

Less Tolling or MaaS Tolling?

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Overview

- The promise of MaaS
- Its anticipated disruptive impact on tolling
- What to do about it
- When to get ready for it

Mobility as a Service

One trip – Multiple modes – One payment
Autonomy – Flexibility – Reliability

- Without MaaS
 - Own individual modes of transportation
- With MaaS
 - Pay per trip, or
 - Purchase mobility service package tailored to individual needs

MaaS and Multimodal Transportation

- Pedestrian
- 2/3 wheelers
- Passenger vehicles
- Buses
- Trains
- On-demand or scheduled airborne transportation
- On-demand or scheduled waterborne transportation

MaaS Ecosystem

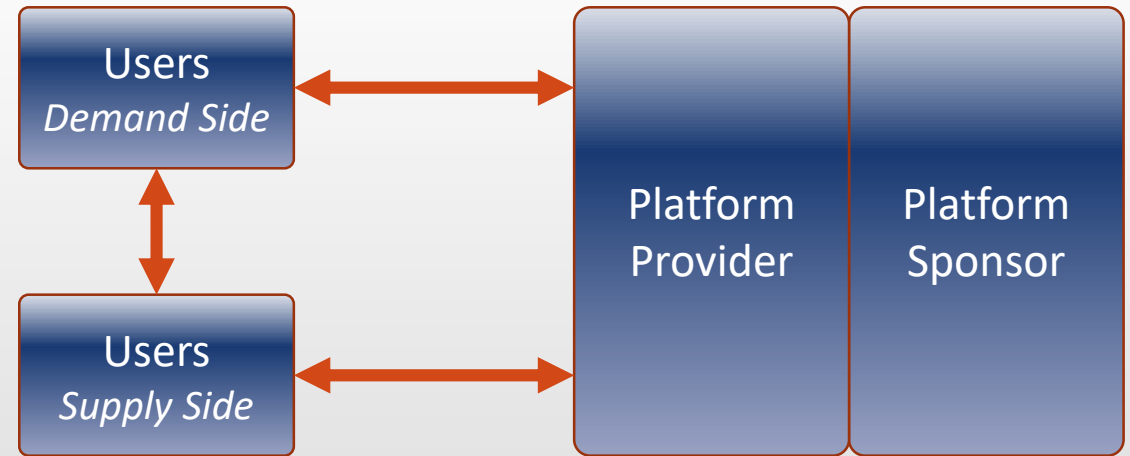
- Dynamic transportation marketplaces
- Public private partnerships
- Transportation service providers
- Infrastructure
- Data providers
- Mobility advisors
- Aggregator role – Manage/moderate supply and demand
- Ecosystem dynamics

MaaS Technology Components

- Open platforms
- Payments and billing
- Telematics and connectivity
- Sensors and beacons
- Data analytics
- *Driverless vehicles*

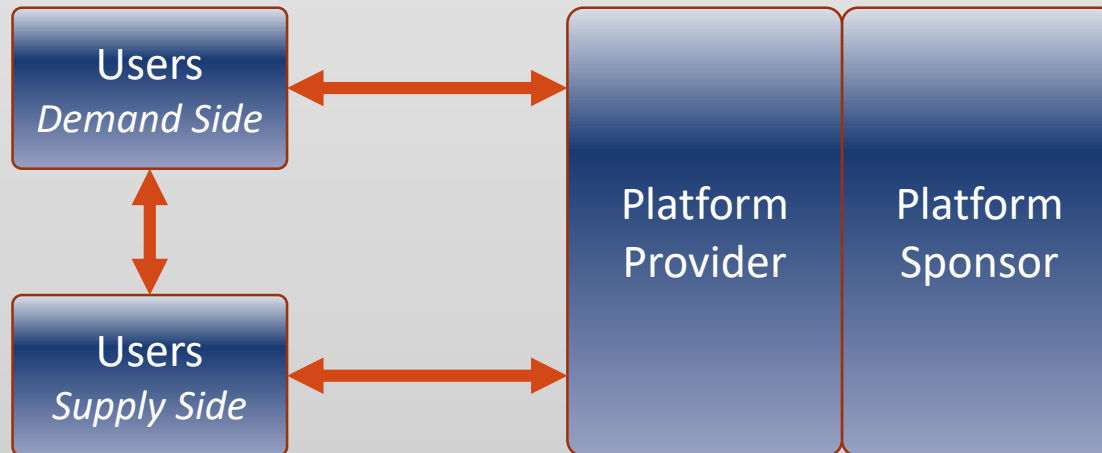
MaaS as a Platform-Mediated Network

- Demand-side user
 - End user
- Supply-side user
 - Service provider
- Platform provider
 - Hardware/software bundle
- Platform sponsor
 - Design and IP rights owner



MaaS as a Platform-Mediated Network

- Traditional industries
 - Bilateral exchanges follow a linear path
 - Vendors purchase inputs, transform them, and sell output
- Platform-mediated networks
 - Users transact with each other
 - Users affiliate with platform provider



MaaS – High Expectations

- Improved travel experience
- Reduced transportation costs
- Efficiently managed travel demand
- Improved environmental and social outcomes

MaaS Issues and Challenges

- Ubiquitous availability
- Fragmentation
- Lack of standards and interoperability
- Public-Private sector cooperation
 - Formulating new model of cooperation
- Legislation, regulation, policies, and frameworks
- Privacy and security concerns
 - Location history data

MaaS Issues and Challenges

- Urban vs. rural
 - Access to communications
 - Poor infrastructure
 - Economies of scale
- Consequence
 - MaaS value will
 - Not reach certain segments of the population
 - Be more expensive
 - Be lower quality

Tolling-MaaS Integration

- Partnering relationship
 - Toll agency
 - Premium transportation option
 - Customer experience based on a time value proposition
 - MaaS provider
 - Convenience of one trip, multiple modes, one payment
 - Customer experience focused on door-to-door travel convenience

New Business Model for Toll Agencies?

- In a transportation ecosystem without MaaS
 - Cater to drivers who want to benefit from the time value proposition
- In a transportation ecosystem with MaaS
 - Cater to MaaS providers (and their algorithms) who want to differentiate their offering

Mass Adoption of MaaS – A Slow Process

- MaaS has the potential
 - To reach certain travelers
 - Car owners vs. non-car owners
 - To decrease private vehicle use
 - Also may provide access to motorized vehicles to non-car owners
 - To instigate different travel patterns among these travelers
 - Habitual trips vs. incidental trips
- Bottom line
 - Magnitude of impact, timeline and direction of change still uncertain



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About TollPlus LLC

TollPlus LLC was founded by IT professionals with backgrounds in high-volume enterprise technology solutions in the credit card, telecommunications, and insurance industries. We apply our enterprise technology experience to develop sophisticated end-to-end toll road management solutions to address the challenges facing the tolling industry.

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