In Vehicle Telematics

Promoting Safety and Fatigue Management

What is In Vehicle Telematics

- Old Technology
- Three core components:
  - In vehicle device
  - Communications
  - Back office

Global Positioning System calculates vehicle position

GSM/GPRS network provider relays vehicle information either to the telematics supplier or directly to the user.

Telematics supplier hosts the data and then either forwards it via a web server or down a dedicated connection to the user

The user accesses the data via the internet

Vehicle location module receives GPS location.
Data collection module passes information to transmitter

The user receives the data directly and access the information through a software application

Who Uses In Vehicle Telematics

- Almost everyone
- Just a question of degree and functionality


MAN

Who does it benefit?

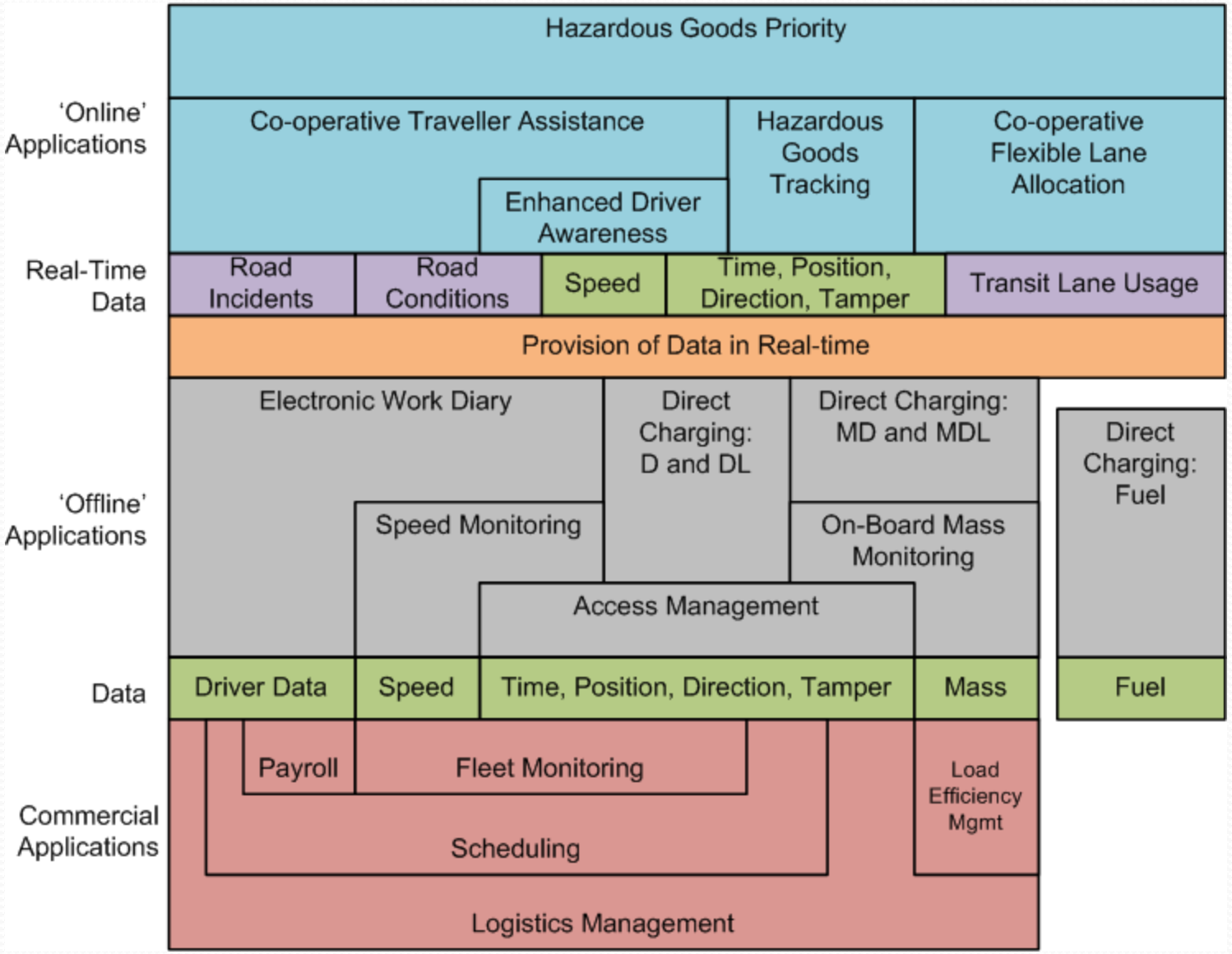
- **Industry** is already a user of telematics
  - Dispatch
  - Fleet tracking and monitoring – for internal as well as customer use
  - Integration with back end systems – payroll; scheduling

Who does it Benefit?

- **Government** has implemented and is examining the use of in vehicle telematics for:
  - Access management (IAP)
  - Mass monitoring
  - Electronic Work Diaries
  - Road user charges

One Unit Many Purposes

- Concept is well understood
- NTC released their Telematics Strategy in 2011
- To date government and industry use of telematics has not converged
- Compliance and enforcement issues are a major issue – NTC addressing


Hazardous Goods Priority
'Online' Applications
Co-operative Traveller Assistance
Enhanced Driver Awareness
Hazardous Goods Tracking
Co-operative Flexible Lane Allocation
Real-Time Data
Road Incidents
Road Conditions
Speed
Time, Position, Direction, Tamper
Transit Lane Usage
Provision of Data in Real-time
'Offline' Applications
Electronic Work Diary
Direct Charging: D and DL
Direct Charging: MD and MDL
Direct Charging: Fuel
Speed Monitoring
On-Board Mass Monitoring
Access Management
Data
Driver Data
Speed
Time, Position, Direction, Tamper
Mass
Fuel
Commercial Applications
Payroll
Fleet Monitoring
Load Efficiency Mgmt
Scheduling
Logistics Management

Existing Use

- About 30% of the vehicle fleet estimated to be fitted with GPS enabled telematics – mostly medium to large

- 2011 Report by Hyder for CRRP found that for those with telematics:
  - Around half of the devices had capability for driver input
  - Around a quarter of companies used for regulatory compliance

Fatigue Management

- Legislation makes provision for use of in-vehicle telematics for fatigue compliance
- No units approved for use
- Tpt for NSW undertaken work which is soon due for release
- SCOTI asked the NHVR to develop an implementation plan

Fatigue Compliance

- Unit must have the capability for driver input of hours of work and rest – many currently are based on vehicle movements only
- Comparison of actual hours with regulated hours - back office and (in some cases) in vehicle
- Provision of information or alerts to drivers (some units)

Improving Safety - Driver

- In vehicle telematics is a tool to assist driver compliance with **fatigue law**
  - It does not prevent individual drivers from driving fatigued
  - It does not measure driver fatigue

Improving Safety – Driver

- In vehicle telematics can aid a driver in complying with fatigue law by:
  - Information on when the next breaks are due – short; long etc
  - Visual and auditory alerts prior to and when breaks are required
  - Fatigue laws are complex – this takes away the need to worry about compliance

Improving Safety - Operator

- In Vehicle telematics is a **tool** which operators can use to assist in:
  - Scheduling
  - Monitoring compliance performance of individuals and the organisation
  - Performance Management and Training
- It is only as good as the use made of the information

Improving Safety - Operator

- Good operators can be safe and compliant without using in-vehicle telematics
- However in vehicle telematics provides:
  - Immediacy of information (real time but most often within 24 hours)
  - Reporting and trend monitoring

Monitoring Safety – C & E

- On road compliance relies on written work diaries:
  - Unless you are a regular reviewer of diaries then these are cumbersome and difficult
  - Fatigue is just one compliance activity and time must be divided across these

Monitoring Safety – C & E

- Data from in vehicle telematics has the ability to improve the speed and accuracy of enforcement activities:
  - On road
  - Back office – audits and investigations

- However this 'benefit' is a potential disincentive to take up

Technology or a Game Changer?

Current Paradigms

Heavy Vehicles:

- Prescriptive Rules
- Enforcement focused – catching people doing the wrong thing

Other Sectors:

- Safety Management Systems
- Monitoring and management - enforcement an option if management practice not effective

Current Paradigms

- Some existing use of accreditation schemes – NHVAS
  - Subject of some criticism – auditing; focus on getting a benefit rather than promoting systemic safety
- Compliance and enforcement effort largely focused:
  - On road – infringement focus and limited reach
  - Limited number of investigations

Current Paradigms

- Current approaches in the heavy vehicle sector are totally logical and understandable:
  - No barriers to entry with short term commercial incentives to break the law to increase revenue
  - Large number of players over large geographical areas
  - No systemically available information

Telematics Versus Paper Records

- Telematics provides:
  - 100% of monitored data which can be readily turned in to reports which can be reviewed and monitored – by regulators and operators
  - Gives drivers information to enable them to plan and behave in compliance with fatigue law
  - Gives operators the ability to respond in real time/near real time to address performance

Possible Future Using Telematics

- Encouraging practices that promote compliance and address non-conformance rather than focusing on punishing identified anomalies
- Monitoring performance trends over time rather than at a point in time
- Sanctions as a tool of last resort not first response

Telematics and Safety

- Telematics provide the opportunity for government and industry to partner and focus on safety rather than enforcement.
- Requires:
  - 'Trust' - a challenge for both industry and government!
  - A change in the current enforcement paradigm
  - Confidence that the information from telematics has integrity, is being used and monitored
  - Effective sanctions for those who persistently and recklessly flout the rules

JUDY OSWIN
Consulting

PO Box 1113 Aspley Q 4034
judy.oswin@live.com.au
Telephone: 0427 754 404
ABN 33 137 436 232