Benefit Analysis of an Electronic Road Use Charge System

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IBEC Session 1: Developments in Benefits, Evaluation and Costs of Road Charging
About EROAD

- EROAD is a fully integrated technology, tolling and services provider. Our advanced technology provides road charging, compliance and commercial services with the same platform to lower overall client and delivery costs.

- **First company** to implement a GNSS/cellular-based road charging solution across an entire country (New Zealand)

- Operations in **New Zealand, Australia, Oregon, Washington and Idaho**

- Sole heavy vehicle technology supplier for **California Road User Charge Pilot**

- **40,000 units** across three countries

- EROAD’s services offered include:
  1. Tax (RUC, WMT, IFTA)
  2. Compliance services (ELOGS, ELD, HOS)
  3. Commercial services

- EROAD is listed on the New Zealand Stock Exchange (NZX:ERD)
The EROAD Technology Platform

One advanced technology platform, multiple applications

New Zealand
- Tax
  Road User Charges (RUC)
- Compliance
  Health and safety
- Commercial
  Fleet tracking, telematics services

Australia
- Compliance
  Health and safety
- Commercial
  Fleet tracking, telematics services

Oregon
- Tax
  Weight Mile Tax (WMT)
- Compliance
  Safety, HOS
- Commercial
  Fleet tracking, telematics services

North America
- Tax
  International Fuel Tax (IFTA)
- Compliance
  Electronic Logging Device (ELD) / HOS
- Commercial
  Fleet tracking, telematics services
The EROAD Technology Platform

EROAD’s end-to-end technology platform consists of:

1. Electronic distance recorder called Ehubo (in-vehicle hardware)
2. Driver application and logbook application (mobile software)
3. Cloud based, highly available, SaaS platform called Depot
4. Online applications portal (SaaS)
5. Bank grade payment gateway
6. A regulatory interface
The EROAD Technology Platform

- Electronic distance recorder
- Internal and external sensors
- Cryptographic module
- Tamper-evident
- Distance, time and location

EHUBO GATEWAY

DEPOT

TAX MANAGEMENT
- Weight-Mile tax
- Highway taxes
- IFTA fuel tax
- Tolling
- Payment gateway

COMPLIANCE
- ELS/ELD
- HOS
- ISP
- Permit
- Maintenance
- Record keeping
- Driver health

COMMERCIAL
- Tracking
- Overspeed
- Idle
- Fuel
- Messaging
- Analytics
- Utilization

User Support

WEB PORTAL

CARRIERS

PARTNERS

DRIVERS

Enforcement

Global Cellular Data Network

AWS secure cloud hosting and storage

TRANSPORTATION AGENCIES

Value-added services
Infrastrucure (cloud)
Digital maps
Web services
Communications
Analytics

THIRD PARTY SYSTEMS

Banking/credit cards

TAX • COMPLIANCE • COMMERCIAL
The EROAD Technology Platform

• EROAD’s in-vehicle hardware, the Ehubo, measures distance travelled with a high degree of accuracy, and captures location, route, driver behaviour and operational data.

• The Ehubo records, stores and continuously transmits encrypted data to the web-based application called Depot, where users access information and services online.

• The tax application displays and reports distance and location travelled by vehicles, calculates taxes owed and generates supporting records. Tax reports are automatically generated in the correct format. The application also supports online tax filing where available.
New Zealand – Introduction of Electronic Road User Charges

• Electronic RUC was launched by EROAD in February 2010.

• ERUC is now 45% of Total Heavy Vehicle RUC.

• Manual RUC dropped from $900 million to $520 million.

• Growth opportunities remain strong with $520 million of Heavy Vehicle RUC still collected manually.

Source: New Zealand Transport Agency
EROAD in New Zealand

- To 31 March 2016 EROAD has collected $1.1 Billion in RUC for NZTA.

- Continuing to grow in both Heavy and Light vehicles.

- 32,452 contracted units, at March 2016

- 50% growth rate per annum

- 97% customer retention rate

- RUC still an important driver of demand

- Health and Safety the “new driver”.

Source: New Zealand Transport Agency
ERoad in New Zealand

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- Continuing to grow in both Heavy and Light vehicles.
- 32,452 contracted units, at March 2016.
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- RUC still an important driver of demand.
- Health and Safety the “new driver”.

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ERUC delivers downstream benefits
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• Beyond the primary direct benefits of an electronic road use charge system in terms of enabling tax reporting, there are secondary downstream benefits flowing from the:
  
  • Ability to deliver new tax, compliance and commercial services to the platform.
  
  • Accumulated unique data collected that can be used to deliver a wide range of new services and analytics insights.

IMPORTANT to note that the carrier owns their own data. EROAD guarantees confidentiality of individual carrier data and only makes anonymized summary data available for users other than motor carriers under strict terms of data use and retention.
New Zealand – Health and Safety Reform – April 2016

1. Health and Safety at Work Act (HSWA) introduced 4th April 2016
   • Defines motor vehicle as a **workplace**
   • Requires employer to provide a **safe** workplace
   • Requires employer to **manage and monitor** driver behavior and vehicle safety in the workplace
   • Employer must take all **reasonable and practical** steps
   • *Note: Fatigue and speed are two practical areas of focus of corporates’ health and safety managers*

2. EROAD was able to provide a suite of Health & Safety Products to supports its customer with these new compliance obligations. These ranged from an electronic logbook and driver management to ability to share

   **Telematics is a reasonable and practical way to manage and monitor driver and vehicle safety**
New Zealand - Health and Safety

• The day the Health and Safety reform became law in April this year EROAD was able to provide its suite of H&S products to 34,000 vehicles across New Zealand. The power of the platform.
New Zealand - Health and Safety

• Collaboration with NZI Lumley: Safe Driving Rewards Programme.

• Star rating compares drivers with EROAD driving population.

• If a company is in the top 25% of EROAD customers for driving behaviour and is also a customer of NZI Lumley, it may qualify for excess waiver in the event of an accident.
New Zealand – Health and Safety

- Congestion monitoring
- Identify possible new toll route
- Predict freight transit times
- Calibrate economic models
- Improve safety of road network
- Enhance insurance underwriting
- substantiate road investments – demonstrate forecasted cost benefits were achieved.

- Lower greenhouse gas emissions reporting
- Quantify economic impact of congestion
- Data on freight demand movements can predict regional GDP and economic downturn
Health & Safety: Driver Behaviour - helping drive safety

Weekly Driver Behaviour Trend

Customer introduces EROAD Drive Buddy
### ERUC delivers downstream benefits – power in the data

- The data collected is order to calculate and manage RUC includes;
  - Distance, time, location, RUC class, industry classifications, weight (nominated or GMW).

- Data collected is also collected to provide Health & Safety and commercial service;
  - Speeding, harsh braking, cornering and acceleration, geo-fence situational activity.

- From this data origination and destination travel, routes travelled and travel times can be calculated.

- EROAD has developed data sharing protocols with BECA in New Zealand to unlock the value of the data while ensuring the confidentiality of customers.

- EROAD provide anonymized data to BECA, BECA provide insights to government to improve capability, safety ad productivity of the transport network.

**IMPORTANT** to note that the carrier owns their own data and EROAD guarantees confidentiality of individual carrier data and only makes anonymized summary data available for users other than motor carriers under strict terms of data use and retention.
The data can be used to:

• Monitor congestion and determine its economic impact
• Freight movements can predict regional GDP and economic downturn
• Predict freight transit times
• Identify possible new toll route
• Calibrate economic models
• Improve safety of road network
• Enhance insurance underwriting
• Substantiate road investments – demonstrate forecasted cost benefits were achieved.
• Lower greenhouse gas emissions reporting

New uses continue to evolve and are only limited by one’s imagination.
The end of a trip is defined by a vehicle not moving for more than 15 minutes.
THANK YOU

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