



# Antitrust Notice

- The Casualty Actuarial Society is committed to adhering strictly to the letter and spirit of the antitrust laws. Seminars conducted under the auspices of the CAS are designed solely to provide a forum for the expression of various points of view on topics described in the programs or agendas for such meetings.
- Under no circumstances shall CAS seminars be used as a means for competing companies or firms to reach any understanding – expressed or implied – that restricts competition or in any way impairs the ability of members to exercise independent business judgment regarding matters affecting competition.
- It is the responsibility of all seminar participants to be aware of antitrust regulations, to prevent any written or verbal discussions that appear to violate these laws, and to adhere in every respect to the CAS antitrust compliance policy.



# PL-3: Usage-Based Insurance: Are You Ready?

CAS PRM Conference

**Robin Harbage, FCAS, MAAA**

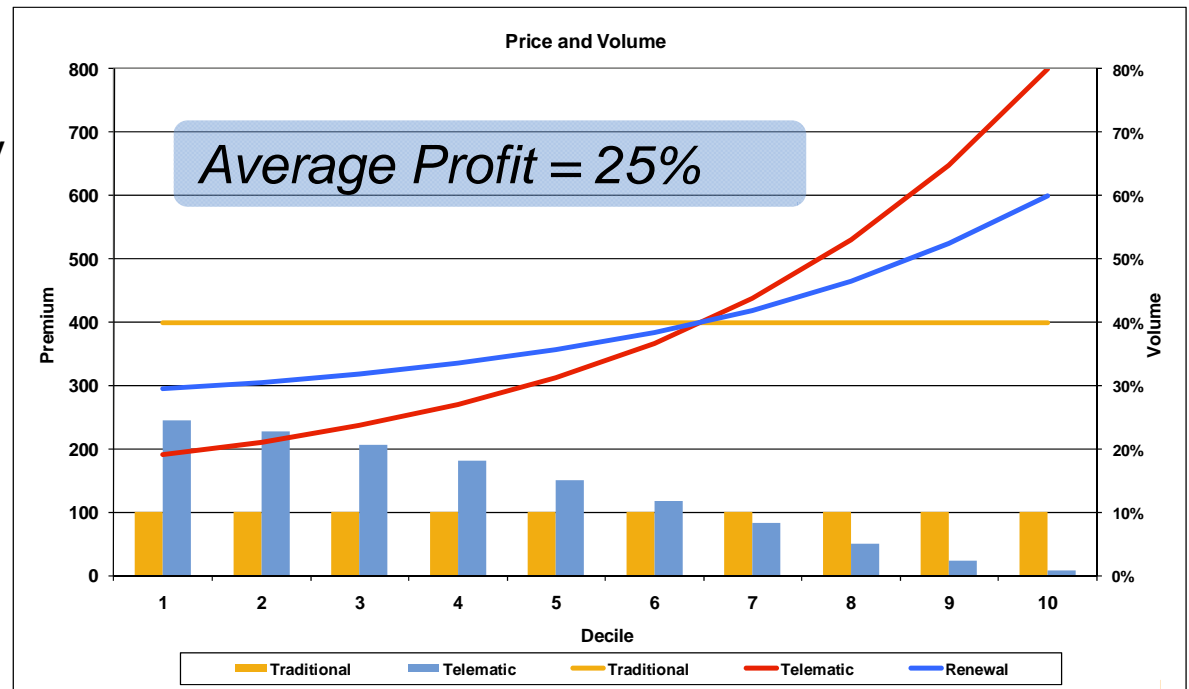
20 March 2012

TOWERS WATSON 

# UBI Benefits

# Driving behavior data is very predictive

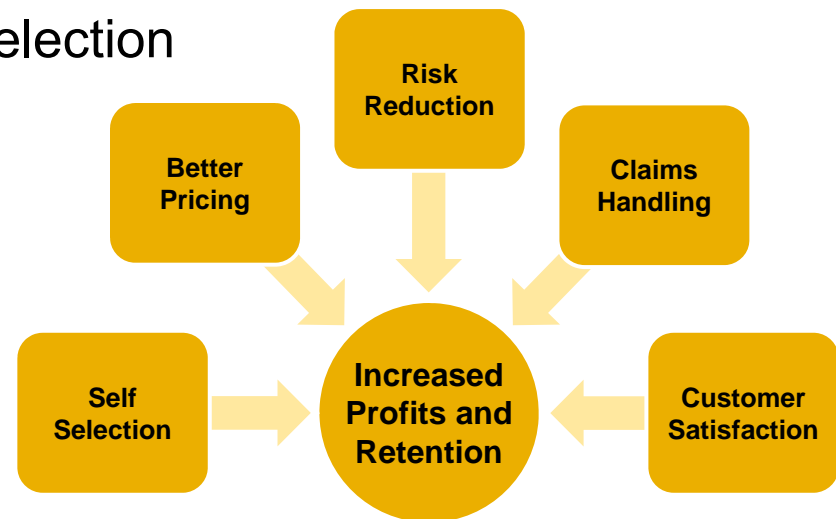
- Provides significant lift above current rating plan
  - Early programs had discounts of up to 61% and surcharges of 9%, but most companies are not giving such significant rate variation
  - Difference between indication and selection can help fund technology while still providing marketing effect
  - Must be matched with policy and claims data to develop predictive models and define lift



Smart implementation helps justify the technology cost

## Why is UBI game-changing?

- Differentiates product offering by offering additional services
- Significantly increases pricing accuracy
- Appeals to consumers as it makes sense, is controllable and minimizes reliance on controversial proxies
- Attracts lower-risk insureds via self-selection
- Allows customers to understand and eliminate risky behaviors, actually reducing accident frequency
- May improve claims handling



**All this means increased retention and profits!**

# Current Market Landscape

# UBI in personal auto around the globe



# UK Market Update


Share this site: [Like](#) [Tweet](#) [+](#) [Share](#)



helping you find the best deals on Black Box Insurance

Insurance Company	Product Description	Mid-term Premium Adjustment based on
 <a href="#">Get a Quote</a>	Rewards accurate answers given at quotation	Time, distance, kept address & documentation
 <a href="#">Get a Quote</a>	£100 fee if car is driven between 11pm and 5am	Times driven
 <a href="#">Get a Quote</a>	Pre paid insured mileage and a retail voucher scheme	Distance driven
 <a href="#">Get a Quote</a>	Additional safe driving discounts upto 11%	Driving score based on speed, cornering, erratic driving & times driven
 <a href="#">Get a Quote</a>	Drive safely, save money	Driving score based on Acceleration, Braking & Cornering every 3 months. Extra charge for late night driving.

towerswatson.com



Car insurance for young drivers aged 17-25



- Discounts for better driving
- No curfews or mileage restrictions
- Latest telematics technology
- A community of better drivers
- Read more ...

Gary Lineker explains all about ingenie

Filling the ingenie device in your car

Natalie Pinkham's guide for new drivers

Sir Frank Williams on the car crash that changed his life

Young Driver 17 - 25?

We cover Young Drivers, Learner Drivers, Student Drivers, Teenage Drivers

Who Is iKube For?

Find out more



# Effective market positioning: 'what,' 'how,' 'price'

## Young Driver Insurance

**Fit Smartbox, drive down costs**

**51% of under 25s could save up to £477\* on their initial premium**

**PLUS earn Safer Driving Discounts**

[Login to your dashboard](#) [Quote & buy](#)

Premiums may increase depending on the driving style.



How it works	Smartbox	Online dashboard
<p><b>How it works</b></p> <ul style="list-style-type: none"> <li>You could save up to £477* on your initial premium.</li> <li>Earn Safer Driving Discounts every 3 months.</li> <li>Plus there's the standard No Claim Discount.</li> </ul> <p>Smartbox may not be big but he is clever – because he gives you an extra way to save with Safer Driving Discounts.</p> <p>Smartbox can do this because it uses 'Pay-How-You-Drive' technology to measure how well the car is driven. So when it's fitted into your car it uses GPS to send information to us on how those on the policy are driving - and we use that to review your insurance premium every 90 days. This can go up as well as down depending on how the car is driven. But by driving safer you can earn <a href="#">Safer Driving Discounts</a>.</p> <p>Better still, you can check to see if you will earn discounts with your very own online dashboard on a personalised web page. Now that is smart.</p>		



Source: CIS website.  
[towerswatson.com](http://towerswatson.com)

The **co-operative** insurance good with money

## Your online dashboard

**Keep up to speed with your progress**

[Quote & buy](#)



### With the 'Pay-How-You-Drive' Smartbox, it pays to drive safely

Quite literally. The safer you're driving, the lower your premium. It's important to remember that unsafe driving can drive your premium up too. But with the online dashboard you'll be able to easily stay up-to-date with how you or any other insured drivers are driving and how that's affecting how much premium you'll pay. That's because Smartbox records, stores and sends data about different aspects of your driving style including:

- your speed on different types of road – using GPS, Smartbox can tell the type of road you're driving on and the relevant speed limit
- how fast and hard you accelerate or brake
- what times of the day you usually drive.
- how quickly you take corners.

So that's the key information that matters. What happens then? Well, it's sent to us and we use it to calculate a score that you can monitor via your online dashboard. In fact, it's updated daily and you can check it any time you like. You may well get into the habit of checking your score and trying to beat your previous efforts.



## Liberty Mutual

- Inherited Safeco's 'Teensurance' program for drivers up to age 25
- 15% discount
- Participants pay \$15 a month for a satellite-tracking service
- Parents can track vehicle location and disable the car remotely if
  - driven outside set boundaries
  - exceeds a preset speed limit
  - drives past a curfew
- Launched 'OnBoard Advisor' to provide driver coaching
- 'Rewind' introduced which provides forgiveness of violation surcharge with telematics monitoring



Teen programs were extremely popular for early adopters

# Example Consumer Proposition – U.S.

1-800-PROGRESSIVE

The screenshot shows the Progressive Snapshot Discount website. At the top left is the 'Snapshot Discount' logo. Below it, the text reads 'Our BIGGEST discount ever!' in large orange letters. Underneath, it says 'Start saving up to 30% more with Snapshot<sup>SM</sup>'. There is a form with a 'Zip Code' input field and a dropdown menu set to 'Auto'. A large blue button labeled 'Quote & Enroll' is positioned below the form. To the right of the form is a smiling Progressive agent in a white uniform. Further right is a graphic of a woman holding a camera, with the text 'SNAPSHOT DISCOUNT<sup>SM</sup>' next to it. Below this is a grid of nine Snapshot Discount icons.



## Snapshot Discount<sup>SM</sup>

With Snapshot, Progressive's Pay As You Drive® (PAYD) program, you can turn your good driving into huge savings on car insurance. Your Snapshot Discount could be as much as 30 percent!\*

### Why pay the going rate?

Good drivers can save big—up to 30%—with our free Snapshot program.

> [How it works](#)



### Find out—fast

Get detailed answers to your questions—about enrolling, saving & more.

> [View all FAQs](#)

## See who's saving!

“Just earned a 22% discount on my car insurance from participating in the Snapshot program—how cool is that!”



—Chad H., Dayton, OH via Twitter

Source: Progressive website

## Progressive's Snapshot<sup>SM</sup>



- Optional program with customer selecting which vehicles to enroll
- Wireless device plugged into OBD II port records time, speed and harsh braking
- Discount calculated based on first 30 days, then applied for remainder of term
- Device removed after first term and discount is fixed until significant endorsement
- Maximum discount of 30% and no surcharge in most states
- Approved in 39 states and Washington D.C.

40k to 50k new vehicles per month, quickly building market share

## Allstate Drive Wise<sup>SM</sup>

- **Drive Wise** launched in Illinois in January 2011 and followed with Ohio and Arizona
- 10% initial discount
  - Up to 36% at renewal
  - No surcharges
- \$10 technology fee semi-annually
- Driver score based on driving behaviors
  - Mileage
  - Hard brakes
  - Speeding (80+ mph)
  - Time of day



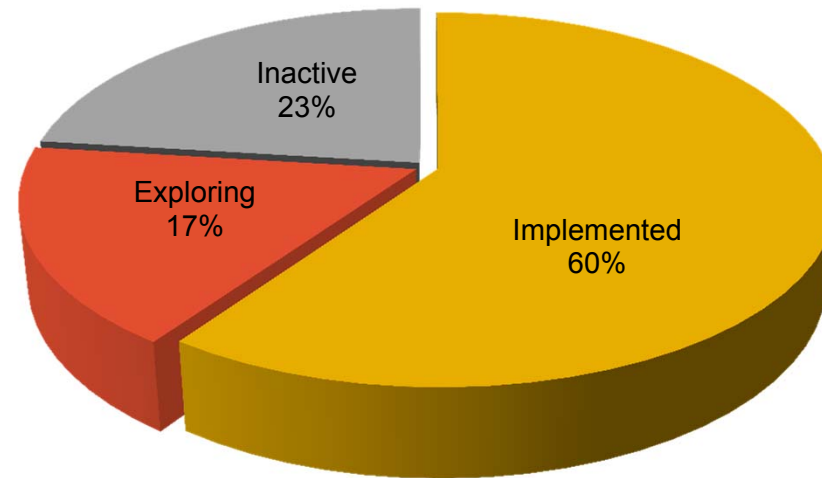
## State Farm In-Drive®

- Existing Drive Safe & Save Program with OnStar in five states
- In-Drive® for IL in “September with more states to be added in 2012”
- Discount up to 50% based on mileage, turns, acceleration, braking, speed and time of day
- \$10 initial fee with \$5 to \$14.99/month upgrade for additional features
  - Emergency response
  - Stolen vehicle location assistance
  - Vehicle diagnostic alerts and maintenance reminders
  - Speed alerts
  - Website and smartphone app for remote and mobile access

Building a comprehensive product offering with many consumer options

## Top 50 U.S. private passenger auto companies

- At least seven top 10 personal auto insurers have implemented programs to insureds in at least one state
- U.S. companies representing over 75% of the market already have programs or are actively pursuing them



*“UBI device sales rocketing from \$50 million in 2011 to approximately \$2.6 billion by 2015.”*  
— FC Business Intelligence

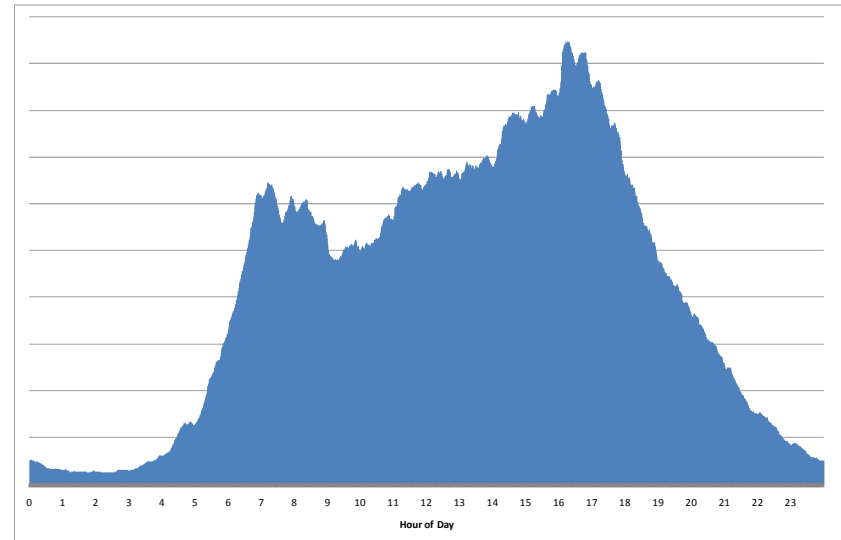
# Data Availability



# UBI data is unlike typical insurance data

	Without Telematics	With Telematics
Update frequency	Annual	Real time, trip, daily
Data quality	Renewal UW	Daily scrubbing
Variables	Pre Defined	Manufactured
Records per policy	Few	A Million per Year
Data size*	Gigabytes	Terabytes (when uncompressed*)

**Trip Distribution by Time of Day**



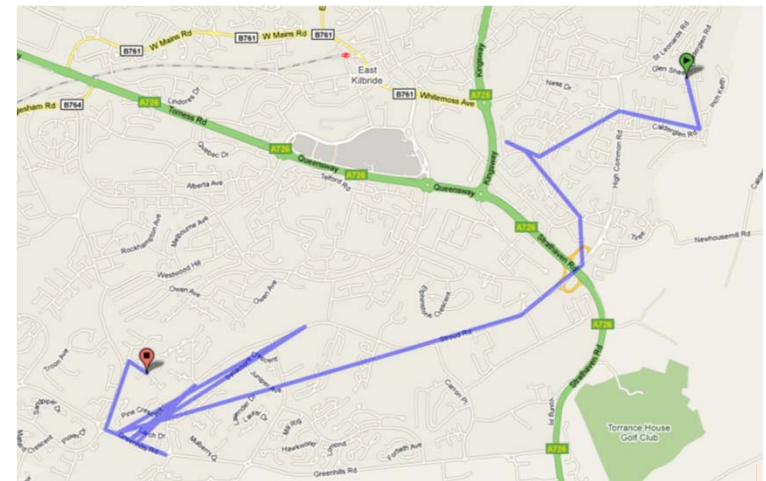
## Challenges

- Defining data requirements and ensuring quality
- Managing data size and transmission costs
- Identifying and fixing data errors
- Developing usable database of credible data

## Data must be scrubbed

- Telematics data can have errors and must be checked
- Granular data is critical to data scrubbing
  - Without it can get phantom events
  - With it can cross-check using several sources and/or external data to determine real versus phantom events
- Imperative to automate as much of the validation as possible to facilitate ongoing scrubbing

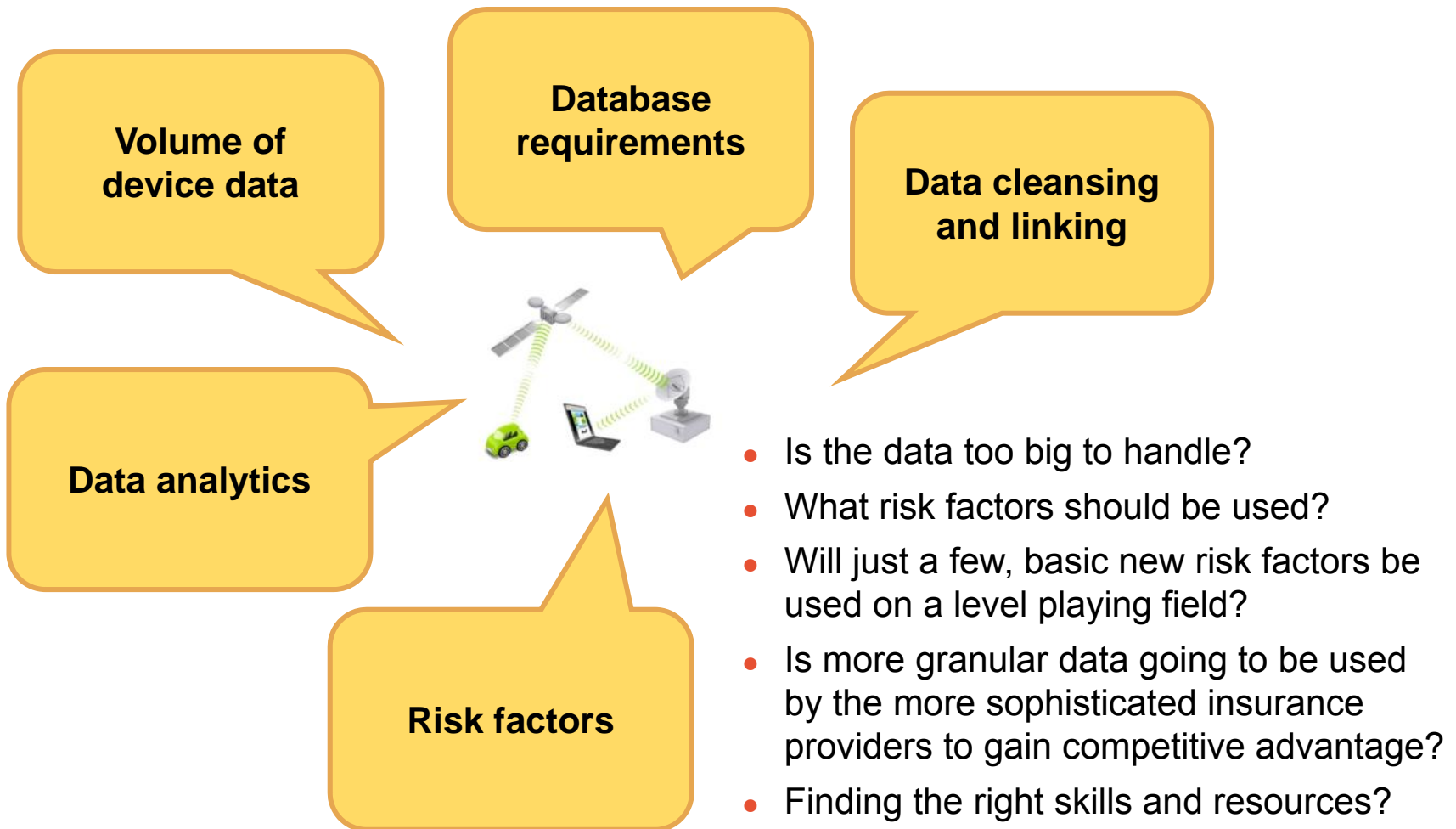
feed_trip	start_time	distance	road_type	horizontal	road_speed
942	17/08/2010 01:58	0.0621	Fourth	95.69	20
936	17/08/2010 00:41	0	Fourth	80.16	20
183	07/07/2010 12:25	0.7456	Fourth	78.91	20
429	21/08/2010 16:31	1.0563	Fourth	77.05	20
399	17/08/2010 20:06	1.0563	Fourth	72.7	20
936	17/08/2010 00:38	0	Fourth	67.73	20
936	17/08/2010 00:39	0	Fourth	67.73	20
936	17/08/2010 00:37	0	Fourth	67.73	20
942	17/08/2010 01:57	0.0621	Fourth	65.24	20
957	17/08/2010 04:27	0	Fourth	116.2	30
522	26/07/2010 14:36	0.3107	Fourth	114.95	30
595	02/08/2010 13:53	0	Fourth	108.12	30
595	02/08/2010 13:52	0.0621	Fourth	108.12	30
520	26/07/2010 13:08	0.0621	Fourth	96.93	30
527	26/07/2010 15:39	0.2485	Tertiary	85.75	30
599	02/08/2010 15:11	0.0621	Fourth	83.26	30
586	01/08/2010 22:11	0.1243	Fourth	80.78	30
520	26/07/2010 13:07	0	Fourth	78.91	30



Data errors are unacceptable in a production environment, exist in telematics flow

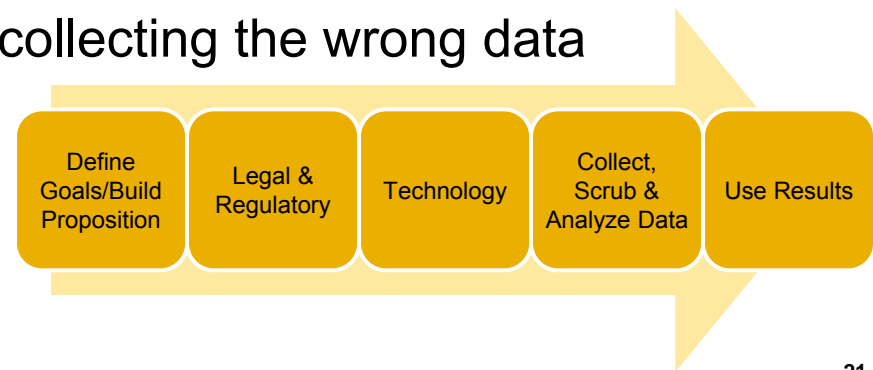
# Overcoming Challenges

# UBI Data and Analysis Challenges



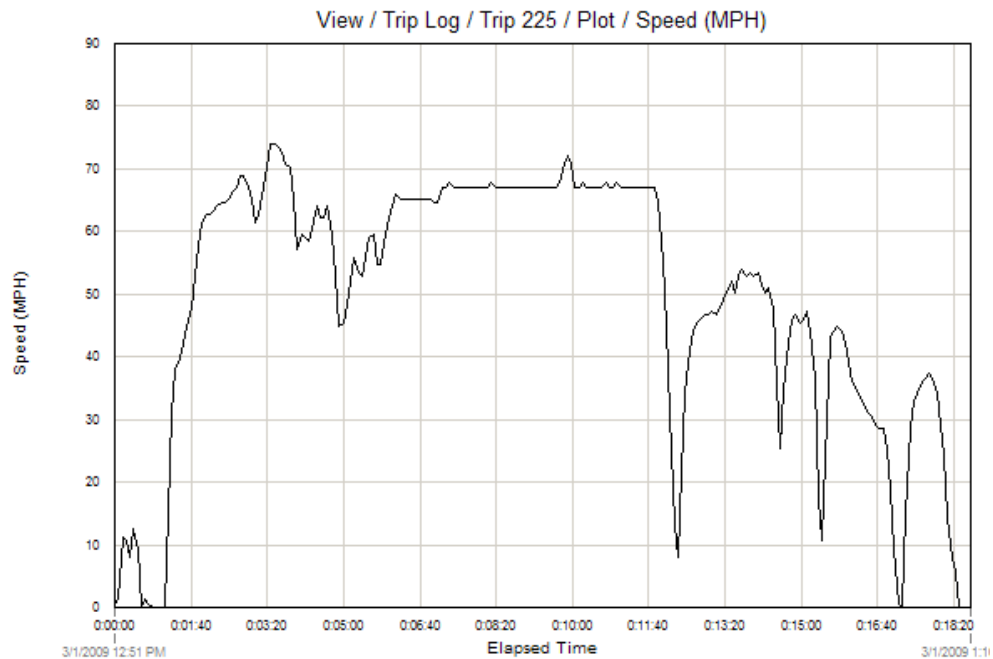
# UBI Implementation Challenges

- UBI projects are extremely complex and require cross-functional teams
- Product must appeal to your market while still being profitable
- Managing the legal and regulatory hurdles
- Determining which of the multitude of devices available will best meet the needs of the program
- Extensive IT infrastructure required to collect driving data, to integrate UBI scores with the current system and to give driving feedback
- No publicly available data to jump-start a program
- Danger of wasting time and money collecting the wrong data
- Driving data is much different than traditional experience data and requires special data scrubbing and analysis techniques



## Appeals to the “right” consumers

- Improves driving behavior
- Controllable and enables potentially large premium savings
- Makes sense and reduces reliance on proxies
  - Insurance credit scores
  - Driver assignment
  - Charges for relatively rare accidents, convictions
- Ancillary services



# Telematics devices

## Alternative Models

- Dedicated Device
  - Insurer handles cost of device and installation
  - Proliferation of alternative devices, but need
    - Reasonable cost
    - Ease of use
    - Reliability and the right data
- Shared Services Device
  - Device supports added value services outside insurance, for example:
    - Satellite navigation
    - Rerouting to avoid traffic congestion
    - Theft tracking
    - Emergency call
  - OEM or mobile phones may provide alternatives

Technology will change, but data is critical now to get a foothold

# Summary



# UBI benefits for the insurance provider

## Self-selection

- Reducing underwriting and claims fraud
- 'Placebo' effect

## Risk segmentation

- New risk factors give a significant increase in predictiveness
- Counters anti-discrimination laws and Internet factor declaration

## Risk influence

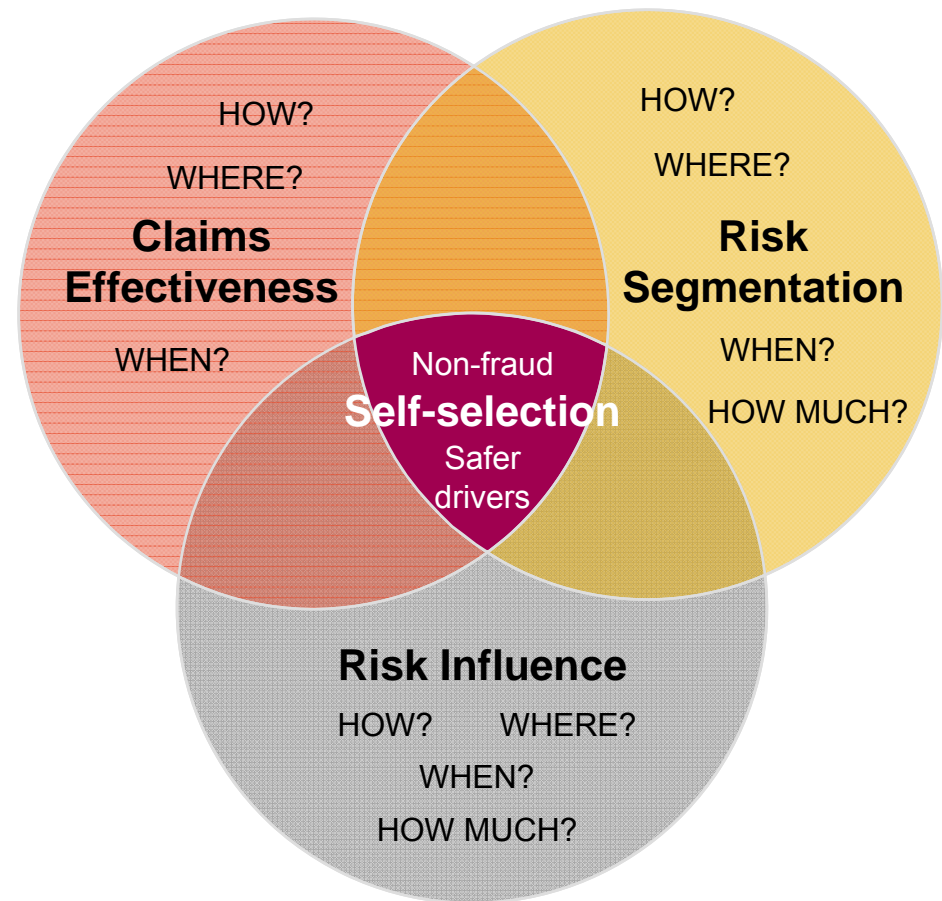
- Provide customer feedback on their driving behaviour
- Reduce potential for causing accidents
- May reduce vehicle usage

## Claims effectiveness

- New data to inform the claims process, manage FNOL, improve service, detect and mitigate fraud

## Customer/society

- Step change in customer insight and relationship
- 'Fair' pricing proposition and feedback on driving with guidance to improve
- Shows commitment to safety and the environment
- New 'value add' services, including emergency and breakdown calls



Opportunity to increase margin and customer loyalty

- Robin Harbage, FCAS, MAAA  
Director

Towers Watson

(440) 725.6204

622 Falls Road

Chagrin Falls, OH 44022

[Robin.harbage@towerswatson.com](mailto:Robin.harbage@towerswatson.com)