

Revenue Management for Electric Roads

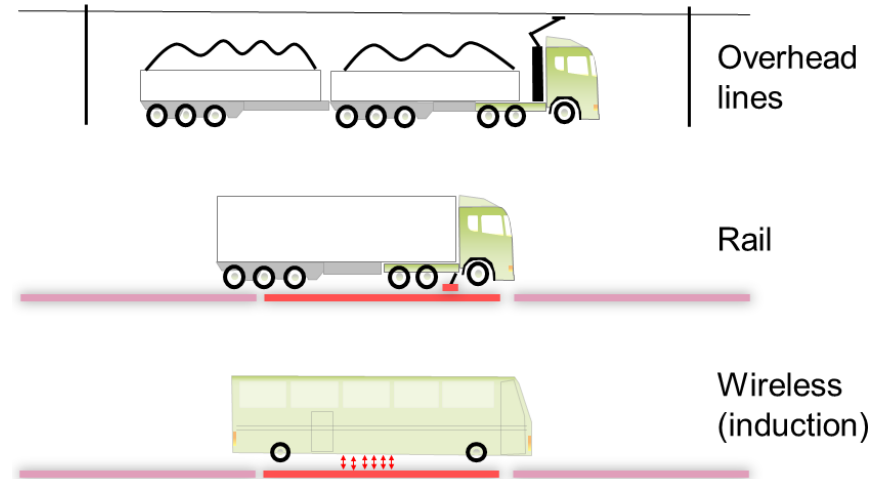
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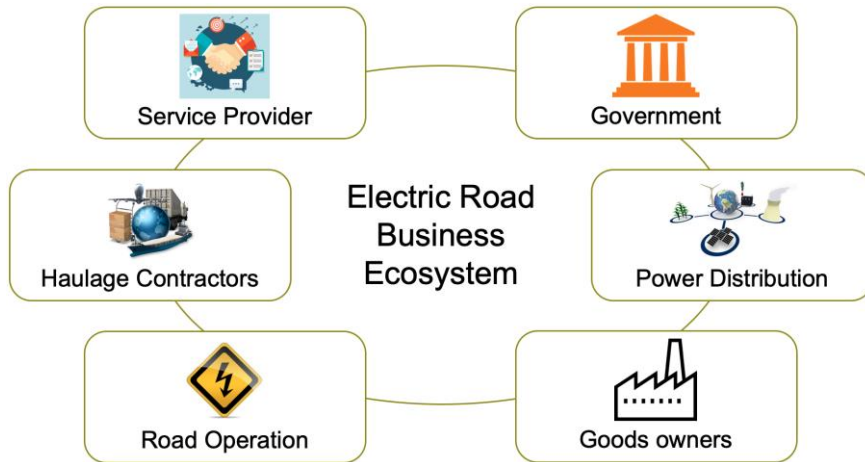
Electric Road Systems Conference 2019

Electric Road Systems (ERS): Power transfer during movement

- Long range for cars, buses and trucks – various applications
- Reduced need for batteries – less cost for vehicles
- Reduced need for charging stops – increased flexibility
- Direct use of electricity offers the most energy efficient way



Business Ecosystem for ERS



- Goods owners, e.g. industries
- Haulage contractors, forwarders and truck owners
- Road operators
- Electric power distributors
- Etc.

Revenue Management for ERS

- Operational ERS will need some form of revenue management for billing the use of infrastructure, electric energy and services
- Complex situation where multiple actors shall get paid
- **Requirement:** Open and scalable architecture that enables interoperability and different business models

Existing revenue management systems

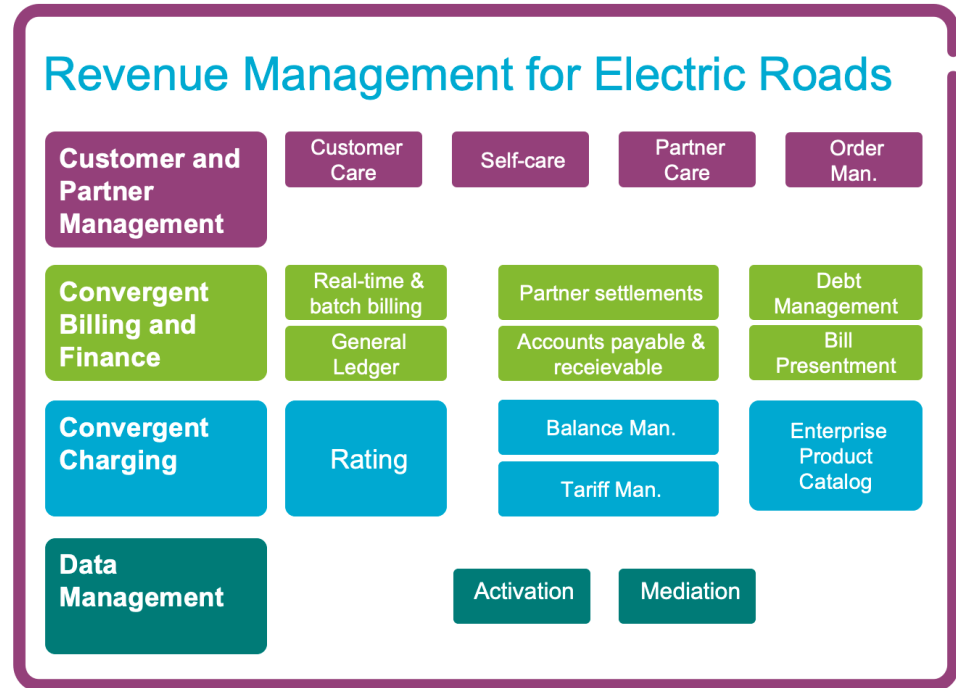
- Communication services (telecommunication etc.)
 - Flexible and configurable systems for changing commercial situations
 - Different business models with multiple actors and roles
- Railway
 - Trading of electricity, but few roles
 - Distance reading of power consumption

Design of revenue management system

- Understand and define the various actors in commercial terms
- Support for a variety of possible business models.
- Advantage of a situation where the actors share a given framework
- Definition: System with access to data sources such as energy meters and that generates invoices

Proposed Architecture

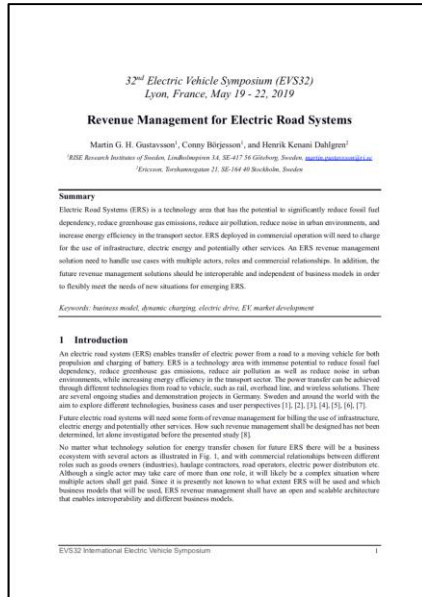
- Open
- Modular
- Scalable
- Interoperability
- Various business models



Conclusions

- The future revenue management systems need to handle complex use cases with multiple actors, roles and commercial relationships; and should be interoperable and independent of business models
- There systems on the market that can handle complex revenue streams
 - About six months to configure and deploy a system for ERS
 - Future adjustments possible by configuration changes

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