

## Online driver risk assessment and predictive modelling

Paper written by

Ed Dubens, CEO and Paul Sudell, Operations Director

Interactive Driving Systems

[www.virtualriskmanager.net](http://www.virtualriskmanager.net)

**“RoadRISK® assessments and DriverINDEX® predictive modelling tools provide Virtual Risk Manager clients with state of the art tools and analytics to aid in the identification of high risk drivers both prior to vehicle allocation, as well as after. Reducing and managing risk exposures ensures drivers return home to their loved ones and communities at the end of each work day as well as creating the opportunity for many other commercial benefits by reducing the total cost of ownership of the fleet.”**

### **Risk assessments prior to vehicle allocation**

Driver risk assessment, monitoring and improvement is important to organizations requiring their employees to drive for work purposes - for a range of business, legal, financial and even societal reasons. Essentially, risk assessment for any work-related driving activity should follow the same principles as those for any other work activity. It should identify and document the potential hazards, who might be harmed and reasonable measures to support your drivers to protect themselves from harm.

A range of approaches are available for driver risk assessment, including combinations of in-vehicle assessments, psychometric tests and online assessments. Each is important, depending on the nature of the work and operating environment. Online tools allow everyone who drives on business, including car, van, occasional, two-wheeler, specialist, site vehicle and grey fleet drivers, to be included in a program that traditionally may have only catered for specialist commercial vehicle drivers.

Completing RoadRISK® requires drivers to log onto a secure internet portal and answer a series of questions, which will then generate a ranking - very high, high, medium and low risk which can be utilized:

-Pre-employment as part of recruitment pre-screening, at interview, during orientation and as part of the new employee training process.

-For current staff as part of the permit to drive process; for selecting instructors and assessors; to evaluate training needs and review the success of training; and for post-collision investigation purposes.

In other ways such as to drive policy and process compliance; allocate company and hire/rental vehicles; engage drivers in cash for car and own vehicle schemes; for high employee turnover operations; risk assessments for due diligence, insurance, underwriting and vehicle hire; as part of the business development process; and as a third party service to clients.

Typically the available tools focus attention on the exposure levels of the driver, the type of vehicle they drive and journeys they undertake, as well as testing combinations of their attitude, behavior and knowledge, and hazard perception. Interventions such as feedback, training, workshops or OneToOnes® will then be allocated on the basis of the risks identified.

## RoadRISK® assessment from Virtual Risk Manager®

Virtual Risk Manager's, online risk assessment tool, first developed through trials undertaken at the University of Huddersfield in the UK in 1998, is known as RoadRISK.

Through its Profile, Defensive Driving and Feedback modules, which take about 40 minutes to complete in total, RoadRISK covers each driver's personal exposure to risk, attitudes to safe driving and behavior on the road. It has been evaluated in some detail through research undertaken at Edinburgh Napier and Loughborough universities based on large numbers of British Telecommunications (BT) drivers and also through predictive validity analysis with many other organizations including most recently the likes of Nestlé, Wal-Mart ASDA, Pfizer, Cummins, Roche and E.ON.

## Predictive validity

Figure 1 shows the relationship between the RoadRISK assessment outcomes and the average driver claim rate for a large company car and van fleet with about 4,000 drivers. Participants identified as being at high risk on the assessment are the same drivers who have the highest collision rate. This gives the organization the opportunity to PREDICT who its most at-risk drivers are for targeting relevant next steps and interventions.

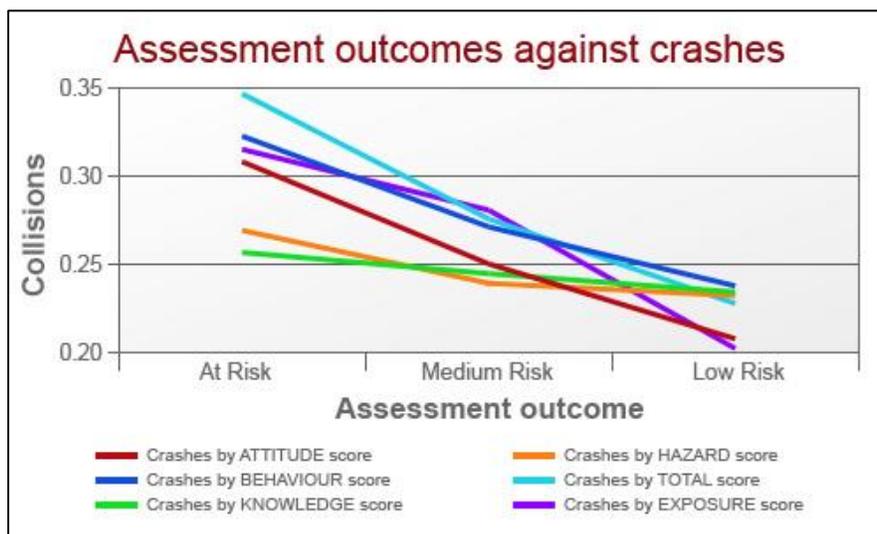


Figure 1. Predictive validity analysis for RoadRISK assessment

Notes:

- RoadRISK: Driver Profile** is a 49 question review of each participant's personal risk exposure, the vehicle they drive and the journeys they make. As well as best practice, it also helps meet health and safety requirements for risk assessment in line with HSE and OSHA guidance.
- RoadRISK: Defensive Driving** is a 45 question assessment of participant attitude, behavior, knowledge of defensive driving best practice and hazard perception on the road.

## Next step - DriverINDEX<sup>®</sup> predictive modelling

Online driver risk assessment is only one part of a wider motor risk management system focusing on policy, compliance, leadership, mobility management, driver wellbeing, vehicle management, collision management and stakeholder engagement. It is, however, in many cases the glue that binds all these areas together.

	First Name	Last Name	Pin	Hire Date	# Events	Todays Value	Change Last Month	Change Last 3 Months	Change Last 6 Months	Change Last 12 Months	VRM Rating	OneToOne
1	*****	*****	***	2003-02-19	13	17.33	6.28	5.55	4.50	17.02	High	Complete
2	*****	*****	***	2005-02-07	20	16.04	9.51	10.68	12.35	13.31	High	Complete
3	*****	*****	***	2009-04-08	9	11.95	-0.22	-2.18	-4.04	-1.12	High	Complete
4	*****	*****	***	2009-11-09	9	10.66	-0.15	-1.03	-2.31	-2.49	High	Complete
5	*****	*****	***	2001-04-25	19	9.63	-0.21	-3.99	-6.08	-5.78	High	Complete
6	*****	*****	***	2003-02-07	14	9.60	7.09	6.80	6.39	5.61	High	Complete
7	*****	*****	***	2008-03-04	47	9.40	-0.97	-5.27	-5.67	1.62	High	Complete
8	*****	*****	***	2007-10-01	7	9.34	-0.11	8.45	8.36	9.29	High	In Progress
9	*****	*****	***	2008-04-22	7	9.09	-0.13	-0.79	-1.73	2.77	High	Complete
10	*****	*****	***	2006-11-28	25	8.94	1.48	0.16	-3.02	0.10	High	Complete
11	*****	*****	***	2011-06-08	1	2.14	2.14	2.14	2.14	2.14	Medium	Not Started
12	*****	*****	***	2009-11-12	2	2.13	-0.03	-0.19	-0.41	-1.31	Medium	Not Started
13	*****	*****	***	2009-06-05	3	2.12	-0.03	1.83	1.52	1.72	Medium	Not Started
14	*****	*****	***	2011-04-14	9	2.11	-0.68	-2.15	2.11	2.11	Medium	Complete
15	*****	*****	***	2001-01-09	8	2.07	-0.04	-0.27	-0.70	-1.52	Medium	Complete
16	*****	*****	***	2010-09-17	2	1.06	-0.02	-0.10	-0.23	1.06	Low	Not Started
17	*****	*****	***	2011-06-11	9	1.06	-0.32	1.06	1.06	1.06	Low	Not Started
18	*****	*****	***	1991-01-21	3	1.06	-0.03	-0.51	-0.80	-0.16	Low	Complete
19	*****	*****	***	2010-11-07	4	1.05	-0.12	0.21	1.05	1.05	Low	Not Started
20	*****	*****	***	2007-11-09	10	1.04	-0.03	0.64	-0.80	0.24	Low	Complete
21	*****	*****	***	2006-12-29	21	1.03	-0.14	-0.79	-0.94	-3.74	Low	Complete
22	*****	*****	***	2006-11-18	5	1.02	-0.06	-0.41	-0.93	-1.82	Low	Complete

With technology and data converging, online risk assessment results are also being securely integrated with information from other sources such as collisions and claims, license checks, in-vehicle telemetry systems, fuel, injuries, tires, observed violations, and training to provide an overall picture of each driver within an organization.

Management leadership, training and interventions are the key to success.

Once DriverINDEX<sup>®</sup> has helped you identify who to target for support, VRM can also distribute subject specific training to drivers based on their strengths and weaknesses. In this way, clients evolve a responsive system across their organization to keep the safety message alive and relevant across every tier of the business.

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*Ed Dubens is the CEO/President of Interactive Driving Systems, a global provider of DRIVER RISK MANAGEMENT SOLUTIONS. We work with our clients on shaping and influencing their drivers' attitude and behavior towards safer driving. This is achieved through Virtual Risk Manager's (VRM) award winning solution – CRASH FREE CULTURE. VRM helps bring organizational policy to life; ensuring expectations are reinforced and understood across the entire organization. OUR PRIMARY GOAL IS TO HELP CLIENTS REDUCE DRIVER INCIDENTS, COLLISIONS, LICENCE & CSA VIOLATIONS, AND INJURIES YEAR ON YEAR.*