Usage-based Insurance for Commercial Lines

there is no time like the present!

Mohamad Hindawi, PhD, FCAS

March 12, 2013

TOWERS WATSON

Pop quiz!

Only one question!

True or False?

It is *easier* to implement a usage-based insurance program in Commercial Lines than in Personal Lines

Objectives

- It would seem that building a telematics insurance product for commercial lines should be easier than personal lines:
  - Less privacy concerns in fleets than on personal lines
  - Bigger average premium to support funding programs
  - Many more benefits for commercial insureds than personal insureds
  - Existing telematics technology in many large fleets
  - And more…

Objectives:

- To understand the current challenges in launching a telematics insurance commercial product
- To understand why many of the successful telematics insurance products are in personal lines

Table of contents

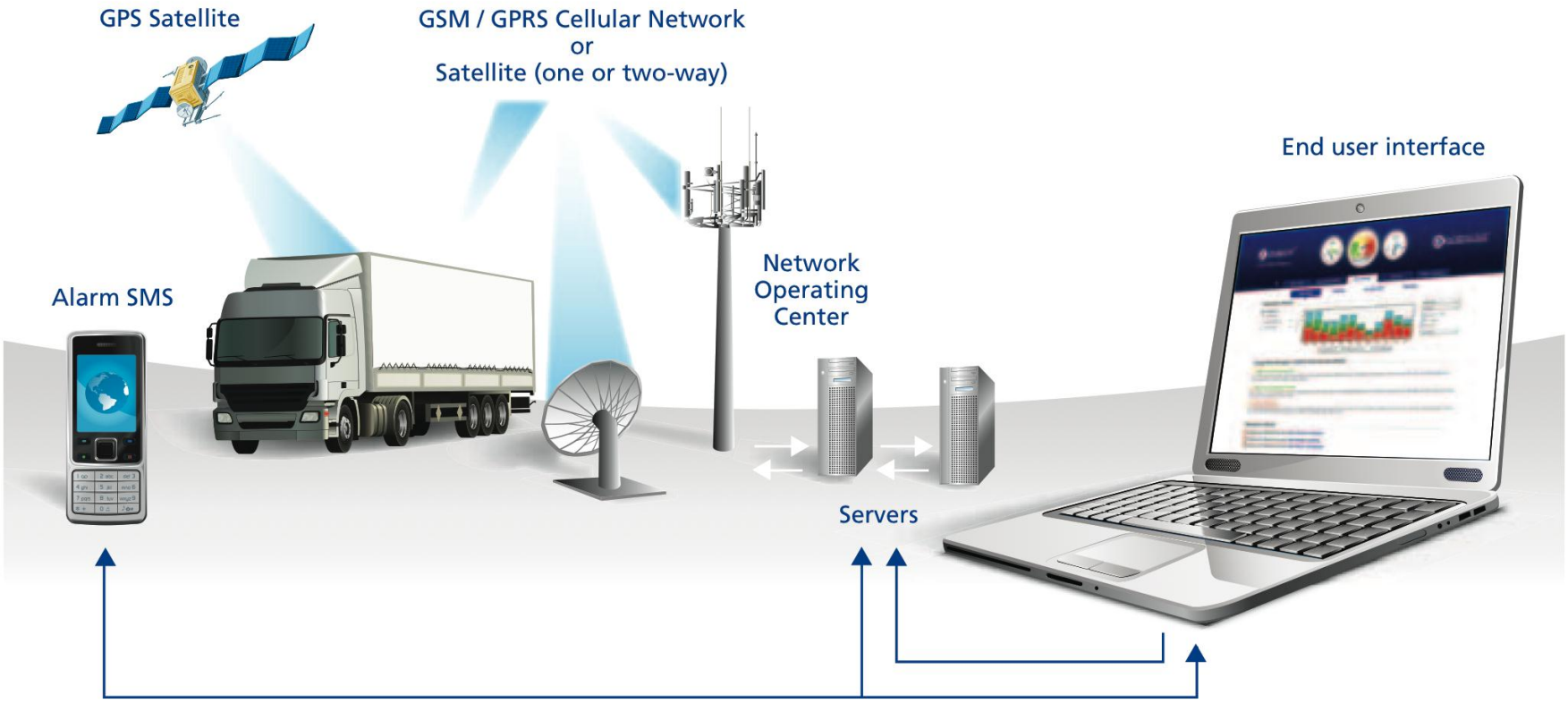
Background

Telematics 101

- Telematics is the technology of sending, receiving and storing information via telecommunication devices in conjunction with effecting control on remote objects*
- In commercial applications, the term has evolved to refer to the following major groupings:
  - Fleet management infrastructure — vehicles, GNSS, network and back-office
  - Vehicle management — diagnostics and maintenance, security
  - Driver management — insurance risk management, driver data and eco-driving
  - Operations management — routing and navigation, logistics, mobile workforce
  - Regulatory compliance — CSA, HOS, Fuel tax

*Wikipedia, The Free Encyclopedia, Telematics.

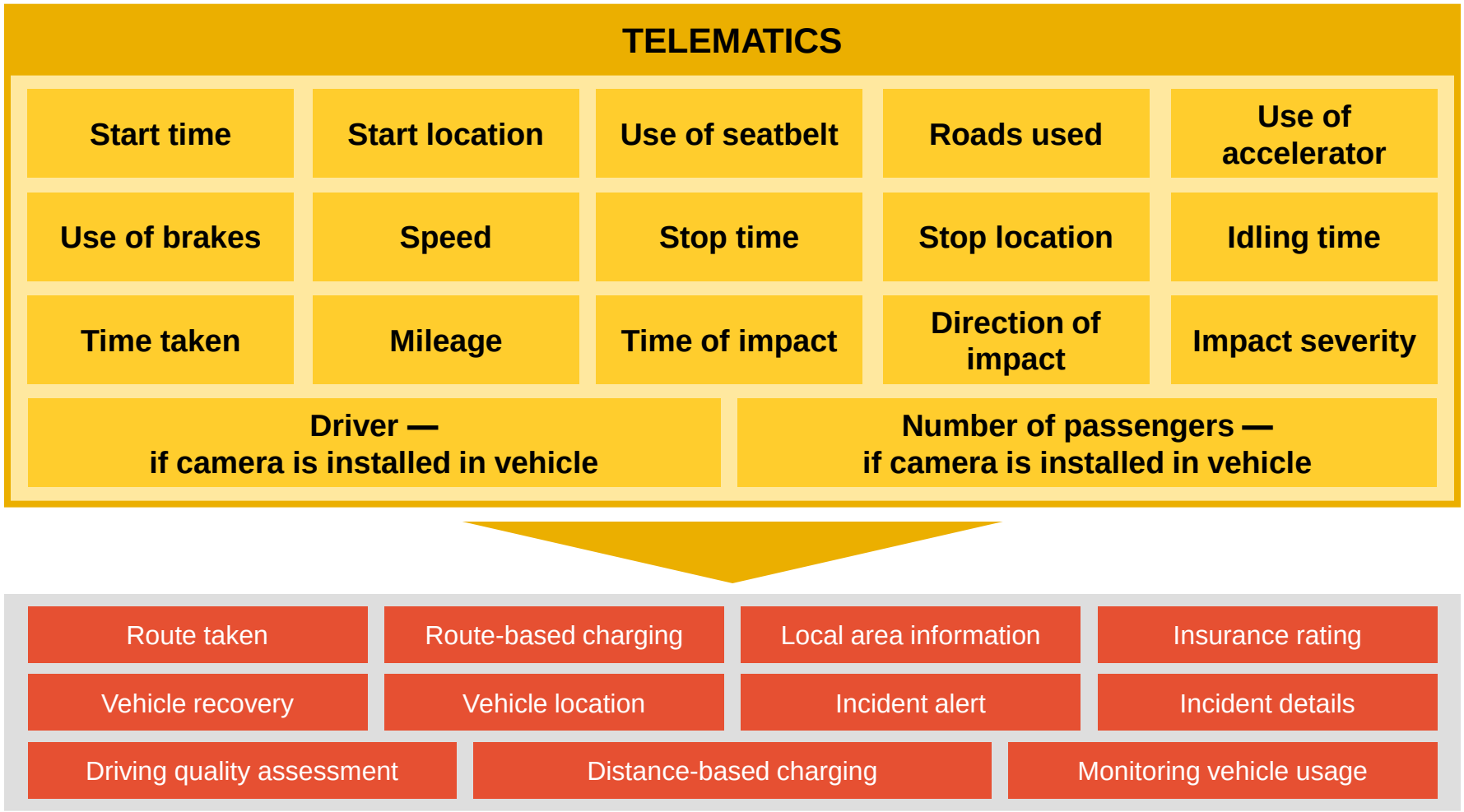
Vehicle telematics — How does it work?



Telematics can provide many data elements…

TELEMATICS				
Start time	Start location	Use of seatbelt	Roads used	Use of accelerator
Use of brakes	Speed	Stop time	Stop location	Idling time
Time taken	Mileage	Time of impact	Direction of impact	Impact severity
Driver — if camera is installed in vehicle			Number of passengers — if camera is installed in vehicle	

Data can provide a wealth of information



Telematics in commercial auto

- Implementation varies widely depending on type and size of fleet
  - Large, long haul trucking has significant penetration (~80%)
  - Small, artisan fleets (<10%)
- Primarily used for fleet management, not insurance
- Many telematics manufacturers and distributors; professional installation typically required
  - Annual maintenance provides opportunity
  - High average premium justifies cost

Some have data to create a risk score, but lack of standard data and variability of behavioral models have been issues industry-wide

Current telematics applications focusing on fleets

There are over 300 telematics vendors — most focus on GPS tracking and other operational models; some are adding risk monitoring at varying levels

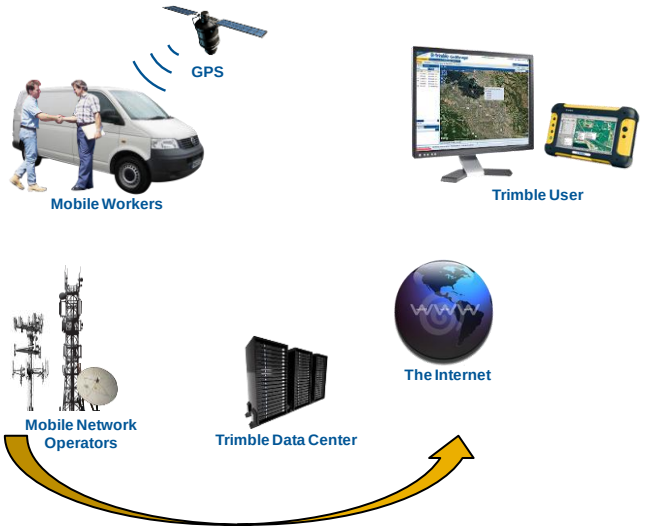
Current applications include:

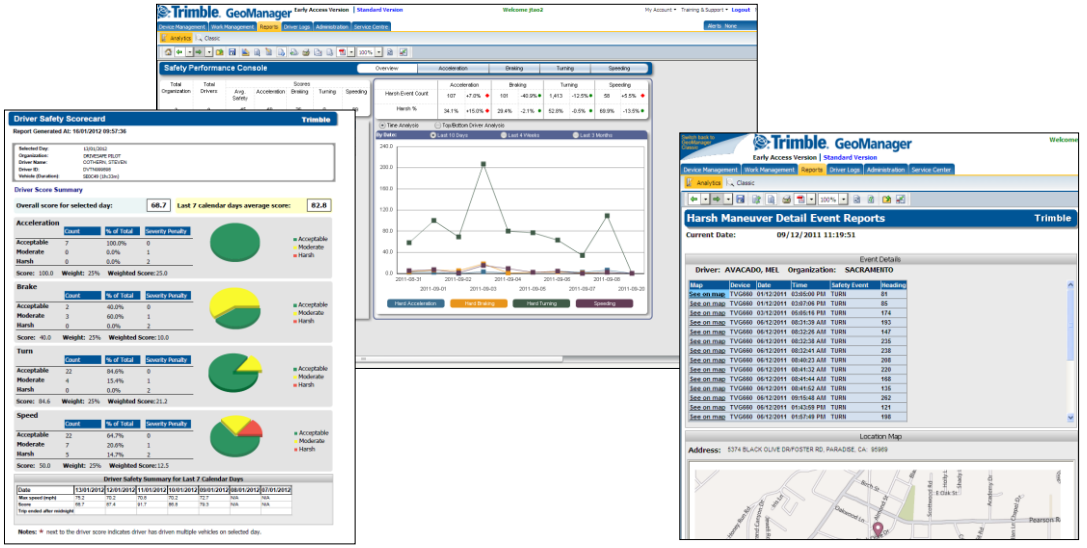
- Operational efficiency
  - Real-time GPS vehicle tracking
  - Routing
  - Fuel saving
  - Dispatch applications
- Driver safety
  - Behavior measurement only
  - Behavior change management programs
    - Real-time feedback
      - Flashy lights
      - Voice
    - Non-real time feedback

Components of complete behavioral change model

Examples of current driver safety programs

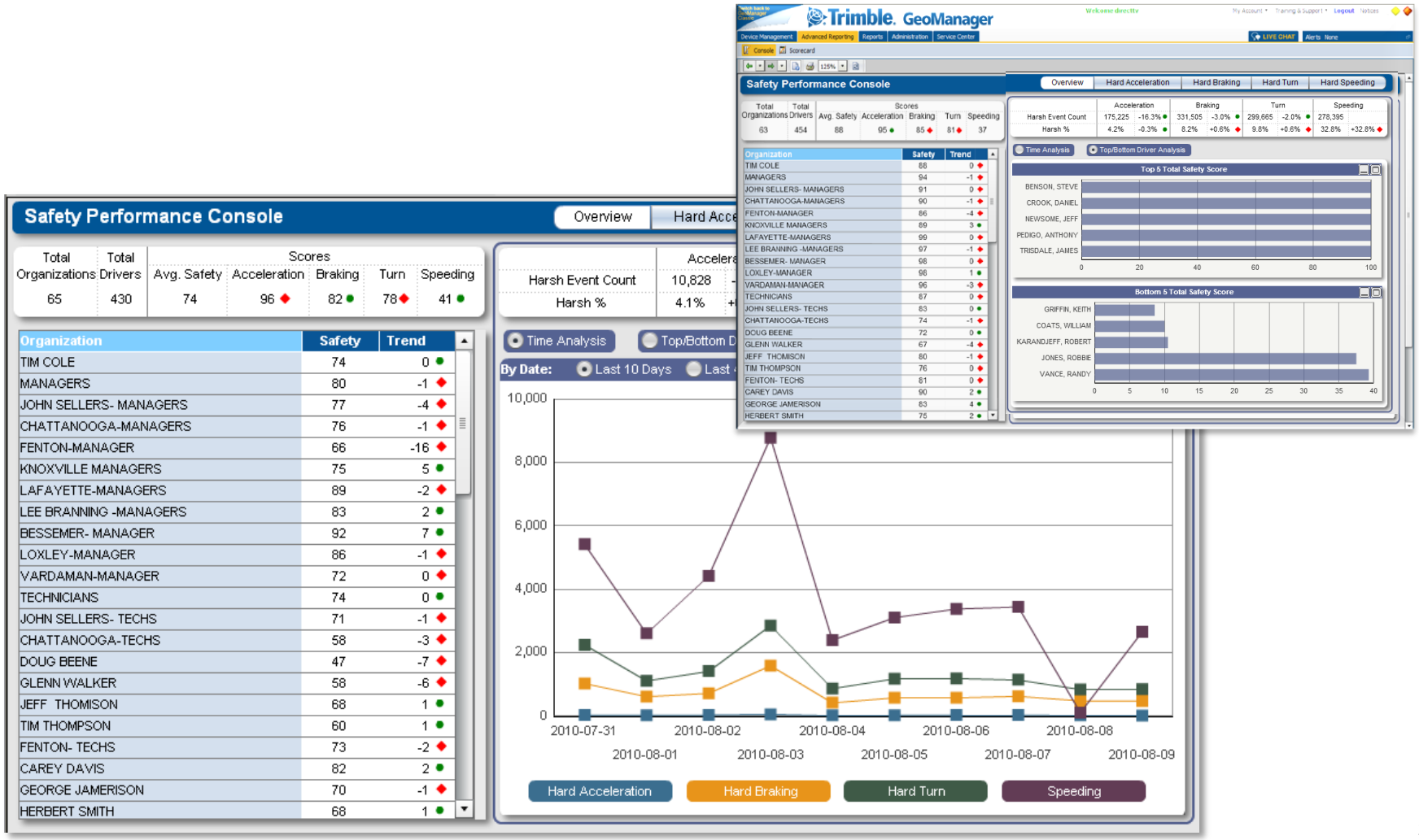
Speed **Brake** **Acceleration** **Turns**





Examples of current driver safety programs

- Interactive dashboard provides review and benchmarking of drivers and teams



Examples of current driver safety programs

Charts Indicate Areas for Improvement

Driver Safety Scorecard — Trimble

Report Generated At: 16/01/2012 09:57:36

Selected Day:	13/01/2012
Organization:	DRIVESAFE PILOT
Driver Name:	COTHERN, STEVEN
Driver ID:	DVTN999898
Vehicle (Duration):	SE0C49 (1h:33m)

Driver Score Summary

Overall score for selected day: **68.7** | Last 7 calendar days average score: **82.8**

Acceleration

	Count	% of Total	Severity Penalty
Acceptable	7	100.0%	0
Moderate	0	0.0%	1
Harsh	0	0.0%	2

Score: 100.0 Weight: 25% Weighted Score: 25.0

Brake

	Count	% of Total	Severity Penalty
Acceptable	2	40.0%	0
Moderate	3	60.0%	1
Harsh	0	0.0%	2

Score: 40.0 Weight: 25% Weighted Score: 10.0

Turn

	Count	% of Total	Severity Penalty
Acceptable	22	84.6%	0
Moderate	4	15.4%	1
Harsh	0	0.0%	2

Score: 84.6 Weight: 25% Weighted Score: 21.2

Speed

	Count	% of Total	Severity Penalty
Acceptable	22	64.7%	0
Moderate	7	20.6%	1
Harsh	5	14.7%	2

Score: 50.0 Weight: 25% Weighted Score: 12.5

Driver Safety Summary for Last 7 Calendar Days

Date	13/01/2012	12/01/2012	11/01/2012	10/01/2012	09/01/2012	08/01/2012	07/01/2012
Max speed (mph)	75.2	70.2	70.8	70.2	72.7	N/A	N/A
Score	68.7	87.4	91.7	86.8	79.3	N/A	N/A
Trip ended after midnight							

Notes: * next to the driver score indicates driver has driven multiple vehicles on selected day.

Detailed List of Events by Driver

Driver Safety Scorecard — Trimble

Report Generated At: 16/01/2012 10:11:20

Selected Day:	13/01/2012
Organization:	DRIVESAFE PILOT
Driver Name:	COTHERN, STEVEN
Driver ID:	DVTN999898
Vehicle (Duration):	SE0C49 (1h:33m)

Driver Safety Event For Last 7 Calendar Days

Date	Time	Vehicle	Event	Severity	Direction	Location	City	State
13/01/2012	06:59:55 PM	SE0C49	SPEED	Moderate	SW	I-75	PHILADELPHIA	TN
13/01/2012	06:57:55 PM	SE0C49	SPEED	Moderate	SW	I-75	LOUDON	TN
13/01/2012	06:36:46 PM	SE0C49	TURN	Moderate	W	10100 COGDILL DR	KNOXVILLE	TN
13/01/2012	06:33:06 PM	SE0C49	TURN	Moderate	SE	TN-162	KNOXVILLE	TN
13/01/2012	06:31:54 PM	SE0C49	BRAKE	Moderate	N/A	10623 HARDIN VALLEY RD/CHARLEVOIX RD	KNOXVILLE	TN
13/01/2012	06:24:26 PM	SE0C49	BRAKE	Moderate	E	10125 GALLOWS POINT DR/WESTCOTT BLVD	KNOXVILLE	TN
13/01/2012	06:53:42 AM	SE0C49	BRAKE	Moderate	E	10208 HARDIN VALLEY RD	KNOXVILLE	TN
13/01/2012	06:51:47 AM	SE0C49	TURN	Moderate	NW	2498 SCHAEFFER RD	KNOXVILLE	TN
13/01/2012	06:50:35 AM	SE0C49	SPEED	Harsh	NW	TN-162/CENTERPOINT BLVD	KNOXVILLE	TN
13/01/2012	06:47:50 AM	SE0C49	TURN	Moderate	NW	I-140/376B	KNOXVILLE	TN
13/01/2012	06:46:35 AM	SE0C49	SPEED	Moderate	E	I-40	KNOXVILLE	TN
13/01/2012	06:44:35 AM	SE0C49	SPEED	Harsh	E	I-40	FARRAGUT	TN
13/01/2012	06:32:35 AM	SE0C49	SPEED	Moderate	NE	I-75/76	LENOIR CITY	TN
13/01/2012	06:30:35 AM	SE0C49	SPEED	Harsh	NE	I-75	LOUDON	TN
13/01/2012	06:26:35 AM	SE0C49	SPEED	Harsh	NE	I-75	LOUDON	TN
13/01/2012	06:24:35 AM	SE0C49	SPEED	Moderate	NE	I-75	PHILADELPHIA	TN
13/01/2012	06:22:35 AM	SE0C49	SPEED	Moderate	NE	I-75	SWEETWATER	TN
13/01/2012	06:16:35 AM	SE0C49	SPEED	Harsh	E	1469 TN-68/COUNTY ROAD 312	NIOTA	TN
13/01/2012	06:14:35 AM	SE0C49	SPEED	Moderate	SE	1805 TN-68/COUNTY ROAD 296	NIOTA	TN
12/01/2012	06:55:03 PM	SE0C49	TURN	Moderate	SW	I-40/376	KNOXVILLE	TN
12/01/2012	06:53:48 PM	SE0C49	SPEED	Harsh	SE	TN-162	KNOXVILLE	TN
12/01/2012	06:51:29 PM	SE0C49	TURN	Moderate	NE	TN-162	KNOXVILLE	TN
12/01/2012	06:51:21 PM	SE0C49	TURN	Moderate	NE	TN-162	KNOXVILLE	TN
12/01/2012	06:49:48 PM	SE0C49	SPEED	Moderate	SW	10497 HARDIN VALLEY RD/HARDIN FARMS LN	KNOXVILLE	TN
12/01/2012	06:52:52 AM	SE0C49	TURN	Moderate	N	2545 WESTCOTT BLVD/GALLOWS POINT DR	KNOXVILLE	TN
12/01/2012	06:49:38 AM	SE0C49	TURN	Moderate	N	TN-162	KNOXVILLE	TN
12/01/2012	06:44:43 AM	SE0C49	SPEED	Moderate	E	I-40	KNOXVILLE	TN
12/01/2012	06:42:43 AM	SE0C49	SPEED	Moderate	E	I-40	FARRAGUT	TN
12/01/2012	06:14:52 AM	SE0C49	TURN	Moderate	E	LOST SEA PIKE/I-75	SWEETWATER	TN
12/01/2012	06:12:43 AM	SE0C49	SPEED	Harsh	E	1471 TN-68/COUNTY ROAD 312	NIOTA	TN
12/01/2012	06:09:17 AM	SE0C49	TURN	Moderate	NE	126 TILLEY RD/TN-68	NIOTA	TN
11/01/2012	06:23:57 PM	SE0C49	BRAKE	Moderate	S	2505 WESTCOTT BLVD/HARDIN VALLEY RD	KNOXVILLE	TN
11/01/2012	06:40:33 AM	SE0C49	TURN	Moderate	NW	I-140/376B	KNOXVILLE	TN
11/01/2012	06:22:57 AM	SE0C49	SPEED	Moderate	NE	I-75	LOUDON	TN
11/01/2012	06:06:56 AM	SE0C49	SPEED	Harsh	E	1511 TN-68/COUNTY ROAD 297	NIOTA	TN
11/01/2012	06:03:43 AM	SE0C49	TURN	Moderate	E	141 TILLEY RD/TN-68	NIOTA	TN
10/01/2012	06:53:42 PM	SE0C49	SPEED	Harsh	SE	TN-162	KNOXVILLE	TN
10/01/2012	06:51:41 PM	SE0C49	TURN	Moderate	E	TN-162	KNOXVILLE	TN
10/01/2012	06:48:48 PM	SE0C49	BRAKE	Moderate	S	2503 WESTCOTT BLVD/HARDIN VALLEY RD	KNOXVILLE	TN
10/01/2012	06:57:57 AM	SE0C49	TURN	Harsh	NW	2545 WESTCOTT BLVD/GALLOWS POINT DR	KNOXVILLE	TN
10/01/2012	06:57:07 AM	SE0C49	BRAKE	Moderate	E	10208 HARDIN VALLEY RD	KNOXVILLE	TN
10/01/2012	06:57:00 AM	SE0C49	SPEED	Moderate	E	10208 HARDIN VALLEY RD	KNOXVILLE	TN
10/01/2012	06:55:03 AM	SE0C49	TURN	Moderate	NW	2498 SCHAEFFER RD	KNOXVILLE	TN
10/01/2012	06:51:19 AM	SE0C49	TURN	Moderate	NW	I-140/376B	KNOXVILLE	TN
10/01/2012	06:49:23 AM	SE0C49	TURN	Moderate	NE	I-40/LOVELL RD	KNOXVILLE	TN
10/01/2012	06:47:46 AM	SE0C49	BRAKE	Moderate	E	10715 PARKSIDE DR NW/LOVELL RD	KNOXVILLE	TN
09/01/2012	07:57:49 PM	SE0C49	SPEED	Harsh	NW	1782 TN-68	NIOTA	TN
09/01/2012	07:55:49 PM	SE0C49	SPEED	Moderate	W	1460 TN-68/COUNTY ROAD 312	NIOTA	TN
09/01/2012	07:37:49 PM	SE0C49	SPEED	Moderate	SW	I-75	LENOIR CITY	TN
09/01/2012	07:25:48 PM	SE0C49	SPEED	Harsh	W	I-40/LOVELL RD	KNOXVILLE	TN
09/01/2012	07:24:36 PM	SE0C49	TURN	Moderate	SW	376B/TN-162	KNOXVILLE	TN

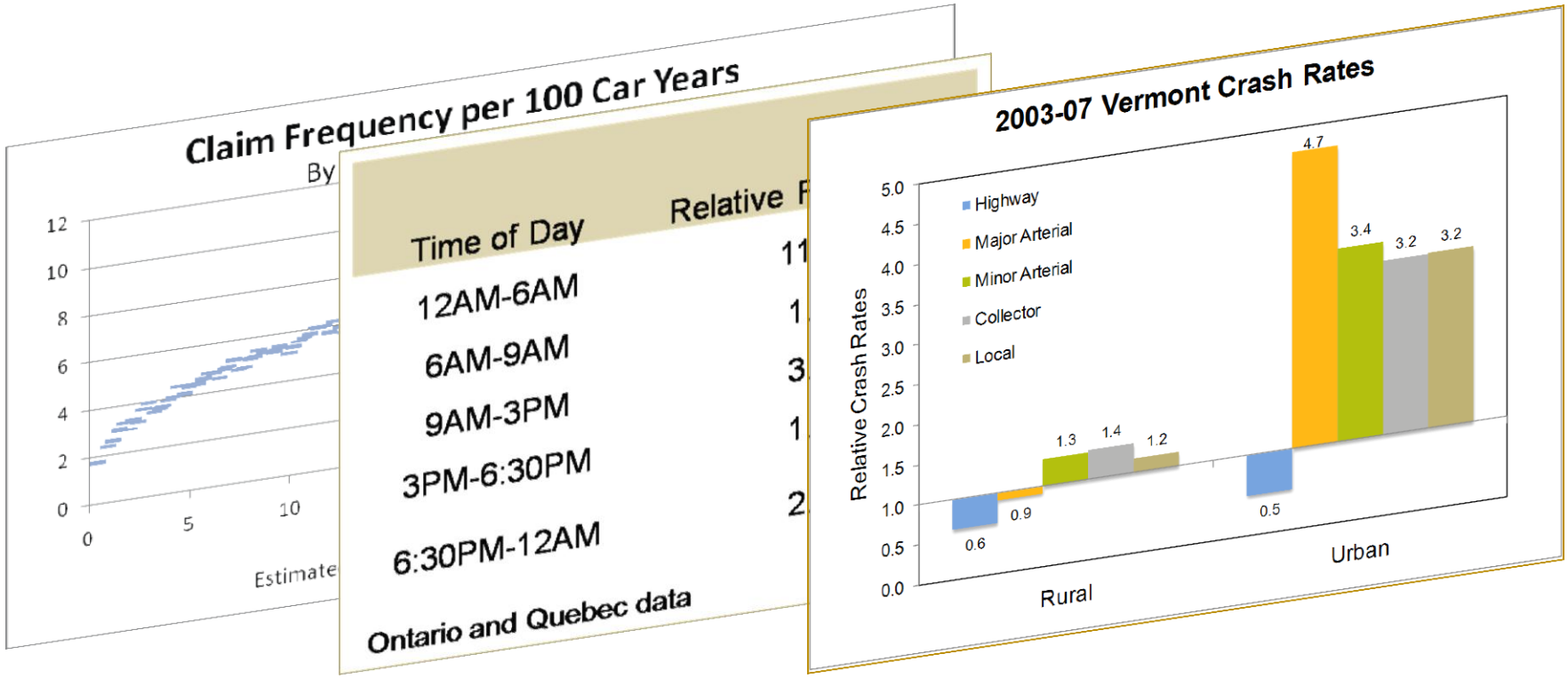
Telematics in the insurance industry

Telematics can be a game changer

- Pricing
  - Improved risk measurement and pricing
  - Driving behavior may correlate with other non-auto risks
- Risk control
  - Highly effective behavioral (risk) change models possible
- Product
  - Support for the “right” products and services
  - Changing the overall value proposition with the insurer
- Claim
  - Ability to better manage fraud
  - Could inform claim processing

Telematics allows for more accurate pricing

- Various studies demonstrate predictive potential



- Companies gain competitive advantage through better segmentation
- Elimination of cross-subsidization is fairer

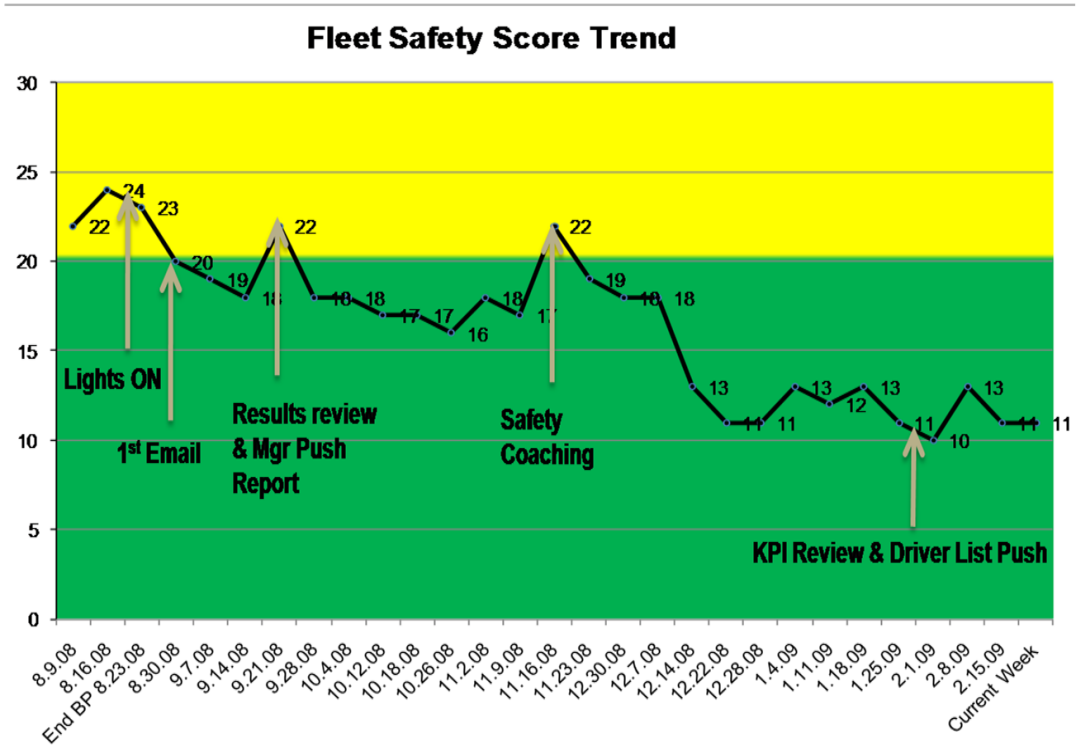
Monitoring/feedback lowers risk

Norwich Union:
30% frequency reduction

Iceland Postal Service:
Reduced crash rate by 56%

Pepsi (Iceland):
Reduced fleet crash rates by over 80%

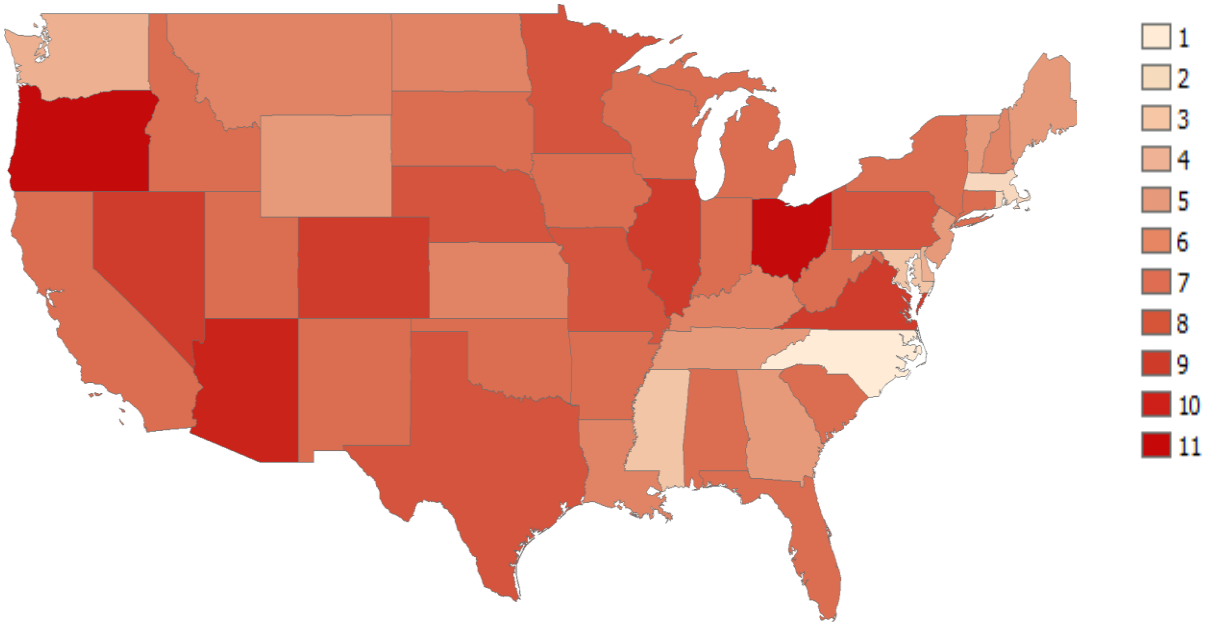
GreenRoad: 54% improvement in fleet crash rate



Safer drivers decrease fuel consumption by roughly 10%

Telematics in personal auto

- U.S. companies representing over 75% of the market already have programs or are actively pursuing them
- 45 states have implemented 4+ Personal Auto UBI programs — Ohio has 11!



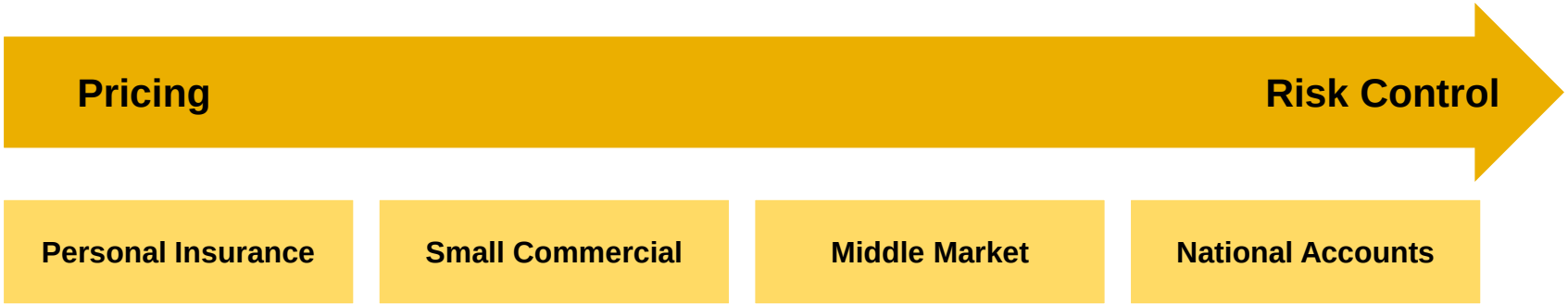
Programs range from simple verified-mileage programs to full-fledged UBI offerings

Early insurer activity in commercial programs

- Programs announced in past three years:
  1. **Hartford:** FleetAhead initially offered in New Jersey expanding to National Accounts — Middle markets and small fleets broadly — program being operationalized
  2. **Liberty Mutual:** OnBoard Advisor program in 14 states in at least three subsidiary companies, including Safeco
  3. **Travelers:** Fleet Vehicle Telematics program available as of September 2010
  4. **Zurich:** ZFI launched in 2011 — Panel of partners: DriveCam, GreenRoad, IVOX, SmartDrive and Trimble (in the US). Limited data is collected via their data gateway partner, IDS
  - Initial activity primarily within Global Corporate — economic incentives
- Marsh is believed to be the only large broker actively promoting a program
- Niche market brokers are creating new products supported by underwriters who are subsidizing the programs

Comparing personal and commercial UBI

Personal lines UBI vs. commercial auto risk management



- Personal insurance offering has been dominated by the need for better price segmentation
- The telematics needs for (very) small commercial can be similar to personal lines but many also want to change their risk profiles
- The telematics needs for medium- and large-sized commercial companies are significantly different than the needs of individuals and small commercial fleets
  - The focus is risk management and operational efficiency

Historical approach to use of telematics varies from personal to commercial

Personal

- A consumer's first experience with risk-based telematics likely came from an insurer supplied telematics (UBI) program
- Insurers are currently fully funding UBI programs to collect data to identify profitable customers
- Model is primarily focused on measurement of risk with subsequent pricing adjustments
- **Use of self-selection and mileage are primary factors supporting early UBI programs**

Historical approach to use of telematics varies from personal to commercial

Commercial

- Many commercial fleets already use telematics to manage operational efficiency
  - Fleets generally seek improved operations over risk management alone
  - Some market segments invested heavily in telematics systems
- The focus historically has been on efficient movement of the vehicle
- There are an estimated 300+ varieties of commercial telematics products in the market, which vary in terms of data collected and business value
- Data/analytics from existing systems is not comparable between systems
- Programmatic approach to risk management (change) varies substantially, with widely varying results

Differences between personal and commercial lines

Personal

- Auto is core business
- Insurers can deploy standard technology (original devices)
- Self selection works to insurers' favor based on single user
- Insurer can establish the platform that suits their business
- Product offering can be adapted to support target business model

Commercial

- Auto is smaller percentage of total product line
- Extensive existing technology base (depends on segment)
- Data availability varies widely
- Capabilities vary widely
- Often very expensive
- Focus on operational efficiency
- Behavioral change models vary widely

Current challenges and successful strategies

What are the challenges?

- Most current telematics fleet programs were developed solely to improve operational efficiencies
- A large number of telematics devices are already installed in large fleets by a wide variety of telematics service providers
- Large self-insured fleets could benefit from loss reduction measures, but insurers have trouble incenting them because policies often carry high deductibles or cover liability only
- Commercial telematics companies have very limited (in most cases none) access to claims data

What are the challenges?

- Data collection is based on simple thresholds, which limits visibility to causal factors
- Effective behavioral-based programs are highly dependent on a wide range of complex activities
- Commercial vehicle operational characteristics vary widely; pricing models must be able to incorporate these differences
- Commercial systems are currently prohibitively expensive

Alignment challenge — Business goals — Insurer and Fleet

Insurer

- Customer acquisition
- Customer profitability
- Improve pricing accuracy
- Retain the right customers
- Profitability
- Fraud management
- Improve economic performance
- Capture market share
- Build book of right customers

Commercial Fleet

- Generate more revenue
- Reduce costs
- Improve operational efficiency
- Employee safety
- Employee retention and job satisfaction
- Profit
- Reduce fuel consumption

Models in commercial insurance and their shortcomings

- “Comprehensive offering” model
- “Panels of providers” model
- “Pricing” model (a.k.a. personal insurance model)
- Something else?

Another quiz!

Only one question!

True or False?

It is *easier* to implement a usage-based insurance program in Commercial Lines than in Personal Lines

Implementing UBI: Lessons learned

- Carefully choose the segment for initial launch
- Define your value proposition (what's in it for me?)
- Find the right solution for your value proposition
- Don't overspend on initial infrastructure
- Get the data you need, not the data you're given
- Test, learn, and adapt

Contact details

Mohamad Hindawi, PhD, FCAS
Towers Watson
(860) 264-7257
Mohamad.Hindawi@towerswatson.com