



Insurance Telematics

Discussion Document
April 2013

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Who we are

- Experienced developer and provider of advanced insurance products such as usage-based insurance (UBI)
- Leading edge researchers in advanced insurance like UBI, its associated technologies, and big data analytics
- Former insurance executives and experts with long tenures in the industry



What we do

AdVanced™ assists insurers in bringing UBI products to market through:

- Strategic consulting
 - UBI strategy development
 - UBI product development
 - Big Data systems development
- A complete set of components to make UBI
- White label hosted UBI solutions
- Advanced analytics predictive model development
- Actuarial and data scientist consulting services

Usage-based insurance basics

Technologies

Product strategies

Market Overview

Regulatory/Legal landscape

ROI and associated challenges

Consumer Issues

What is usage-based insurance (UBI)?

Auto insurance based on the consumption of one or more factors such as miles driven, time, place, etc. or driving performance factors such as:

- acceleration / deceleration
- time-of-day
- location

Other acronyms:

PAYD, PHYD, MHYD, PAYDAYS, ...

Business Pressures

- Pressure to 'catch up' to competitors
- Threat of predation / adverse selection
- Hard market or not?
- Diminishing ROE
- Greater persistency
- Profitable growth imperative



Usage-based insurance represents the next big thing in auto insurance with a potential to provide the types of detailed customer and risk insights that insurers have always dreamed of.

Is it going to become pervasive enough to transform the industry and drive adoption?

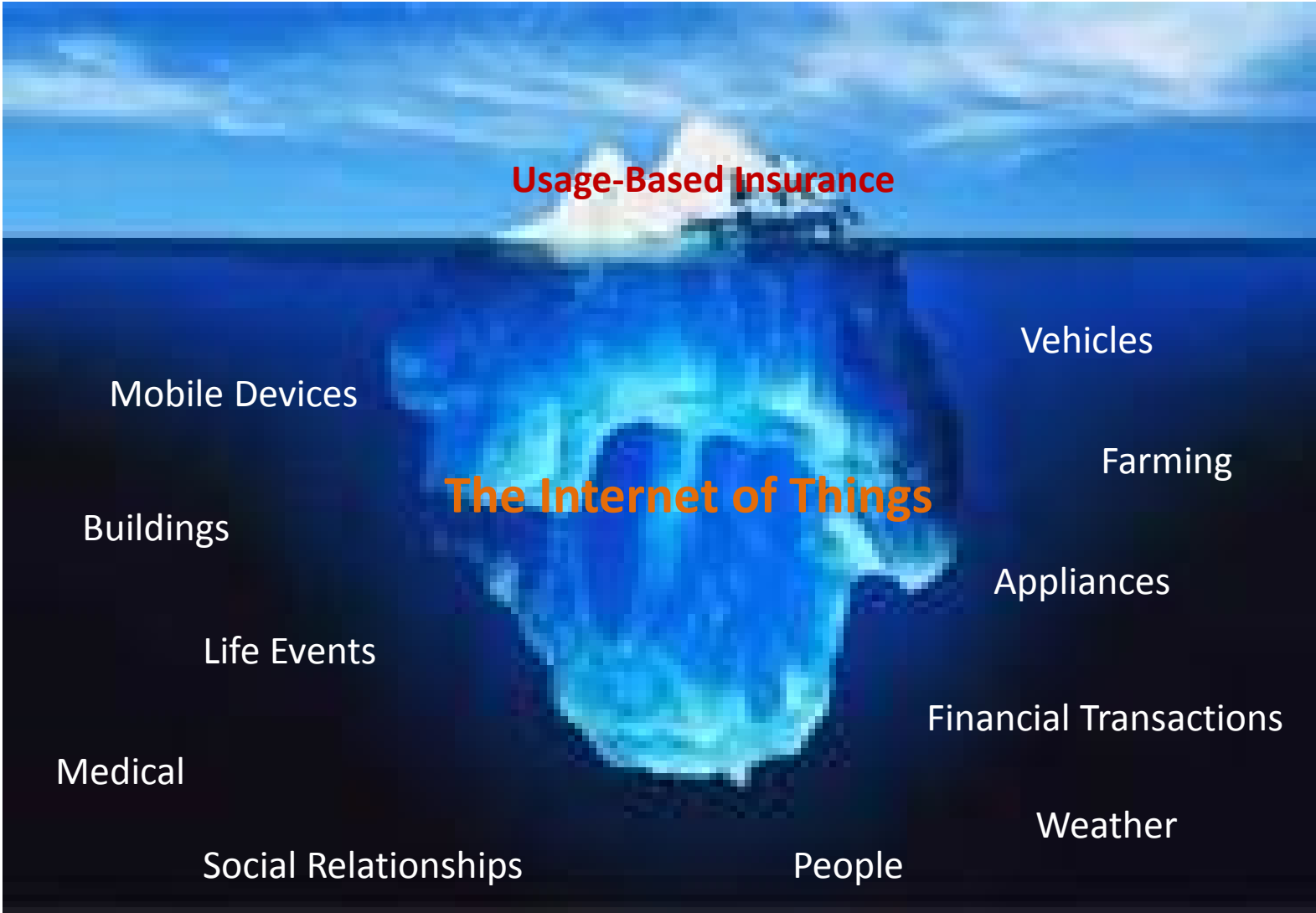
Is it possible to make money off of these products?

Is it possible to get around the legal issues?

Usage-based insurance must be understood in terms of:

- A broader internalization of a new paradigm
- Commitment to advanced analytics
- Data-driven decision making processes

Paradigm Shift



UBI Data

Time	Latitude	Longitude	Elevation	Speed (MPH)	Heading (Degrees from true North)	Event Code	Odometer	Gas
2011-02-16T02:26:23	42.68	-112.20	367.02	0	0	IGNITION_OFF_TIME	69553	14.9
2011-02-16T01:26:24	42.68	-112.20	353.10	1	189	IGNITION_OFF	69553	14.9
2011-02-16T01:25:55	42.68	-112.20	356.51	1	270	IGNITION_ON_TIME	69552	14.9
2011-02-16T01:24:54	42.68	-112.19	354.49	30	302	IGNITION_ON_TIME	69552	14.9
2011-02-16T01:23:53	42.68	-112.19	359.44	0	283	IGNITION_ON_TIME	69552	14.9
2011-02-16T01:22:52	42.68	-112.19	346.44	51	0	IGNITION_ON_TIME	69552	15.0

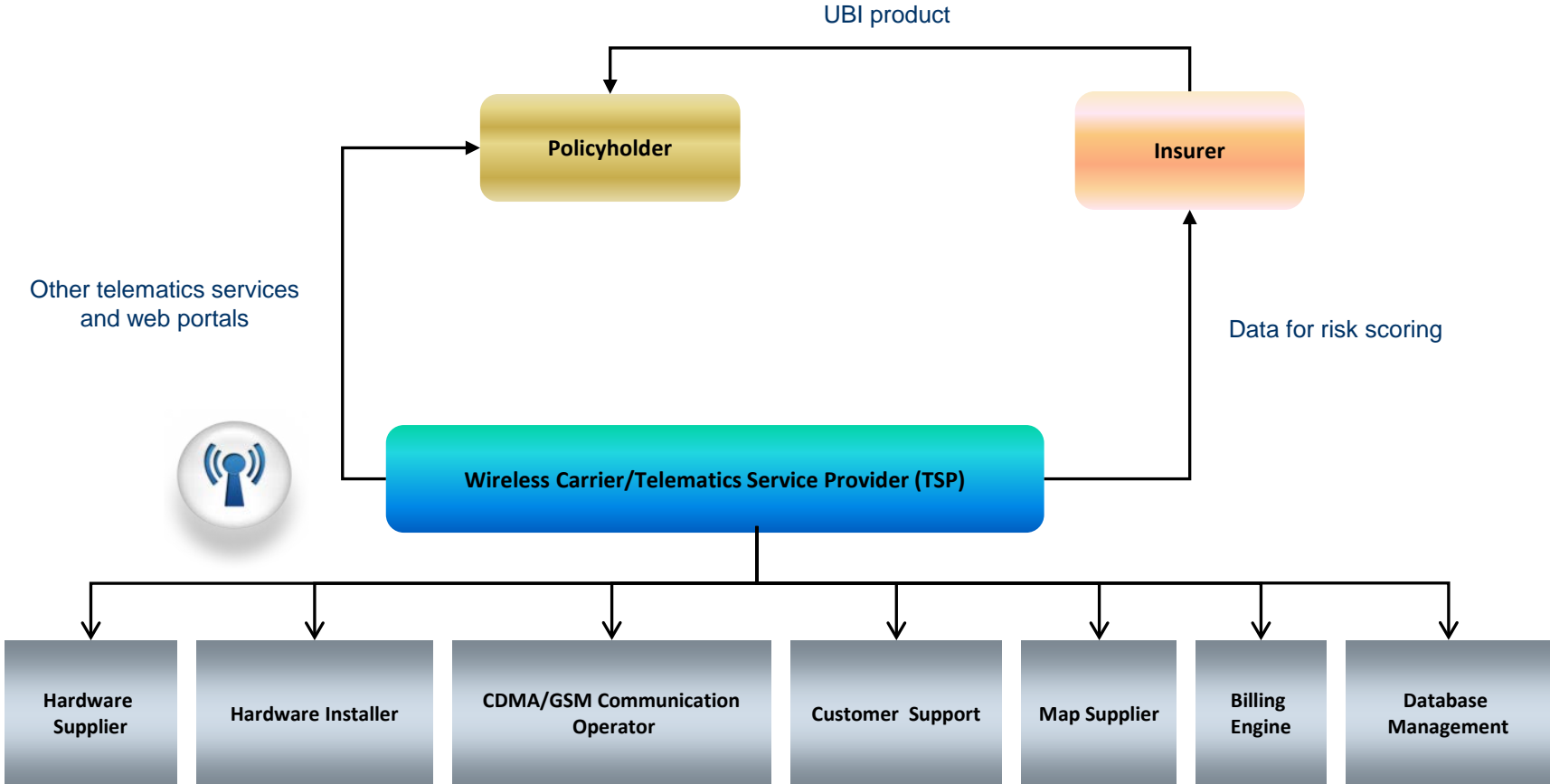
...1440 records for a 24 minute trip...

2011-02-16T01:07:15	42.66	-111.92	466.54	73	284	SPEEDING	69535	15.4
2011-02-16T01:06:20	42.65	-111.90	453.66	63	289	IGNITION_ON_TIME	69534	15.4
2011-02-16T01:05:19	42.65	-111.89	465.18	54	237	IGNITION_ON_TIME	69533	15.5
2011-02-16T01:04:18	42.66	-111.89	489.80	47	160	IGNITION_ON_TIME	69532	15.5
2011-02-16T01:03:18	42.67	-111.89	515.10	22	208	IGNITION_ON_TIME	69532	15.5
2011-02-16T01:03:18	42.67	-111.89	515.10	22	208	DIRECTION_CHANGE	69532	15.5
2011-02-16T01:02:15	42.67	-111.89	554.38	0	0	IGNITION_ON	69532	15.6
2011-02-16T00:40:12	42.67	-111.89	554.38	0	0	IGNITION_OFF_TIME	69532	15.6

...1440 X 10k bytes = 14.4MB for the 24 minute trip (1 vehicle)...

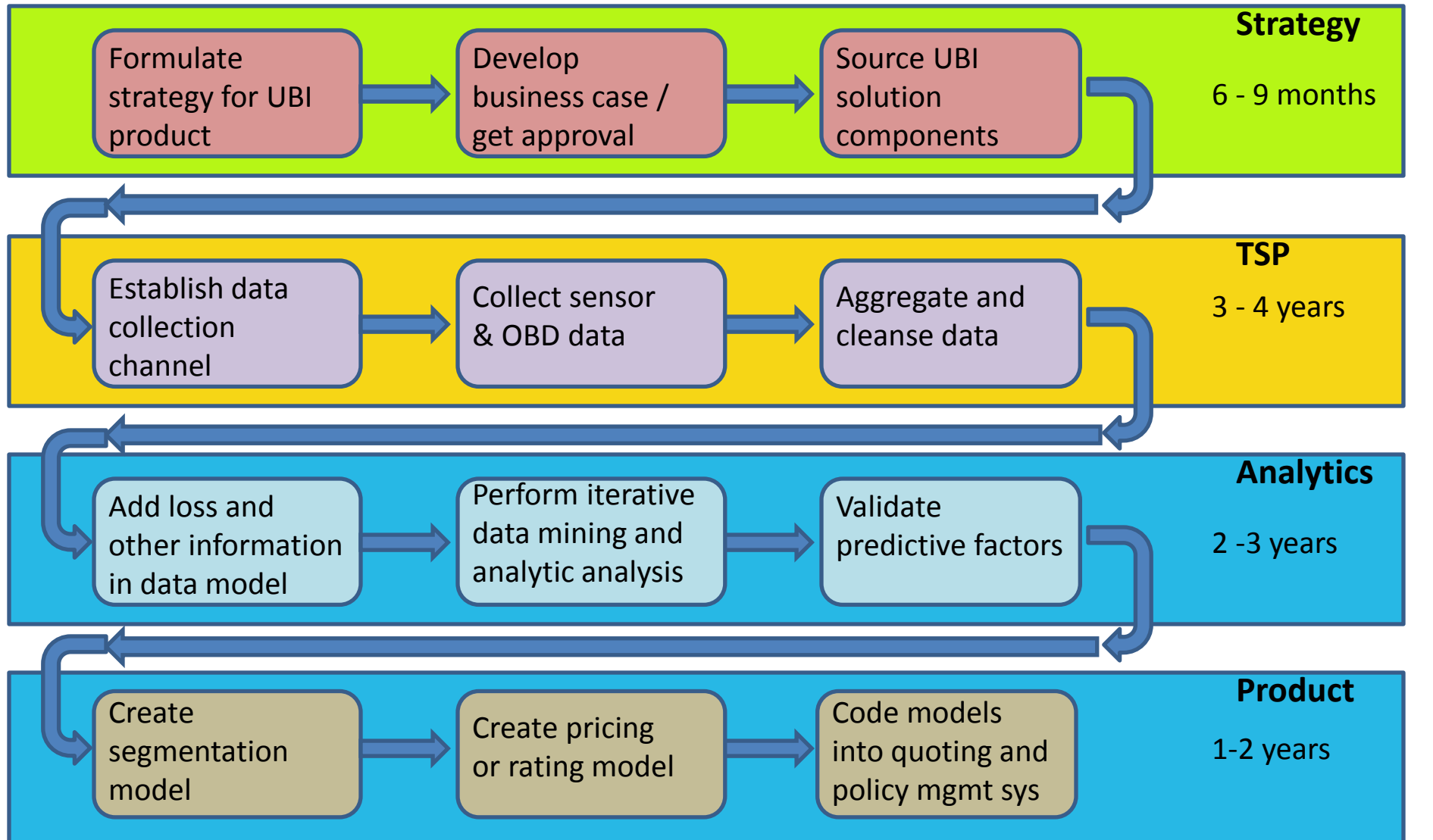
*The volume of data collected to develop usage-based insurance is 1000 to 1,000,000 times greater than that required for traditional insurance products. The 'Internet of things' is creating exponentially larger amounts of information that can be used for customer segmentation and risk analysis. Insurers will increasingly need to build **big data** environments to handle these large volumes of diverse types of data.*

Current UBI Ecosystem



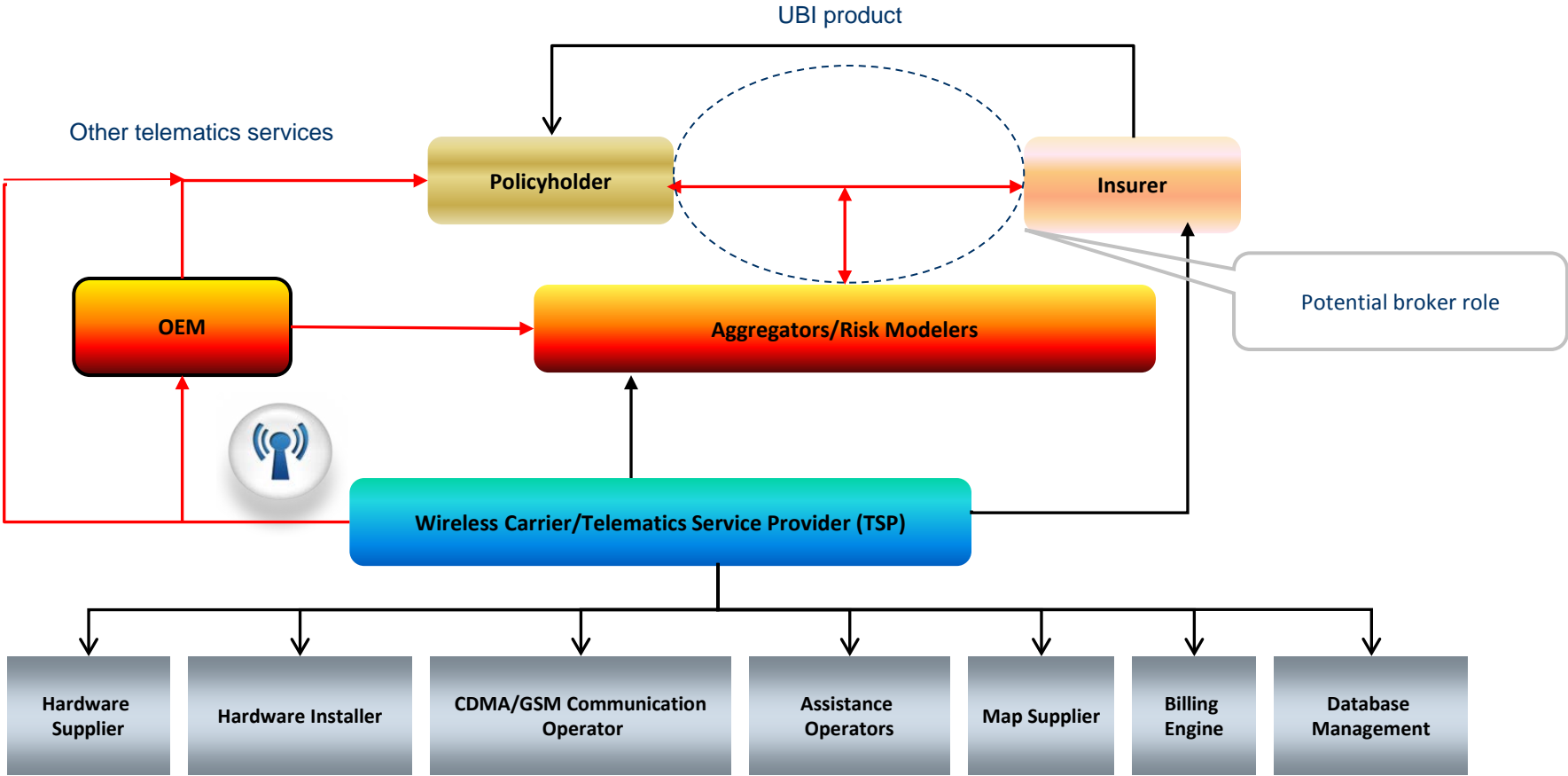
TSPs and Solution Providers act as supply chain integrators by sourcing and tying together the various parts needed to create the UBI ecosystem. It is generally expected that the insurer will convert the data into actionable information and eventually into predictive models. Many of the TSPs provide basic web portals for insurers and their customers to review recorded events for feedback.

The Making of Usage-Based Insurance



Average 8 year process

Future UBI Ecosystem

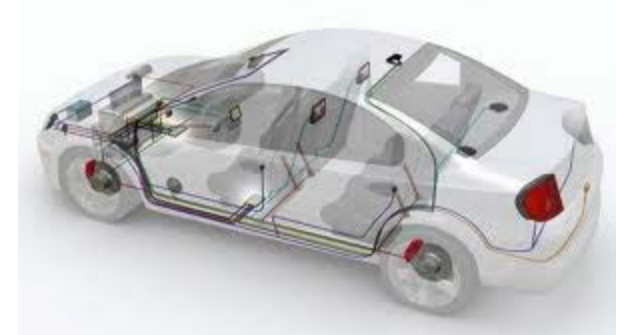


OEMs are expected to install telematics hardware in vehicles as a factory-fitted system and are expected to partner with solution providers for telematics services (Telematics services related to vehicle diagnostics, driving behaviour, planned vehicle maintenance, emission management, and insurance). **OEMs could even offer specific telematics data to the insured through a specific aggregator or TSP.**

“The future will see the OEM’s play a pivotal role in the UBI value chain”

Four main device choices:

- Professionally installed device
- Self-installed device
- Mobile phone application
- OEM car installation



OEM embedded system



Professionally installed

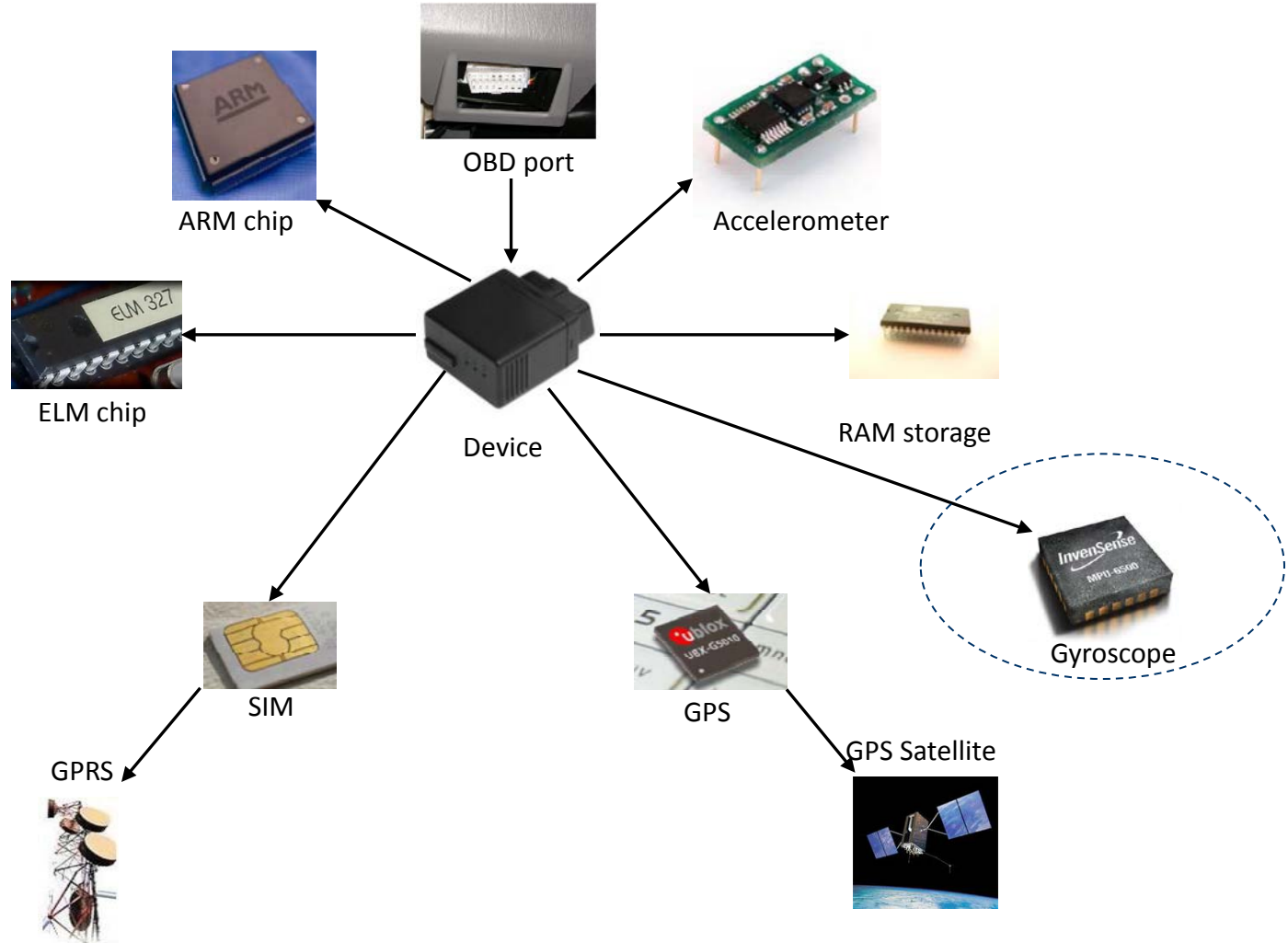


Self-installed



Smart phone app

Device Components



Technology

Contextual

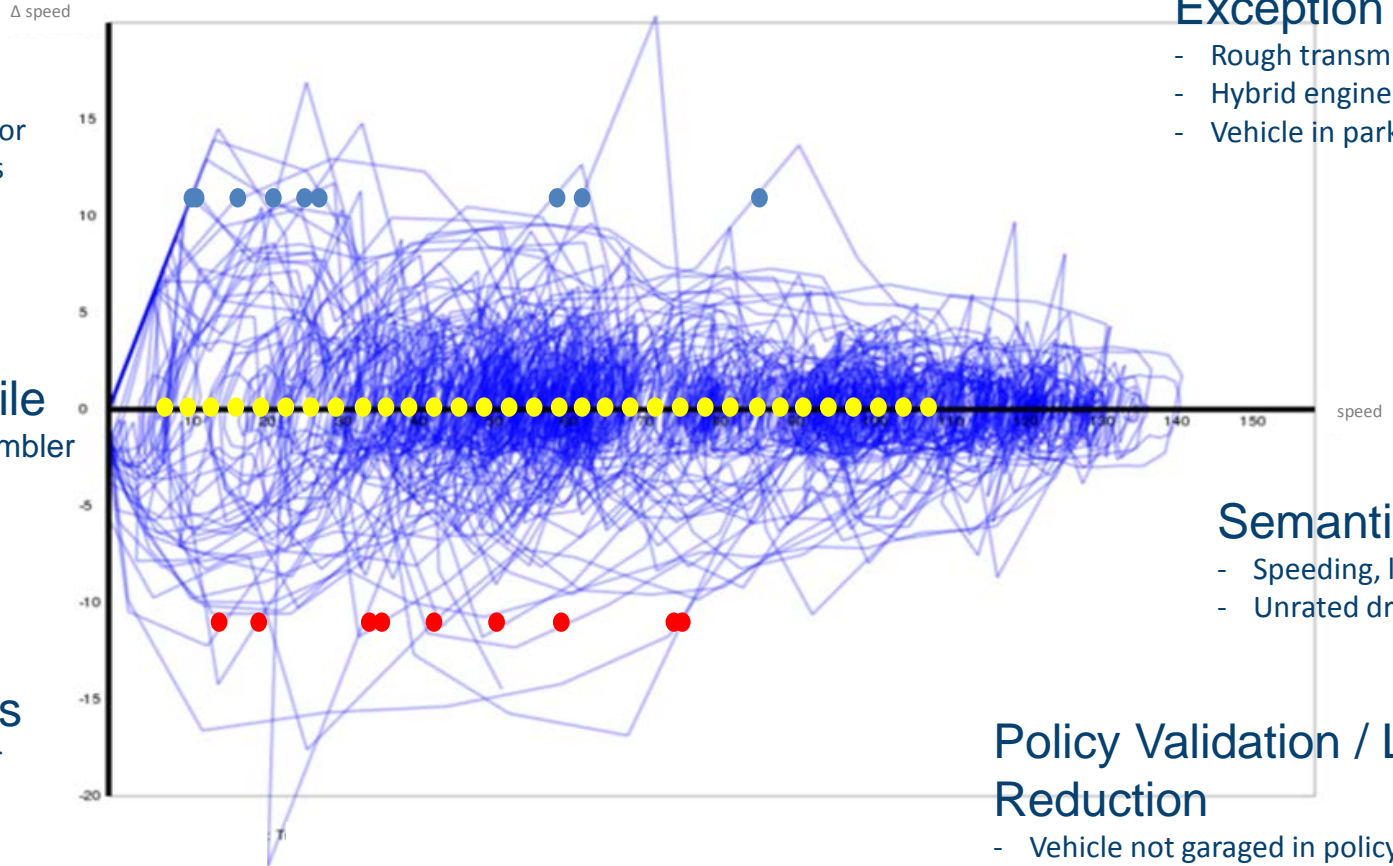
- Risk moderating or enhancing factors

Driving Profile

- risk averse or gambler

Driving Skills

- Risk moderating or enhancing factors



Exception translation

- Rough transmission gear shift
- Hybrid engine switch
- Vehicle in parking garage

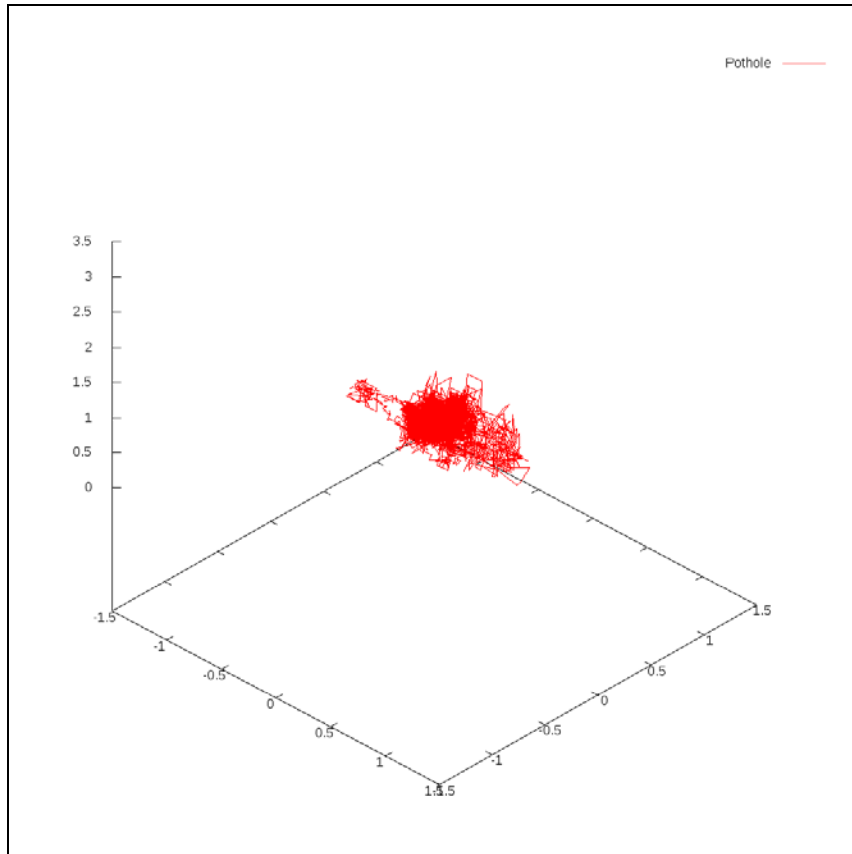
Semantic translation

- Speeding, late for work
- Unrated driver driving vehicle

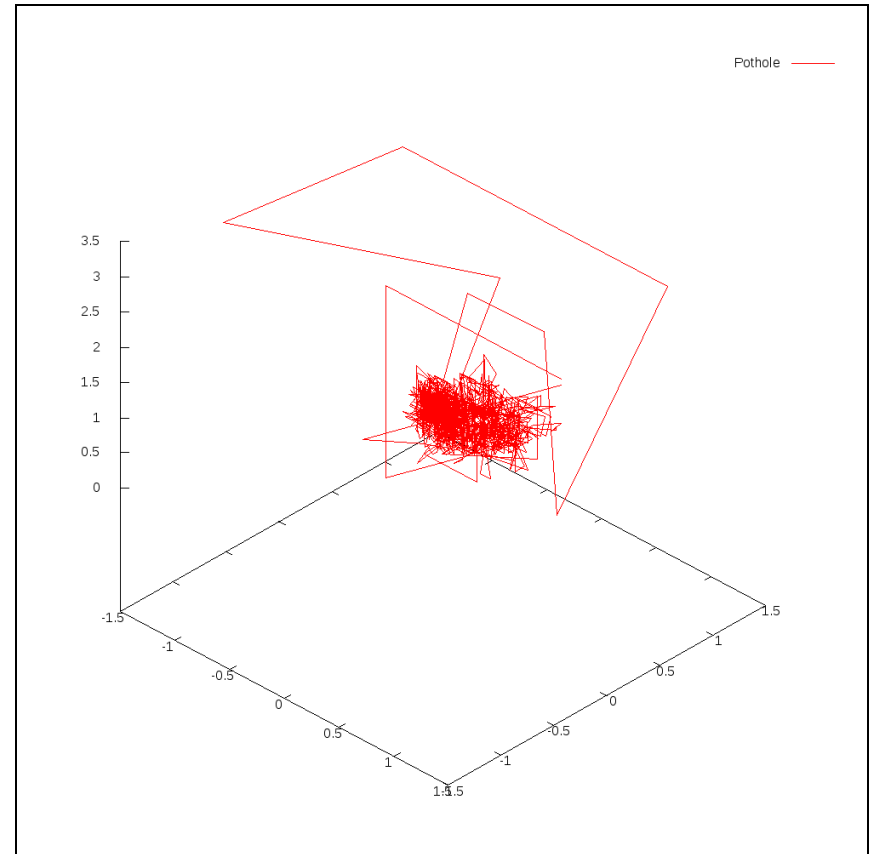
Policy Validation / Leakage Reduction

- Vehicle not garaged in policy location
- Actual miles exceeds policy rating

Using 3 axis accelerometers



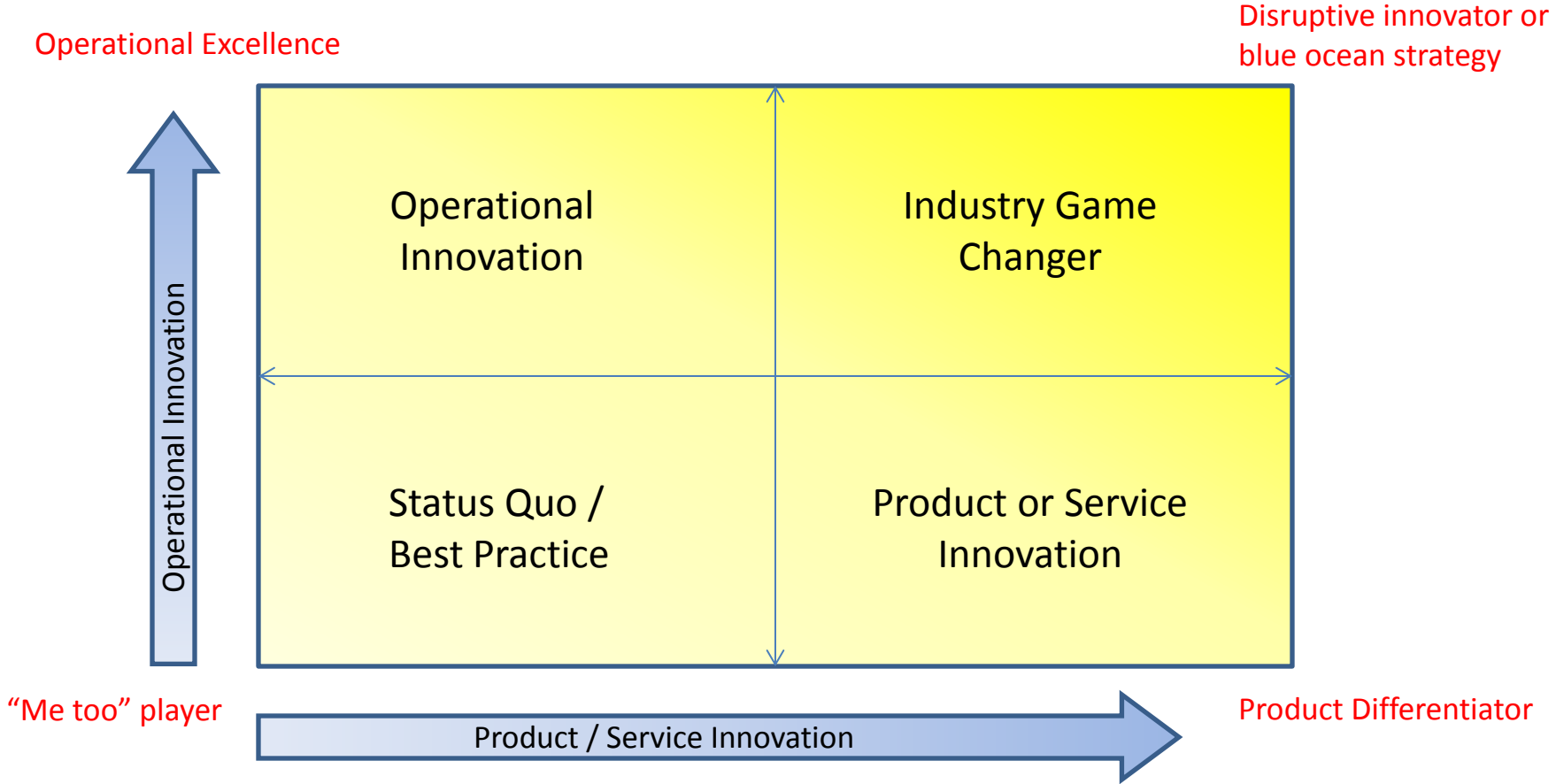
Normal driving noise



Pothole strike

Developing Strategy

UBI strategies are unique to each insurer. It's important to understand what you want to achieve through a UBI product and how that plays to your strengths.



Evolution of Insurance from Risk Transfer to Risk Reduction

Advanced analytics and risk profiling

- Models based on individual lifestyle, propensity, etc.
- Specialty lines for personal insurance

Protecting the family

- Teen/Senior-family relationships
- Strengthens insurer to insured relationships

Behavioral modification

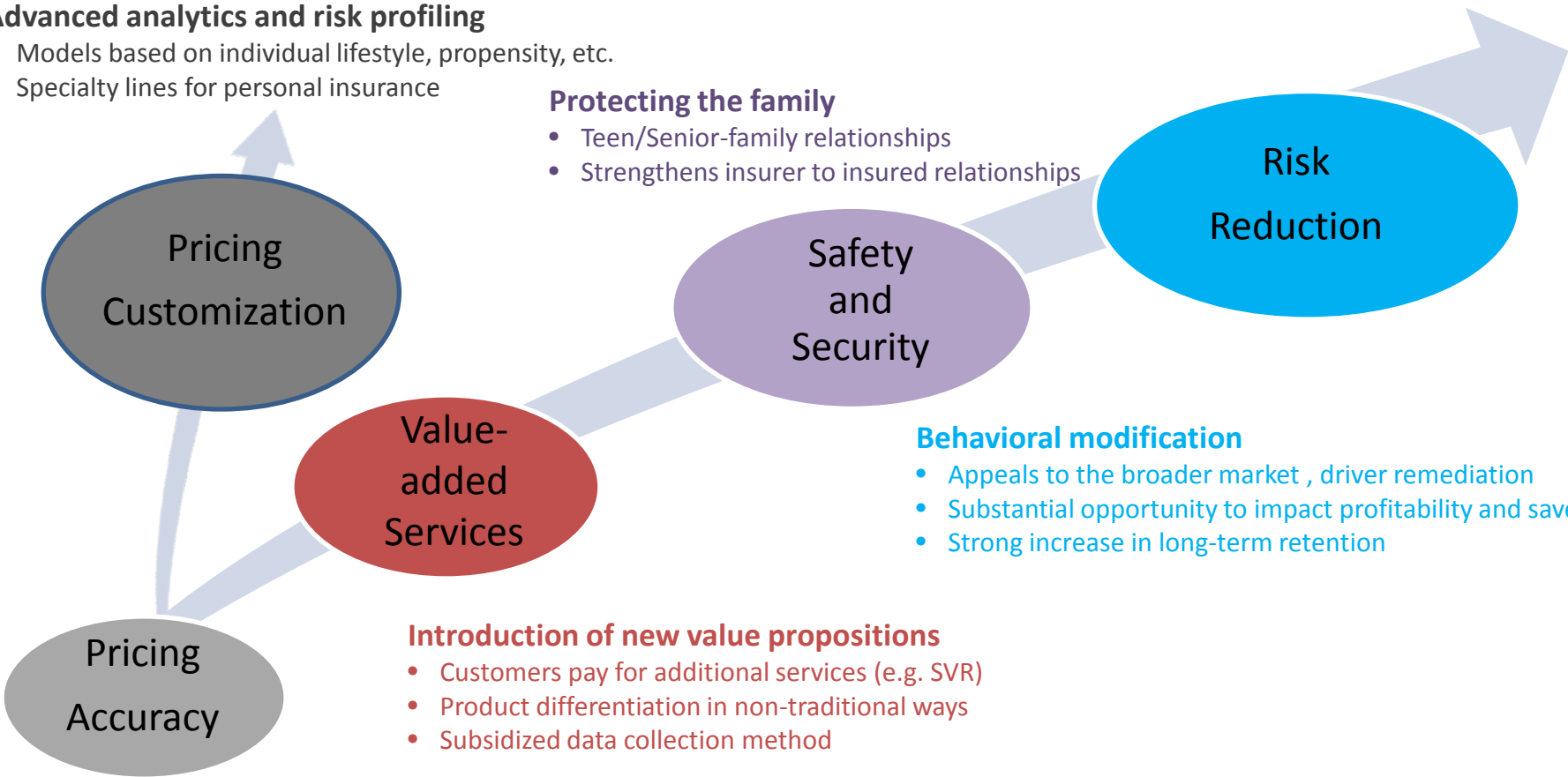
- Appeals to the broader market , driver remediation
- Substantial opportunity to impact profitability and save lives
- Strong increase in long-term retention

Introduction of new value propositions

- Customers pay for additional services (e.g. SVR)
- Product differentiation in non-traditional ways
- Subsidized data collection method

Simple segmentation and scoring enhancement

- Discount centric, based on self-selection
- Focused on high profit customers
- Price risk 'as is'



Insurers have a variety of approaches and opportunities available to them

1. Driver risk assessment (“Driver Quality Index”)
2. Mileage based pricing (pay for how much you drive)
3. Driver safety improvement (coaching and feedback)
4. Theft prevention
5. Teen driver safety improvement
6. Crash assistance / emergency calling upon accident
7. “Gamification” (to encourage safe driving)

AdVanced™ can enable insurance carriers to capture value by helping them build the operational capabilities necessary to capture and analyze driving behavior data to determine driver risk and segmentation

Insurers representing 60% of personal lines auto market have introduced a UBI product

At least one UBI product has been implemented in each state

55% of insurers in Europe have an active UBI project

50% of insurers in the US have an active UBI project

Market Overview

Canada

- Industrial Alliance

US

- NoCal AAA
- SoCal AAA
- Allstate
- American Family
- Esurance
- GMAC
- The Hartford
- Liberty Mutual
- MetLife
- Nationwide
- Plymouth Rock
- Progressive
- Sequoia
- State Farm
- Travelers
- 21st Century

Europe

- The AA
- Allianz
- Aviva
- CIS
- Coverbox
- Direct Line
- Elephant
- Equity
- iKube Young Drivers
- Ingenie
- Insure the Box
- MAPFRE
- Markerstudy
- Polls Direct
- Reale Mutua
- RSA
- Sabre
- Young Marmalade

Japan

- AIOI

South Africa

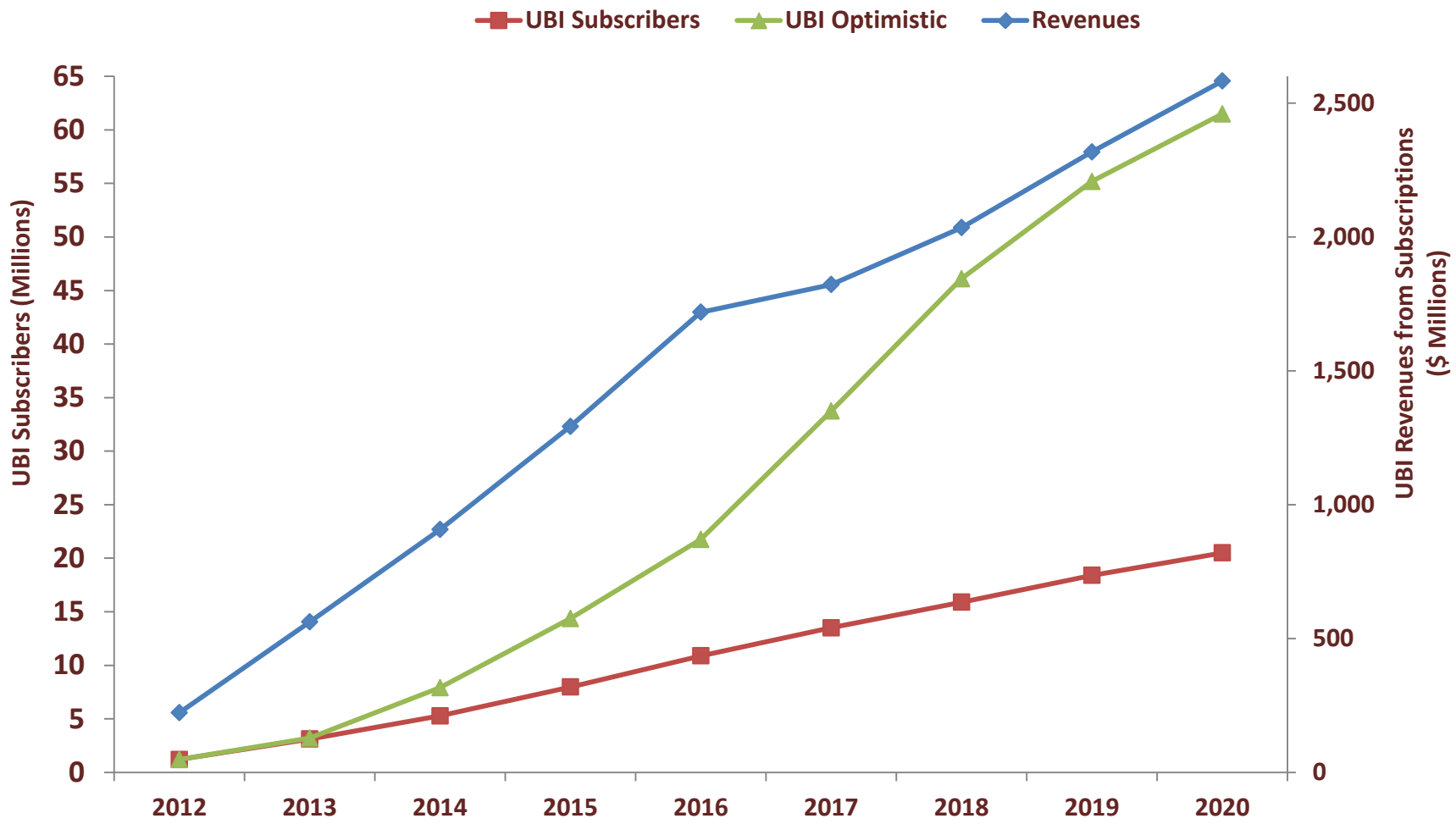
- Discovery Insure
- Hollard
- MiWay

Australia

- Real Insurance/Hollard











Source: Towers Watson, 2012

US Market Projections



Market Overview

UBI Comparison Chart

Parameters										
Name of UBI Program	Snapshot	On-Board Advisor	Insurethe box	Coverbox	Truelane	Drive Safe & Save	Low Mileage Discount	IntelliDrive	DriveWise	Driving While Distracted
Commercial Launch date	2010	2010	2010	2009	2012	2010	2010	2010	2011	2008
Type of UBI	Miles, When & how	Pay How You Drive	Miles	Miles, Where & When	Miles, When & how	Miles	Miles	Where & How	Miles & How	Teen Monitoring
Current geographic presence	43 States	23 States	UK Only	UK & Northern Ireland	AZ, CT, MN, MO, NV, OK, OR, WV	16 States	35 States	AL, IL, IN, Maine, OH, OR, Virginia, CT	IL, OH, AZ, NY, CO, MI, NJ, FL, PA and OR	Canada and Some US States
Future geographic Expansion	AK, CA, HI, IN, NC, TN and WA	Patent issues	Pan Europe	No Expansion	Patent Issues	Patent Issues	Increase state coverage	Increase state coverage	Patent Issues	No Major Expansion plans
OEM / Aftermarket	Aftermarket	After-market	After-market	After-market	After-market	After-market & OEM	OEM – OnStar Users	Aftermarket	Aftermarket	Aftermarket
Discounts	<=30%	>=15%	Flat Discount	Flat Discount	5-<=25%	5--<=50%	<=54%	<=20%	<=30%	Contract dependent
Patent Issues	NA	Progressive	NO	NO	Progressive	Progressive	No	No	Progressive	No

Patent environment for insurance telematics is a very active one

45 patents covering IP related to insurance telematics

IP litigation

Progressive versus:

- Allstate
- Liberty Mutual
- Safeco
- State Farm Mutual
- The Hartford

Progressive Patents

98005797134 - Motor Vehicle Monitoring System For Determining A Cost of Insurance

00006064970 - Motor Vehicle Monitoring System For Determining A Cost of Insurance

05006868386 - Motor Vehicle Monitoring System For Determining And Communicating A Cost of Insurance

12008090598 - Motor Vehicle Monitoring System For Determining And Communicating A Cost of Insurance

12008140358 – Vehicle Monitoring System

12008311858 – Vehicle Monitoring System

Evolving US regulatory environment

Insurance commissioners approve of voluntary programs

Some states limit rating factors

Concern over disclosure of IP in rate/product filings

State activity

California

Illinois

Washington

Europe

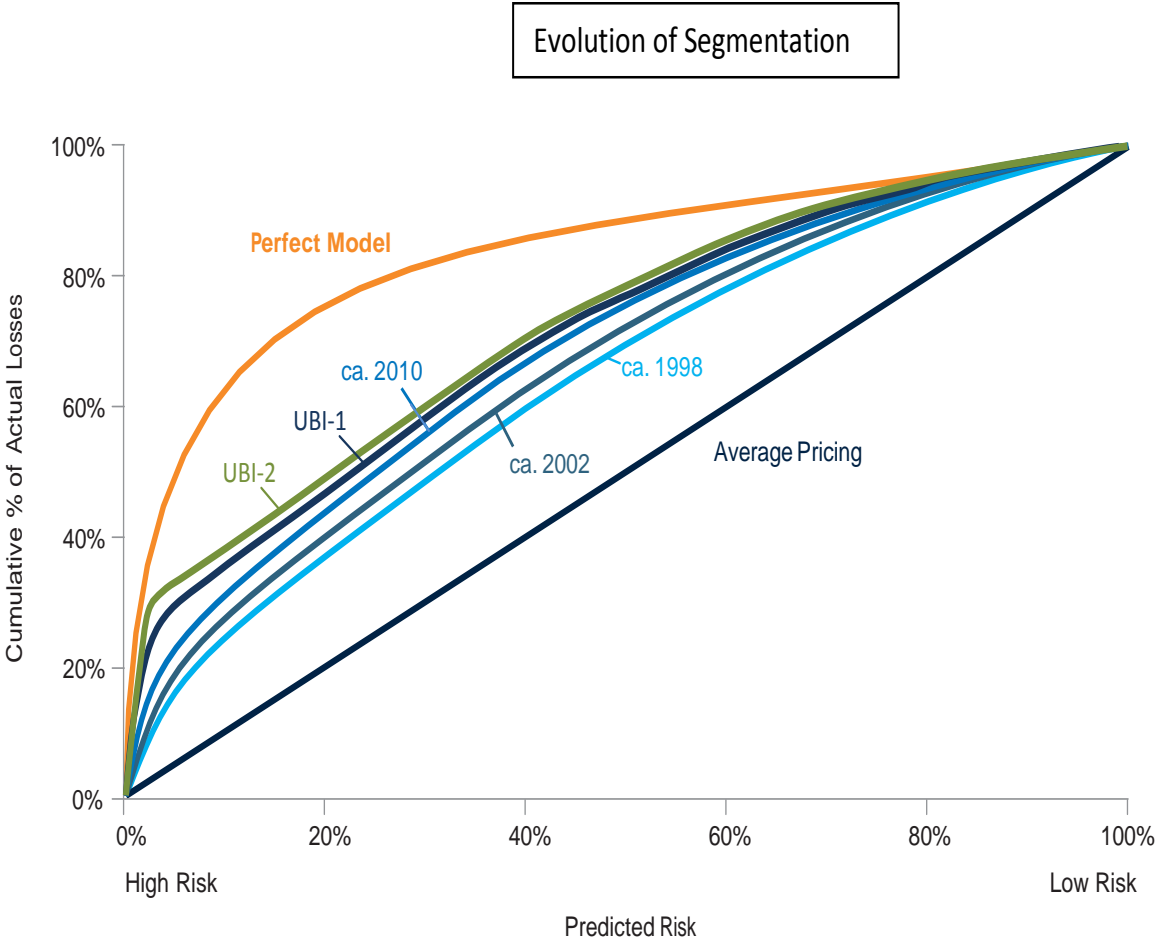
Gender no longer allowed



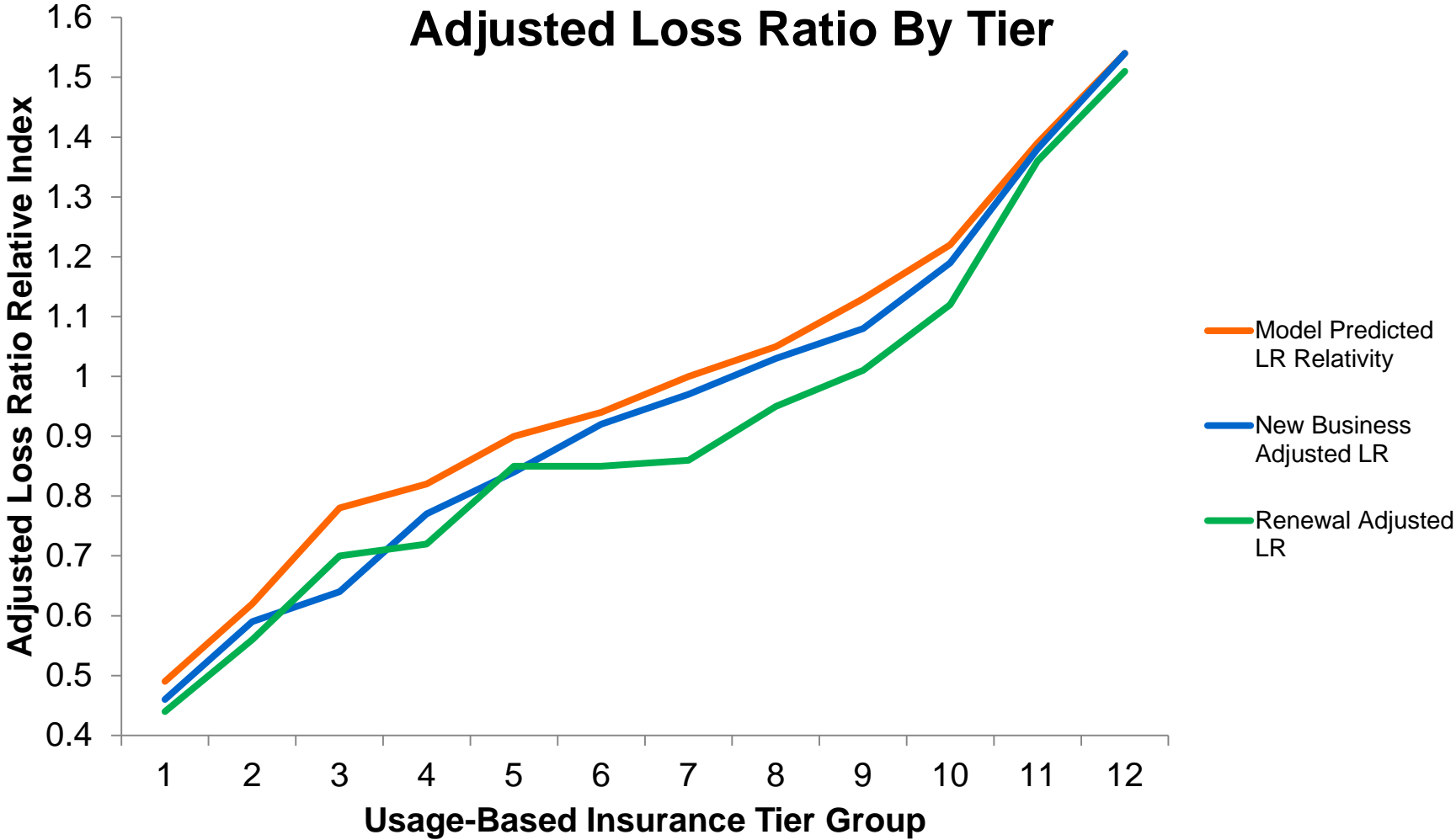
Source: Progressive Investor Presentation, 2012, p. 20

Present day scoring models (including credit) follow the familiar reversion to mean pattern
UBI scoring provides higher predictability providing reduced variability

Enhanced Segmentation



Impact of Enhanced Predictability



UBI Economics

Progressive Simple Scoring Enhancement Model

Average annual premium	\$800
Average annual LLAE	\$600
<hr/>	
Net	\$200

Average discount	15%
Cost of infrastructure	2%
	<hr/>
	- 17%
Reduction in LLAE	20%
	<hr/>
	+20%
Average ROI	3%

Competitive advantage with less variance

UBI Economics

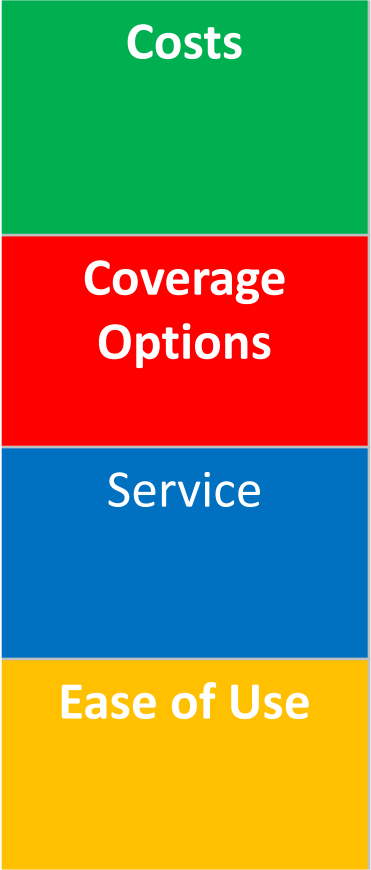
Behavior Modification Model

Average annual premium	\$800
Average annual LLAE	\$600
Net	\$200

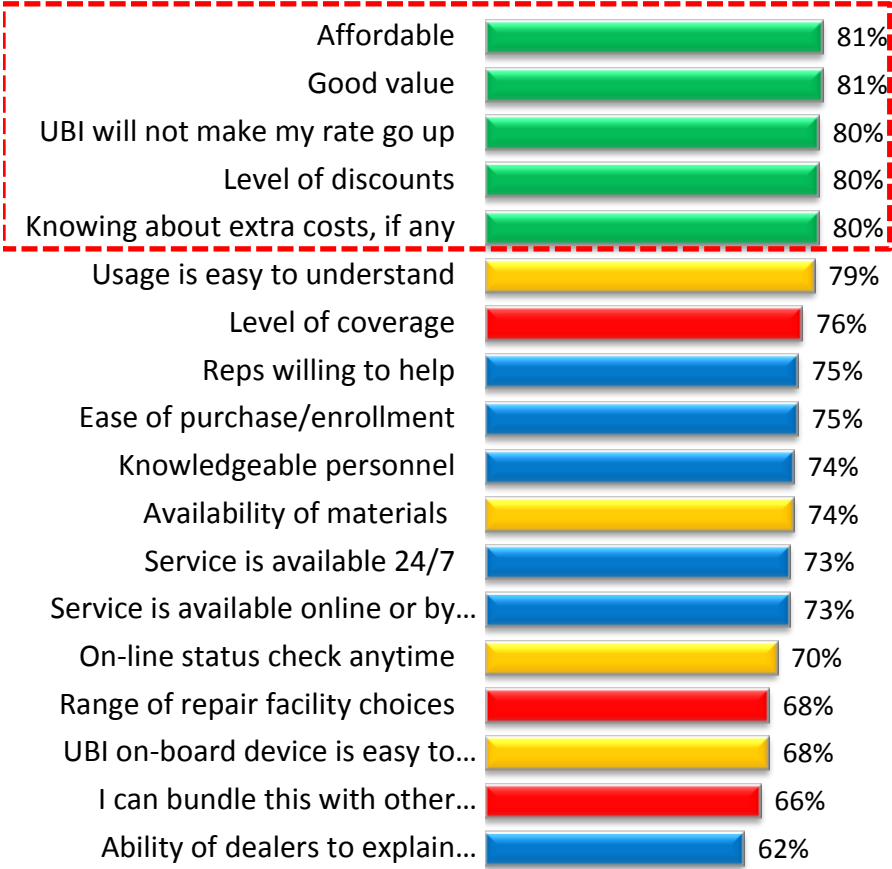
Discount target	25%	
Cost of infrastructure	5%	
	- 30%	
Reduction in LLAE		40%
Reduction in leakage		5%
		+45%
Average ROI	15%	

Competitive advantage and substantial reduction in variance (reduced VAR)

Why would consumers consider purchasing UBI?



Stated Importance When Considering UBI

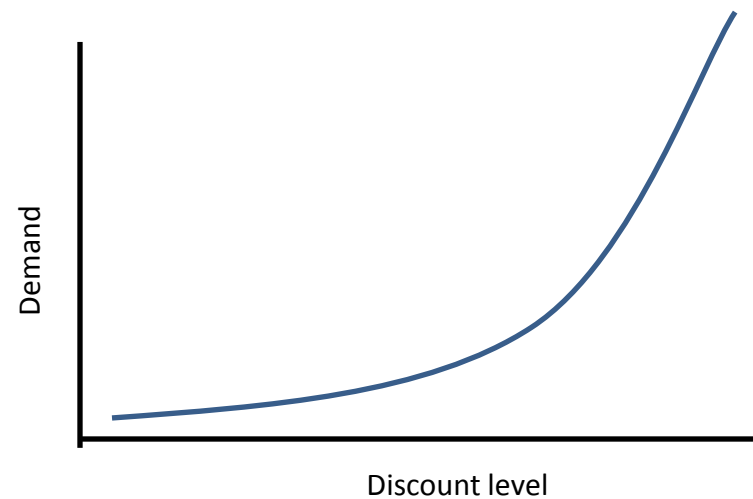


Population: All respondents (n=600).

AdVanced™ has relationships with several prominent universities and conducts ongoing research on advanced insurance including usage-based insurance.

Demand for UBI increases non-linearly in proportion to the level of discount

Elasticity of demand for UBI



Software Applications

Landing Page



Save Money with Usage-Based Insurance

Usage-Based insurance can save you money! With ABC Insurance Company's usage-based insurance product, your insurance rate is based on your driving performance including factors such as: miles driven, hard braking events, and time of day.

Sign up for a free trial or get a quote today!

Contact Us

Talk to a local agent

Or call 1-888-888-8888

Get a Quote

Find out how much you can save.

Sign Up for a Free Trial

Starting your free trial is easy.



User Account Page

The screenshot displays the user account page for ABC Insurance. At the top right, it says "Welcome, Customer! | [Logout](#)". The ABC Insurance logo is on the left. A navigation menu includes "Your Usage Stats" (highlighted), "Learning Center", "FAQs", "Manage a Claim", "Account Information", and "Contact Us". The main content area, titled "Your Usage Stats", features a "Driving Performance Score" of **B**. Below this, it states "This score reflects:" and lists four categories: 24 Speeding Alerts, 17 Accelerating Alerts, 20 Braking Alerts, and 78% Daytime Driving. A large box at the bottom indicates "218 Miles Driven". The footer contains links for "Privacy and Security" and "Terms and Conditions", along with social media icons for Facebook, Twitter, YouTube, LinkedIn, and a mobile app icon.

Welcome, Customer! | [Logout](#)

ABC Insurance

- Your Usage Stats
- Learning Center
- FAQs
- Manage a Claim
- Account Information
- Contact Us

Your Usage Stats

Driving Performance Score

B

This score reflects:

- 24 Speeding Alerts
- 17 Accelerating Alerts
- 20 Braking Alerts
- 78% Daytime Driving

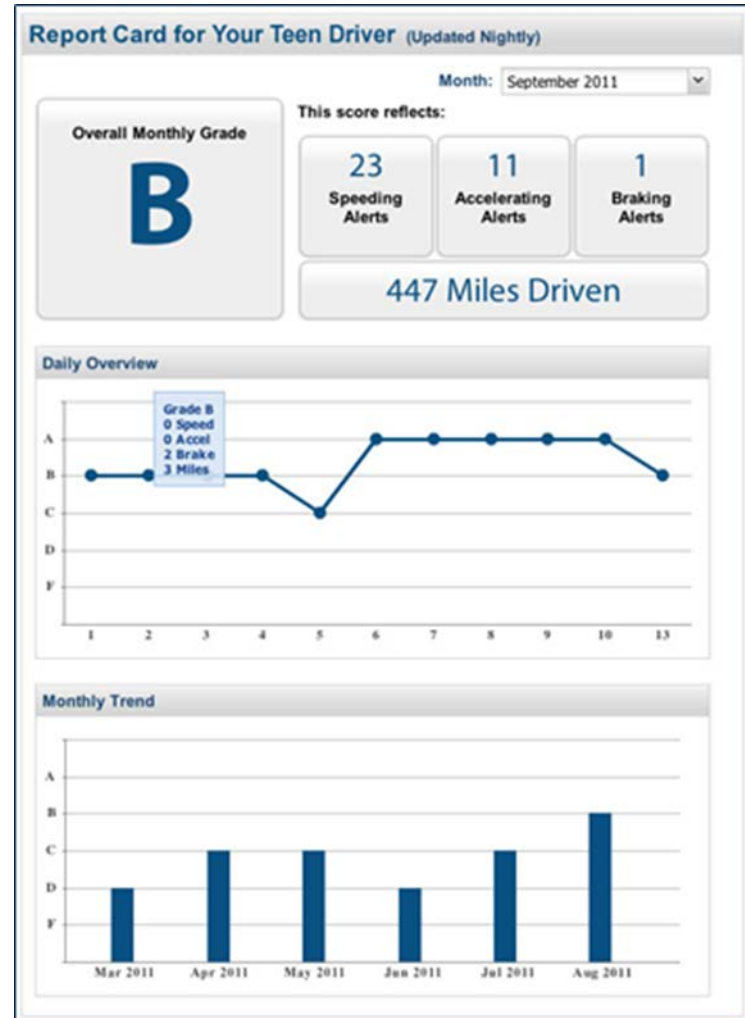
218 Miles Driven

[Privacy and Security](#) | [Terms and Conditions](#)

[Facebook](#) [Twitter](#) [YouTube](#) [LinkedIn](#) [App](#)





Application Screen Shots

Online Report Card



















Trip/Alert Summary Report

ABC Insurance

 **Map**
 **Report**
 **Alerts**
 **Setup**

Alerts

Date:

Type	Name	Map	Description	Date
Name: Greg Winter (3 Items)				
	Greg Winter	Map	Speeding Alert (Heading N at 49mph)	Oct 07, 2012 07:50 PM
	Greg Winter	Map	Speeding Alert (Heading W at 64mph)	Oct 07, 2012 07:40 PM
	Greg Winter	Map	Speeding Alert (Heading W at 59mph)	Oct 07, 2012 07:39 PM
Name: Naeem Bari7 (3 Items)				
	Naeem Bari7	Map	Harsh Braking (Heading SW at 19mph)	Oct 07, 2012 06:37 PM
	Naeem Bari7	Map	Speeding Alert (Heading SW at 47mph)	Oct 07, 2012 06:37 PM
	Naeem Bari7	Map	Harsh Braking (Heading W at 29mph)	Oct 07, 2012 11:30 AM
Name: Paul Inman (10 Items)				
	Paul Inman	Map	Harsh Braking (Heading S at 16mph)	Oct 07, 2012 03:25 PM
	Paul Inman	Map	Harsh Braking (Heading W at 18mph)	Oct 07, 2012 03:19 PM
	Paul Inman	Map	Harsh Braking (Heading E at 4mph)	Oct 07, 2012 12:42 PM
	Paul Inman	Map	Speeding Alert (Heading W at 52mph)	Oct 07, 2012 12:39 PM
	Paul Inman	Map	Speeding Alert (Heading W at 62mph)	Oct 07, 2012 12:38 PM
	Paul Inman	Map	Speeding Alert (Heading N at 60mph)	Oct 07, 2012 12:16 PM
	Paul Inman	Map	Rapid Acceleration (Heading NE at 14mph)	Oct 07, 2012 10:20 AM
	Paul Inman	Map	Speeding Alert (Heading SE at 49mph)	Oct 07, 2012 10:17 AM
	Paul Inman	Map	Speeding Alert (Heading S at 49mph)	Oct 07, 2012 10:15 AM
	Paul Inman	Map	Speeding Alert (Heading E at 68mph)	Oct 07, 2012 10:09 AM

Bread Crumb Trails



Commercial Auto Summary Screen

You are logged in as Zia Iqbal | [My Account](#) | [Order More Devices](#) | [Help](#) | [Logout](#)

ABC Insurance [Map](#) [Report](#) [Alerts](#) [Setup](#)

Reports

> Activity Summary

Start Date: 09/01/2012

End Date: 09/30/2012

[Show Activity Summary](#)

> Stops

> IFTA

All Users - September 01, 2012 through September 30, 2012

[Export](#)

Miles Driven

3679

3668

Authorized

11

Unauthorized

Speeding Events

763

Idle Time

21h 7m

User Details

Name	Auth	Unauth	Total
Paul Inman	1,627	11	1,638
Greg Winter	1,023	0	1,023
Naeem Bari7	442	0	442
Mike Janger 1	357	0	357
Numerx SIM test 3520...	219	0	219
contay	0	0	0
Naeem Bari	0	0	0

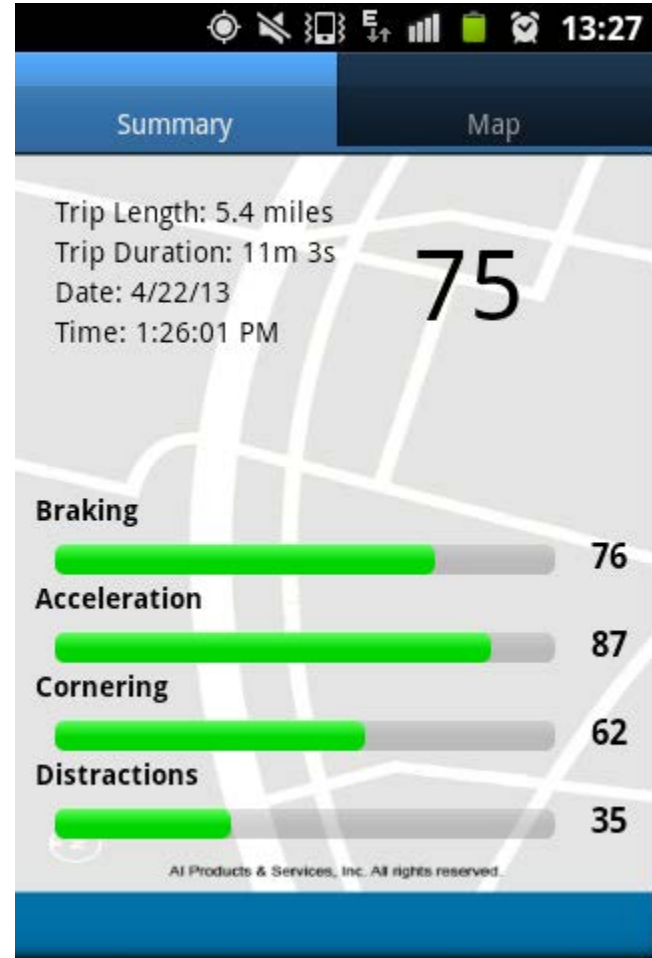
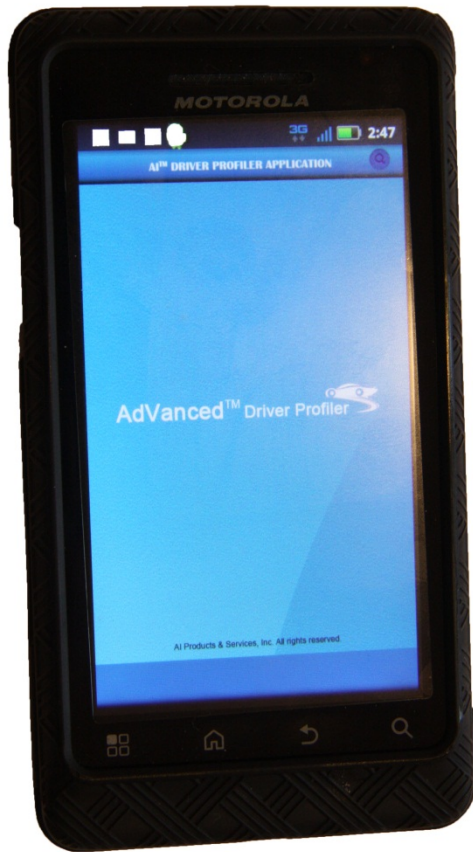
User Details

Name	Events
Paul Inman	372
Greg Winter	237
Naeem Bari7	76
Numerx SIM test 35205405...	52
Mike Janger 1	26
contay	0
Naeem Bari	0

User Details

Name	Time
Greg Winter	7h 1m
Naeem Bari7	6h 19m
Paul Inman	4h 38m
Mike Janger 1	1h 50m
Numerx SIM test 35205405...	1h 19m
contay	0h 0m
Naeem Bari	0h 0m

Smart Phone App





Innovate, Grow, Advance

www.adv-ins.com