

Emerging Issues in Personal Auto

UBI, self-driving cars and ridesharing

**Buckeye Actuarial Continuing Education
Columbus, Ohio**

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November 20, 2014

TOWERS WATSON 

“

“May you live in interesting times”

”

— Purported Ancient Chinese Curse



“

“May you live in interesting times”

”

— Purported Ancient Chinese Curse



Usage-based Auto Insurance (UBI)

- **The UBI marketplace today**
- **What are consumers saying?**
- **What can the data do for you?**
- **What is the right technology for now and the future?**

Usage-based Auto Insurance (UBI)

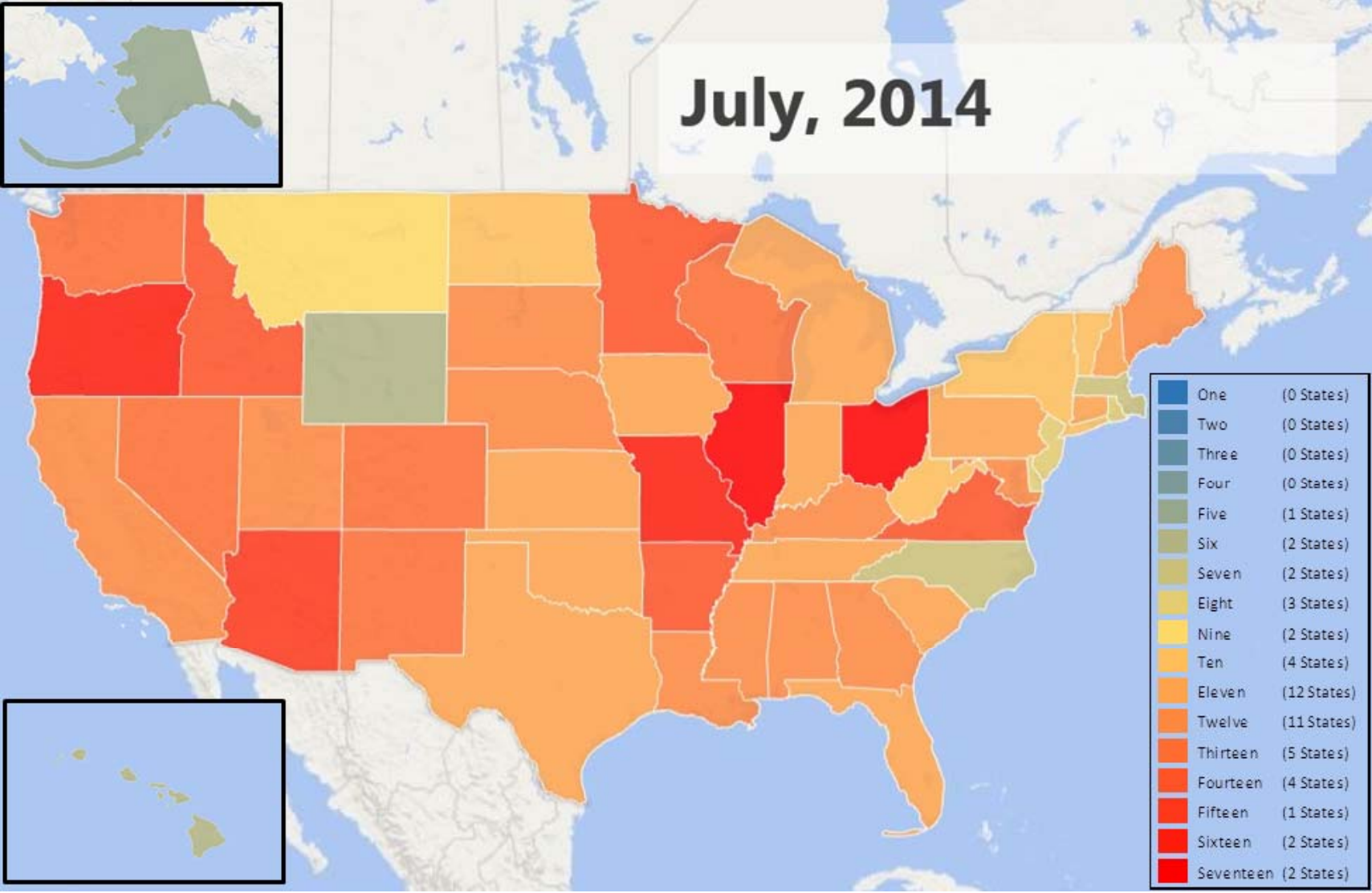
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Widespread development underway on a global basis

Pace of development varies by region



Proliferation of U.S. UBI Programs



Usage-based Auto Insurance (UBI)

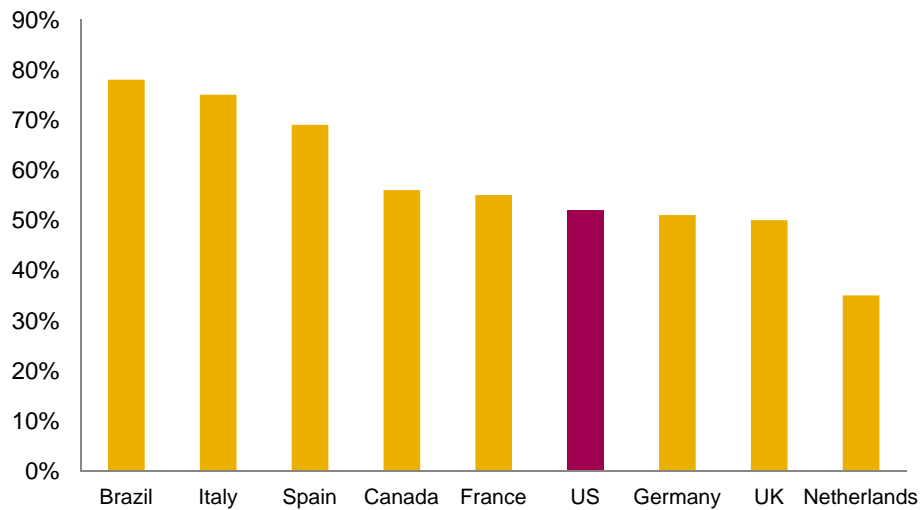
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The marketplace is ready for widespread adoption of UBI

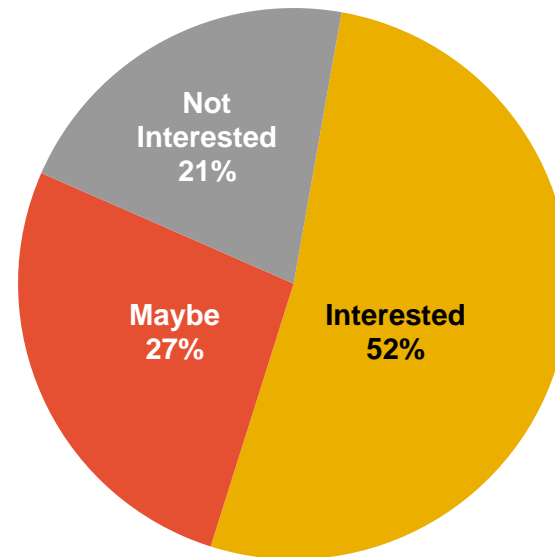
52% Definitely or probably interested in U.S.

79% Would be open to UBI in the U.S.

Percent interested in UBI, by Country



U.S. Interest in UBI

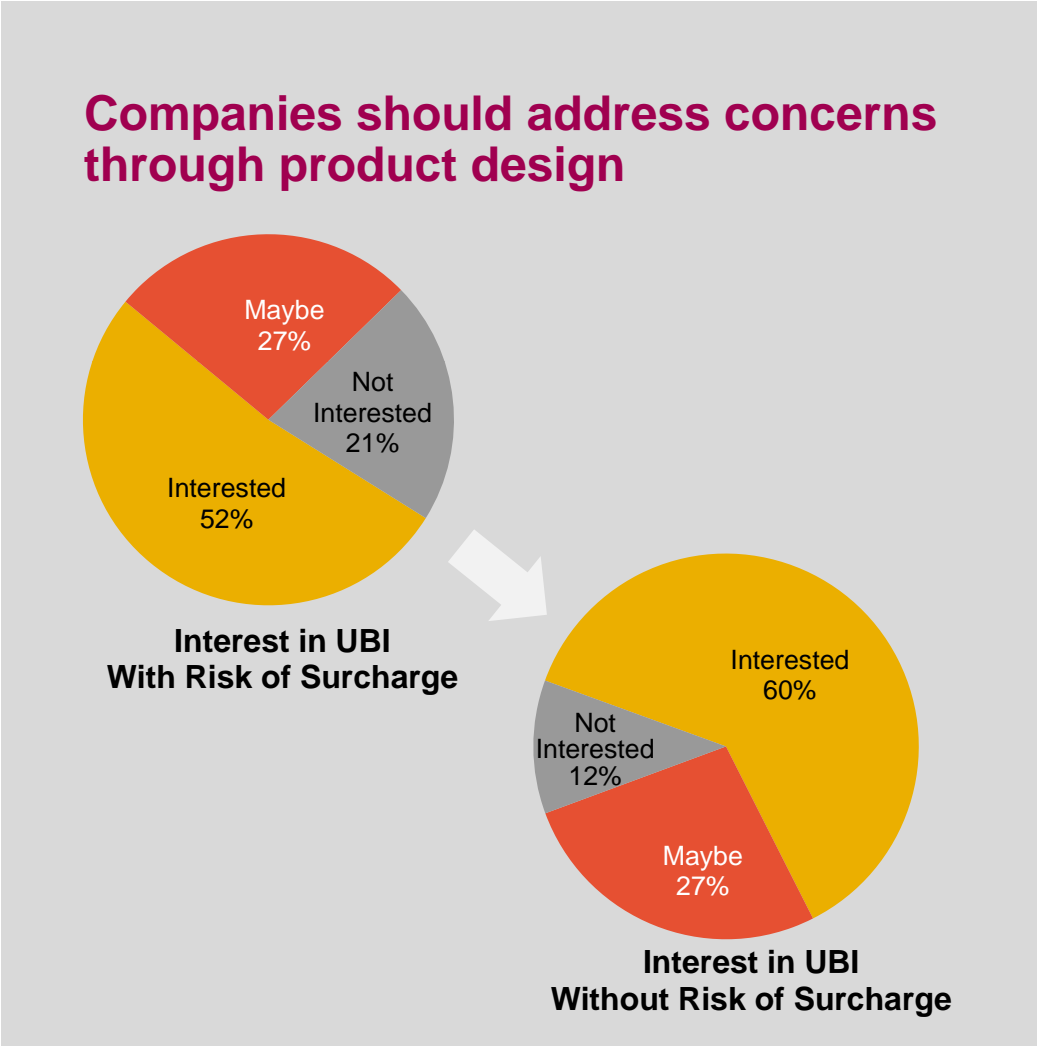


What are insureds' main concerns with UBI?

Money
48% worried that premium will increase

Privacy
35% worried about sharing their data

Claims
33% worried claims will be invalidated



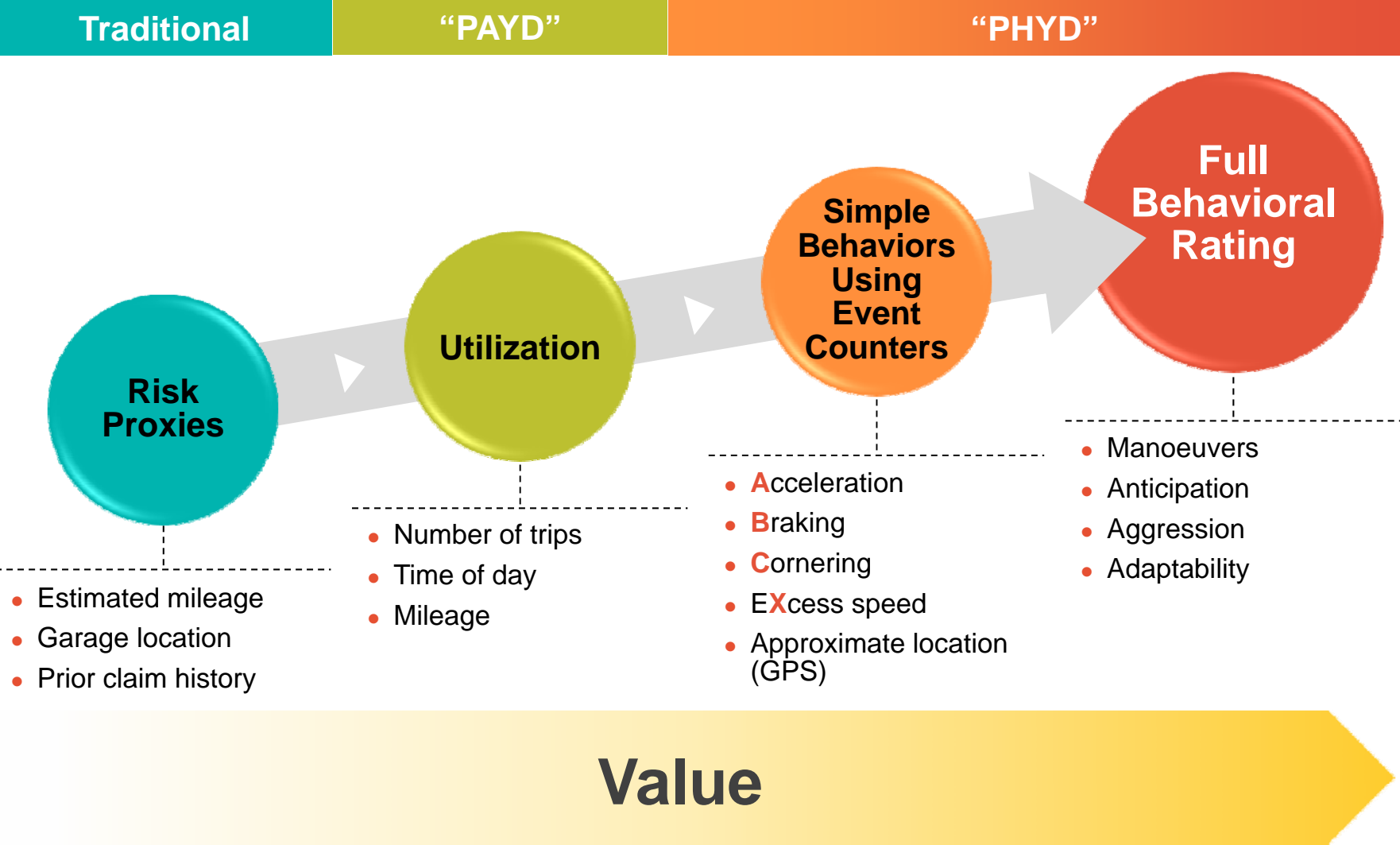
Consumer acceptance

- In the past 17 months, the number of consumers who have or had a UBI policy has nearly doubled to 8.5%.
- Privacy concerns have decreased, with the percentage of respondents indicating unease with insurers monitoring where insureds are driving dropping to 35.2% from 41.6% in our prior survey.
- Using smartphone apps to monitor driving is widely seen as acceptable by consumers, with 80% of smartphone owners open to using this technology for UBI; however, only 64% of respondents own a smartphone.

Usage-based Auto Insurance (UBI)

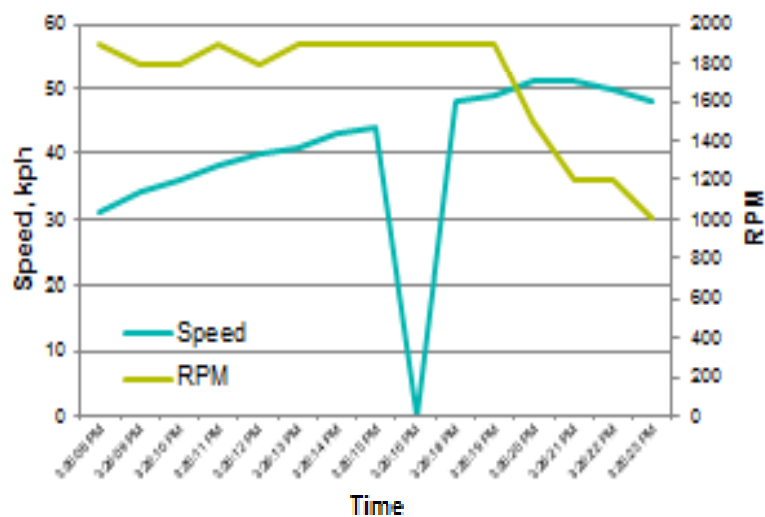
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Data granularity and the consumer proposition

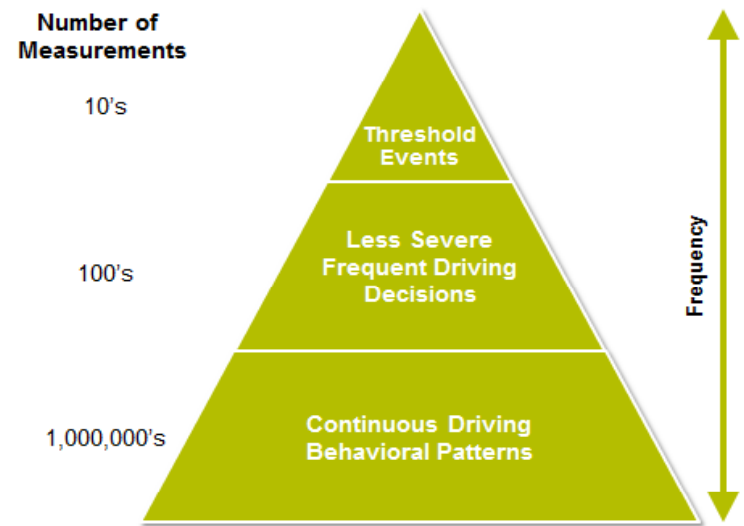


Is granular data really necessary?

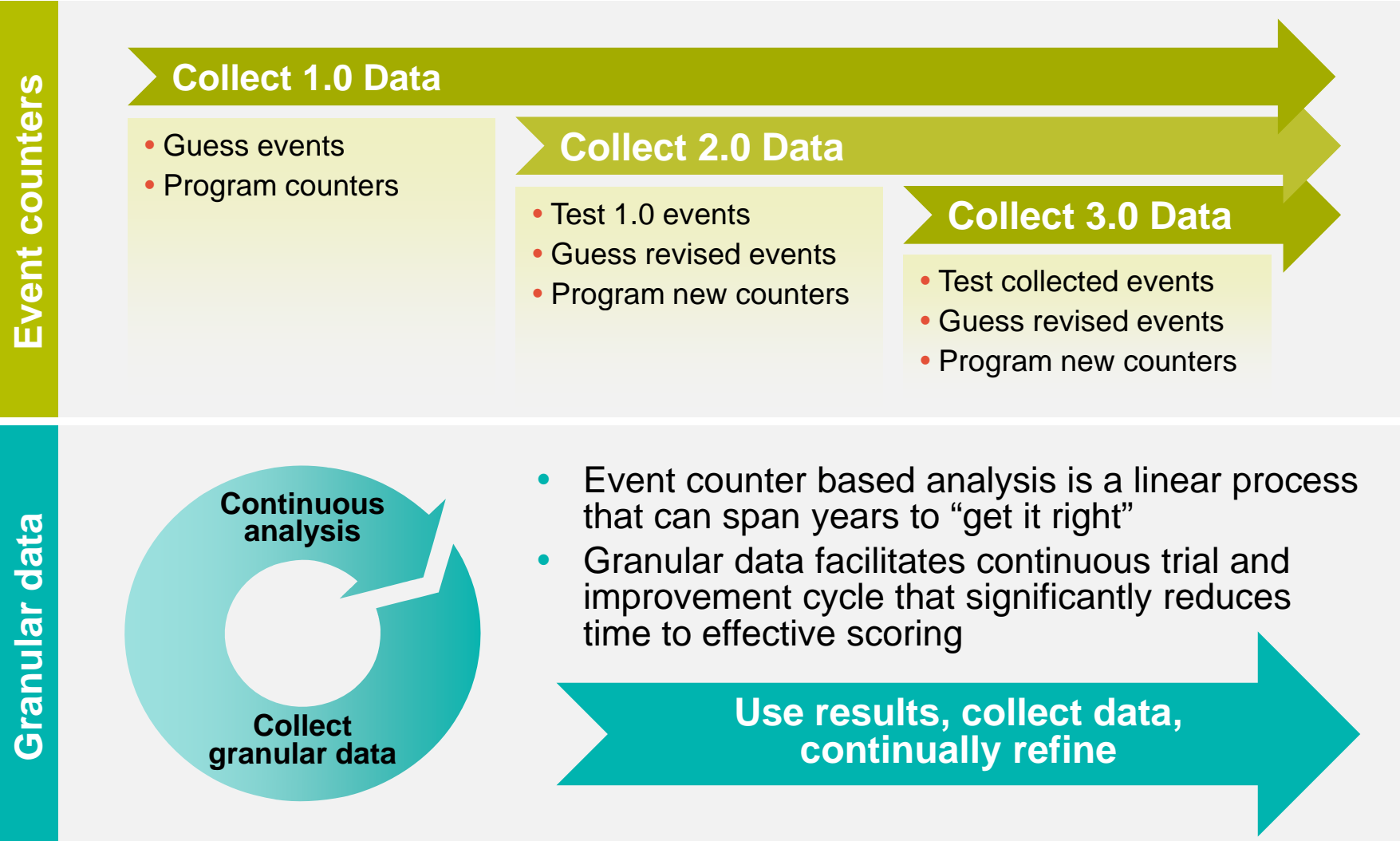
- Telematics data, like all data, needs to be scrubbed
 - Event counters could be inaccurate due to measurement errors
 - Granular data enables analyst to clean data prior to scoring



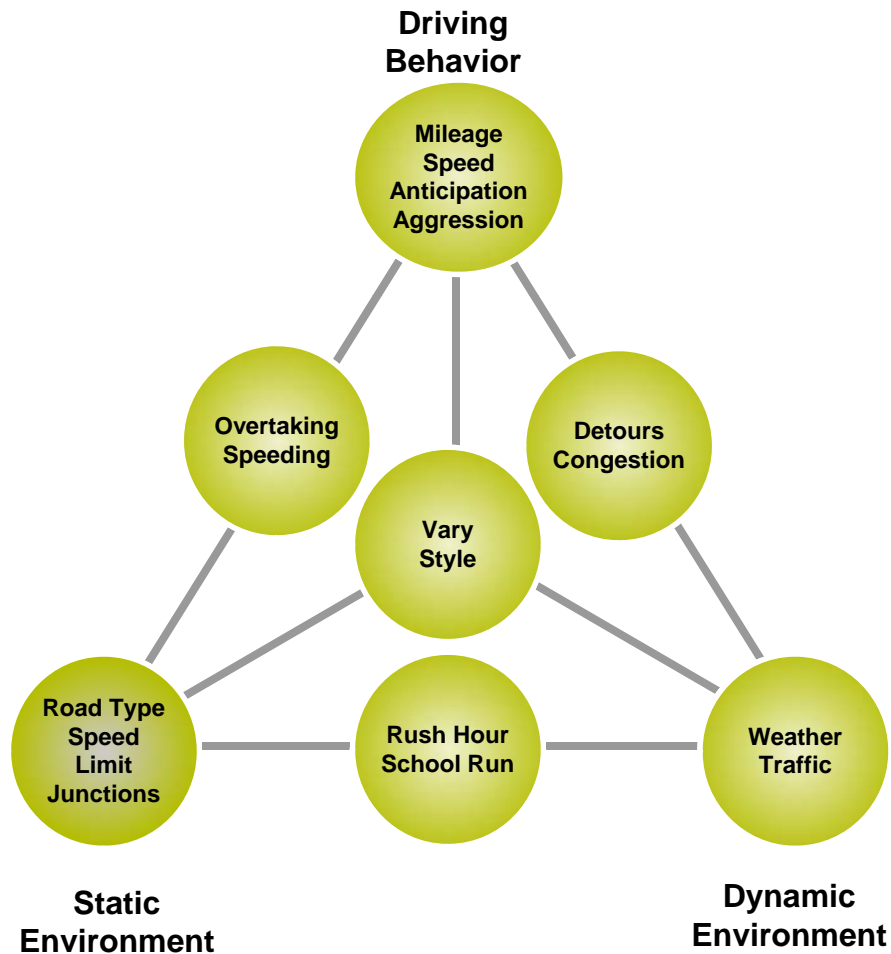
- Event counters and average measurements discard useful info
 - Driving ½ minute at 50 MPH and 70 MPH isn't the same as driving 1 minute at 60MPH
 - A 0.5G braking threshold ignores over 99.9% of deceleration events



Granular data results in a better score faster



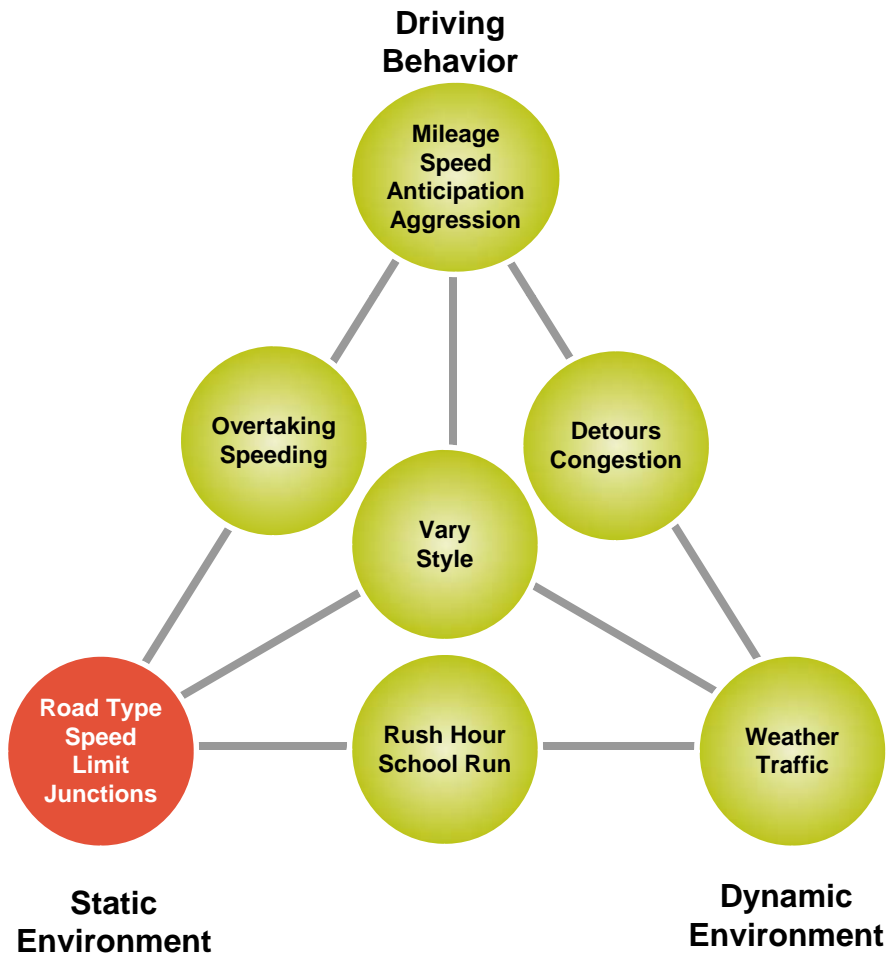
External data enables powerful contextual factors



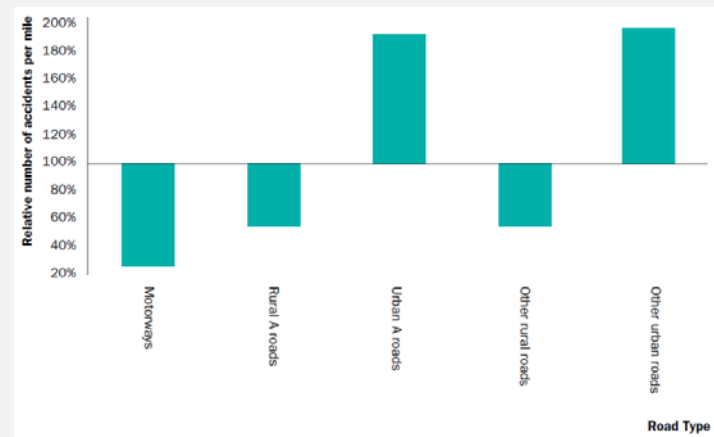
- Telematics data provides insights as to how and when the vehicle is being operated
- External data can put the driving behaviors into proper context



External data enables powerful contextual factors

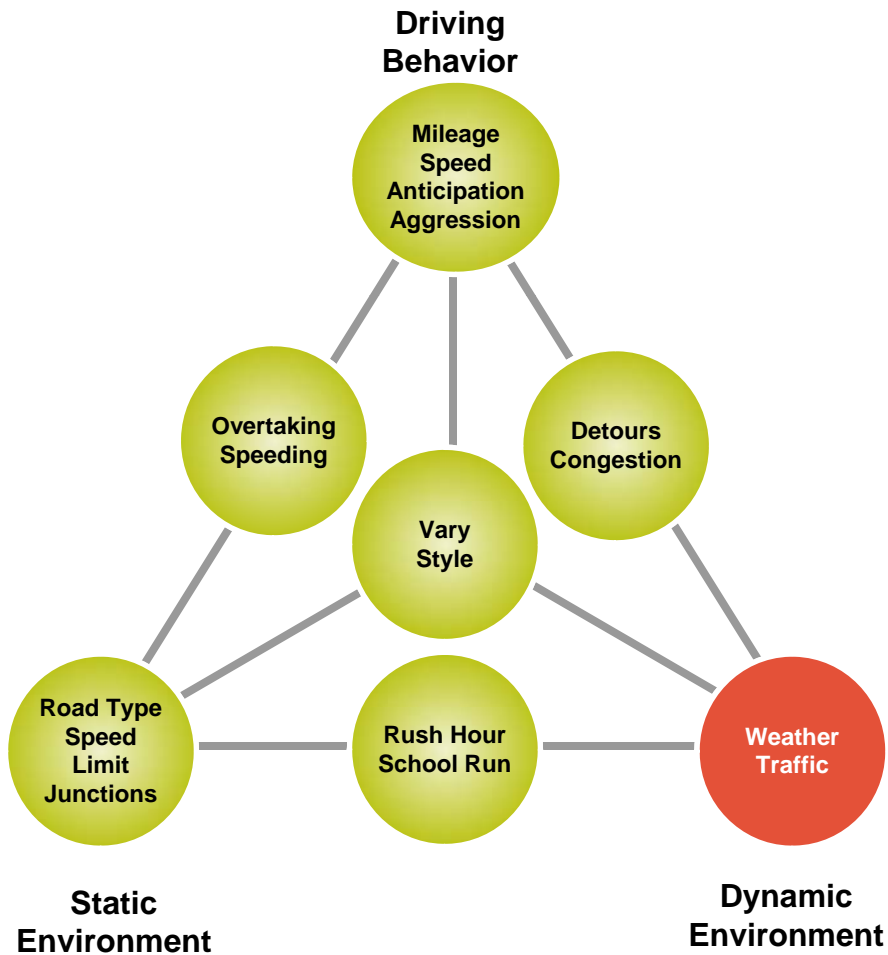


- Risk varies significantly based on where vehicle is operated

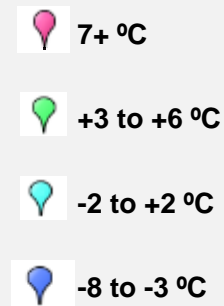


- Driving 70 MPH on a highway is different than doing so on a minor road

External data enables powerful contextual factors

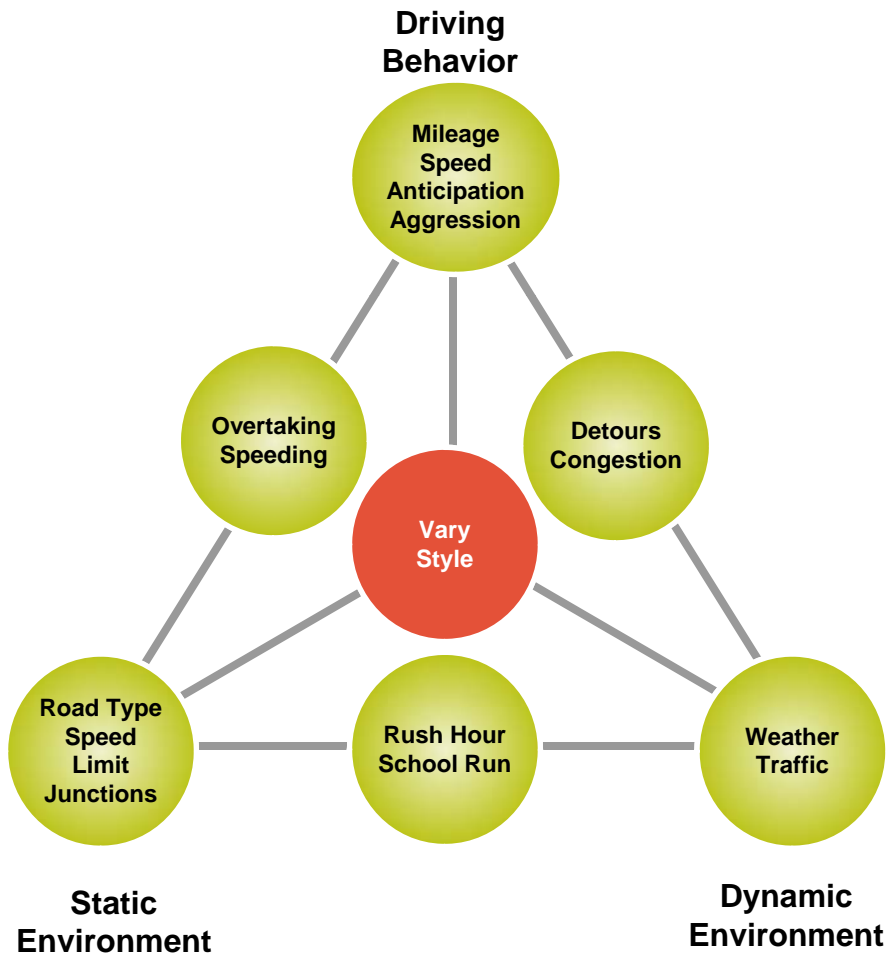


- Risk varies significantly based on dynamic environment

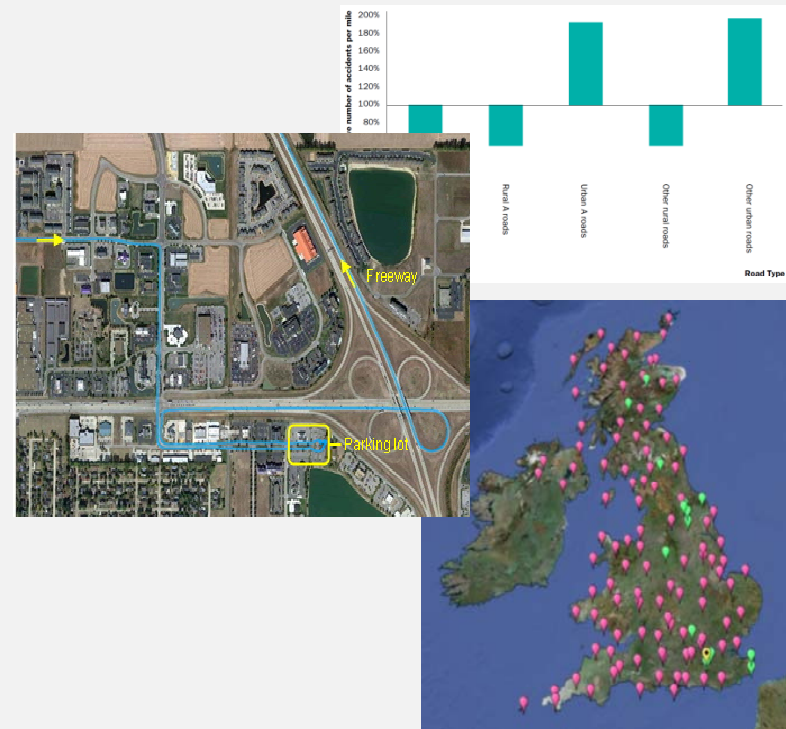


- Driving 70 MPH on a sunny day is less risky than doing so when the weather is poor

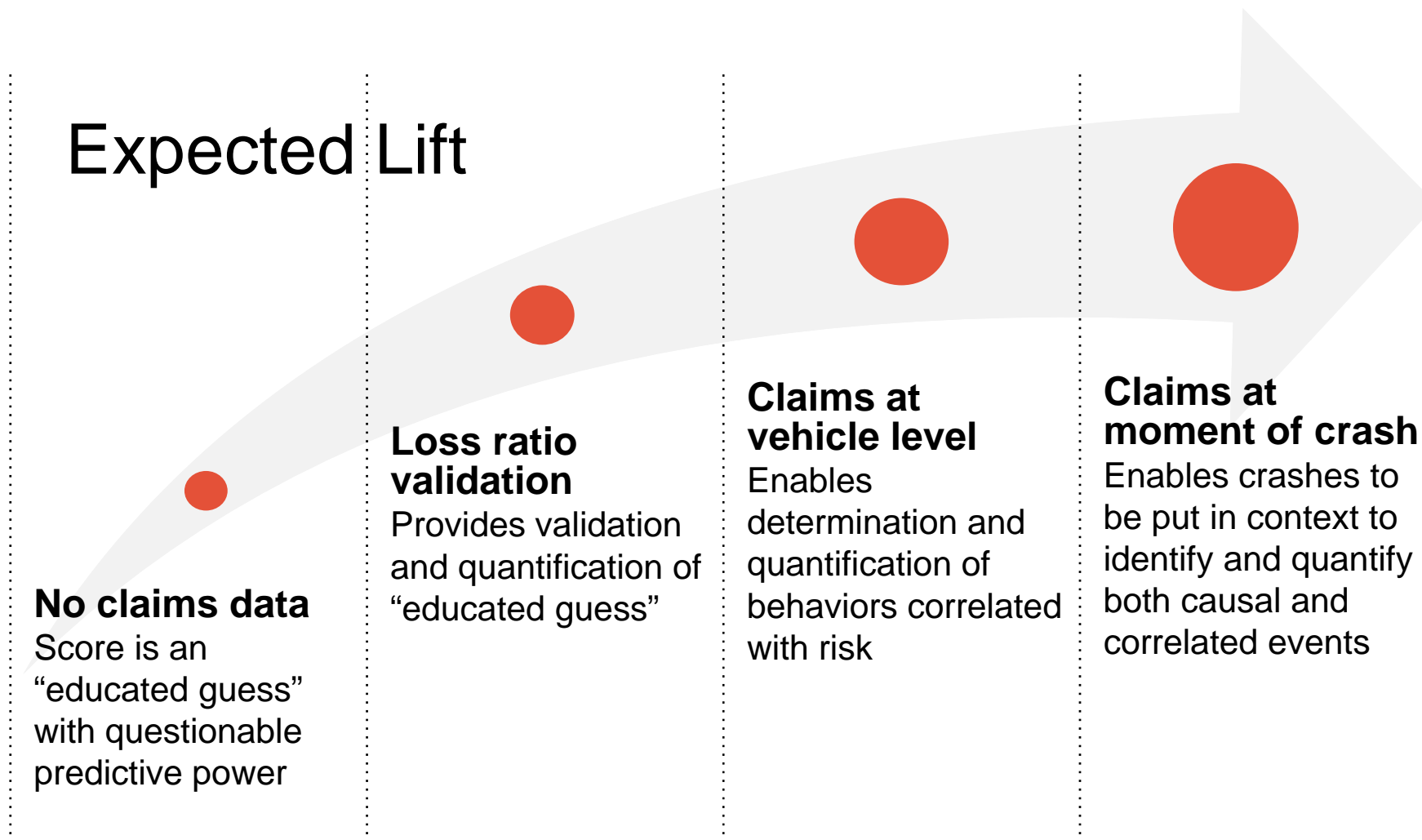
External data enables powerful contextual factors



- External and granular data enables identification of drivers who vary driving based on environment

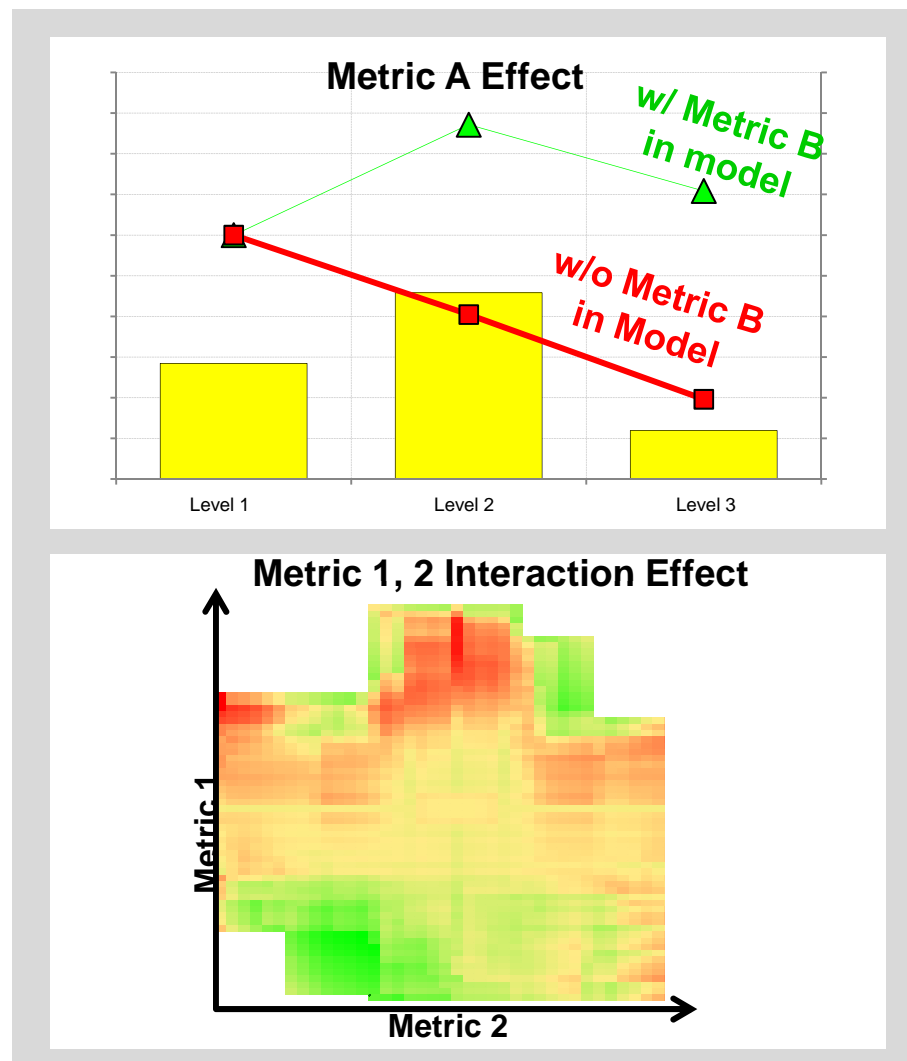


Proper use of claims data maximizes lift



Predictive analytics needed to bring everything together

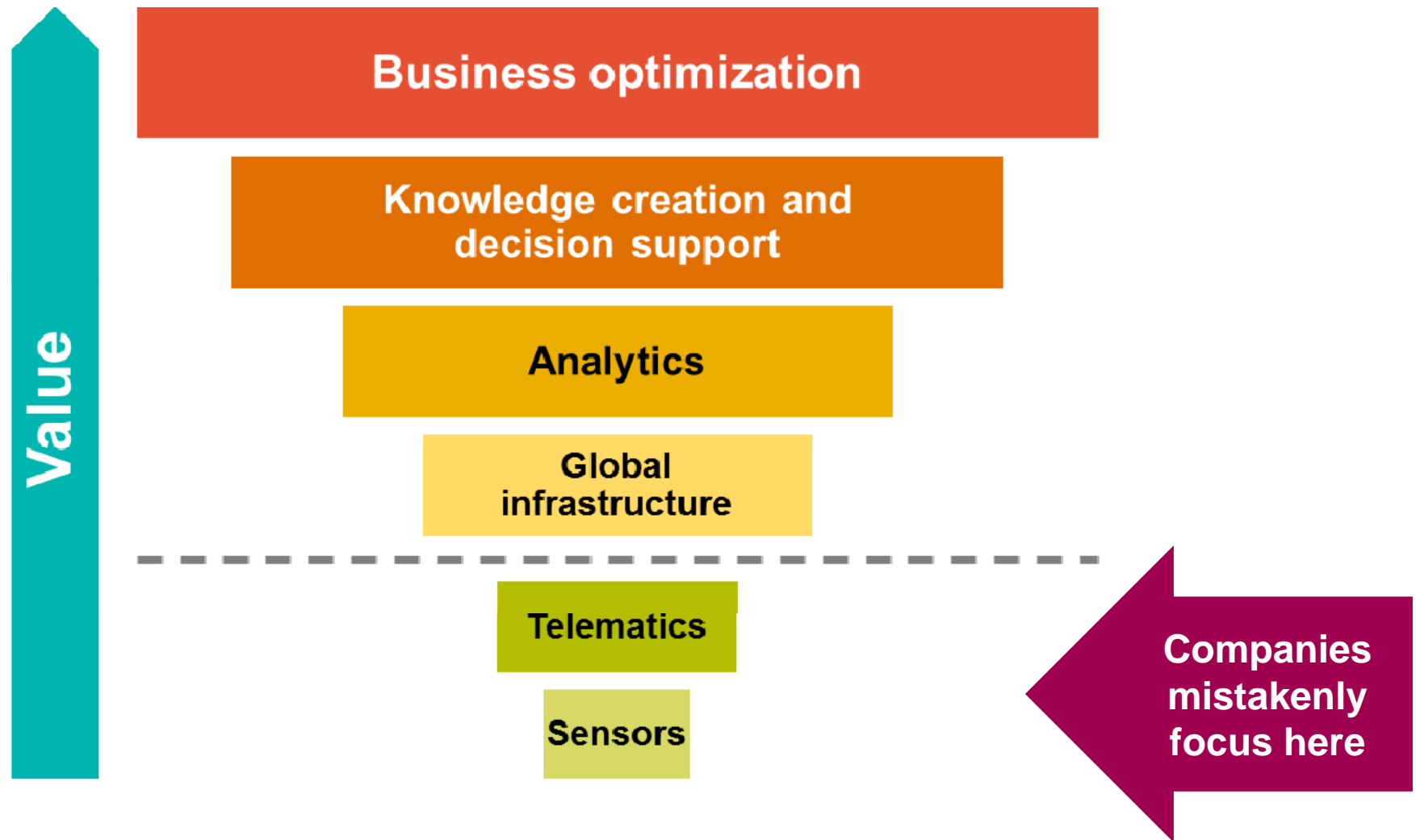
- Having all the data is only part of the solution
- Proper techniques are required to build a predictive model
 - Identifies which factors are really predictive of risk
 - Eliminates double-counting of correlated behaviors
 - Finds interactions between factors



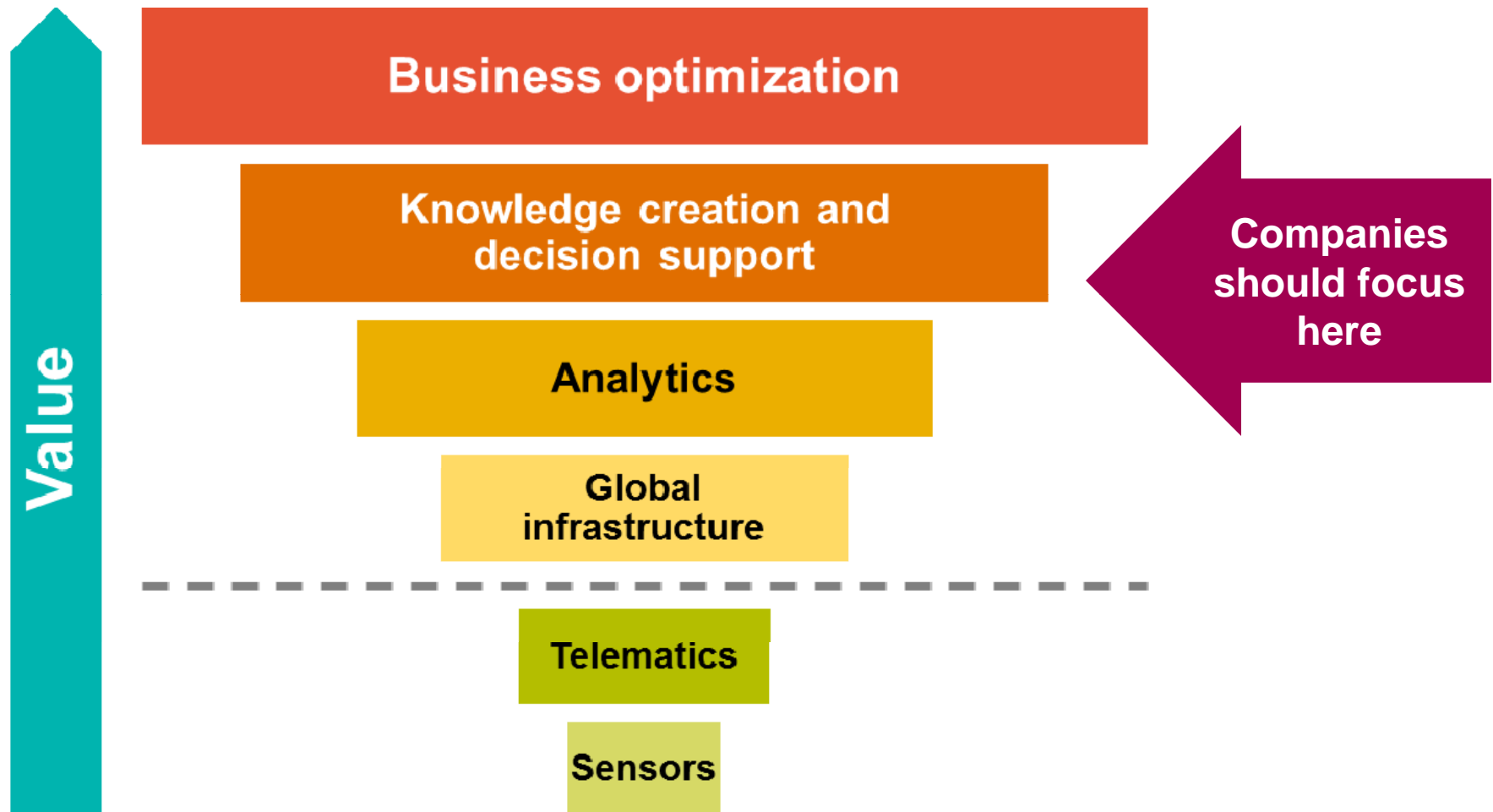
Usage-based Auto Insurance (UBI)

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Focus on the “right” part of the value pyramid



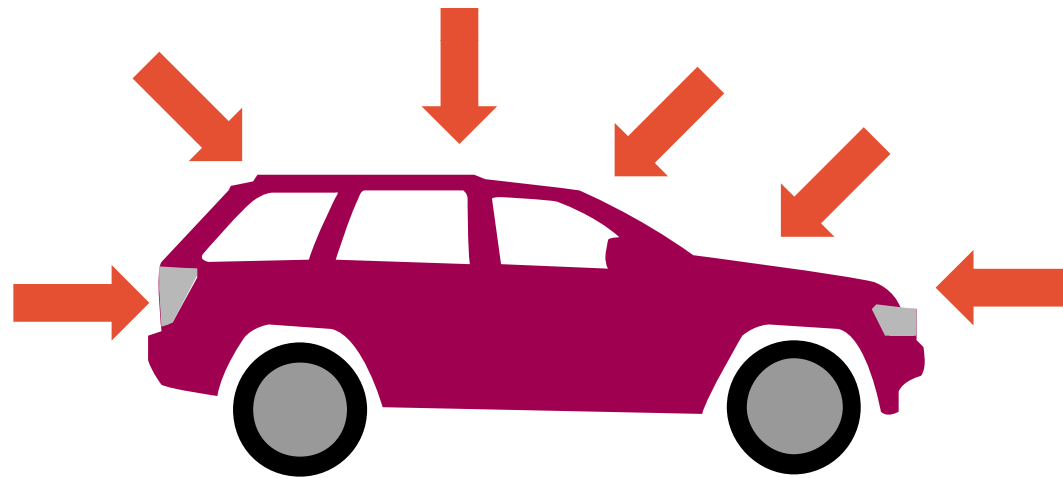
Focus on the “right” part of the value pyramid



Evolution of UBI technology



Evolution of UBI technology



Evolution of UBI technology



Sources of driving data today and in the future

Technology	Description
Hard install device	After-market 'black-box' device - requires professional installation. Sometimes installation is invasive. Some options involve simpler attachment to battery.
On-Board Diagnostics (OBD) device	After-market device plugs into the vehicle's OBD port. Can be installed by the customer. Beginning in 1996, data is standardized in the U.S.
Smartphone app	A smartphone application which captures driving data. It is not connected to the car.
Smartphone with tethering	A smartphone application which is tethered (often via Bluetooth) to a device connected to the vehicle typically in the OBD port.
Connected car	The technology for data connection is factory installed or is enabled through components provided at factory installation. In addition to connection with smartphones, can also include on-board computing capability on which bespoke apps can be installed.
Passive data/ unaware monitoring	Data which does not require any new device or action on the part of the customer for its collection, e.g. telecoms mast data or monitoring within apparently unrelated apps.

Smartphones in the market



<http://blackboxinsurancereviews.com/black-box-insurance-apps/>

Smartphones: what's the real story?

- Insurers are anxious to have a smartphone solution due to low cost
- Three basic smartphone products
 1. Customer acquisition (e.g., try-before-you-buy)
 2. Smartphone as a standalone in-policy sensor
 3. Tethered smartphone as an in-policy sensor



Telematics devices & the insurer value proposition

	Hard Install	OBD	Smartphone	Smartphone Tethered	Connected Car	Passive Data
U.S. Current Product Readiness	✓	✓	✗	✗	✗	✗

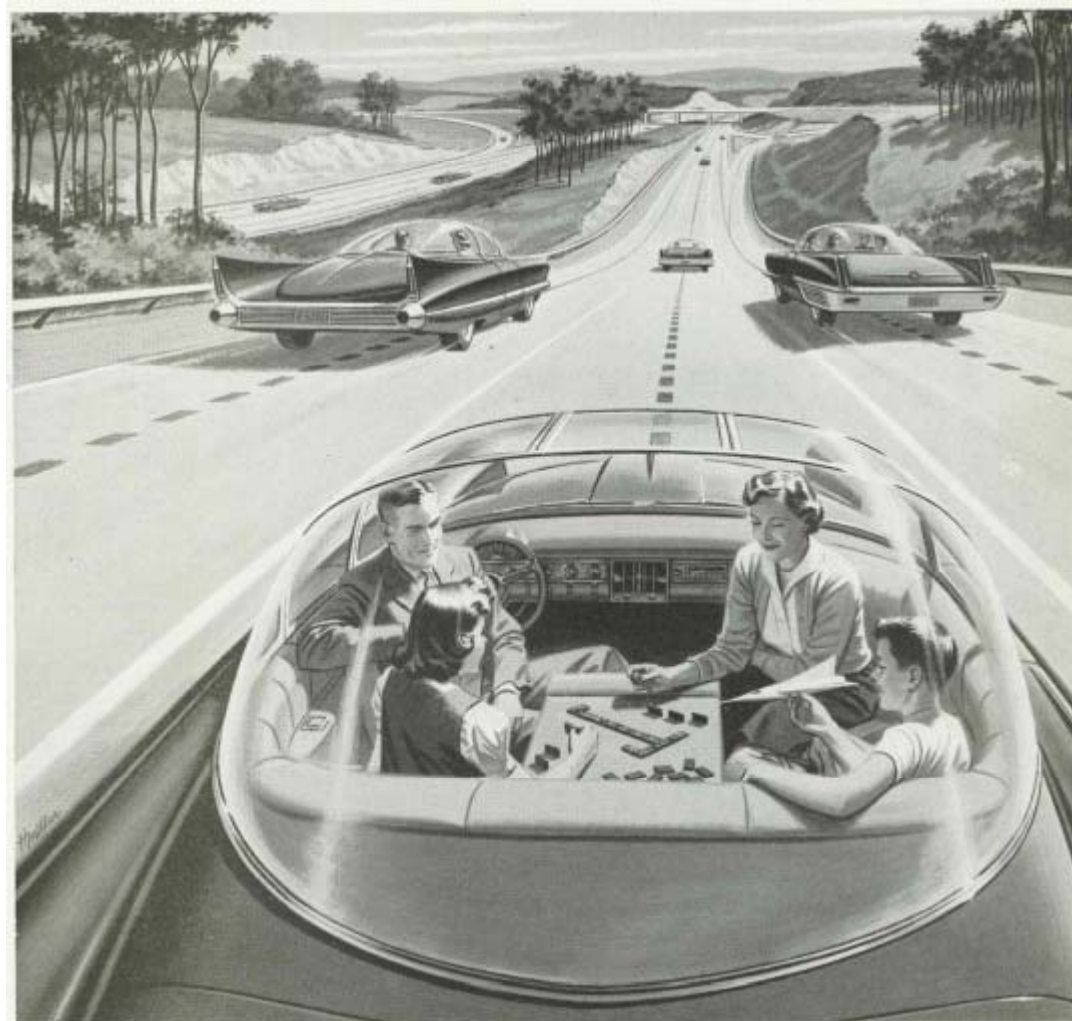
Telematics devices & the insurer value proposition

	Hard Install	OBD	Smartphone	Smartphone Tethered	Connected Car	Passive Data
U.S. Current Product Readiness	✓	✓	✗	✗	✗	✗
Insurer Value Proposition	Hard Install	OBD	Smartphone	Smartphone Tethered	Connected Car	Passive Data
Cost	\$\$\$\$	\$\$\$	\$	\$\$	\$?	\$
Customer Acquisition	✗	✗	✓	✗	✓	?
Risk Assessment	✓	✓	✗	✓	✓	✗
Real-time Feedback	✓	✗	✓	✓	✓	✗
Claims management	✓	?	✗	?	✓	✗
Value added services	✓	✓	?	?	✓	✗

Self-driving cars

History, Phases, Considerations, Future

Saturday Evening Post, 1950s

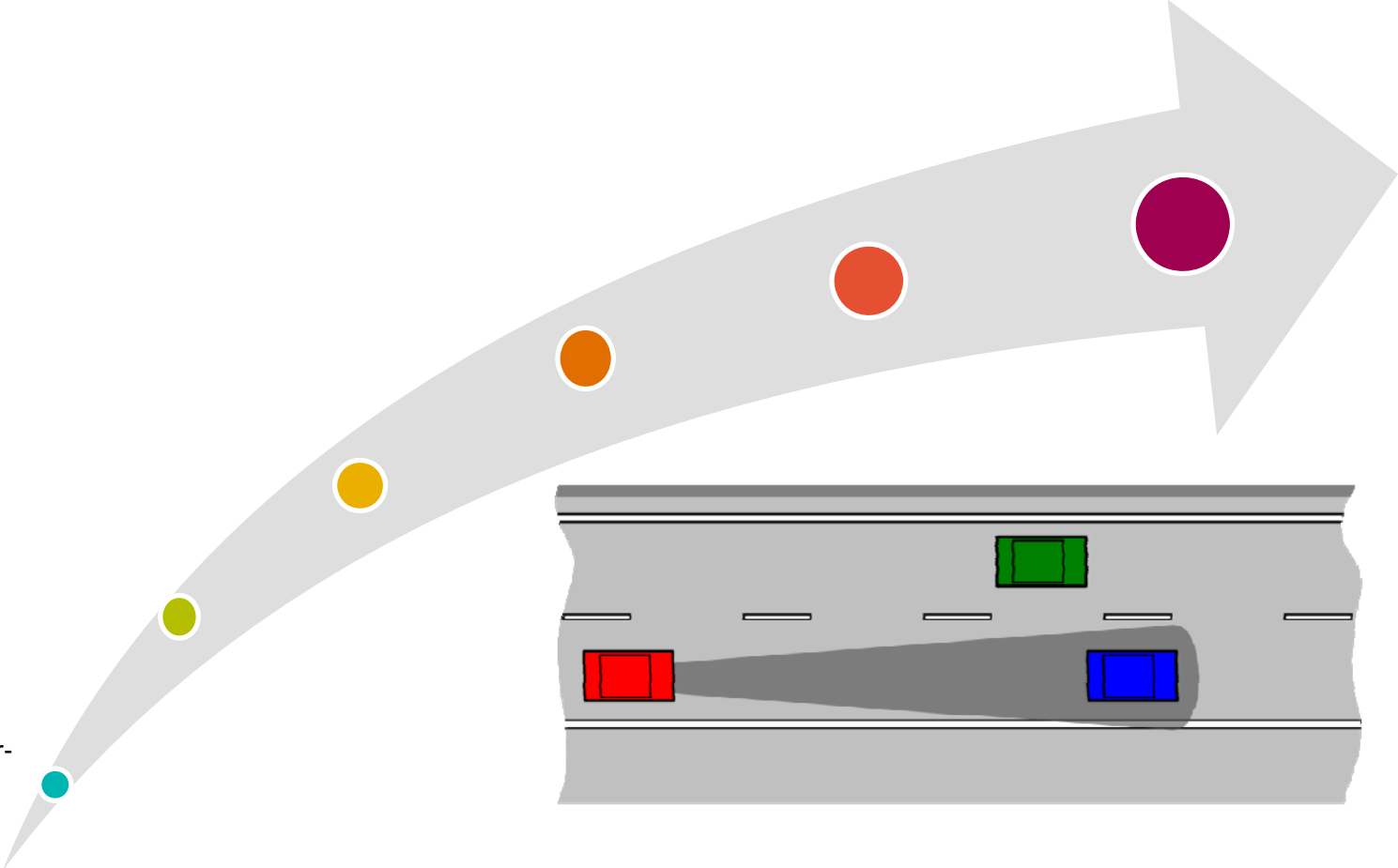


ELECTRICITY MAY BE THE DRIVER. One day your car may speed along an electric super-highway, its speed and steering automatically controlled by electronic devices embedded in the road. Travel will be more enjoyable. Highways will be made safe—by electricity! No traffic jams . . . no collisions . . . no driver fatigue.

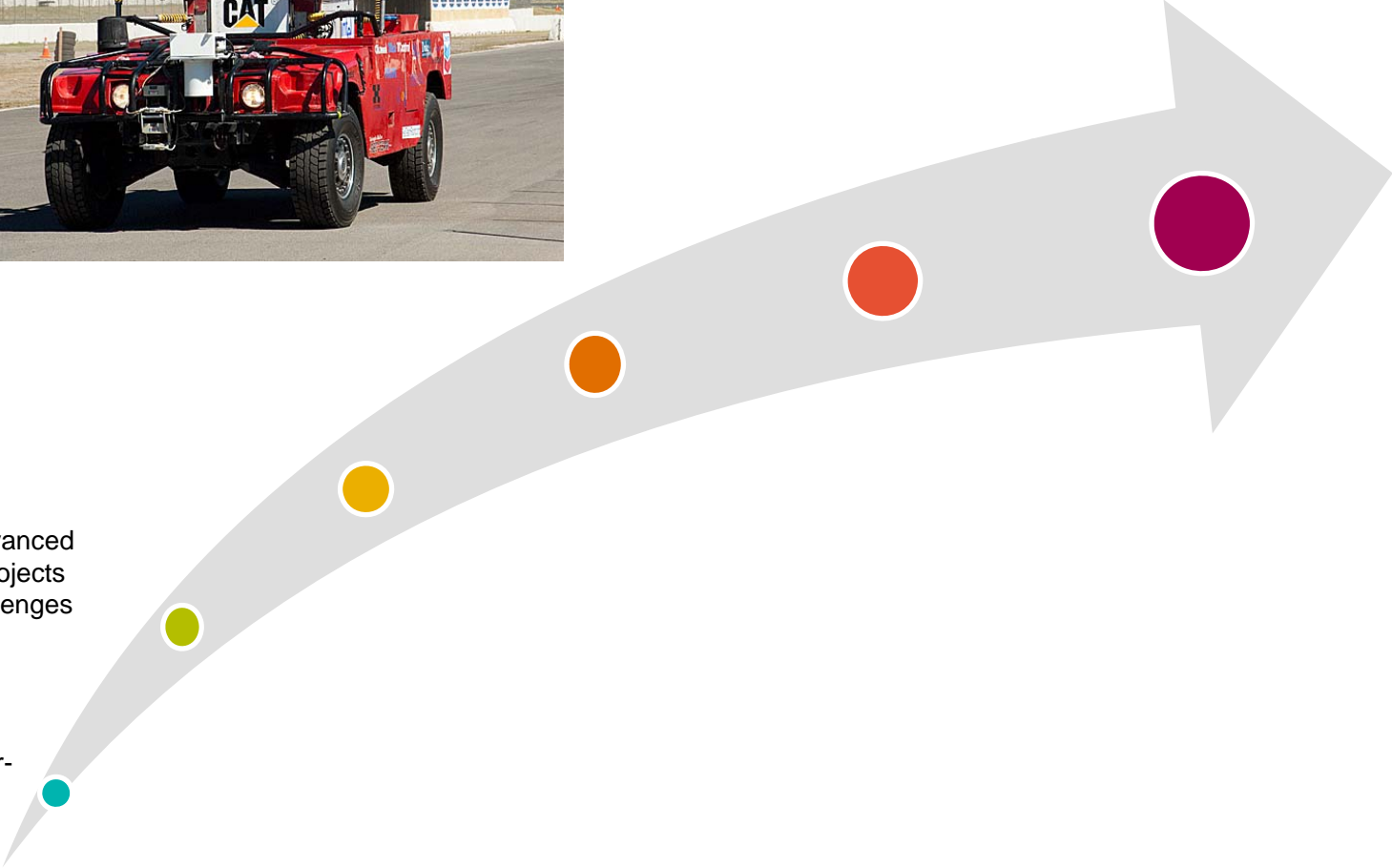
Self-driving cars over the years

1995-2003

- Introduction of driver-assistance technologies



Self-driving cars over the years



2005-2007

- Defense Advanced Research Projects Agency challenges

1995-2003

- Introduction of driver-assistance technologies

Self-driving cars over the years



2010

- **Google** car debuts
- **Volvo** CitySafe system is standard

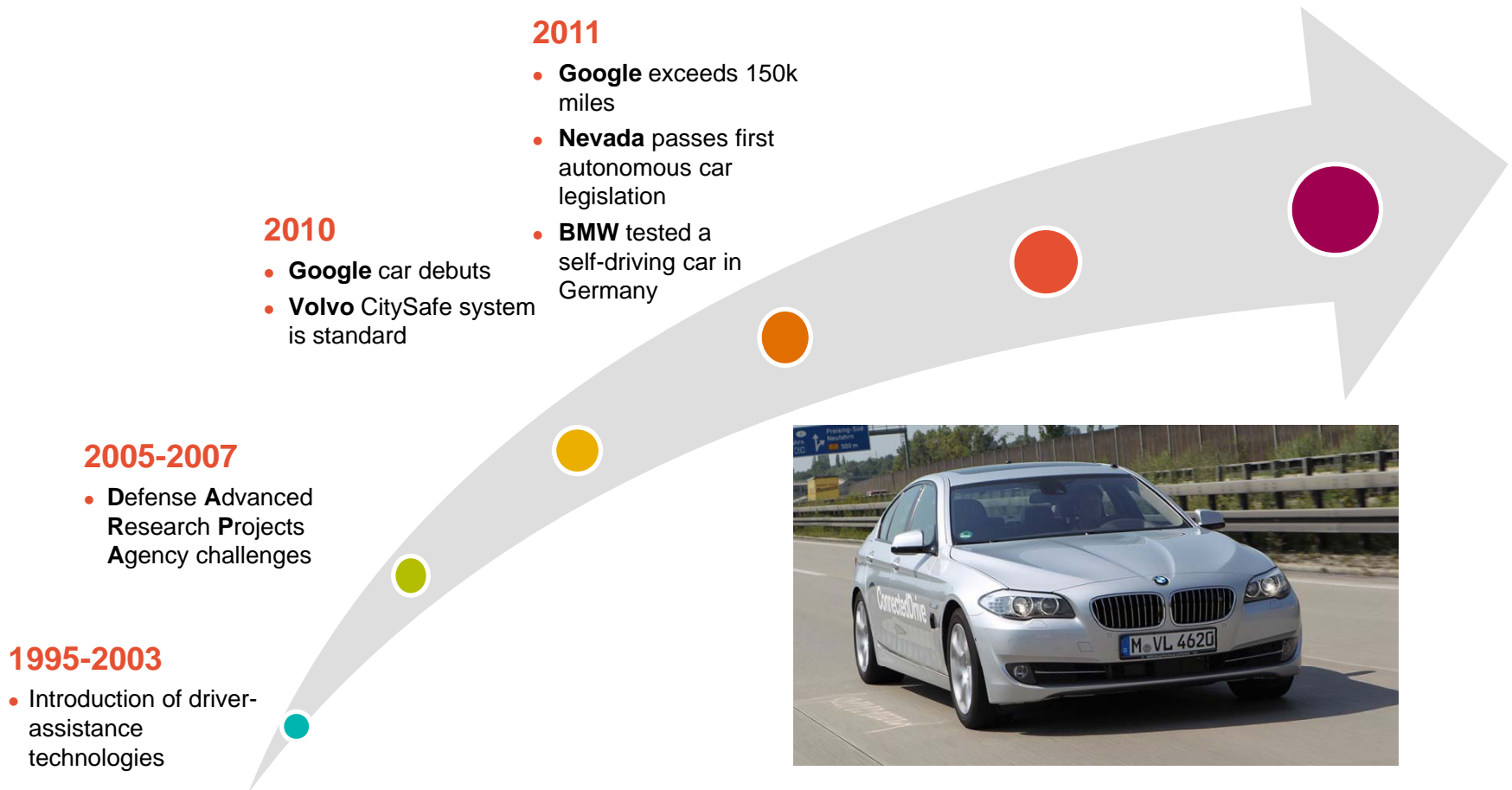
2005-2007

- **Defense Advanced Research Projects Agency** challenges

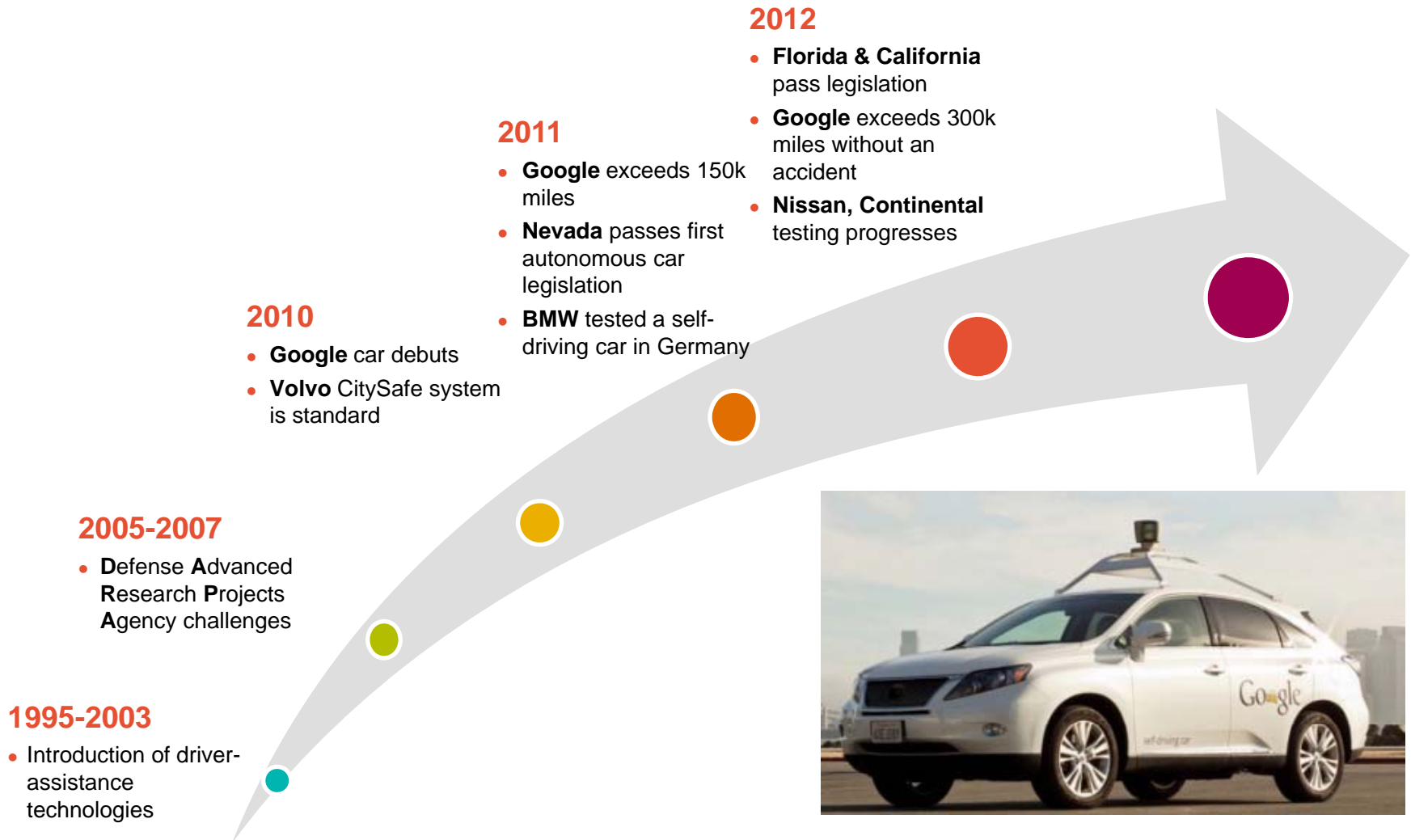
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Self-driving cars over the years



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2010

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2011

- **Google** exceeds 150k miles
- **Nevada** passes first autonomous car legislation
- **BMW** tested a self-driving car in Germany

2012

- **Florida & California** pass legislation
- **Google** exceeds 300k miles without an accident
- **Nissan, Continental** testing progresses

2013

- **Google** exceeds 500k miles
- **NHTSA** releases policy statement
- **Numerous** tests on public roads
- **DC** passes legislation
- **Oxford** add-on

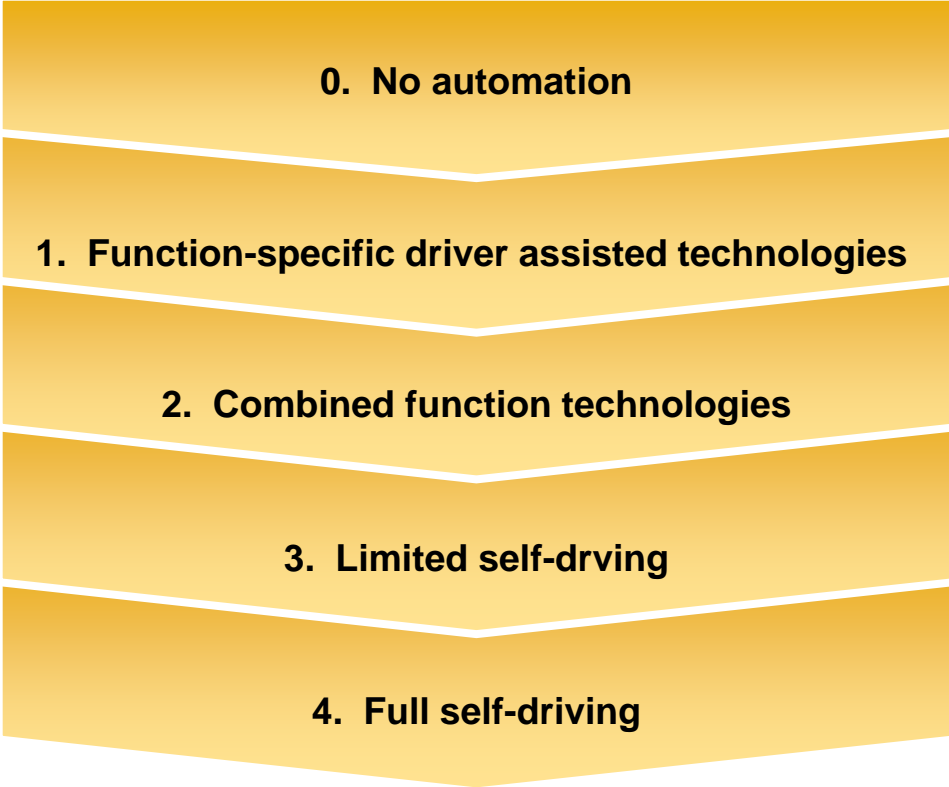


Evolution of self-driving computers

2012 – Lexus



Levels of vehicle automation (defined by NHTSA)



General considerations for self-driving cars

- Technology
 - Driver-assisted technologies
 - Vehicle-to-vehicle and vehicle-to-infrastructure
- Cost
 - Audi - \$2,500
 - Carnegie Mellon - \$5,000 - \$7,000
 - Lidar - \$250 in 2014
- Legislative
 - Mandate V2V technology
 - Allow for testing
 - Establish reporting requirements
 - Who owns the data?
 - Reform driver education

Consumer acceptance

2/3

of Americans are
**moderately or
very concerned**
about riding in a
vehicle with **self-
driving technology**¹

55%

are not willing to pay a
penny more for the
technology

10% will pay \$5,800¹

By 2020, **84%** of
Americans expected
in urban areas²

25% of the population are Millennials

16% are under 14, digital natives

24% are baby boomers

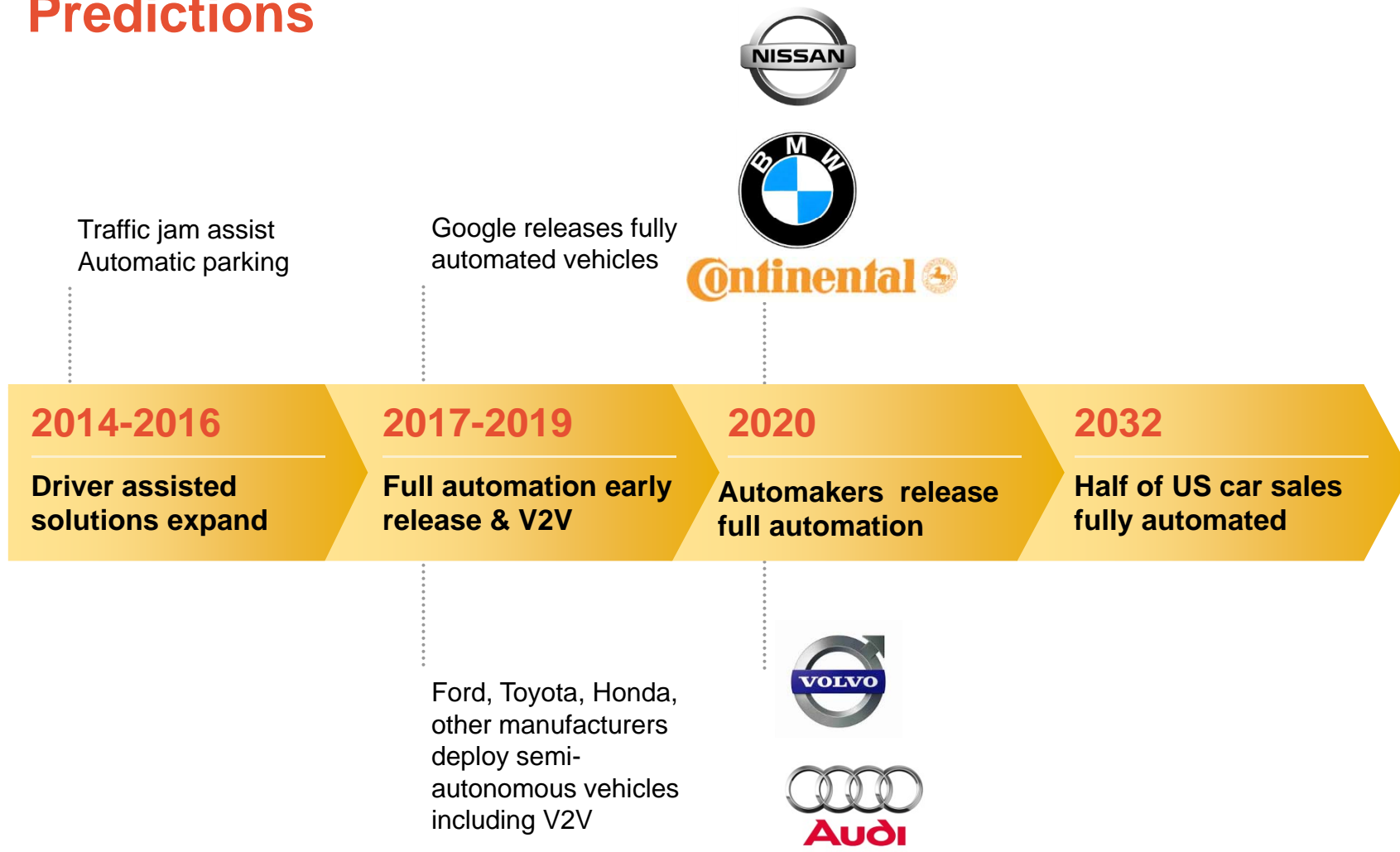
¹ University of Michigan Transportation Research Institute, August 2014

² World Urbanization Prospects, United Nations Department of Economic and Social Affairs, 2011⁴⁴

Insurance company to-dos

- ❑ Get involved in testing and research
 - ❑ Are these vehicles safe?
 - ❑ How will this impact losses?
 - ❑ How do we cull all the data?
 - ❑ How does the technology differ between models?
 - ❑ How will this impact current rating and underwriting?
- ❑ Understand regulation

Predictions



Ridesharing

History, Phases, Considerations, Future

An introduction



Valued at \$18B, as of June 2014;
Operating in more than 120 cities

U B E R

Secured over \$330M in funding
since 2007



Raised \$35M this year, including
support from Richard Branson

Side•car
a whole new way to get around

An introduction




Over 3,000 driver combined in Seattle

The concerns

 **Unregulated**

 **Safety**

 **Impact to taxicab industry**

 **Insurance**

Regulation

- Cease & desist issued by
 - Missouri
 - Nebraska
 - Austin, Dallas & Houston in Texas
 - Virginia
- Consumer alerts issued by
 - NAIC
 - Connecticut
 - DC
 - Kansas
 - New Jersey
 - Tennessee
 - Utah
- Colorado introduced law to regulate ridesharing

Insurance agreement in California

- Commercial auto policy
 - Minimum limits while app is running
 - \$1M when the driver is matched to the passenger
- Potential standard for other states

Insurance considerations for ridesharing

- ❑ Ask about it during claim handling
- ❑ Assess the risk
- ❑ Get the right policy ready
- ❑ Train your staff

Q&A



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