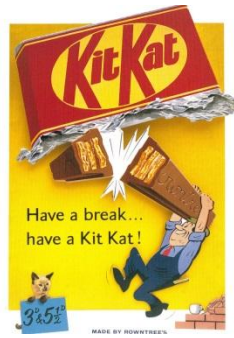# Data led work-related road safety

Dr Will Murray, Research Director

Interactive Driving Systems

Contents

- Why

- Collision causes

- How:
  - Understand risks & costs
  - Manage risks using systems based approach
  - Evaluate

Why?

- Societal:
  - Driving is biggest risk workers, commuters & local communities face
- Legal:
  - Transport, OHS - 89/391/EEC
  - Vehicle = workplace
- Business:
  - Good practice, reputation, brand, CSR
- Financial:
  - Hidden costs twice actual & impact profitability
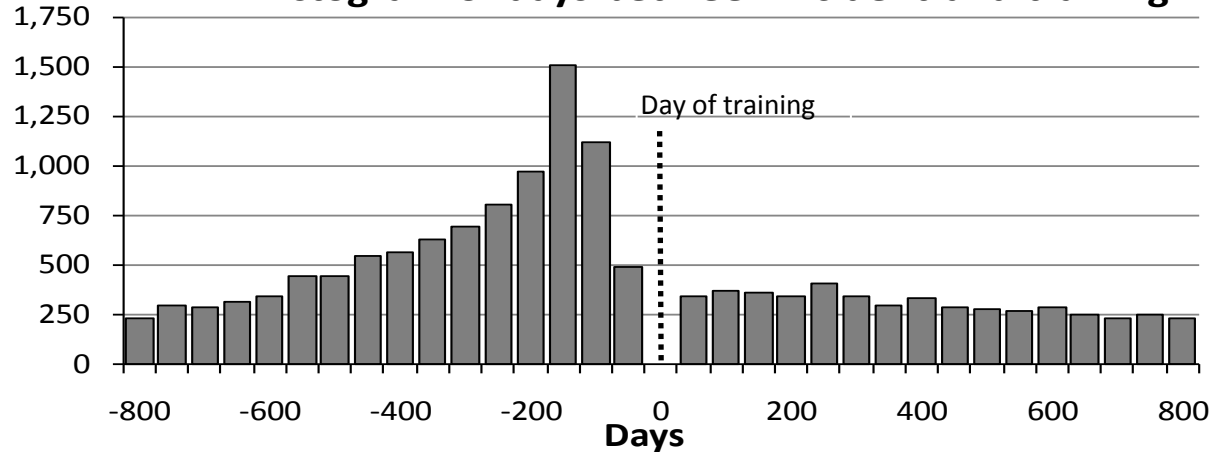 - Injuries hit: individual (57%), Company (20%) & Society (23%)

Who causes collisions?

- Drivers are the main cause of work-related road collisions

- Managers are the main cause of work-related road collisions

Behind the wheel outcomes

Histogram of days between incident and training

Benefit of BTW starts before training undertaken!

- All employees = 0.029 claims per year, never trained = 0.025
- Training = 0.347 per year before training - falling to 0.125 after training
- Claim rate improved with training, but still 5* higher than 'never trained' group
- Regression to the mean makes up approx. half of training impact
- Work-related road safety goes beyond drivers

Creating a Crash Free Culture

Research shows that:

'Fleet safety is most likely to be improved by the introduction of an integrated set of measures based on the safety culture within the organisation'

TRL, MUARC, CARRS-Q

Haddon Matrix framework

	Management Culture (30%)	Journey (10%)	Road/ Site Environment (10%)	People - Drivers and Managers (20%)	Vehicle (10%)	External/ Societal/ Community/ Brand (20%)
Pre-Crash or Pre-Drive	Leadership Business case Legal compliance Safety review Benchmarking Pilot studies Goals & policies Safety culture Committee Pledge Communications Contractors	Travel policy Mode choice Journey planning Routing Risk assessment Emergency preparation Shifts/ working time	Risk assess Observation Guidelines Site layouts Work permits Site rules Road design Hot-spot mapping Engage local road agencies	Recruit Contract Induct Check qualified Handbook Risk assess Train Equip Communicate Engage Monitor Correct	Risk assess Select Specification Safety features Service Maintain Check Use policy Mobile comms ITS/telematics Wear & tear Grey fleet	Regulator/policy engagement CSR Benchmarking Communications Family members Community Road safety weeks/ days Awards
At Scene	Emergency support to driver	Engage local investigators	Manage scene	Process to manage scene	Crashworthy 'ITS' data capture	Escalation process
Post-Crash	Report, record & investigate Change process Data linkages, evaluation & KPIs	Debrief & review journeys	Investigate and improve Review site/road elements of collision data	Reporting and investigation Driver debrief Counselling, trauma support Reassess/train	Strong openable doors Investigate 'ITS' data Inspection & repair	Manage reputation and community learning process

How to improve work-related road safety

Understanding & targeting risks

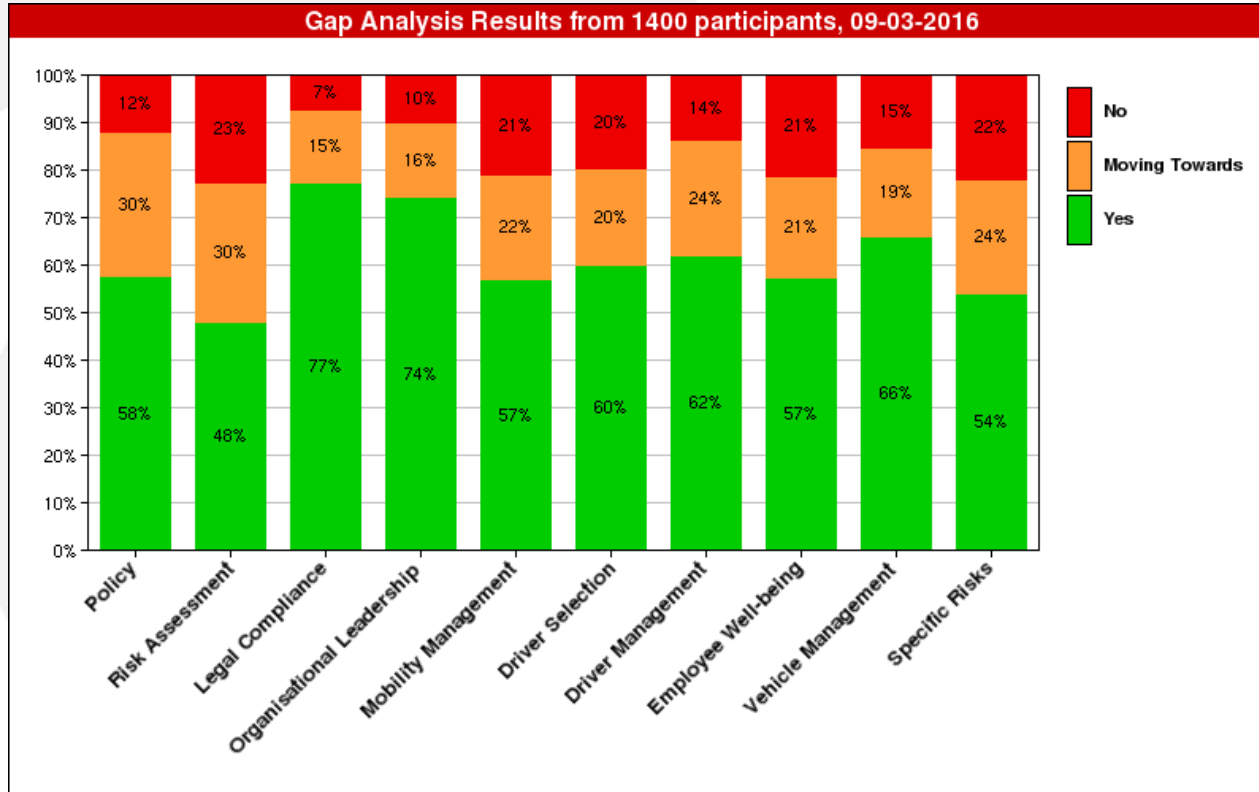# Process data

Gap analysis

www.fleetsafetybenchmarking.net

10*, 30, 150 & 300+ questions

Others eg Zurich

www.fleetsafetybenchmarking.net

Gap Analysis Results from 1400 participants, 09-03-2016

| Category	No	Moving Towards	Yes
Policy	12%	30%	58%
Risk Assessment	23%	30%	48%
Legal Compliance	7%	15%	77%
Organisational Leadership	10%	16%	74%
Mobility Management	21%	22%	57%
Driver Selection	20%	20%	60%
Driver Management	14%	24%	62%
Employee Well-being	21%	21%	57%
Vehicle Management	15%	19%	66%
Specific Risks	22%	24%	54%

Outcomes data:

- Risk assessment
- Licence checks
- Claims
- Telemetry

How do you compare?

What does the data tell us?

What are the barriers?

Risk assessment data

Assessment outcomes against crashes
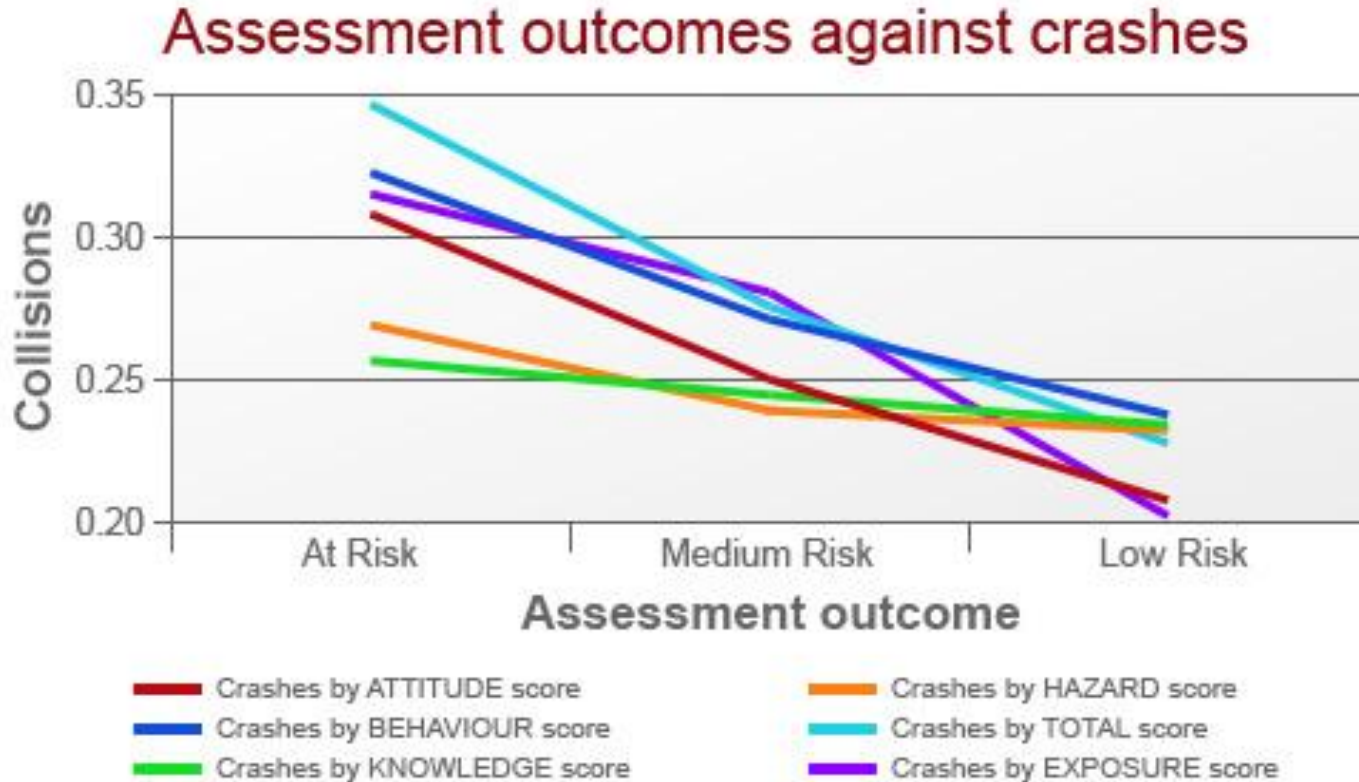
Licence check data
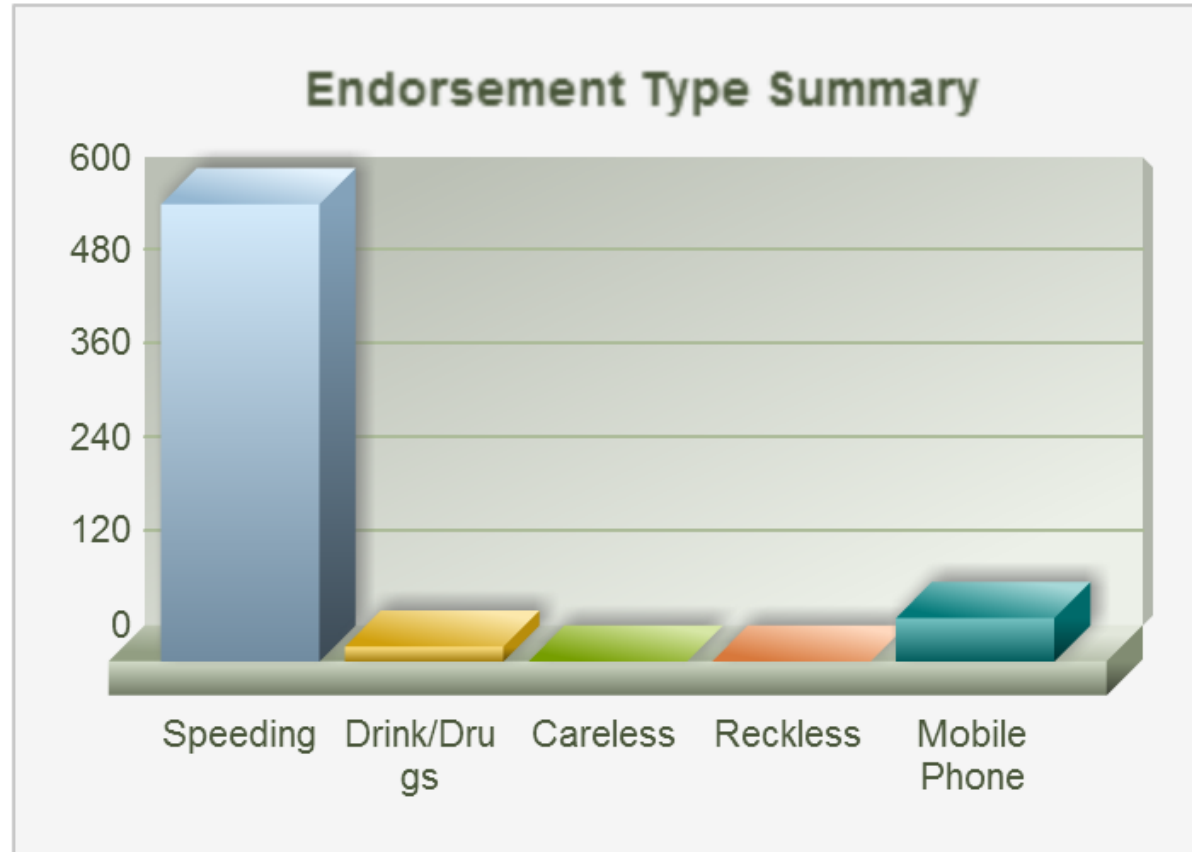
Claims data

Claim type	2012 Claims	£	2013 Claims	£	2014 Claims	£
Hit TP in rear	93	515,251	55	387,519	55	277,496
Hit parked/stationary TP vehicle	73	104,005	63	135,584	57	49,704
TP pulled out into client path	65	107,882	28	135,579	27	15,193
Reversing	59	119,142	40	87,462	43	64,616
TP hit client in rear	40	13,846	6	2009	14	4,500
Pulled out into TP path	37	277,228	34	143,564	31	155,691
Multiple collision	19	86,362	3	1,685	5	27,808
TP hit parked/stationary client vehicle	14	482	7	2,333	14	15,558
All other	14	96,890	3	15,400	11	12,777
Roundabout collision	12	30,245	14	102,333	14	49,757
Changing lanes	8	1,319	15	54,409	7	45,384
Hit TP's wall/fence	8	725	4	2,214	5	6,122
Hit cyclist	6	44,771	2	23,300	2	22,703
Head on collision	5	15,270	3	-	3	750
Collision on bend	3	2,600	5	20,502	1	-
Total	456	1,416,018	282	1,113,892	289	747,658

Collision locations data
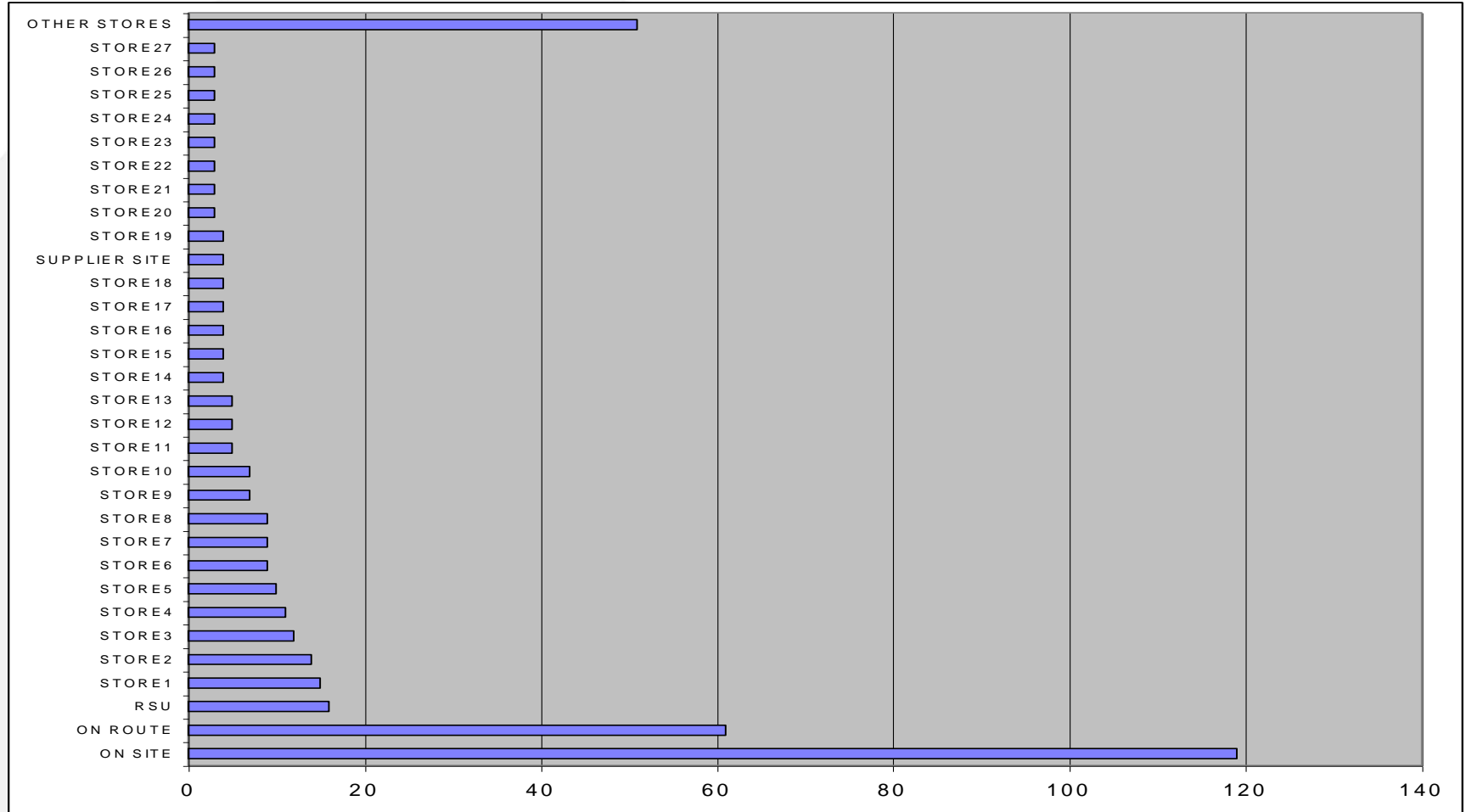
Driver level Pareto data

% of drivers	% of claims
10	29
20	46
50	77
80	93
100	100

Pareto analysis of claims v drivers
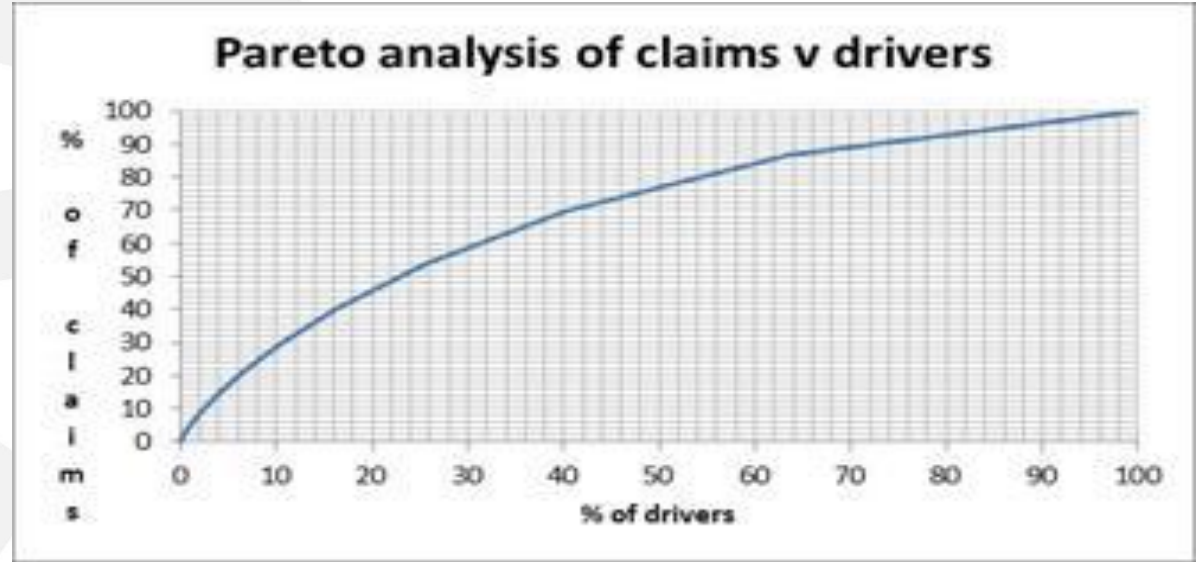
Telemetry data

BEHAVIOR CHANGE	
Performance Analytics: March – December, 2014	ALL XX Drivers *
Aggressive Events / 100 Miles Driven	70.09% Reduction
Speeding Events >15mph over the limit	91.87% Reduction
Speeding Events >10mph over the limit	77.71% Reduction
Reversing	46.67% Decrease (No Target)
Idling	60.53% Decrease (No Target)
Harsh Acceleration	20% Increase
Harsh Braking	25% Reduction
Harsh Cornering	218% Increase
Seatbelt Usage	77.69% Improvement in Usage

* Sales representatives in company cars

Barriers? - Germany

Workers Councils?

TUC

Work-related road safety

Zone ENDS

Guidance for safety reps

Data privacy?

BT SAFE DRIVING PROGRAM: PRIVACY AND DATA PROTECTION NOTICE

December 2014

The safety of our employees, their families and the communities in which we opera importance.

The BT Safe Driving Program (the Program) provides appropriate tools, resources on BT business (including in company, rental and personal vehicles) and tracks the protection requirements, this Privacy and Data Protection Notice describes how pe your safety on the road is processed and used as part of the Program.

Sources of Data. The Program obtains information from several sources:

- Directly from you via online modules, such as the Travel for Work and Driv RoadRISK assessment.
- BT HR, Fleet and Safety records.
- BT's approved external training and fleet suppliers.

Your Personal Information. Where appropriate and permitted by law, we may ho you in both paper and/or electronic format. This includes:

Evaluation – does it work

Gap analysis outcomes

Fleet gap analysis	XXX 2006	All 2006	XXX 2010	All 2010
Fleet Safety Policy	75%	71%	87%	71%
H&S Policy & Risk Assessments	61%	63%	71%	65%
Legal Compliance	81%	62%	87%	79%
Organisational Leadership & Culture	62%	70%	82%	68%
Journey/Mobility Planning	77%	74%	92%	76%
Driver Recruitment, Selection & Induction	51%	62%	75%	67%
Driver Supervision, Assessment & Training	61%	59%	80%	65%
Driver Wellbeing	57%	61%	82%	64%
Vehicle Selection, Checking, Maintenance & Security	85%	77%	93%	79%
Claims Reporting, Investig.& Recording	81%	61%	96%	63%
Marketing & Community Involvement	49%	48%	-	47%
Total	69%	65%	86%	68%
Claim Frequency (claims per vehicle)	18%		7%	

Nestlé trend

Average Claims Cost Per Vehicle & Claim Frequency
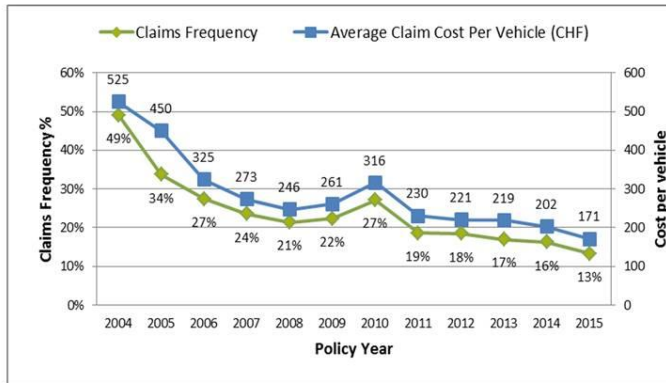(excl. UK/ROI prior to 2015, Australia, NZ)
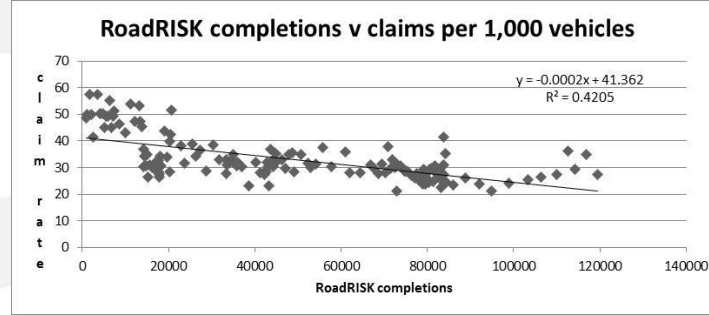
- Since inception of Program in 2004 there has been a year on year improvement in claim frequency & average claims cost per vehicle

- Improvement due to road safety culture that Nestlé have embedded, strong road safety program and risk initiatives

- Nestlé motor program is the best in our portfolio and 'best in class
  - Senior International Underwriter
  - Motor Fleet
  - Zurich Global Corporate

BT trend
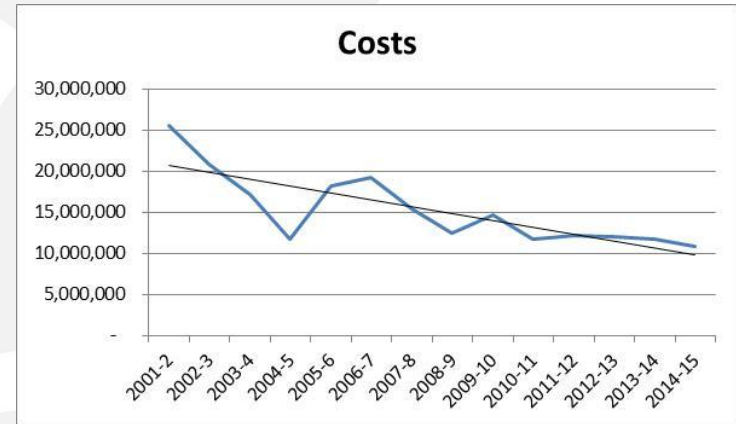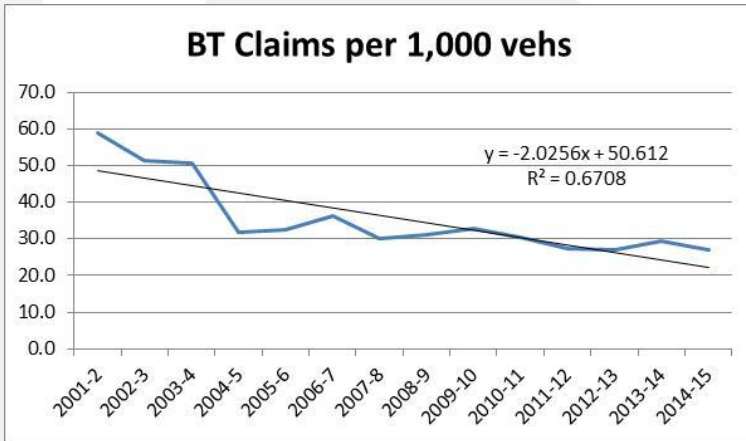
Summary/recommendations

- OHS/data led systems-based approach leads to long term sustained improvements in **collisions**, **costs, compliance** & **CSR**

- Managing drivers, vehicles & mobility

- Gap analysis/data is start

- Next steps:

  - www.fleetsafetybenchmarking.net

  - will.murray@virtualriskmanager.net