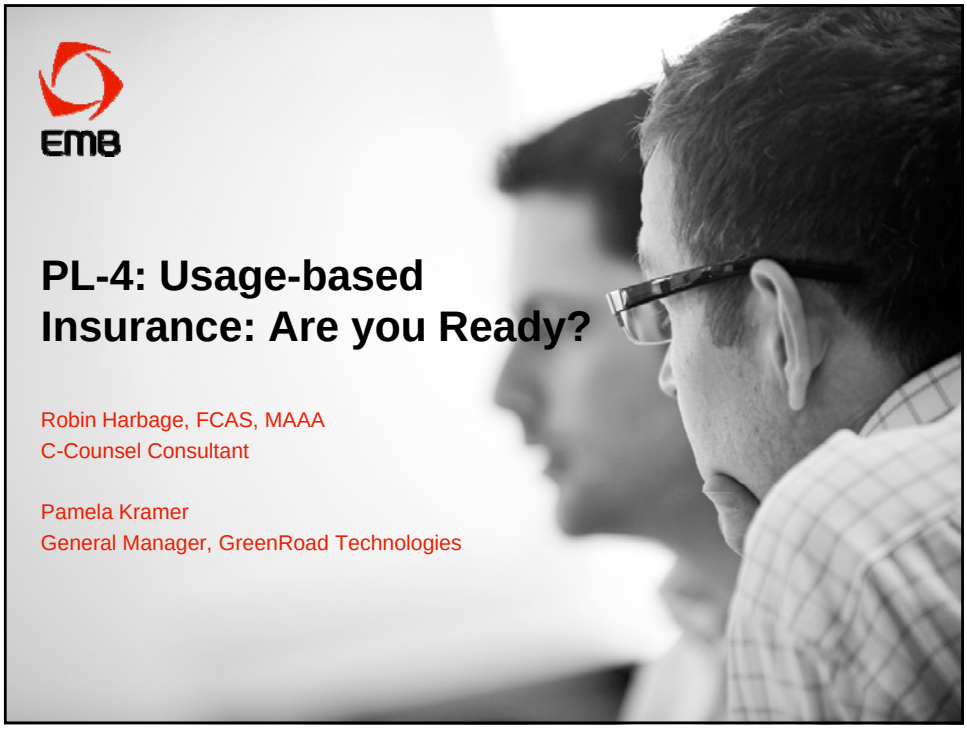

PL-4: Usage-based Insurance: Are you Ready?

Robin Harbage, FCAS, MAAA
C-Counsel Consultant

Pamela Kramer
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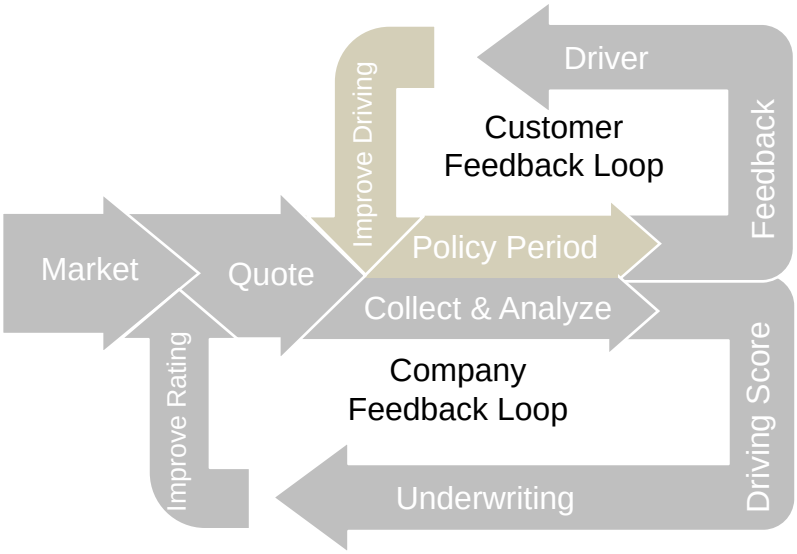
 Slide 2

PL-4: Usage-based Insurance: Are you Ready?

Usage-based Insurance (UBI) utilize insured's driving behavior collected from telematic devices to differentiate risk and/or providing useful information to policyholders. Poised to be the next major innovation since auto insurers began using credit scores.

What is currently happening?
Why is UBI good for companies, customers & society?
What are the obstacles to implementation?

How does UBI work?



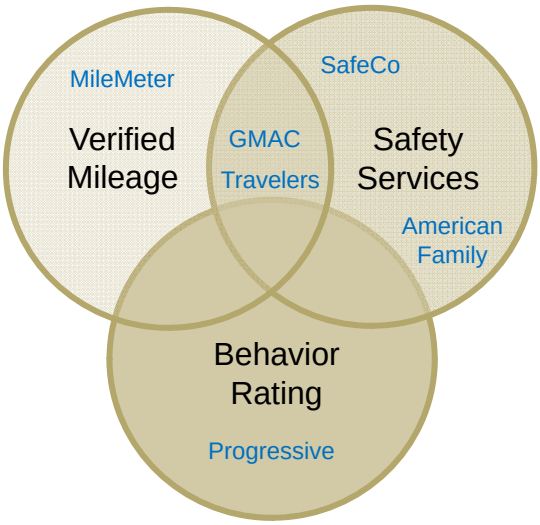
 Slide 5

What is usage-based insurance (UBI)?

UBI programs collect data on driving behavior from telematic devices and use that information to modify insurance premiums or to provide useful feedback to policyholders, or both.

- Companies have UBI programs around the globe
- Many other companies, including small companies, are moving toward implementation

Notable US Programs



 Slide 6

Commercial Auto

- Many telematics manufacturers and distributors
- Primarily used for fleet management, not insurance
- Professional installation required
  - Annual maintenance provides opportunity
  - High average premium justifies cost
- No standard for data
- No consistent databases or loss cost models

On-Board Recording Device Commercial Regulations

Section 395.15 FMCSA safety regulations - Automatic On-Board Recording Device (AOBRD), replace a paper logbook.

AOBRD automatically records engine use, road speed, miles driven, the date, and time of day.

Drivers enter other information required for hours-of-service records.

Electronic On-Board Recorder (EOBR) formally proposed.

EOBR uses GPS to automatically record additional hours-of-service.

What proportion of the US commercial fleets currently use telematics?

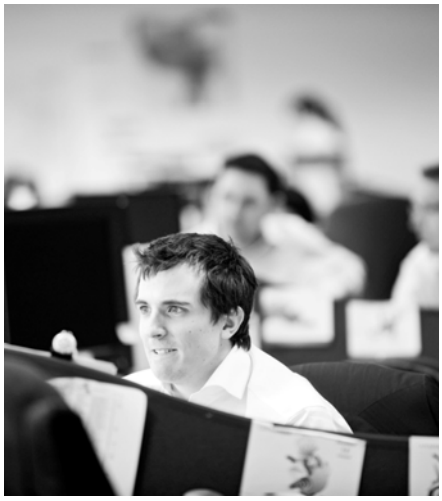
1) Less than 10%
2) 10% to 25%
3) 26% to 50%
4) More than 50%

 Slide 9

Personal Auto

- Early pilots used professionally installed OEM or after-market devices
- Subsidized cost for learning
- Inconvenient for consumers and low adoption rate

- Opportunities as device costs decline
- Multiple electronic makers offering devices
- Several insurers launching efforts



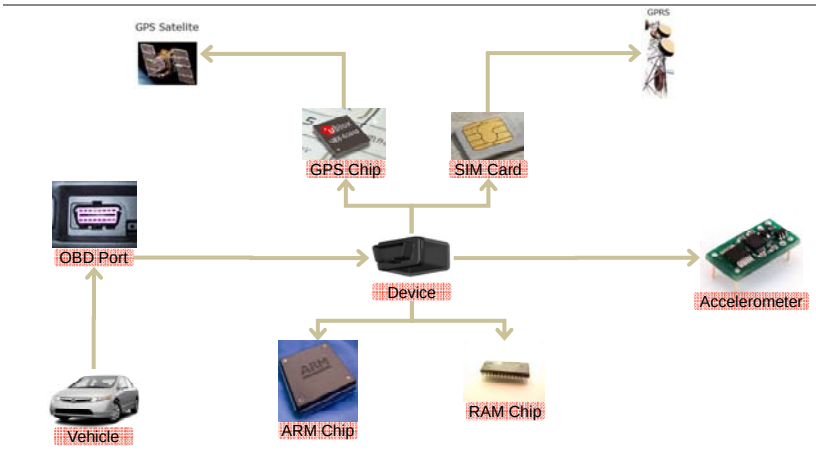
 Slide 10

What proportion of the US auto insurance market will use UBI in 5 years?

1) Less than 10%
2) 10% to 25%
3) 26% to 50%
4) More than 50%

 Slide 11

Telematic Devices



Device Components

 Slide 13

Alternative Models

- **Dedicated Device**
  - Insurance must pay for device and install
  - Need self install to appeal to mass market
    - Reasonable cost
    - Ease of use
- **Shared Services Device**
  - Device is able to support added value services outside insurance for example
    - Satellite Navigation
    - Rerouting to avoid Traffic Congestion
    - Theft Tracking
    - Speed camera warnings
    - Emergency Call etc.
  - Hard install may be required for these

 Slide 14

Added Value Services

- Safe Driver Coaching
  - In vehicle feedback
  - Web site reports
- Emergency Call
  - Detect significant impacts
  - Send text alerts (“Where am I” message)
  - Real-time service to dispatch help
- Theft Service
  - Detect motion without ignition
  - Tracking and call for help
- Geo-fence Service
  - Detect location outside boundary zone
  - Trigger notification

Subscription services could help subsidize the costs

Which technology will be most prevalent in five years?

1. Aftermarket OBD
2. Smart phone app
3. GPS (e.g. Garmin)
4. OEM
5. Other

DATA

Data Transmission Costs and Alternatives

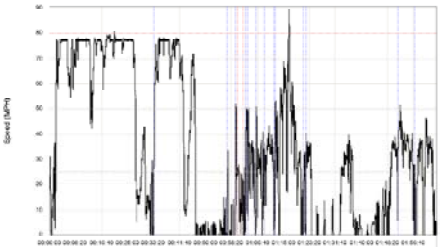
- Data types
- Record size
- Frequency of transmission
- Data Compression

Data Uses

- Data needed for loss cost models
- Data consumer wants
- Data for additional services

 Slide 19

Customer Feedback



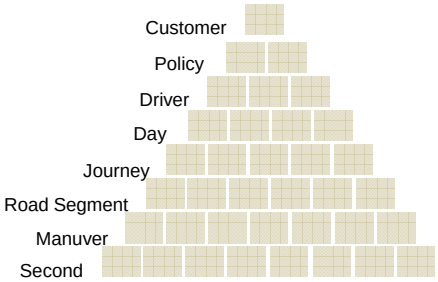
View / Trip Log / Summary

	Start Time	Duration	Distance Miles	Maximum Speed MPH	Time in Top Speed Band	Brakes Hard	Brakes Extreme	Accelerations Hard	Accelerations Extreme
Trip 1	27/02/2009 11:20	00:11:18	7.7	77	00:03:03	1	1	0	0
Trip 2	27/02/2009 19:24	00:12:43	7.7	77	00:00:00	4	0	0	0
Trip 3	27/02/2009 19:43	00:11:00	7.7	83	00:00:06	3	0	3	0
Trip 4	28/02/2009 08:32	00:14:53	5.7	69	00:00:00	3	0	0	0
Trip 5	28/02/2009 08:46	00:04:17	0.6	29	00:00:00	0	0	0	0
Trip 6	28/02/2009 09:33	00:07:06	2.1	45	00:00:00	4	0	1	0
Trip 7	28/02/2009 11:49	00:10:31	6.1	76	00:00:00	4	0	1	0
Trip 8	28/02/2009 12:33	00:28:24	20.9	78	00:00:00	3	0	0	0
Trip 9	28/02/2009 15:15	00:34:21	29.1	79	00:00:00	5	0	1	0
Trip 10	28/02/2009 18:57	00:14:22	6.0	77	00:00:00	3	0	1	0
Trip 11	28/02/2009 19:11	00:06:29	2.1	56	00:00:00	0	0	0	0
Trip 12	28/02/2009 19:23	00:14:27	6.3	70	00:00:00	1	0	2	0
Trip 13	28/02/2009 22:29	00:10:45	6.8	76	00:00:00	0	2	0	0
Trip 14	01/03/2009 12:38	00:20:12	10.7	66	00:00:00	0	0	1	0
Trip 15	01/03/2009 14:08	00:11:54	6.1	75	00:00:00	1	0	0	0
Trip 16	01/03/2009 14:22	00:07:22	2.4	43	00:00:00	0	0	0	0
Trip 17	01/03/2009 14:32	00:11:22	5.3	76	00:00:00	0	0	0	0
Trip 18	01/03/2009 15:07	00:08:29	3.9	77	00:00:00	0	0	1	0
Trip 19	01/03/2009 15:36	00:11:37	5.6	73	00:00:00	0	0	0	0
Trip 20	01/03/2009 16:09	00:13:29	9.7	72	00:00:00	0	0	0	0

Start Time	16/03/2009 07:40
End Time	16/03/2009 09:45
Duration	02:04:07
Idle	00:23:33
0 to 25 MPH	00:30:29
26 to 50 MPH	00:31:08
51 to 80 MPH	00:38:36
Over 81 MPH	00:00:19
Distance	70.2 Miles
Average Speed	34 MPH
Maximum Speed	89 MPH
Hard Brakes	2 (Between 0.59 G and 0.79 G)
Extreme Brakes	0 (Over 0.79 G)
Hard Accelerations	16 (Between 0.31 G and 0.45 G)
Extreme Accelerations	0 (Over 0.45 G)
Parameters	
Parameter 1	Vehicle Speed Every 1 Seconds
Parameter 2	Engine Speed Every 5 Seconds

 Slide 20

Levels of Aggregation



Factors can exist at any level

 Slide 21

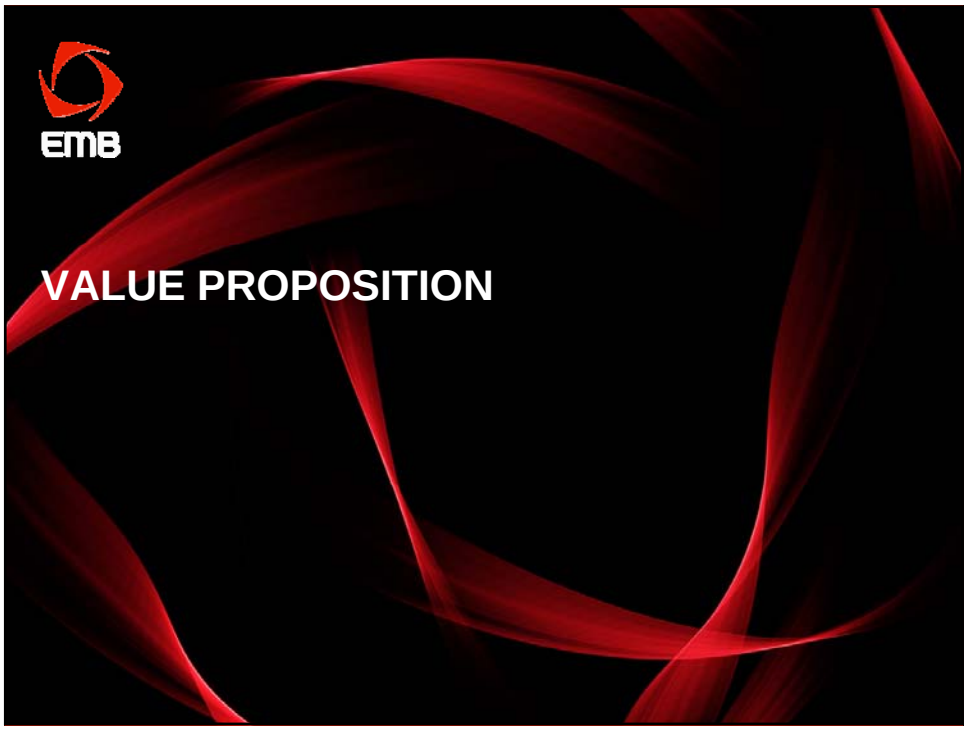
Data Sources

- Internally recorded by device
  - Clock, Accelerometer
- Obtained from vehicle diagnostics
  - Odometer, Speedometer, Engine operation
- Obtained from external sources
  - GPS, Maps, Weather, Traffic
- Developed from raw data

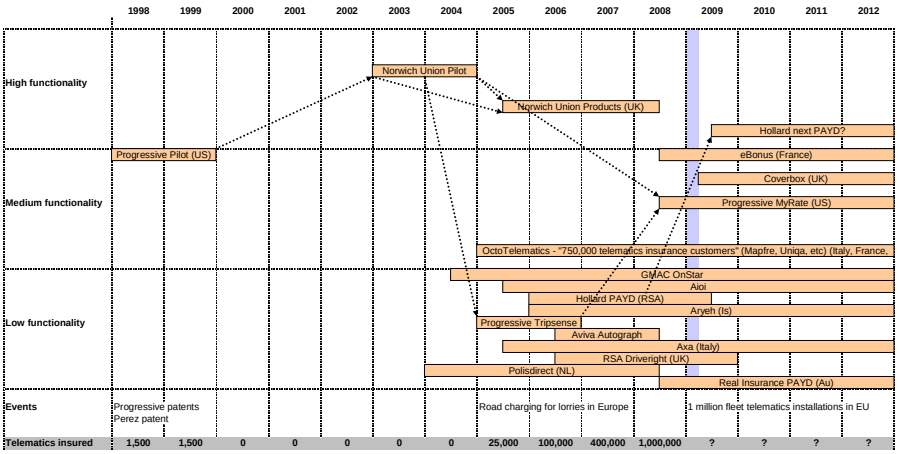
 Slide 22

What are the biggest obstacles to UBI rollout?

1) Consumer privacy
2) Technology
3) Investment costs
4) Lack of data
5) Patents
6) Other



Telematics Timeline



 Slide 25

Why now?

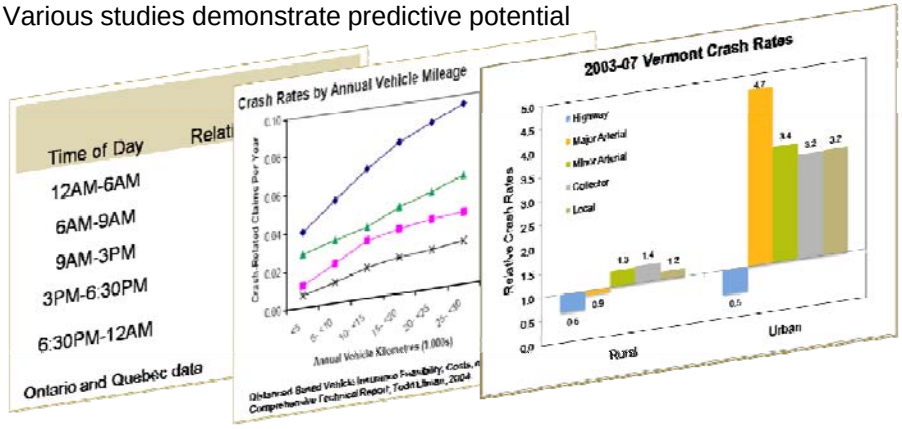
There a numerous reasons why UBI is gaining momentum

- Technology costs have dropped
- Predictive power significantly enhances accuracy of prices
- Participating consumers love it
- Accident reduction potential
- Politically accepted
- Retention dramatically increased

 Slide 26

Tremendous predictive power

Various studies demonstrate predictive potential



- Companies gain competitive advantage through better segmentation
- Elimination of cross-subsidization is more “fair”

 Slide 27

Appeals to participating consumers

Once educated, UBI appeals to consumers

- Makes sense
- Controllable
- Side benefits

As it is causal, reduces reliance on risk proxies

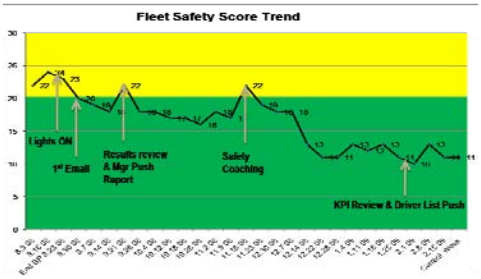
- Insurance credit scores
- Driver assignment
- Charges for relatively rare accidents, convictions

 Slide 28

Improves driving and reduces accidents

UBI experience significantly better

- Norwich Union: 30% frequency reduction
- GreenRoads: 54% improvement in fleet crash rate
- Iceland postal service reduced crash rate by 56%
- Progressive offers up to 61% discounts
- Pepsi (Iceland) reduced fleet crash rates by over 80%



Early adopters will have increased profits and a competitive advantage

 Slide 29

Missing Premium

- Rating error represented nearly 10% in personal auto premium
- Largest cause ($2.6 billion) was unrated drivers
- 52 percent of auto policies change of vehicles or drivers annually
- 5 times more likely to report mileage changes that lower than raise premium.
- But UBI accurately tracks behavior

Source: Quality Planning report in National Underwriter Online News Service, Jan. 20, 2010

With UBI, who drives may no longer matter.

 Slide 30

What will be the average loss cost savings for early adopters?

1) Less than 5%
2) 6% to 10%
3) 11% to 20%
4) 21% to 50%
5) Greater then 50%

Even the regulators can support this

Unlike many innovations, regulators should love this too

- "Fairly" discriminatory
- Saves lives
- Environmentally friendly
- Addresses affordability issues

Some states have applicable legislation

- CA: required rating variable
- TX: HB 45
- OR: tax rebate
- Items pending in other states

What does this mean?

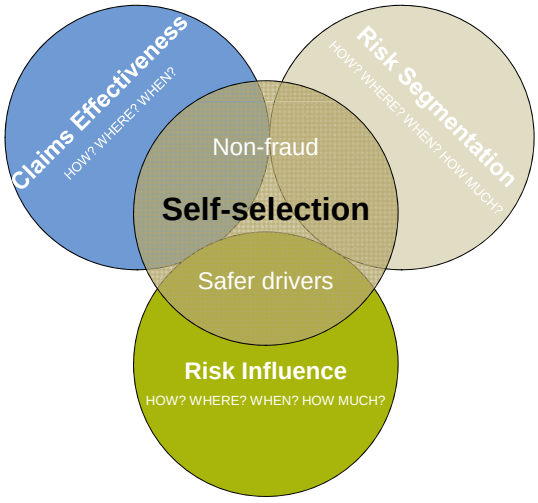
Devices can track simple or very detailed driving behavior

- Significantly increase pricing accuracy
- Minimize reliance on detailed questions and controversial proxy variables
- Help customers understand and eliminate risky behaviors
- Differentiate product offering via additional services

All this means increased profits and retention!

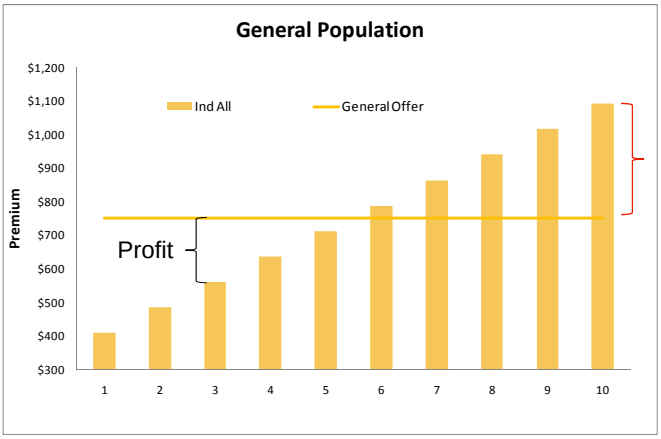
Reducing Risk Cost with Telematics

- **Risk Segmentation**
  - Deriving risk factors from the data, and applying loadings / discounts to customers to enhance selection
- **Risk Influence**
  - Customer feedback on behaviors to avoid
  - Reducing Vehicle usage overall, and especially higher risk miles
- **Claims Effectiveness**
  - Informing the claims process
  - Use of Telematics data as evidence
- **Self Selection**
  - Reducing underwriting and claims fraud



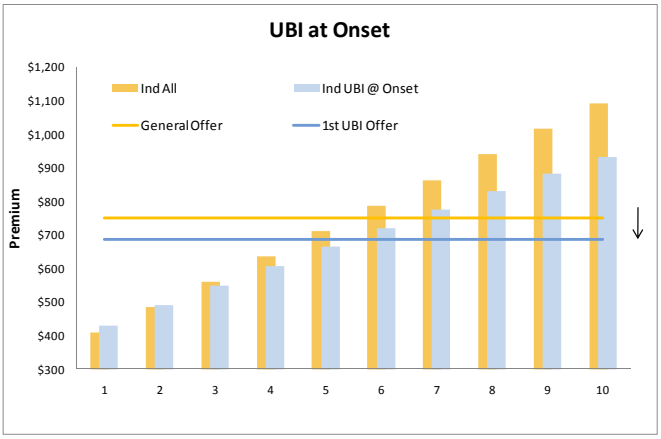
UBI is a significant advantage for early adopters!

Risk varies significantly by driving behavior, even though premium is not



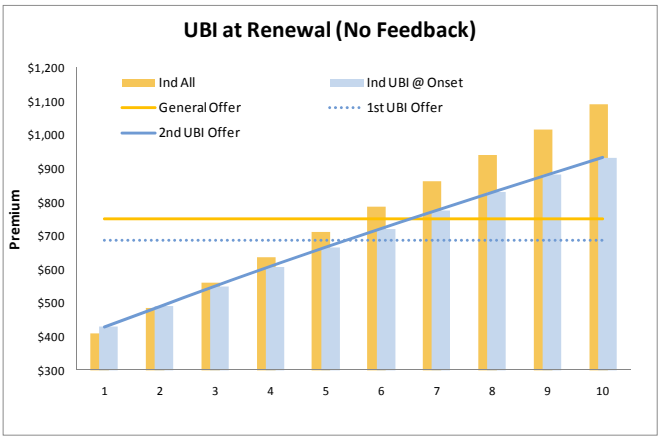
UBI is a significant advantage for early adopters!

UBI population's risk is lower than total population due to self-selection, observation effect, and consumer feedback mechanisms



UBI is a significant advantage for early adopters!

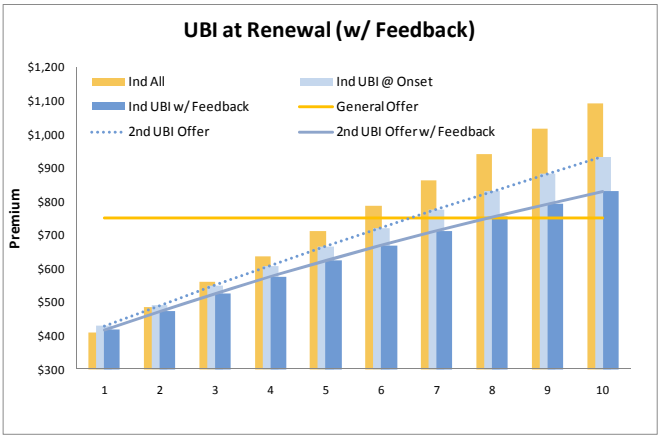
Once behavior is measured, UBI insurer will be able to segment the risks effectively and have a huge competitive advantage



 Slide 37

UBI is a significant advantage for early adopters!

If provide feedback to drivers, can drive the costs down even lower to increase advantage



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