

Technology Trends

Charlie Macdonald

Industry Executive Manufacturing
Transport and Logistics
Telstra Global Industries

May 2016



Industry insights

Trends and drivers



Safety

All users of the Supply Chain have to ensure compliance to the Chain of Responsibility (CoR)



Congestion Mobility

Road congestion is a key issue and is predicted to cost the industry up to \$20bn by 2020



Environment

Ever increasing corporate and public pressure on ensuring environmental impact is controlled



COR Defences

Reasonable Steps



At least annually, identify risks and ways to eliminate/minimise them
Keep records of steps taken for 3 years

Comply with industry code of practice
Ensure measures are taken to safely weigh load.

At least annually, identify risks and ways to eliminate/minimise them

Keep records of steps taken for at least 3 years

Comply with relevant industry code of practice

Ensure contractual arrangements enable compliance

Contingency planning

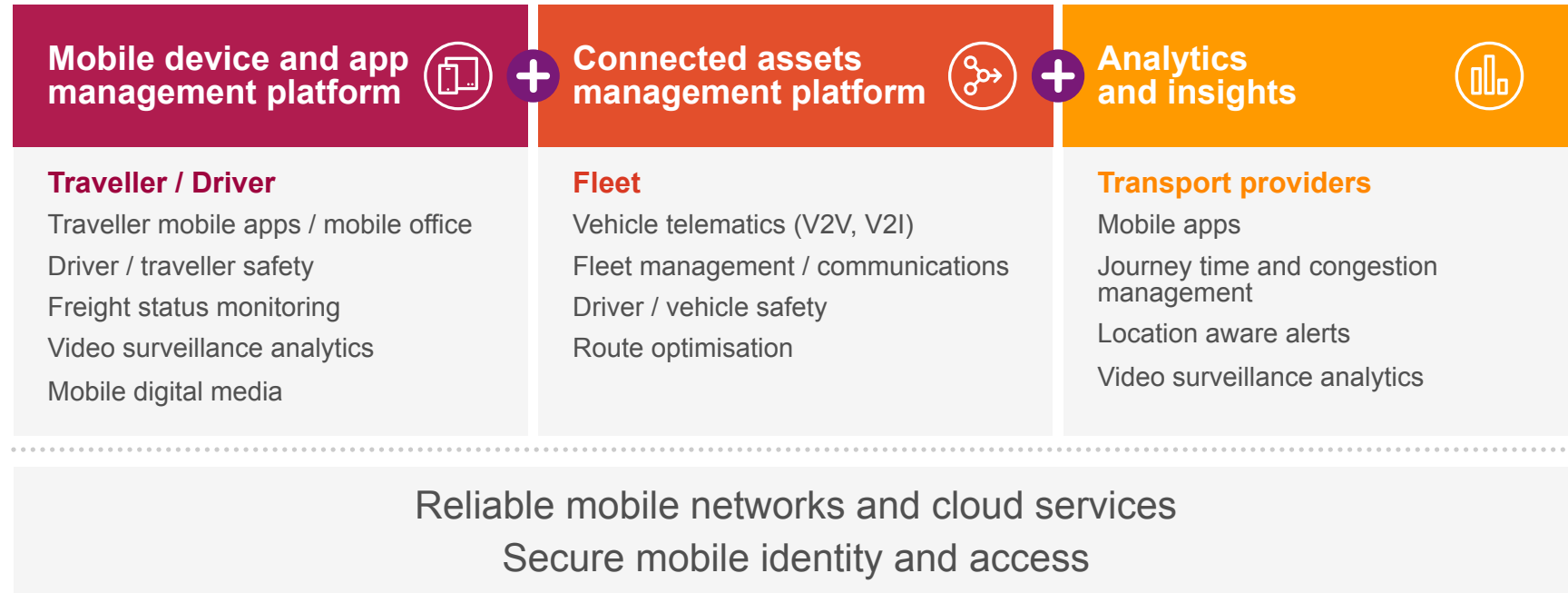
Regular consultation with other parties



The power of digital transformation



The future of business is mobility innovation



Make every journey reliable, predictable and safe

Increase visibility

Update customer order tracking websites and send SMS notifications automatically with IoT solutions

Meet safety regulations

Reduce long shifts, driver fatigue and unroadworthy vehicles

Fleet tracking

Cut costs and improve service with insights straight from the road

Increase productivity

Streamline loads, schedules, handovers and fuel consumption with monitoring, reporting and diagnostics

Security and surveillance

Protect your travellers and drivers with state-of-the-art video surveillance and analytics

Simplify travel

Update travellers in near real-time with boarding passes, train, bus and ferry arrival times and notify them of delays via the Telstra Mobile Network

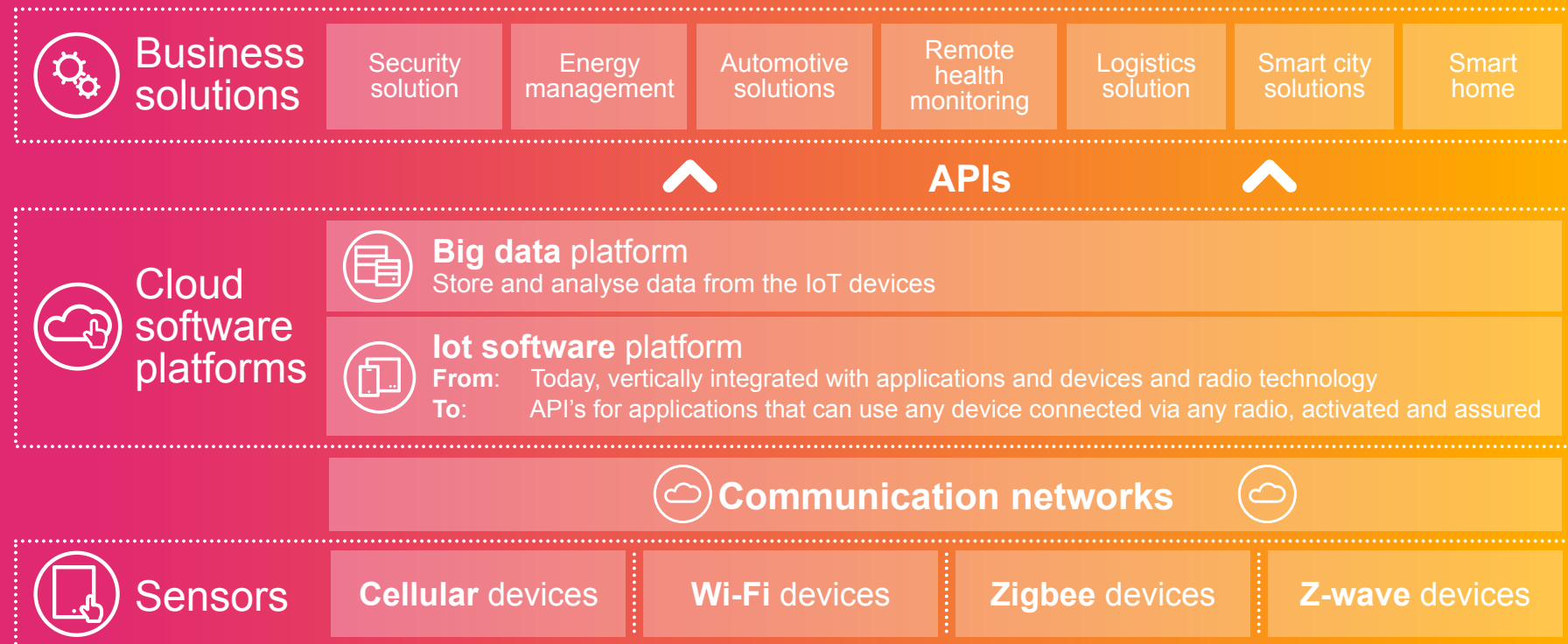


The Internet of Things (IoT)

By 2020, 25 billion things will be connected to the internet gathering insightful data to create valuable business outcomes



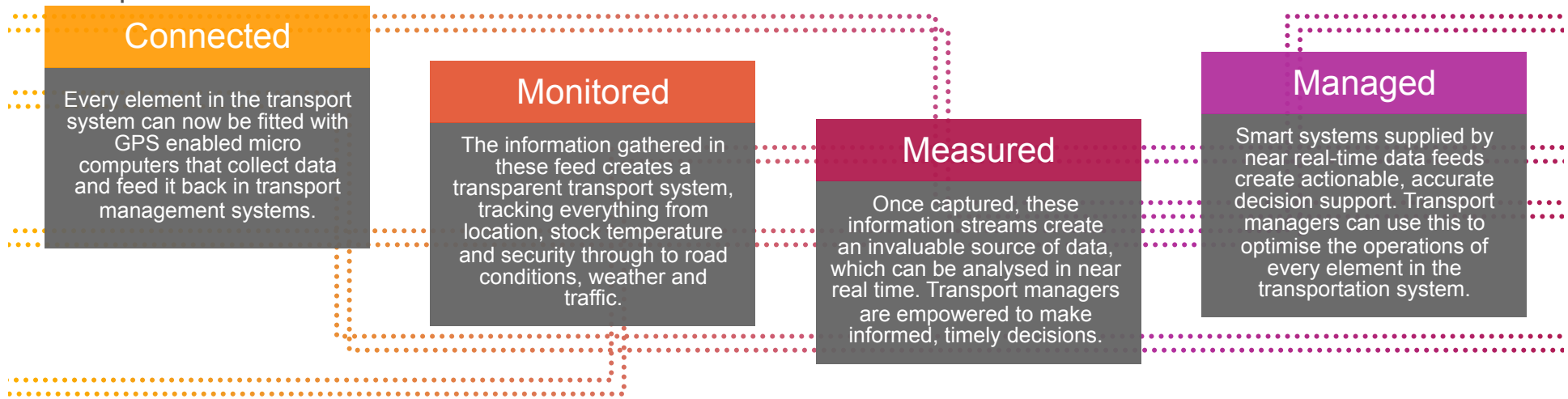
What is the Internet of Things?



IOT in supply chain and logistics

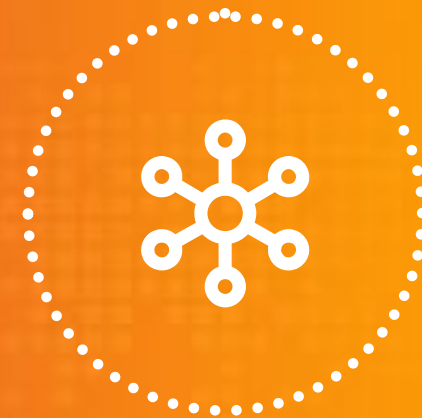
Connected Future

Technologies are converging to create a transport and logistics industry where systems are tracked, optimised and constantly improved

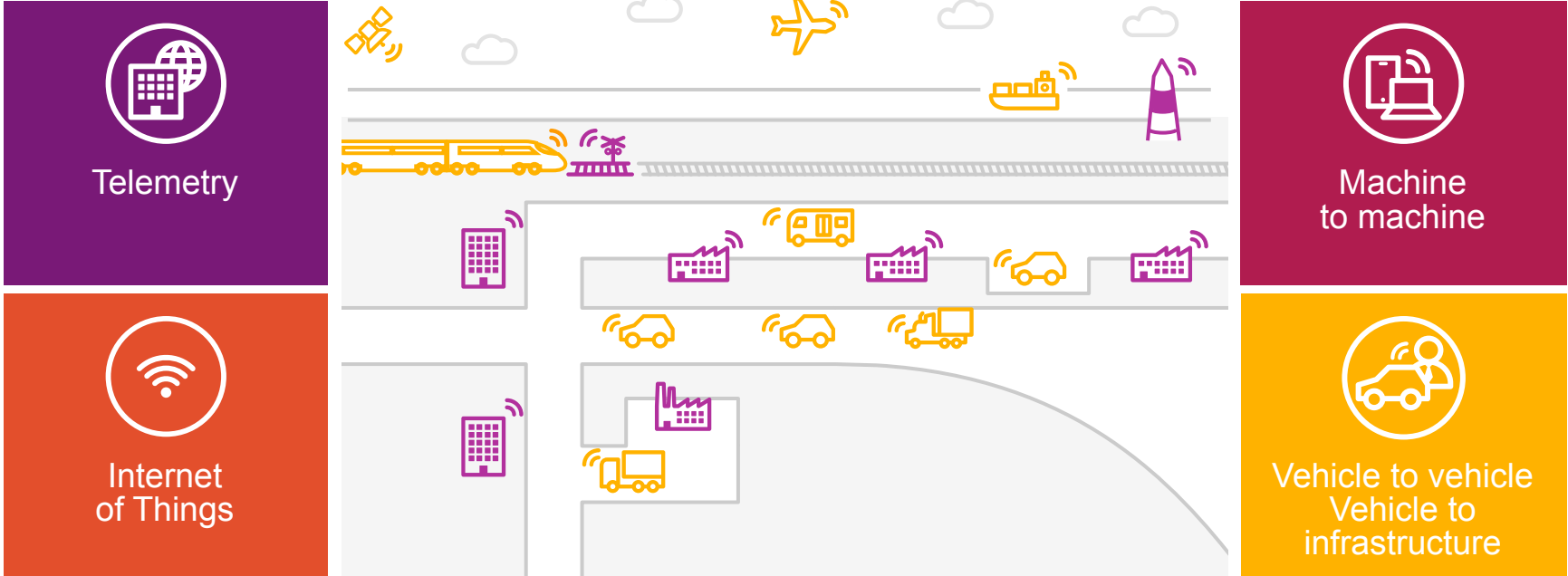


Intelligent Transport Systems (ITS)

ITS aids in reducing incidents such as road accidents and improving the safety, efficiency and sustainability of transportation networks



What are Intelligent Transport Systems (ITS)?



Levels of Vehicle Automation

Human driver monitors the driving environment

Level	Name	Description
0	No Automation	THE PAST - Everything is done manually
1	Driver Assistance	THE PAST - You complete the majority of driving tasks, with assistance for either steering, acceleration or braking
2	Partial Automation	WHERE ARE WE NOW - Some automated functions for steering, acceleration or braking – but your hands must be on the steering wheel at all times

Source: SAE International's levels of driving automation for on-road vehicles. Information Report J3016



Levels of Vehicle Automation

Automated driving system (“system”) monitors the driving environment

Level	Name	Description
3	Conditional Automation	2017 - 2020: Hands off the wheel. All aspects of driving is automated – but you must be ready to take back control when prompted
4	High Automation	2020 - 2025: Driver no longer needed. You can take back control if needed – but the car will work fully autonomously
5	Full Automation	2026 - 2030: We won't need a steering wheel or a drivers seat

Source: SAE International's levels of driving automation for on-road vehicles. Information Report J3016

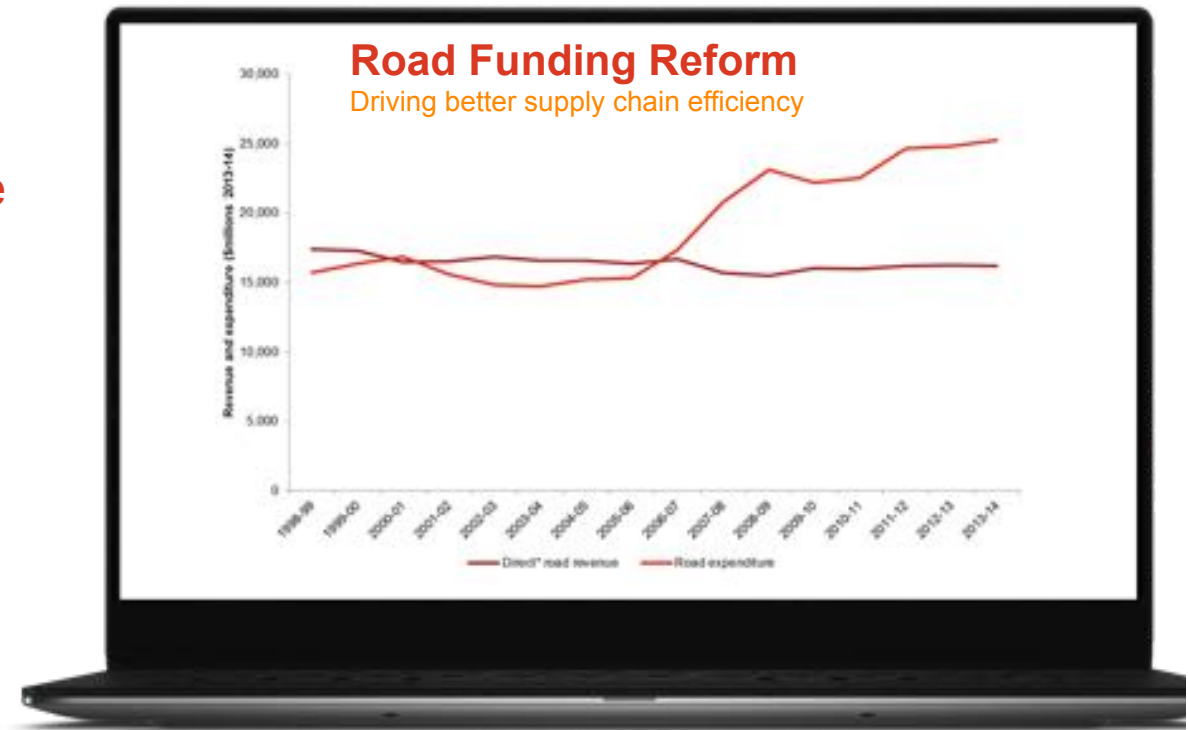


Road User Charging driving road funding reform

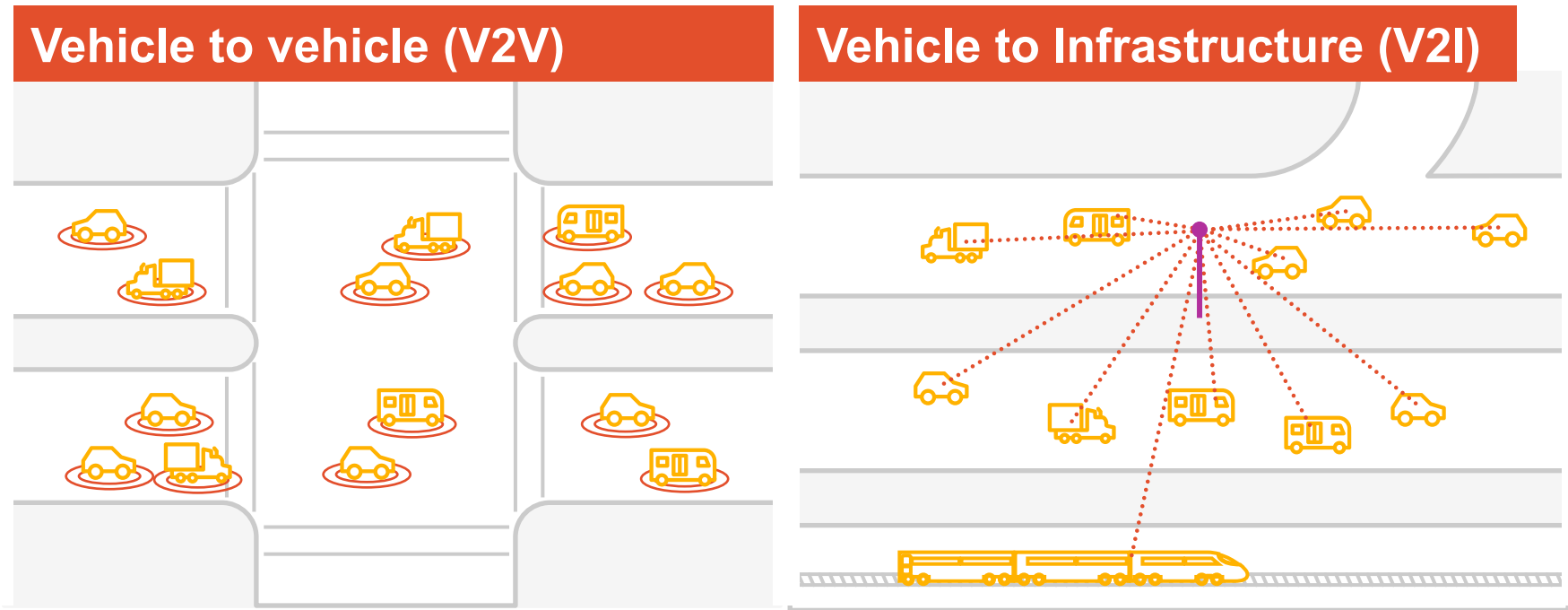
“The current approach to charging for road use and investing in road infrastructure is unfair, unsustainable and inefficient.

Fixing our road funding model by delivering whole-of-system road user charging”

Source: Infrastructure Australia



Collaborative Intelligent Transport System (C-ITS)



Platooning Technology

Vehicle Platooning

Aims to improve safety, efficiency, mileage, and time of vehicle travel while relieving traffic congestion, decreasing pollution and reducing stress for passengers.



Reduces Drag

It has been observed that vehicle platooning can significantly reduce the drag that each vehicle experiences. This translates into less fuel consumption, greater fuel efficiency and less pollution.



The Connected Driver

Wearable technology offers huge potential enabling the wearer to access and share data then act in near real-time



Beyond compliance

Fatigue and safety management

SEEINGMACHINES



SMARTCAP



RESTALERT



This is an extraordinary time for business

“Mobility will revolutionise jobs, lives and entire industries.”

Andrew Penn, CEO, Telstra

> Are you ready for the journey?



Thank you

 @MacdCharlie

 au.linkedin.com/in/macdonaldcharlie/



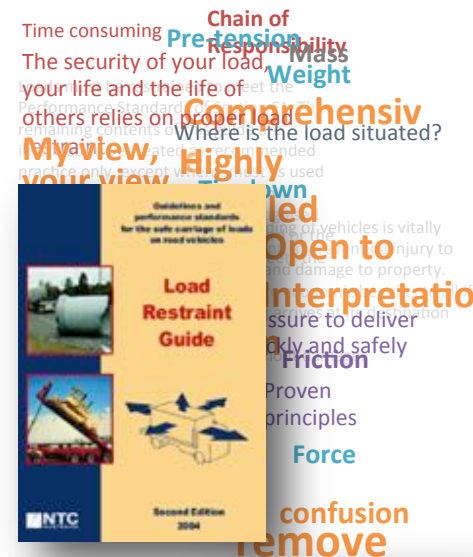
LOAD SAFETY SAVES LIVES

Load restraint mobile app
by Telstra and Engistics



The Present Approach

- A **280 page book** based upon an engineering “g force” approach (as used world wide)
- Multiple **Complex Tables** to handle the mathematics
- Needs Lots of **Training** for inspectors and drivers to interpret correctly
- **Inconsistency** of assessment & application
- **5 Fatalities & 110 injuries p.a.**



MAXIMUM WEIGHT EACH 50 mm WEBBING STRAP CAN RESTRAIN					
FRONT OF LOAD BLOCKED?	NO		YES		
	MEDIUM p = 0.4 (Strap Rest on Trailer)	HIGH p = 0.8 (Strap Rest on Trailer Load Mat)	MEDIUM p = 0.4 (Strap Rest on Trailer)	HIGH p = 0.8 (Strap Rest on Trailer Load Mat)	
Minimum average strap tension 300 kg					
STRAP ANGLE EFFECT (E)					
90°	1.0	600 kg	1800 kg	2400 kg	3000 kg
approx 60° to 90°	0.85 to 1.0	510 kg	1530 kg	2040 kg	2550 kg
approx 45° to 60°	0.70 to 0.84	420 kg	1260 kg	1680 kg	2100 kg
approx 30° to 45°	0.50 to 0.69	300 kg	900 kg	1200 kg	1500 kg
approx 15° to 30°	0.25 to 0.49	150 kg	450 kg	600 kg	750 kg

INTRODUCING CHECKALOAD THE LOAD RESTRAINT APP



WHAT IT IS

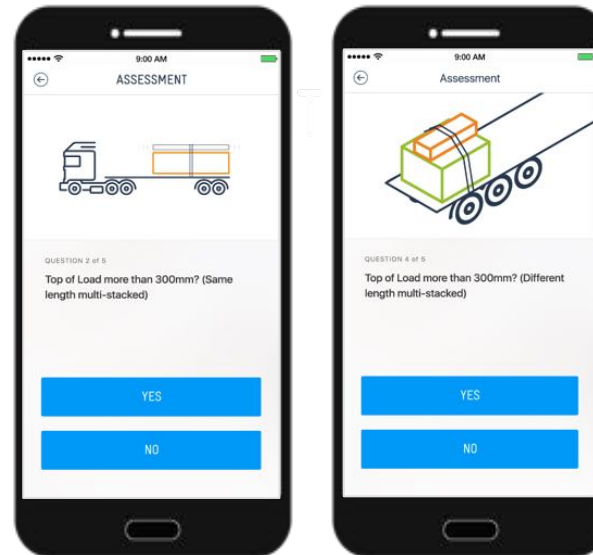
A cloud based, mobile app for Smartphone and Tablet (iOS and Android)

A smart tool to assist with load restraint compliance and improved road safety

Brings consistency to load restraint assessment for all road authority officers and industry alike

Enables evidence based recording of load compliance for future auditing

Covers all major load types and methods (e.g. pantechs, curtain sliders, drop decks, low loaders, etc.)

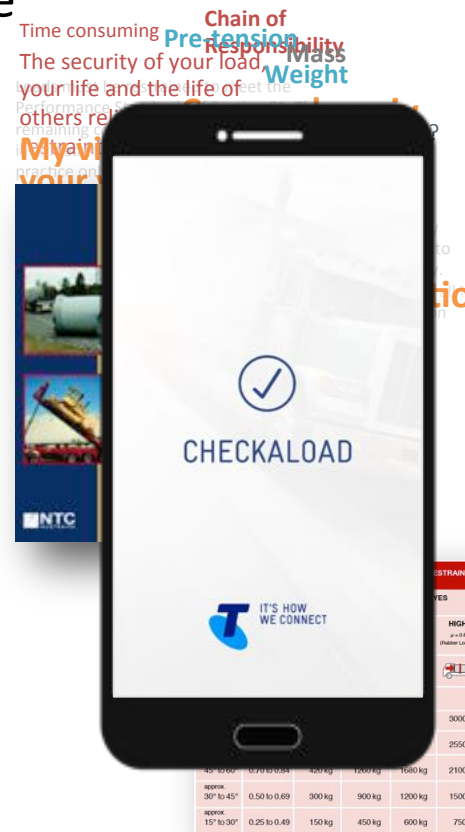


The hidden genius is turning a complex problem into **simple and user friendly steps**...but at the same time, keeping it **comprehensive**



CheckaLoad APP for the Future

- Intelligent Q & A to assess whether this load is legally compliant & records with photos
- Handles both the Maths and checks for all the common (71!) configuration fail types
- **Consistency** of assessment without training, you just answer its questions and select diagrams
- **NHVR / State on-road inspectors are doing pilot trials (next week!)**
- **Public Release June 2016**
- **\$250 pa /user**



The “Game Changing” Effects

- Inspectors will not be guessing or inconsistent any more.
- “You *can* improve what you *can* measure”.
- CoR (now), you must take “**All** Reasonable Steps” to compliance. So consignors, loaders, transport operators & drivers will have no excuses
- CoR (future), an App becomes your risk assessment for ALARP (making risks as low as reasonably practicable).
- Codes of Practice Audits can now measure load restraint
- All parties in the CoR chain can easily check Load Restraint
- **“Digital Disruption” as APPs will quickly replace books and web sites as technical solutions to all sorts of complex, knowledge based problems**