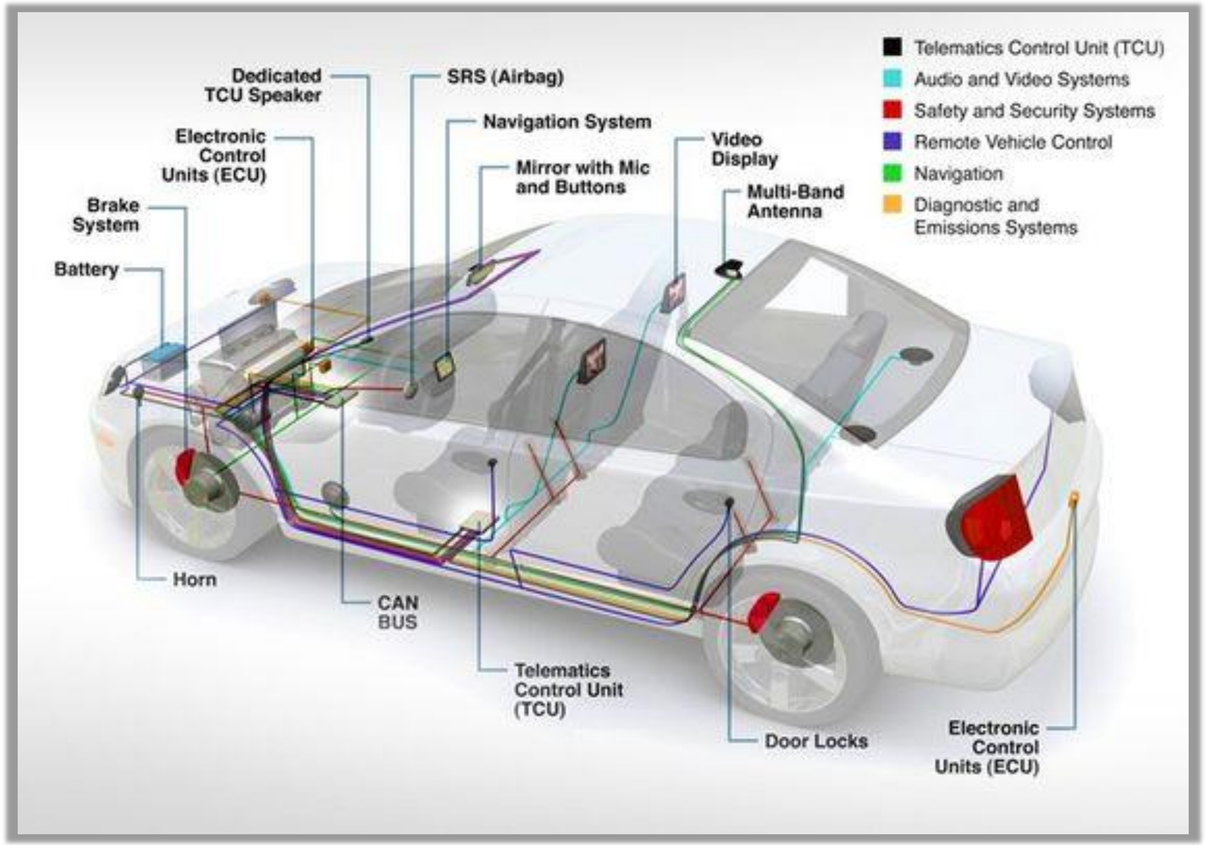
Insurance Telematic Data

One or more data streams from four types of connected devices as well as a car’s built-in electronic sensors (OEM)



The connected car

Whatever device (or combination of devices) is used the source data is analysed and key attributes derived:



- Location
- Speed
- Distance travelled
- Length of time driving
- Time of day journey took place
- Accelerations (& decelerations)
- Cornering
- Braking or swerving events
- Crashes

Telematics Data

Technical & Regulatory considerations

- Original Equipment Manufacturers (OEM) adhere to standards OBD-II (US) and EOBD (EU)
- Various modes of buffering and transmitting data
- Streams typically condensed to between 2 and 200MB per month
- Impact of **General Data Protection Regulation** (**GDPR**)
- Access to “Connected Car” data will need driver consent for use of **DBD** (Driver Behaviour Data)
- Conventional wisdom: Millennials are comfortable with a ‘quid pro quo’ approach to data sharing.

Insurance Telematics Today

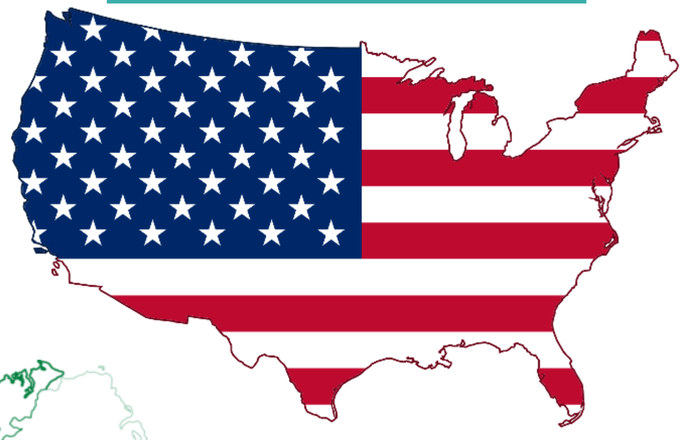
Motor telematics market conditions in the following countries

Italy

UK

Germany

US

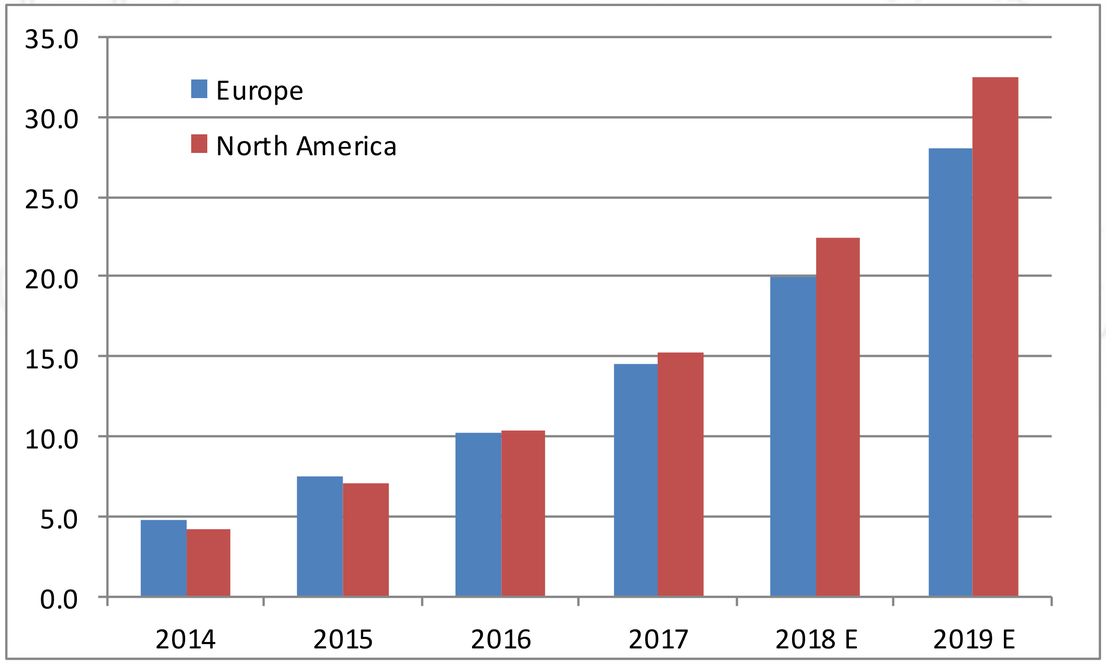


Ireland

Source data from Ptolemus

Telematics policy numbers

Number of insurance telematics policies in force (millions)



Source: Berg Insights

Strong growth, driven by increasing market acceptance, particularly in Italy and US…

The state of Usage Based Insurance (UBI) today (3rd installment)					
	US	**Canada**	**UK**	**Italy**	**S. Africa**
No. of UBI policies	> 7.9m		> 0.86m	> 5.0m	
UBI policy growth (6/15-16)	62%	100%	50%	40%	80%
UBI market penetration	5%		2%	15%	
No. of UBI programmes	45		59	42	

Source: Ptolemus, June 2016

The Italian connection

What forces have led to the success of telematics in the Italian insurance market?

- Legislative encouragement…
- A law in Italy that recommends Telematics for all motor insurance. (L124/2017 – Market and competition act approved by the parliament on 4 August 2017).
- The general rules follow the 2012 "Monti Decree", including:
  - A requirement for the vehicle to be physically inspected by the insurer before the contract is signed.
  - The insurers are required to send a detailed report of the number of doubtful claims, their actions and progress on fraud reduction to IVASS the Italian regulator.
  - The insurers have to bear the cost of the telematics black box and all associated costs including the installation.
  - The IVASS was required to issue within 90 days from when the law came into force:
  - A standard governing the collection of telematics data so as to ensure interoperability of the systems between different insurers (to be applicable 2 years later).
  - A standard governing the hardware and software technology of OBUs (applicable 2 years afterwards). [Source: Ptolemus]

- According to Matteo Carbone…

"Some insurers in this market were able to use the telematics data to create value and share this value with customers. The most successful product with the largest traction is based on three elements:

- A hardware device provided by the insurer with auto liability coverage, self-installed by the customer on the battery under the car's hood.
- A 20 percent upfront flat discount on annual auto liability premium.
- A suite of services that goes beyond support in the case of a crash to many other different use cases—stolen vehicle recovery, car finder, weather alerts—with a service fee around €50 charged to the customer."

Insurance Telematics Survey

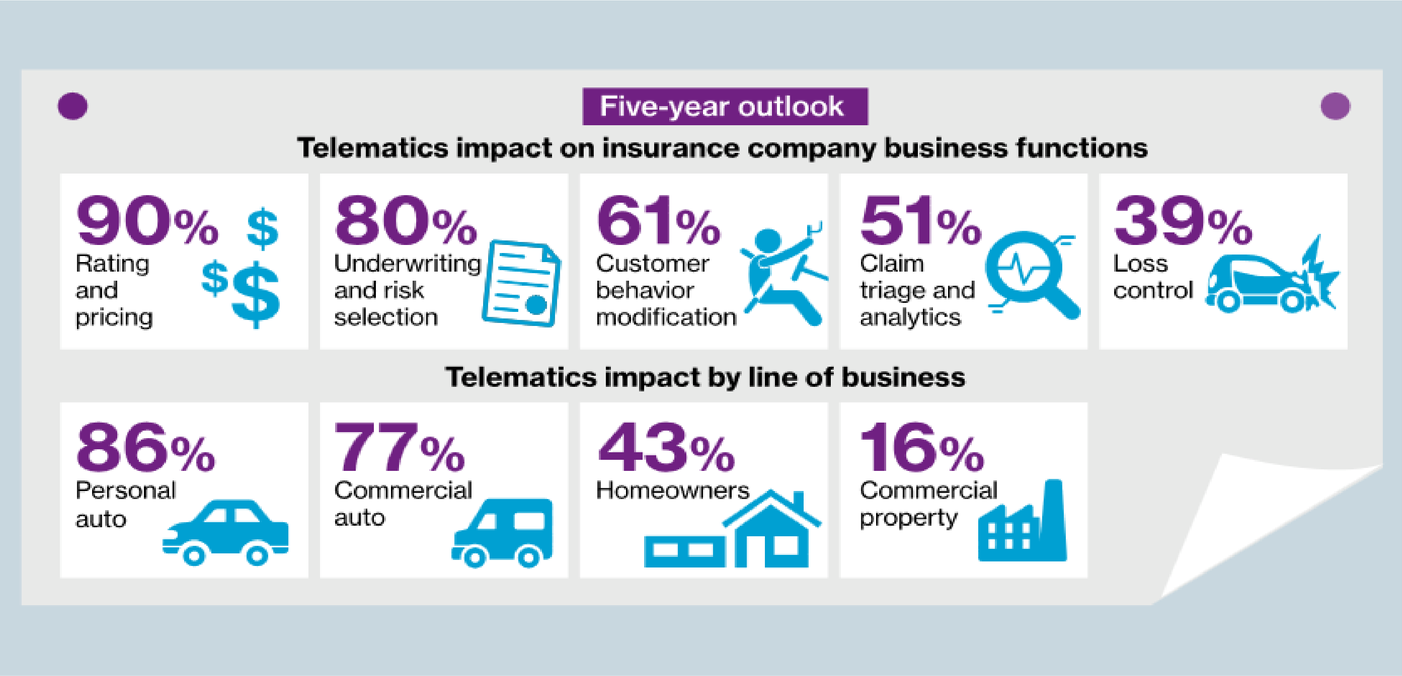
Telematics Survey - Ireland (1/2)			
Insurer	*Telematics App*	*Telematics Other*	*Additional comments*
AIG Direct	Y		Insureds can download the XLNTdriver smart phone app. to obtain a 5% discount initially, which can increase to 20% depending on driving behaviour score. Score 86+ to get full 20% credit, subject to 3 month + record & min. no. of journeys. No age limit.
Allianz	Y		Allianz Safe Driver App. T&C outlined on website. Data is transmitted to Allianz Technology, Trieste, Italy. Allianz Safe Driver Score if insured achieves an overall Driving Score of 80 or more. Discounts (if any) not stated.
Aviva			No mention of telematics or UBI on Irish website.
Axa	Y		DriveSafe app and policy option for under 25s. Discount of 20% up front, with an additional 5% cashback, "depending on how well you drive." UBI data relayed to MyDrive Solution Ltd. (UK). "MyDrive Solutions will not be able to link a customers identity to the data they collect."

Insurance Telematics Survey

Telematics Survey - Ireland (2/2)			
Insurer	*Telematics App*	*Telematics Other*	*Additional comments*
FBD		See comment	"No Nonsense" no longer provides new motor quotes. Formerly offered "SmartDriver" device, which was returned after 6 months. Installing the device resulted in an upfront 10 - 15% saving. With a further 20% (max. 30% overall) discount "by demonstrating safe driving behaviour". No current FBD telematics offering.
Liberty			No mention of telematics or UBI on Irish website.
RSA (123.ie)			No mention of telematics on 123.ie website.
Zurich			Zurich representative confirmed that they do not currently offer discounts or telematics related policies in Ireland.
Others		Y	BoxyMo and Boxclever are device based telematics car insurance broker programmes underwritten by AIG.

Based on information gleaned from insurer websites in May 2018 with some clarifications over the phone.

US insurers use of telematics data in the future



Source: Willis Towers Watson, 2017/18 Advanced Analytics and the Future Survey.

Telematics data use by company size						
	Large		Medium		Small	
	Now	Two Years	Now	Two Years	Now	Two Years
Personal auto	50%	94%	13%	50%	0%	71%
Commercial auto	29%	67%	0%	22%	0%	33%
Homeowners	0%	65%	0%	22%	0%	0%
Commercial property	0%	38%	13%	38%	0%	0%

Telematics: Companies to watch

By_Miles – pay-by-mile car insurance for savvy drivers. (UK)

Trōv – flexible on-demand insurance. Partnering with Waymo (Google).
(Currently available in UK and Australia, launching in the US in 2018)

Cuvva – App. for car insurance by the hour, day, week or month. (UK)

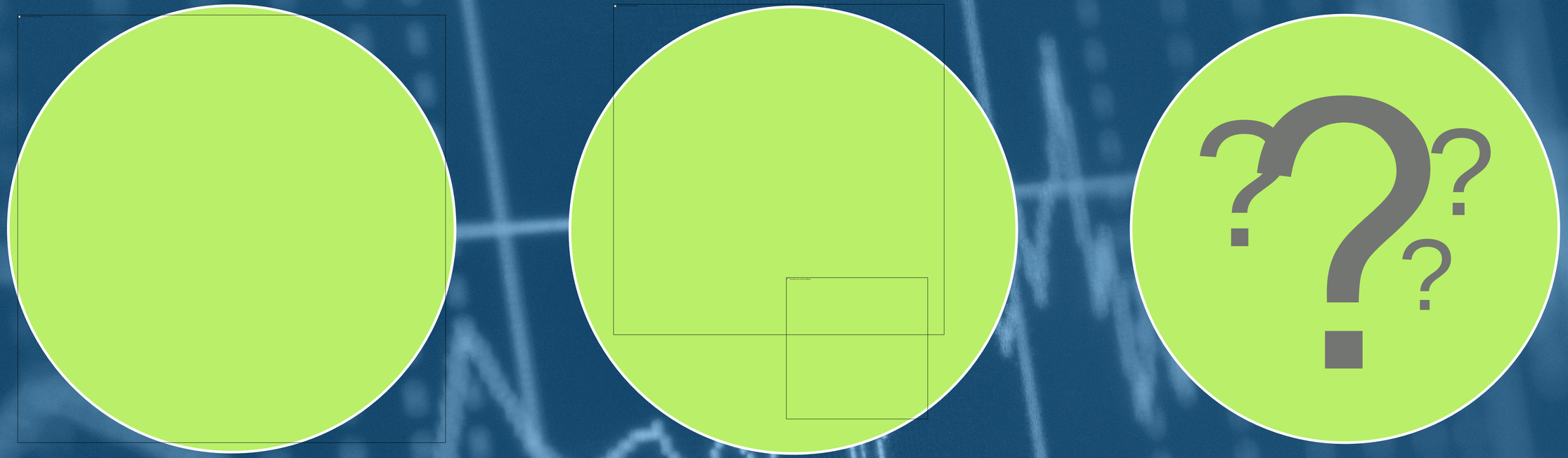
Zego - offers flexible insurance for food and parcel delivery drivers. (UK, Ireland in 2018)

SafeMotos – Launched in Rwanda in 2015, uses Motorcycle telematics data to measure real time motorcycle taxi driver safety. (Rwanda, Congo in 2018, office in Cork)

Fast Moving world of Telematics

The Floow Value Proposition

Building Telematics Propositions Can …



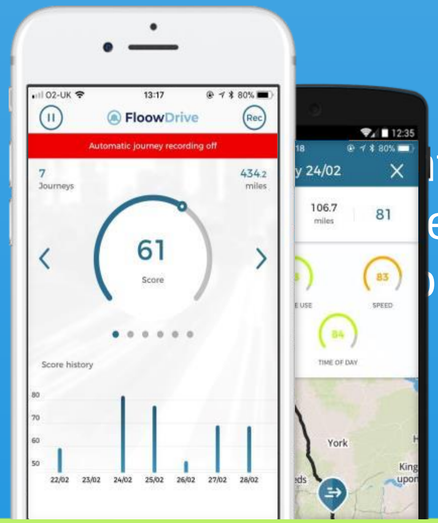
6 years of client experience and feedback across 5 continents

Billions of journey miles

Learnings from hundreds of thousands of telematics customers

Insights from actuarial experts, data scientists and social scientists

All built into one, unique telematics platform



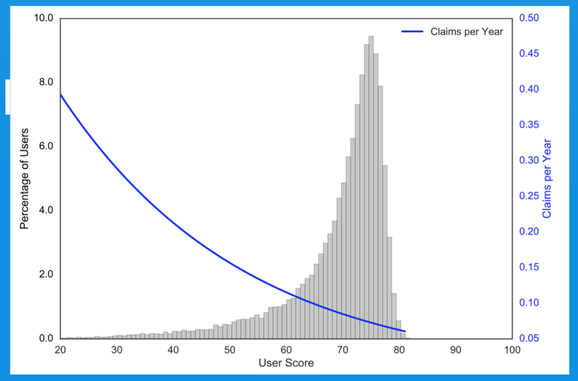
figurable, customisable
er-facing app, using the
one as a mobility sensor

Access to a fully integrated online rewards program to encourage and reward safer driving

FloowDrive

A complete, production-ready telematics platform with access to an exciting product roadmap

Built upon a powerful and predictive telematics service platform



ortal delivering rich
gement information

FloowDrive Benefits

For the Insurer

Insights into driver behaviour enable better risk management and customer engagement

Get out to market quickly via fast configuration & customisation; regular upgrades

For the Policy-Holder

Intuitive journey scoring helps you better understand your driving habits

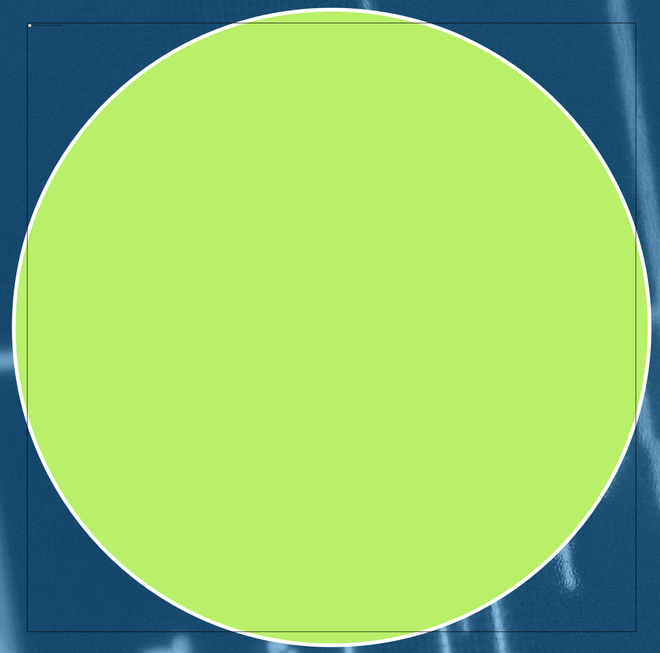
Tips, education & optional coaching modules help you improve your scores and drive more safely

Incentives reward you for safe driving and improving your scores

Intuitive App Experience

Easy to use
Clear scoring
Detailed journey feedback
Map details and pin drops
Tips and advice
Integrated rewards capability
Availability of personal coaching

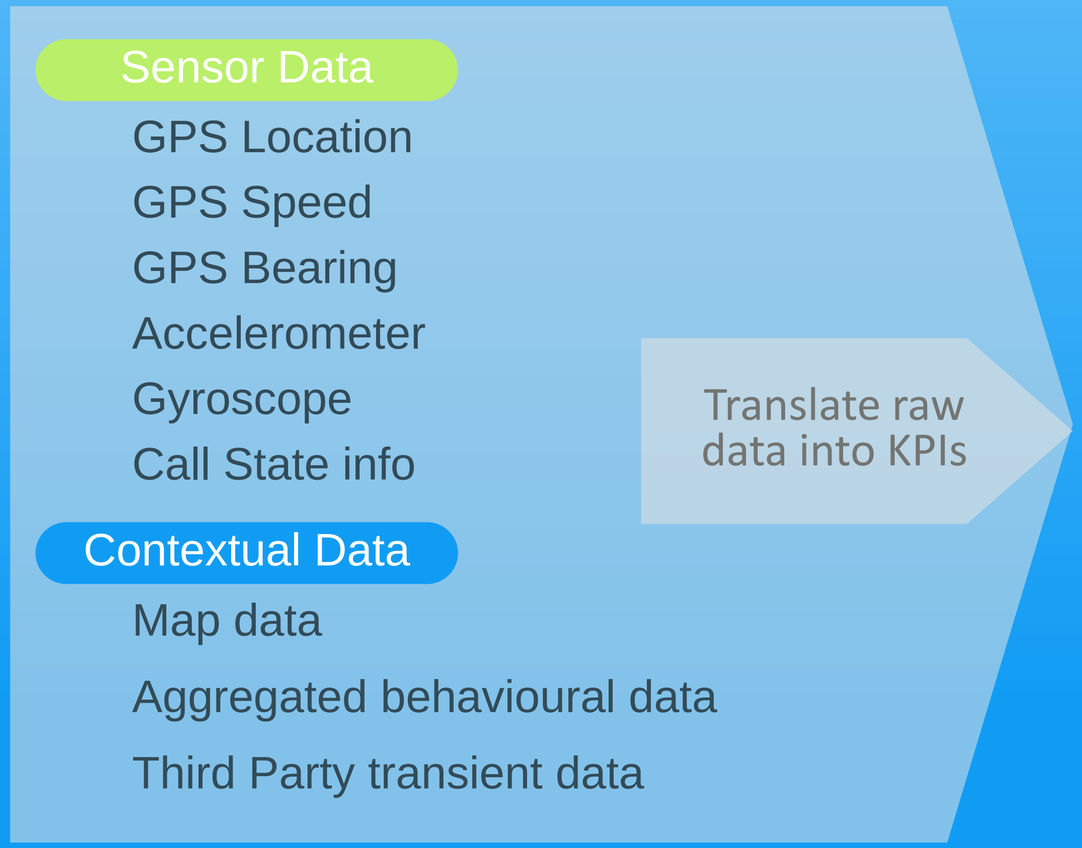
But it can’t be quick to build … can it?



The Floow provide a range of Telematics Solutions	FloowDrive	FloowKit	FloowCustom	FloowFleet
	An off-the-shelf fully white-labelled telematics solution	An SDK that integrates into an existing app providing data collection, storage and scoring	A fully customisable solution	A fleet telematics solution
85 FloowScore	A suite of Scores and KPIs already proven to predict claims experience			
Rewards	A fully integrated online rewards program to encourage and reward safer driving			
FloowCoach	A telephone based personal coaching program proven to improve scores and reduce claims			

The Floow Scoring

The Floow Scoring: Powered by Data



Example KPIs

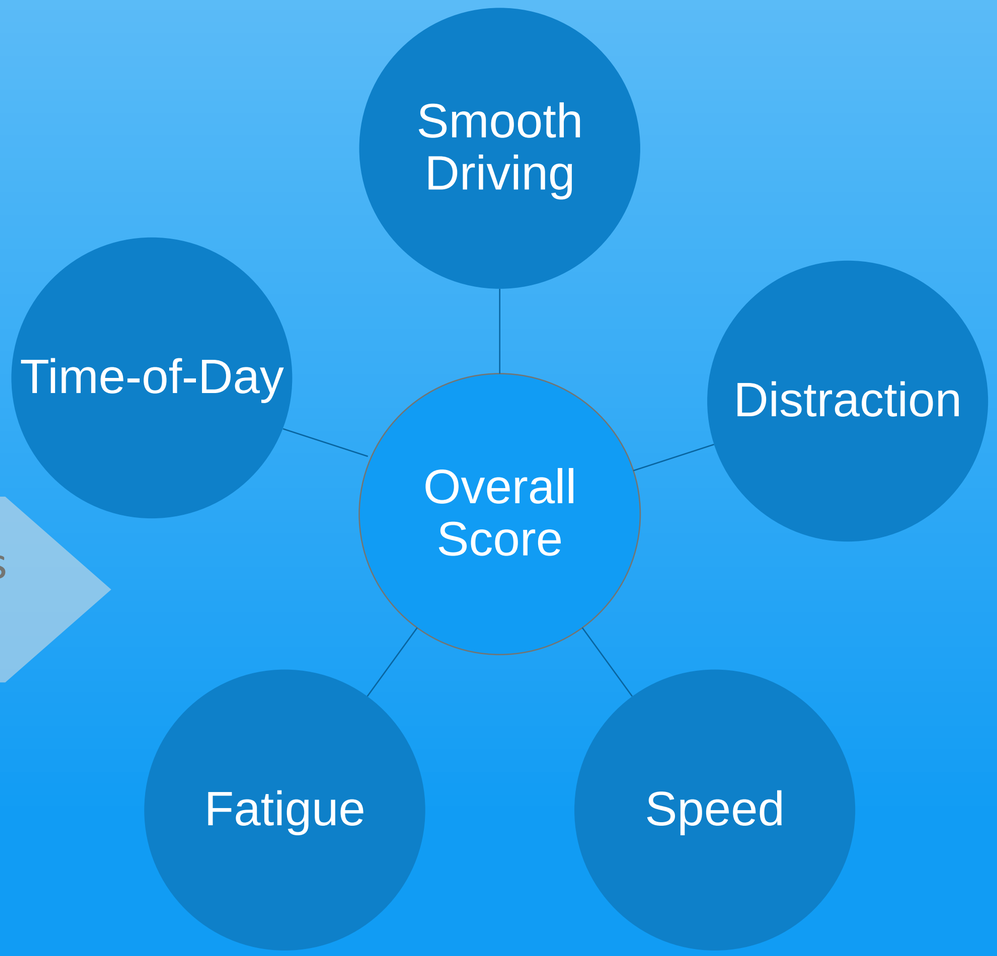
Accelerations	Start & end locations	Length of trip
Brakings	Making & receiving phone calls	Crash events
Cornerings	Physical use of your phone	Time of day
Speed on various road segments	Day of the week	etc

The Floow Scoring: Components

Example KPIs

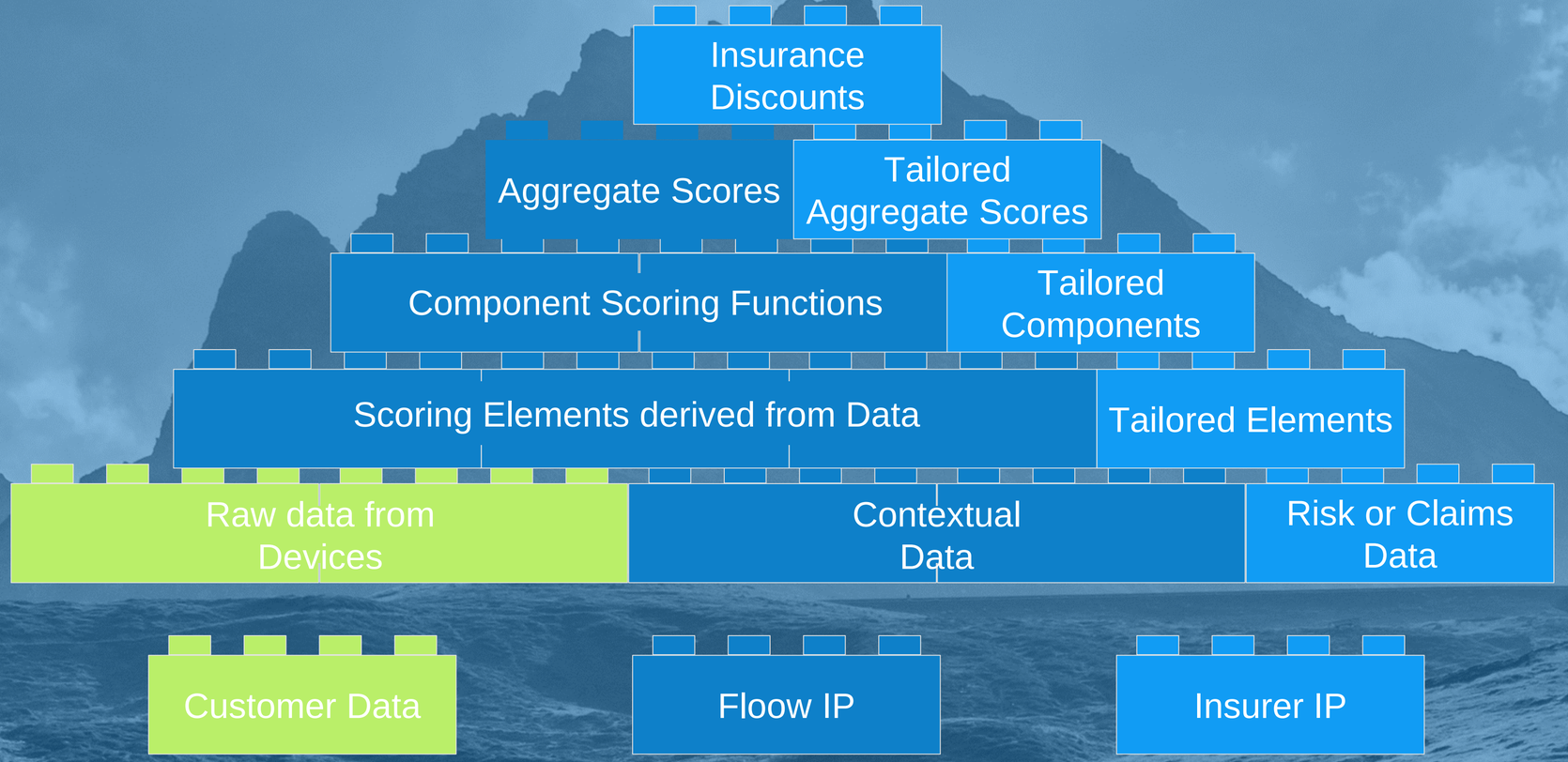
Accelerations	Start & end locations	Length of trip
Brakings	Making & receiving phone calls	Crash events
Cornerings	Physical use of your phone	Time of day
Speed on various road segments	Day of the week	etc

Translate KPIs into Scores



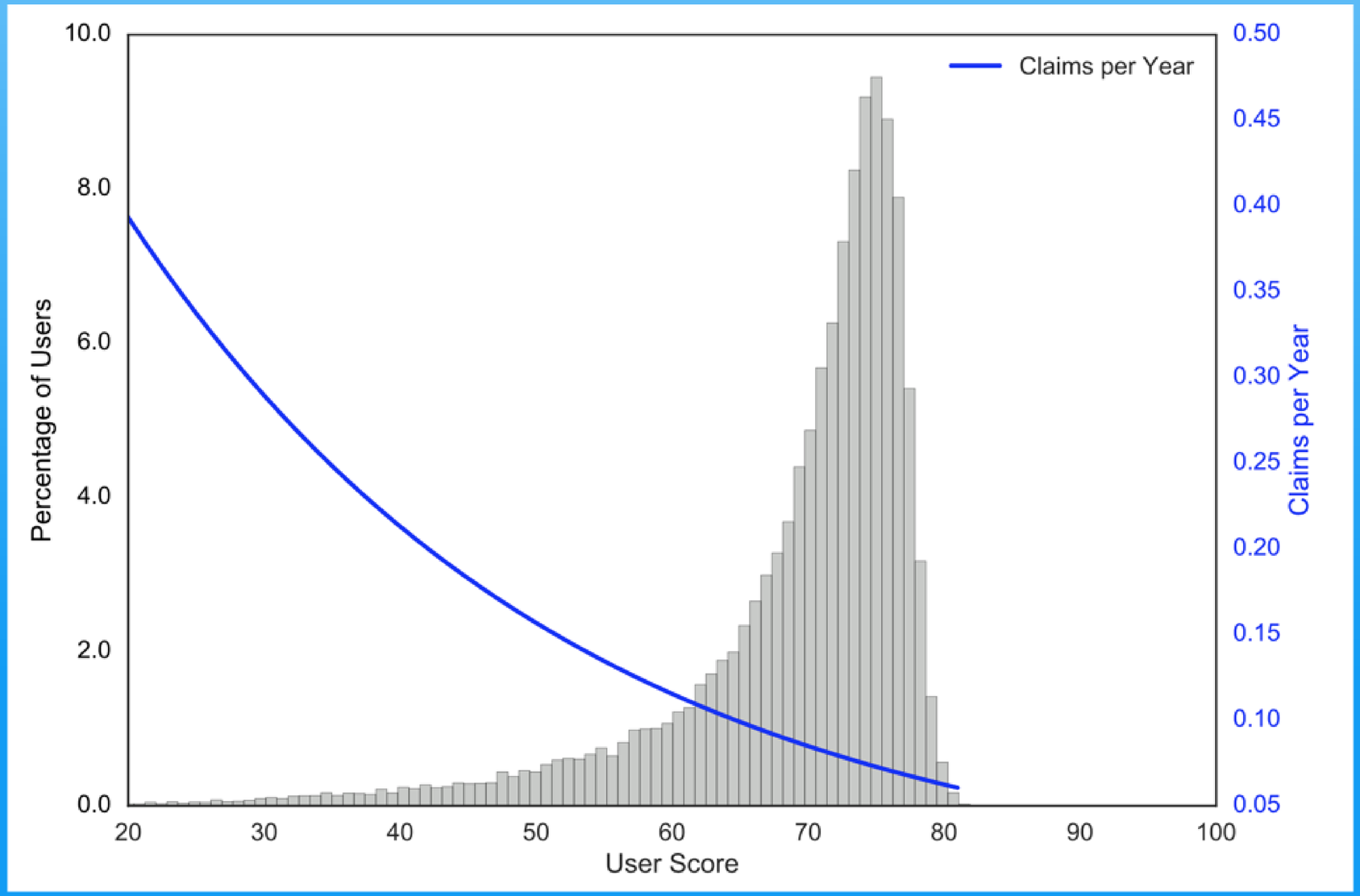
Balancing the Scores

The Floow's Intellectual Property Model

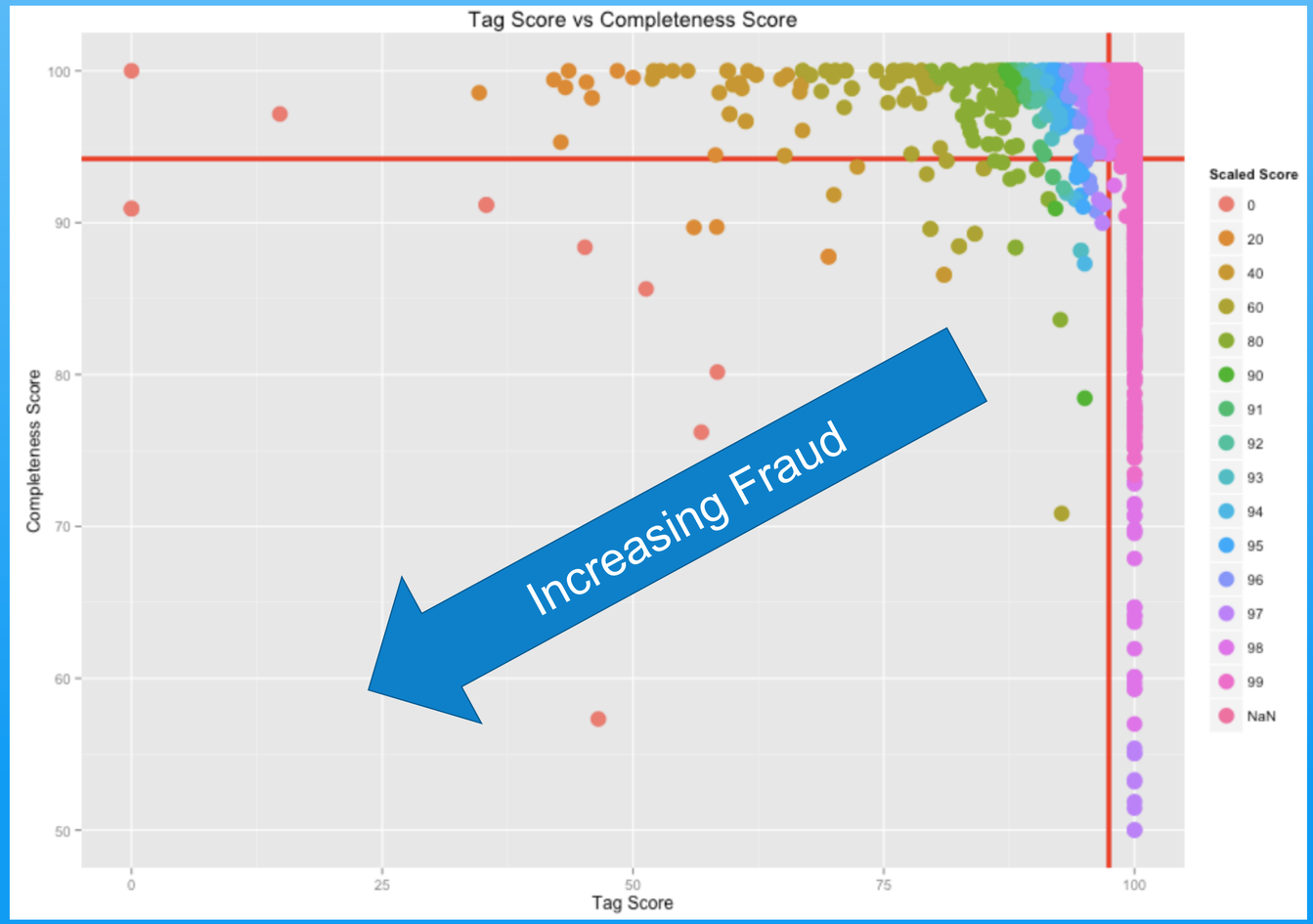


"Lego-Brick" approach to scoring offers Client Actuaries and Underwriters flexibility to produce unique tailored scores

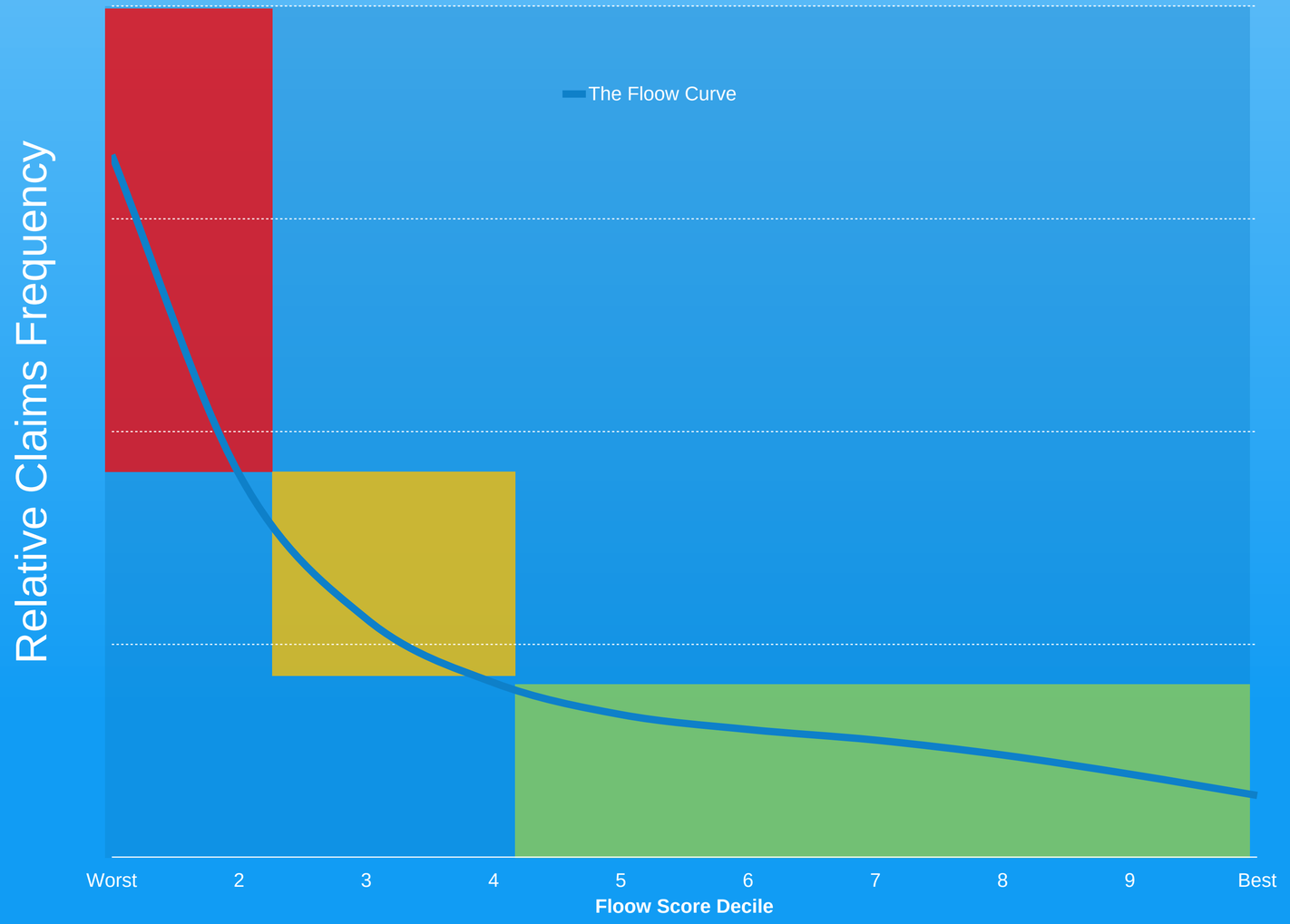
Correlation of Scores with Claims Frequency



Customer Honesty is also monitored



Understanding Scores and Influencing Driver Behaviour



Worst Deciles (1-2)

- Tailored 121 Coaching
- 3 weekly training modules
- Remove cover if no improvement?

Deciles 3 & 4

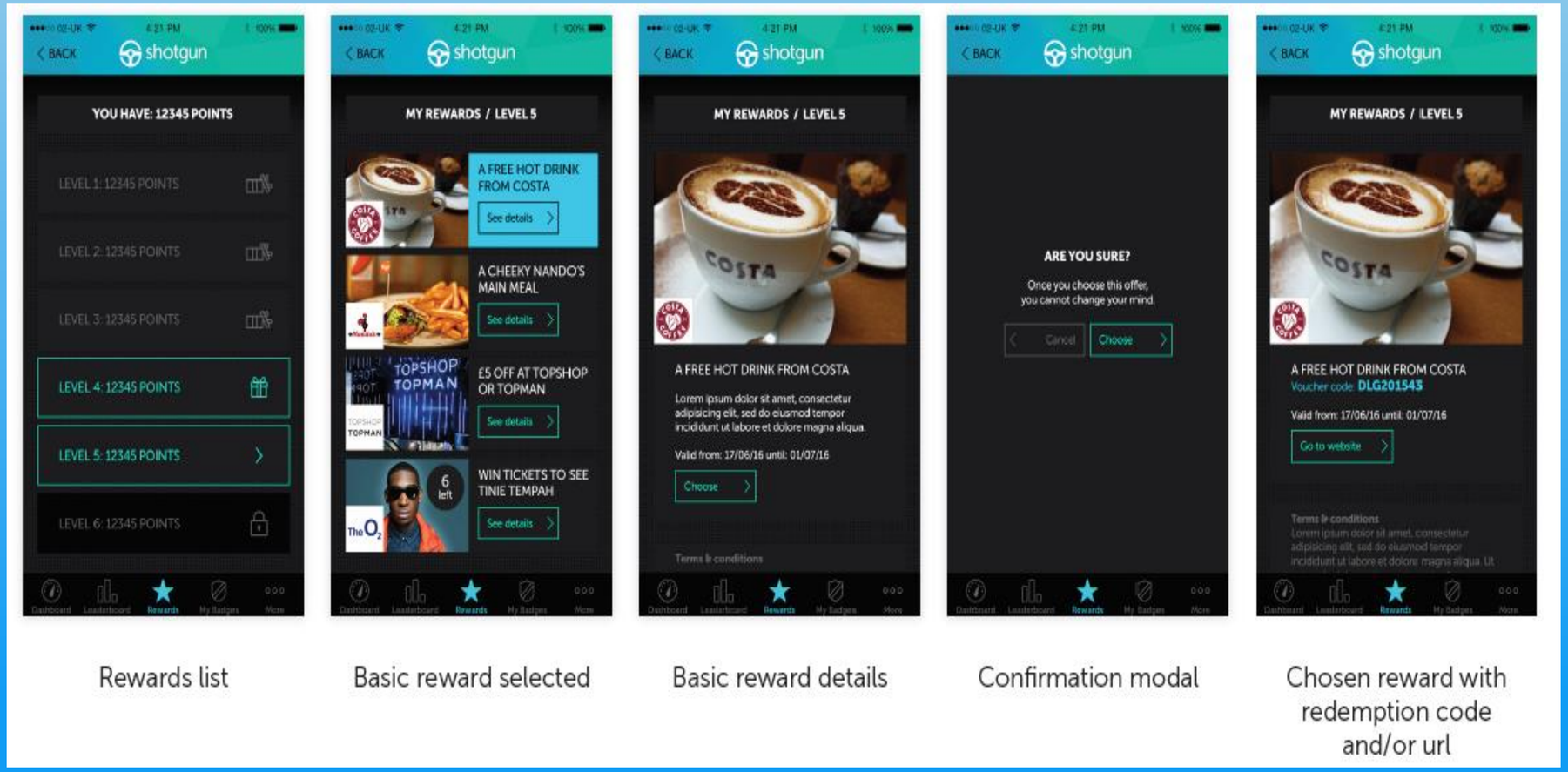
- Tailored emails & Driving Video programs
- Rewards for improvement

Most Drivers

- Journey scores
- Maps with Pin drops
- Positive messaging
- Rewards

Improving Risk through Rewards

- Rewards combine a driver scoring app with the opportunity for customers to gain rewards in exchange for safer driving.
- Rewards are provided from retailers and brands to meet local market preferences.



Rewards list | Basic reward selected | Basic reward details | Confirmation modal | Chosen reward with redemption code and/or url

Results of Rewards

- Our research shows that targeted rewards can result in more drivers making significantly greater improvements than a pure insurance discount-based proposition

Improving Risk through Coaching - FloowCoach

In 2015 The Floow launched a Driving Behaviour Coaching Programme

Increase scores (for bottom 20% of drivers)

Provide a great customer experience

Reduce crashes and claims

Promote road safety, with the objective of saving lives

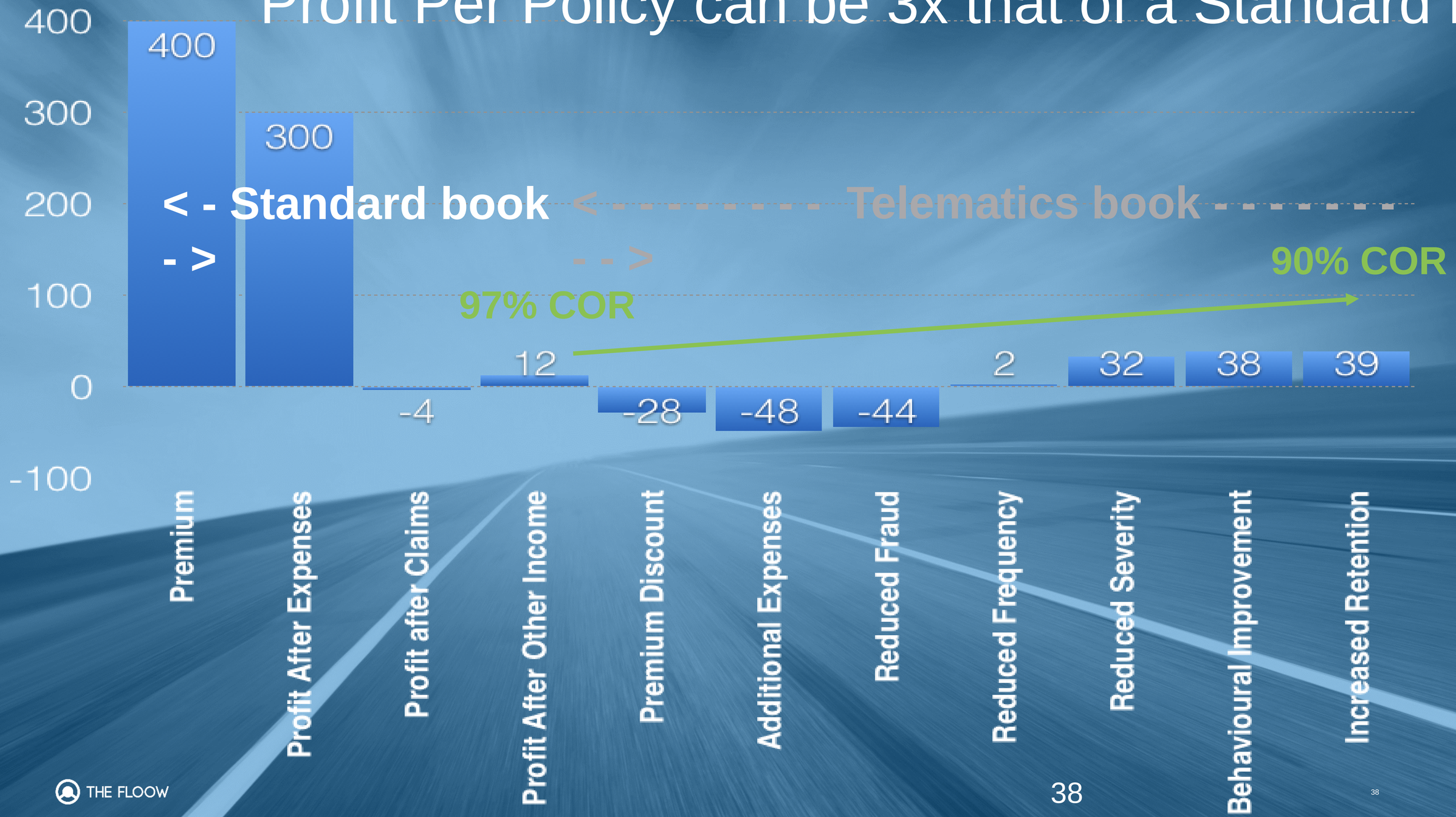
The Social Science of FloowCoach: Facilitating Behavioural Change

- Program of 3 or 4 calls 3 weeks apart
- Review performance and scores
- Address issue(s) with driving, encouraging reflection, accepting responsibility & creating willingness to change
- Develop personalised action plans, setting interim goals
- Coach and motivate behaviours, focusing on positive outcomes
- Provide ongoing recognition & reinforcement including a personalised follow up email after each call

FloowCoach Results

- Coaching leads to a significant improvement in driver scores and reduces the chance of making a claim
- For every **1,000** participants around **31 claims** are avoided
- For every **100** policyholders in the worst decile who complete the programme, **16** additional claims are avoided
- Each Coach saves ~ 1 accident per week of work across the following year
- Average saving per month estimated at £30,000 per coach (assuming £5,000 ACPC)

Profit Per Policy can be 3x that of a Standard Bo



The Floow Solution

Additional Roadmap Modules

Driver Coaching

Driver Rewards & Incentive Modules

Customised to Your Brand Appearance

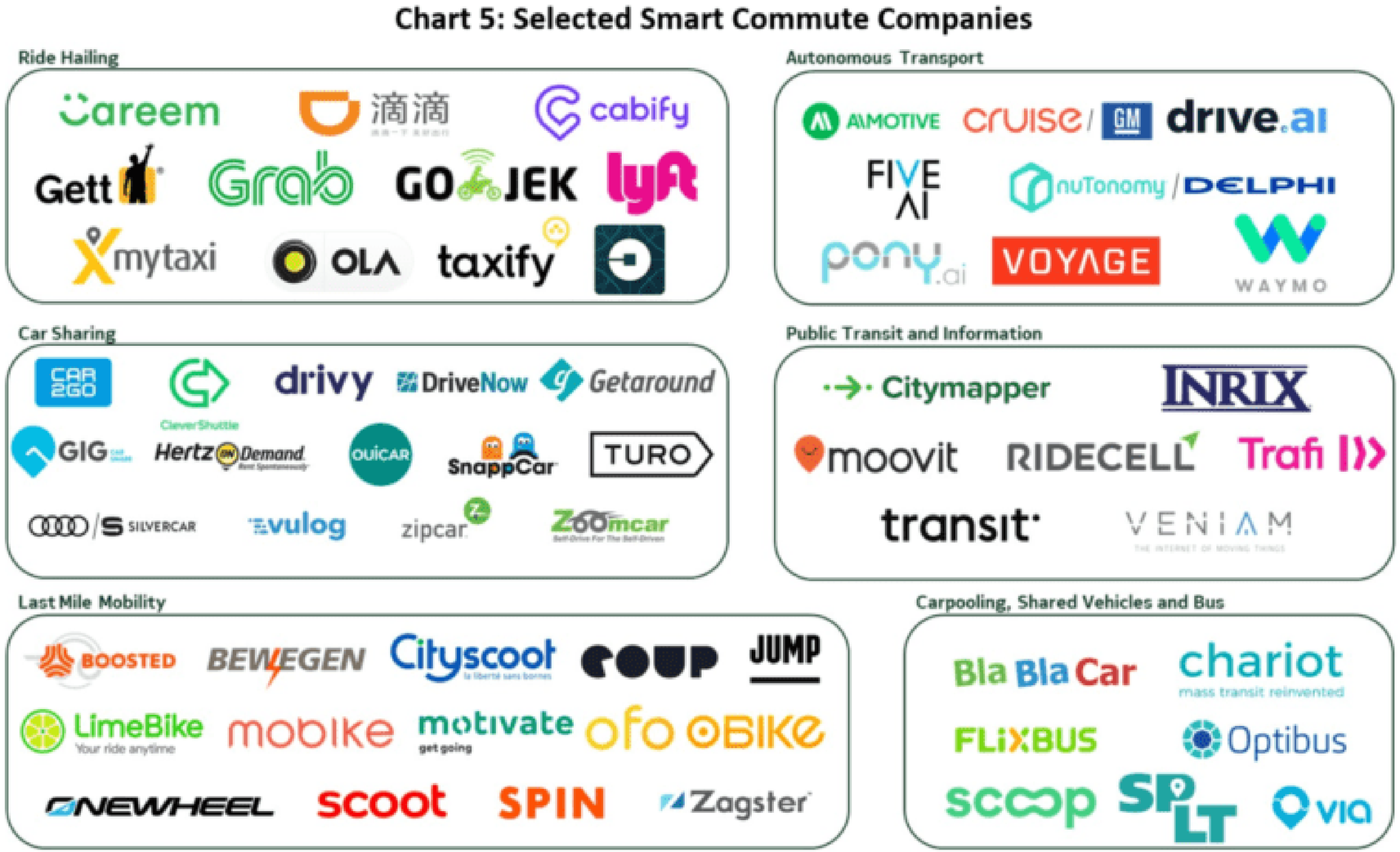
Client IP = Scores Trained on Your Claims

Proven, Scalable, Fast to Market and Cost-effective Telematics Platform

City Motability

City Mobility & Car sharing

The entire motability ecosystem



Source: CB Insights

The mobility sharing economy

Focus on reducing congestion in cities

Car sharing partnerships (US)

MAVEN

Next-gen rental service launched by General Motors in January 2016. Through the Maven mobile app, customers can search for shared vehicles in the Maven fleet and book hourly or daily reservations. The company is operational in 17 cities across the US and Canada.

DAIMLER moovel

Mobile app that aggregates urban transportation options (car sharing, taxis, bike rentals, public transportation) on a single platform. Booking and payments are fully integrated, creating a seamless experience for users. Available throughout Germany; recently launched North American operations.

TESLA Tesla Network

Upcoming car-sharing service utilizing a fleet of shared autonomous Tesla vehicles. Using a mobile app, Tesla owners will be able to add their vehicles to the Tesla shared fleet, enabling them to generate income while the car is unused. The network is planned to launch in 2017.

ReachNow

Mobility services company that offers both on-demand rides and car rental services. Its fleet of 1,300 BMW vehicles supports more than 45,000 users in Seattle, Portland and Brooklyn.

Ford FORD SMART MOBILITY

New subsidiary focused on emerging opportunities in the automotive industry. The division has developed FordPass, a mobility service app that provides navigation and payment features to Ford vehicle owners; acquired Chariot, an on-demand commute ridesharing service; and launched Canvas, an online platform offering short-term auto leases for pre-owned Ford vehicles.

AAA GIG

Car sharing service created by A3 Ventures, the American Automobile Association's venture arm. With Gig, users can choose to pay per mile, per hour or per day. The service was launched in April 2017 and is currently available in Oakland and Berkeley, CA.

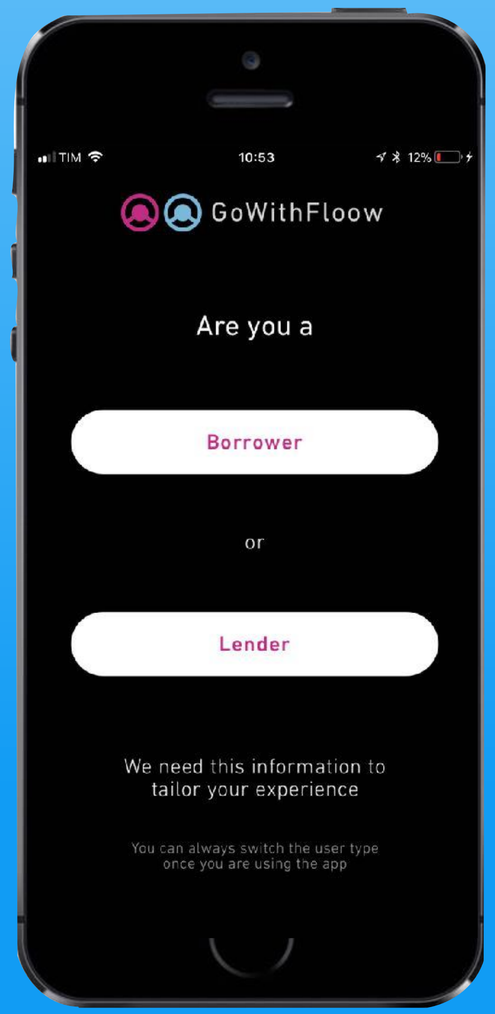
Irish Car Sharing Firms

	Fleet App	GoCar
Business Model	P2P (peer-to-peer)	Shared cars owned by GoCar
Fee Model	Pay per day	Pay daily or hourly
Division of fee	Shared Fleet App & Owner	100% GoCar
Insurance cost	Compulsory - 100% renter cost	GoCar + renter has option to purchase excess coverage
Access Technology	Key transfer	Remote access keycard
Role of trust	Critical – Rating mechanism important	Low – Rating optional

Telematics Background

Floow Car Sharing Model

Car Sharing



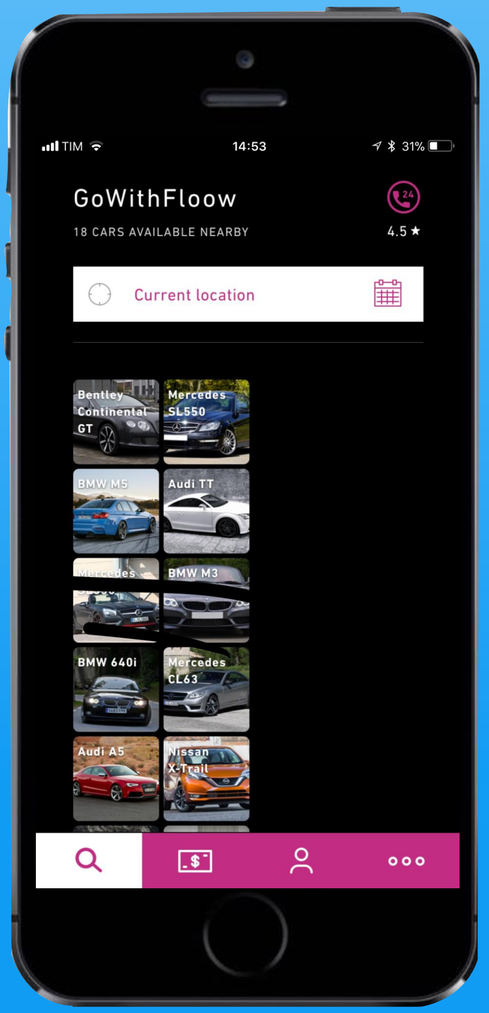
GoWithFloow

The world's first car sharing platform built exclusively for the insurance industry

Engineered on The Floow's
device neutral analytics
data management platform
powering behavioural scores

Access to vehicles:
Where: Walking distance
When: Within 5 minutes
How: Within 3 clicks

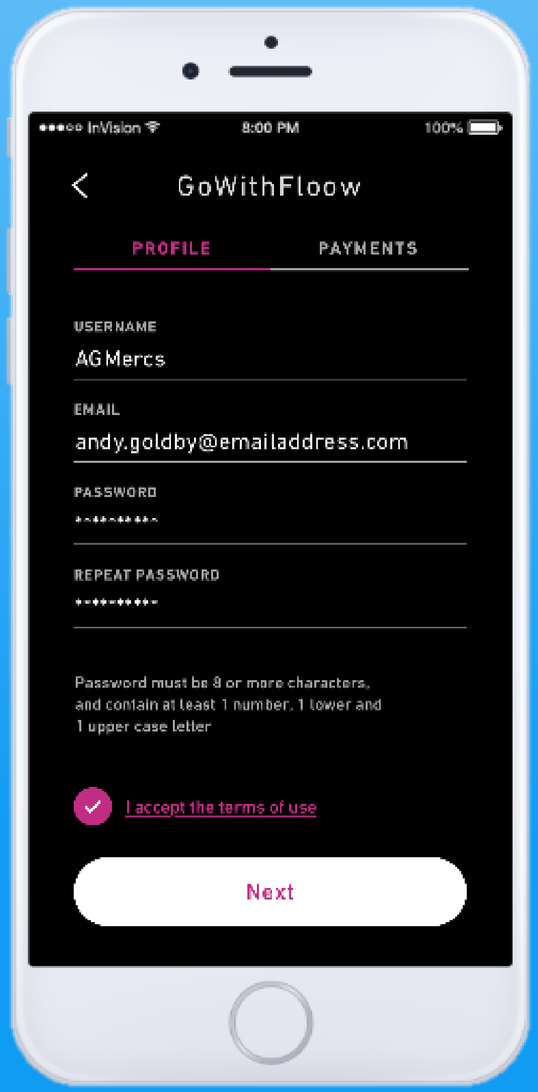
Car Sharing



In a nutshell

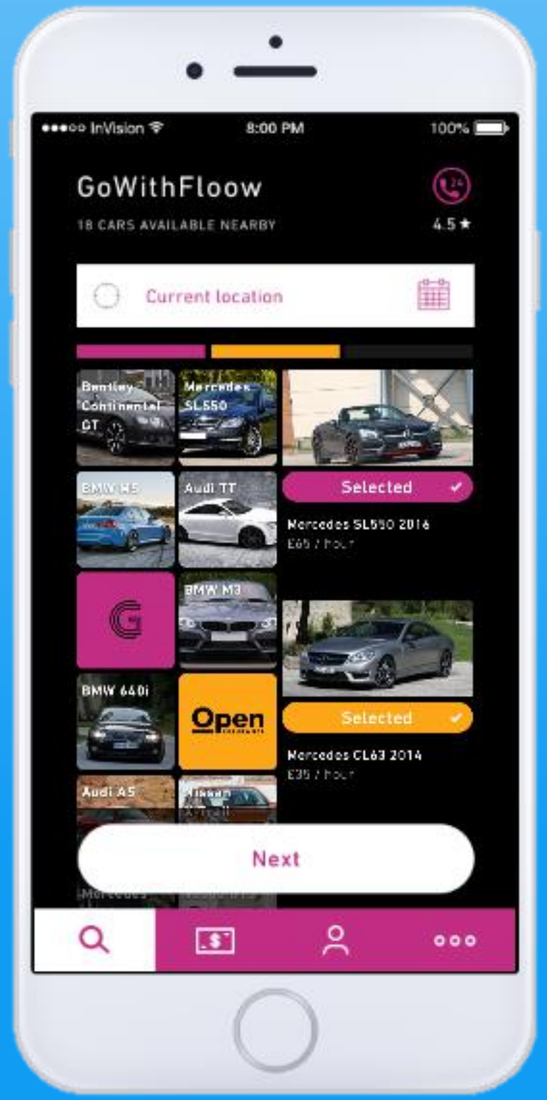
- Short-term access to privately-owned vehicles
- App-enabled and monitored
- The Floow broker transactions among car owners and renters by providing:
  - Data collection
  - Online transactional platform
  - Customer support
  - Automobile insurance (options available)

Car Sharing



Register

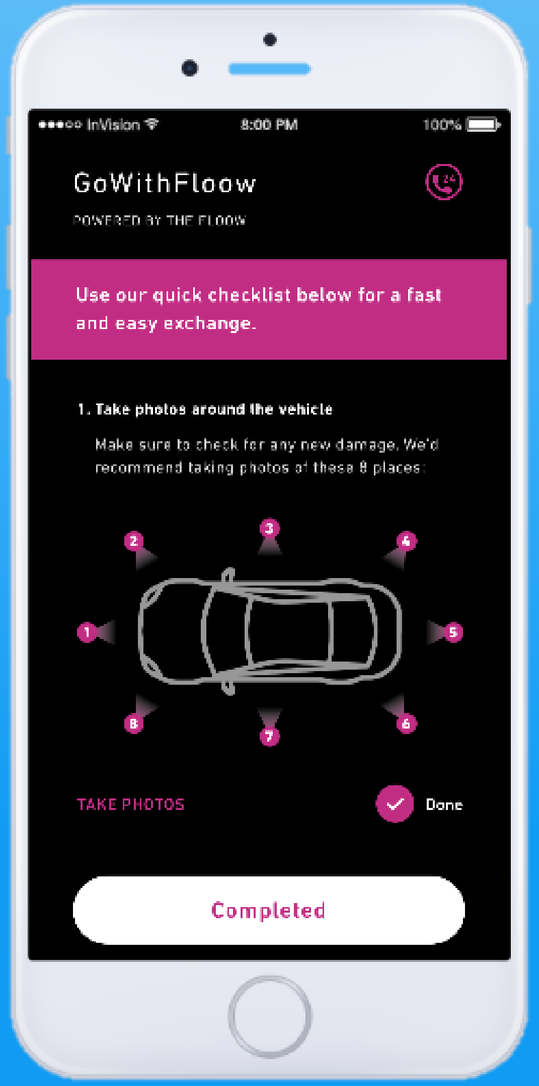
Lender adds vehicle



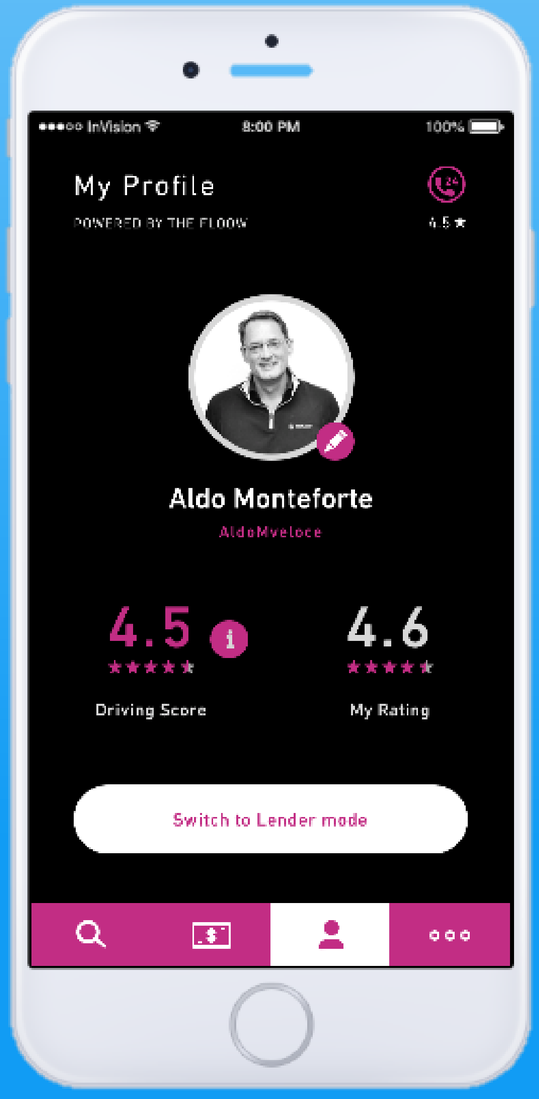
Borrower selects vehicle

Car Sharing

Accept request



Take photos and hand over keys

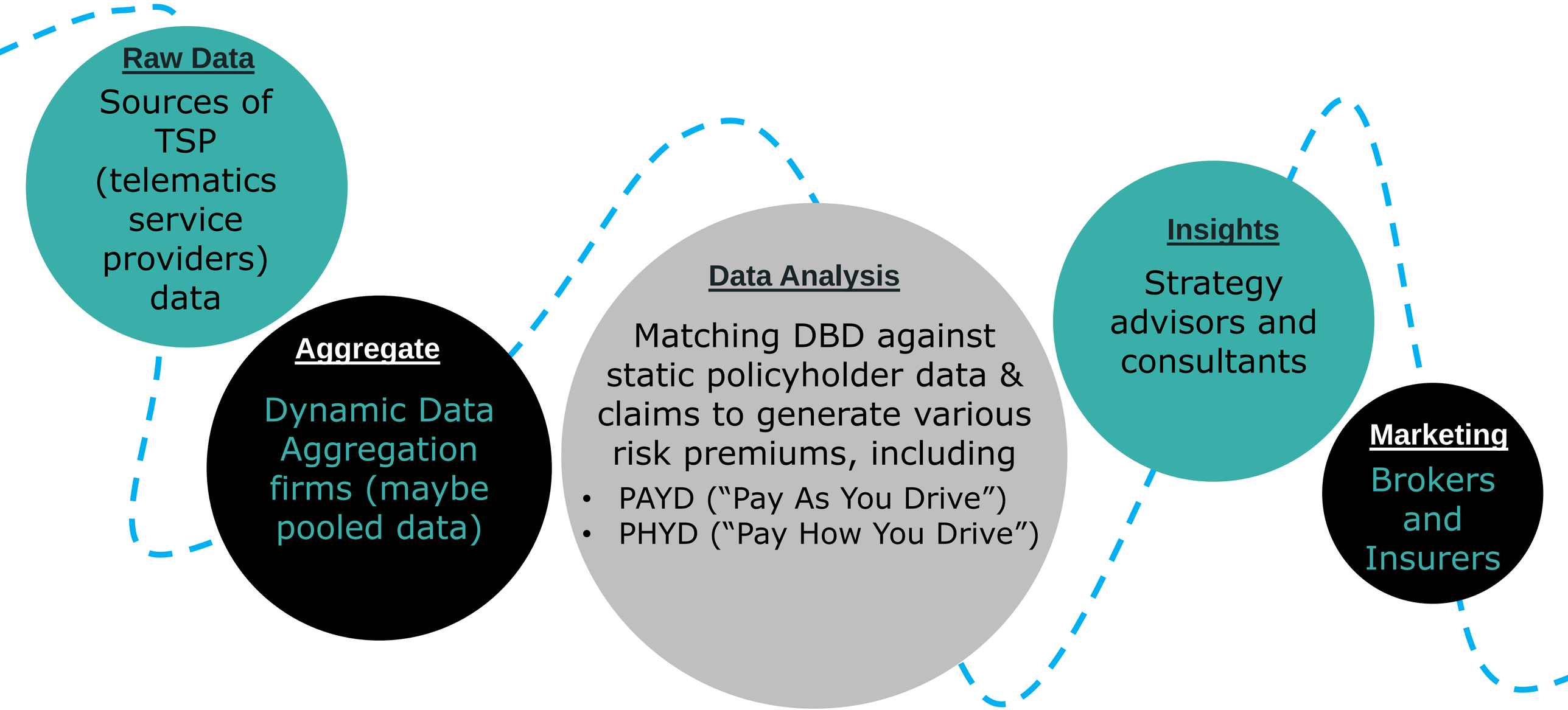


Rate drivers subjectively and on

Insurance Telematics

Telematics Data – Goldmine or Landmine

Links in the Value Chain



Value chain flowchart

- Doing all work in-house requires number of dedicated staff and integrated workstreams involving computing, actuarial and claim handling disciplines.
- Combination of in-house and external expertise most common
- Development of the end-to-end analytical model fully outsourced to external vendors.
- Decisions around level of integration with existing motor pricing systems.

Claim Data Enhancement

Other Value Added Services

Building a Business Case

Building the Analytical Platform

Value Chain Ecosystem

Claims Data Enhancement

- FNOL (“First Notice of Loss”) large change in deceleration indicates collision
- Introduction of E-call in all new cars after May 1, 2018
- Data from dash camera device will provide additional accident context.
- Accident reconstruction
- Fraudulent claim detection

SCI-FI STREETS

Car crashes ‘to be recreated with CGI’ to tell exactly what happened – and who was to blame.

THE SUN 29th Dec. 2017

Claim Data Enhancement

Other Value Added Services

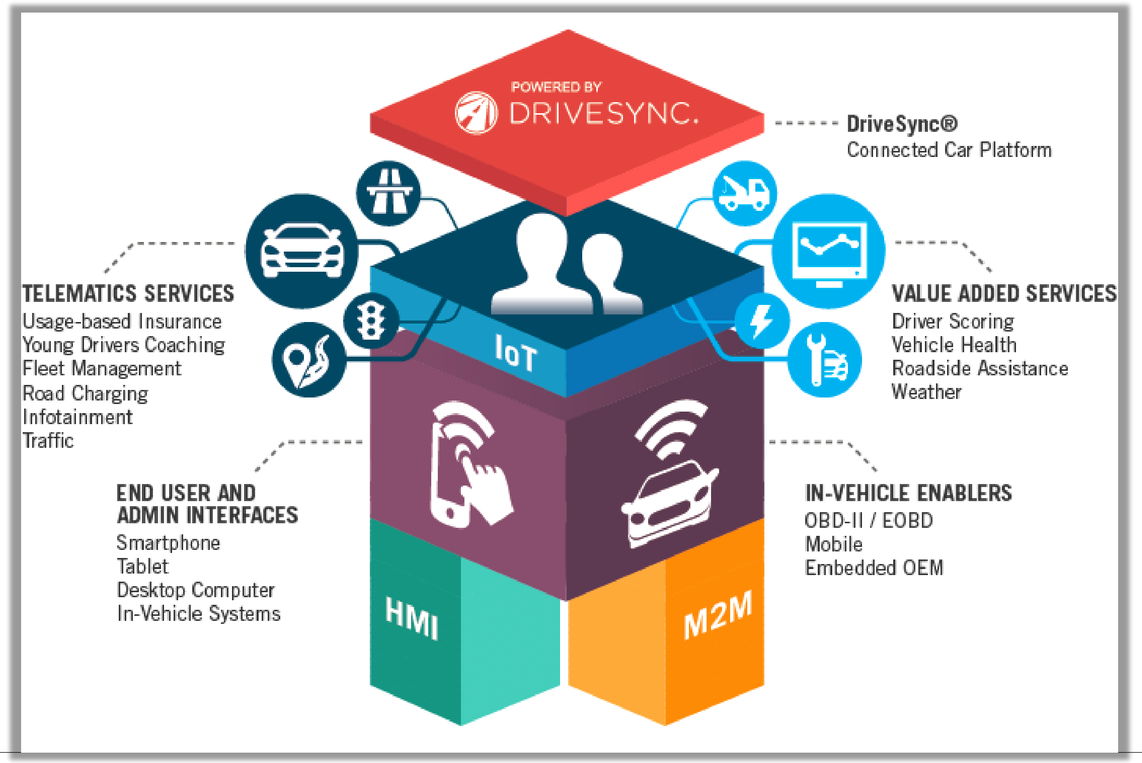
Building a Business Case

Building the Analytical Platform

Strategic Partnerships

Strategic Partnerships:

- BMW/ Fri:day & Wrisk
- Mercedes / HDI
- The Floow / Direct Line Group
- Waymo / Trov



Claim Data Enhancement

Partnerships & Value Added Services

Building a Business Case

Building the Analytical Platform

Telematics

Acquisitions

Automaker	Company	Date	Details
DAIMLER / Mercedes-Benz	Pinc	Sep-17	• Carpooling app
	taxibeat	Feb-17	• Taxi-hailing app • Acquired for $43 mm
	FlightCar	Jul-16	• Peer-to-peer airport car rental
	HAIL	Jul-16	• British taxi-hailing app merged into existing MyTaxi operations
Audi	SILVERCAR	Mar-17	• Car rental app • Audi previously led Silvercar's $28 mm Series C (Jan-16)
RENAULT	KARHOO	Jan-17	• On-demand ride startup
Ford	chariot	Sep-16	• On-demand commute ridesharing service
	BREEZE	NA	• Leasing platform for drivers for ride-hailing companies • Subsequently relaunched as Canvas, a subscription-based monthly rental service

Investments

Automaker	Company	Date	Details
DAIMLER	VIA	Sep-17	• On-demand shared ride service • Part of $250mm round
	TURO	Sep-17	• Peer-to-peer car rental • Part of $92mm round
	Careem	Jun-17	• Dubai-based ride hailing app • Part of $150mm round
TOYOTA	Grab	Aug-17	• Southeast Asian ridesharing service • Part of $2,500mm round
	Getaround	Apr-17 $45 mm	• Peer-to-peer car rental • Part of $45mm round
		Oct-16	• Partnership to offer vehicles to rent on the platform
	UBER	May-16	• Partnership to offer vehicles to rent on the platform
JAGUAR / LAND ROVER	lyft	Jun-17	• Supports Lyft's autonomous vehicle activities • $25mm investment
HONDA	Grab	Dec-16	• Southeast Asian ridesharing service
Volkswagen	Gett	May-16	• Cab-hailing app • $300mm investment
GM	lyft	Jan-16	• Partnership focused on autonomous vehicles • $500mm investment

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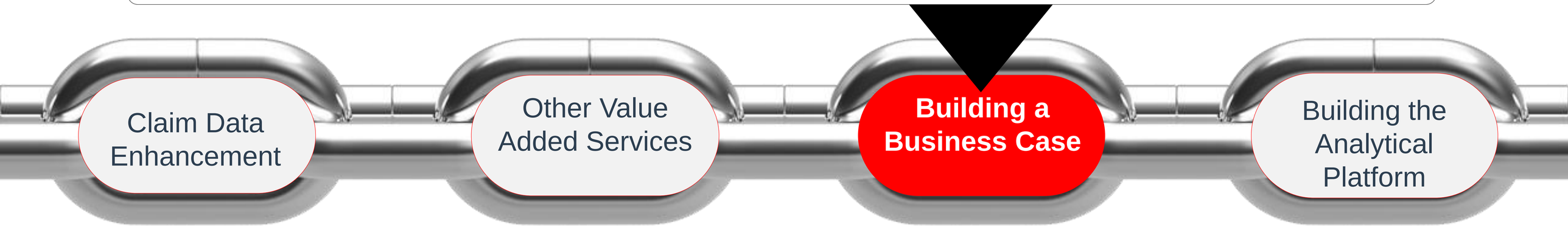
Summary of Telematics Benefits

- Attracting low-risk drivers who appreciate being rewarded for their safe driving behaviour
- Lowering the cost of claims and responding more promptly and efficiently to claims settlement
- Increasing the number of potential touch points each year and providing additional communication channels
- Strengthening customer loyalty through enhanced communication and personalized services
- Creating a platform upon which attractive new services and innovative program offerings can be launched
- Encouraging smarter, safer driving behaviour through feedback, coaching and incentives.



Futurology- Automotive in 2030

Futurology – Automotive Landscape in 2030

- Smart cities, sharing economy, electric cars
- Driverless cars: Full ‘5’ autonomy by 2030?
- ‘Safety tech’ leads to new kinds of accidents?
- Evolution in insurance liability and products
- Nissan researching driving by ‘mind control’
- Flying Cars / Taxis – Back to the Future or Bladerunner?

SAE level	Name	Narrative Definition	Execution of Steering and Acceleration/ Deceleration	*Monitoring* of Driving Environment	Fallback Performance of *Dynamic Driving Task*	System Capability *(Driving Modes)*
***Human driver* monitors the driving environment**						
0	No Automation	the full-time performance by the *human driver* of all aspects of the *dynamic driving task*, even when enhanced by warning or intervention systems	Human driver	Human driver	Human driver	n/a
1	Driver Assistance	the *driving mode*-specific execution by a driver assistance system of either steering or acceleration/deceleration using information about the driving environment and with the expectation that the *human driver* perform all remaining aspects of the *dynamic driving task*	Human driver and system	Human driver	Human driver	Some driving modes
2	Partial Automation	the *driving mode*-specific execution by one or more driver assistance systems of both steering and acceleration/ deceleration using information about the driving environment and with the expectation that the *human driver* perform all remaining aspects of the *dynamic driving task*	**System**	Human driver	Human driver	Some driving modes
***Automated driving system* (“system”) monitors the driving environment**						
3	Conditional Automation	the *driving mode*-specific performance by an *automated driving system* of all aspects of the dynamic driving task with the expectation that the *human driver* will respond appropriately to a *request to intervene*	System	**System**	Human driver	Some driving modes
4	High Automation	the *driving mode*-specific performance by an automated driving system of all aspects of the *dynamic driving task*, even if a *human driver* does not respond appropriately to a *request to intervene*	System	System	**System**	Some driving modes
5	Full Automation	the full-time performance by an *automated driving system* of all aspects of the *dynamic driving task* under all roadway and environmental conditions that can be managed by a *human driver*	System	System	System	**All driving modes**

Telematics

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