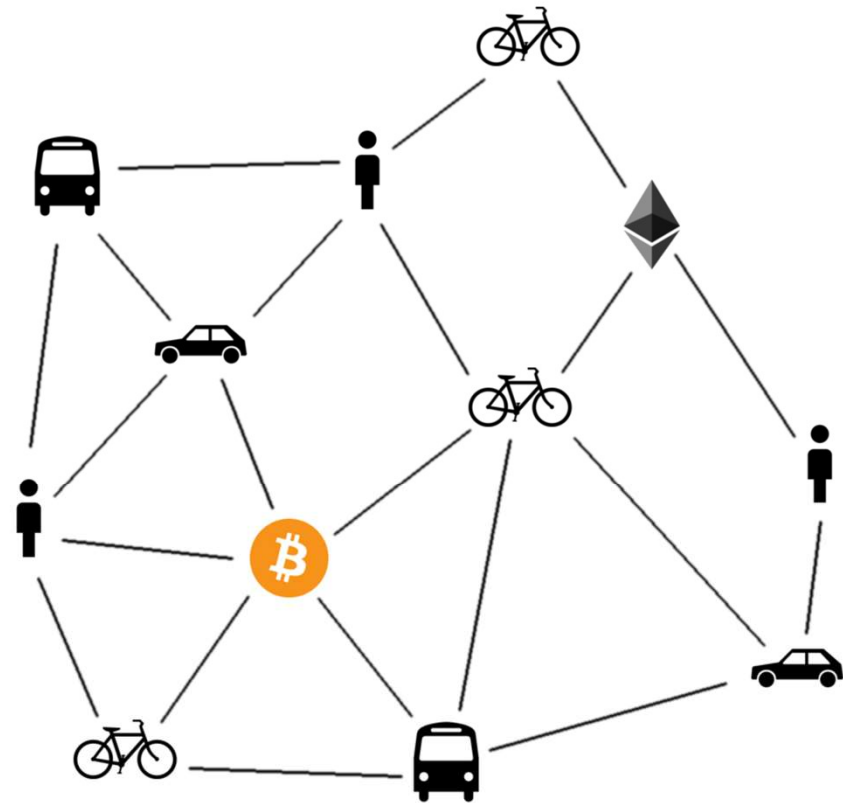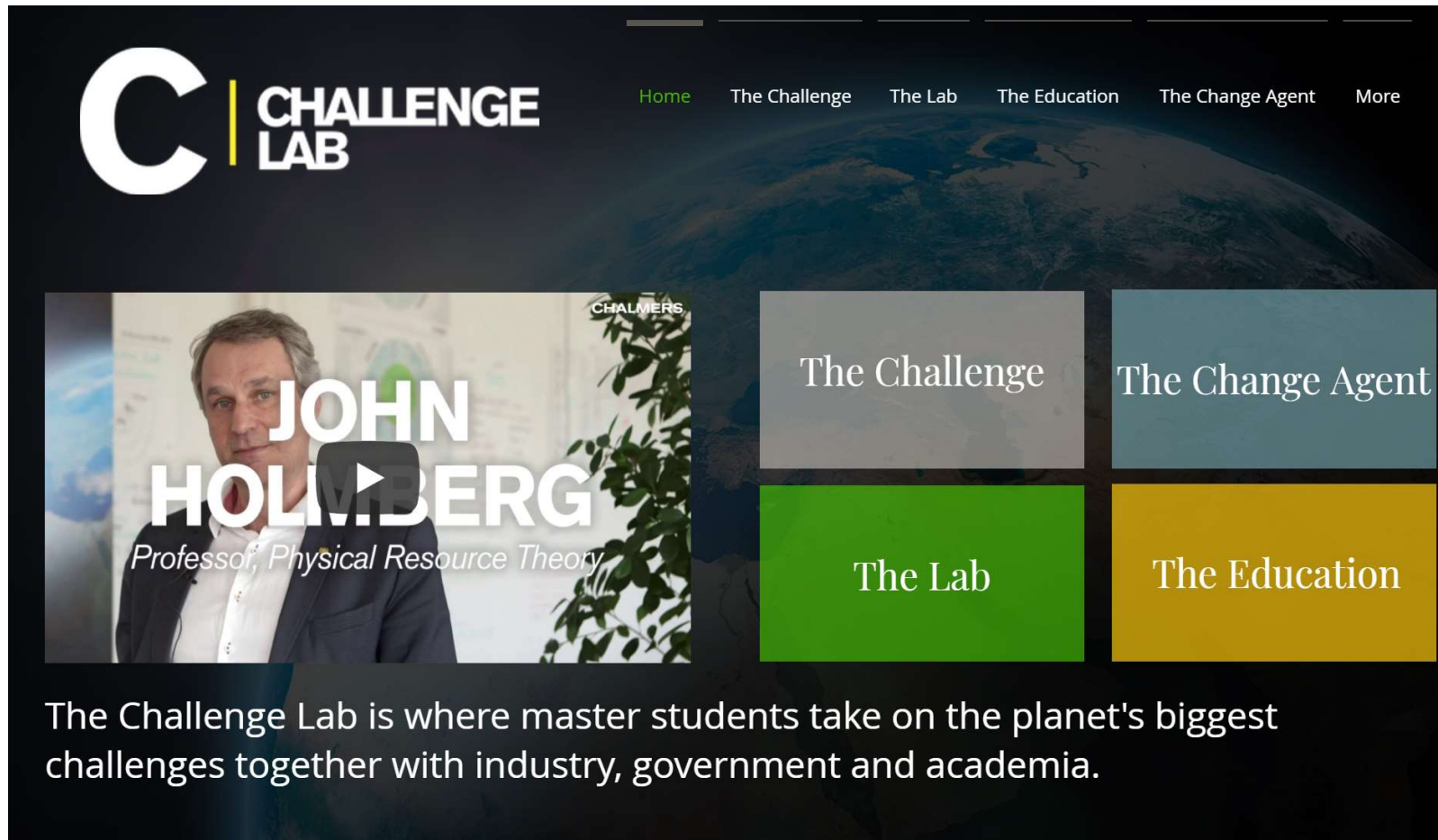# Exploring the role of blockchain technology in Mobility as a Service

Patrik Andersson, MSc. Management and Economics of Innovation
Joel Torstensson, MSc. Complex Adaptive Systems
Supervisor: Frances Sprei

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Thesis background

Design of study - Problem background

Pollution

Congestion

Design of study - Problem background

Web 2.0

Subscription on mobility – instead of owning a car
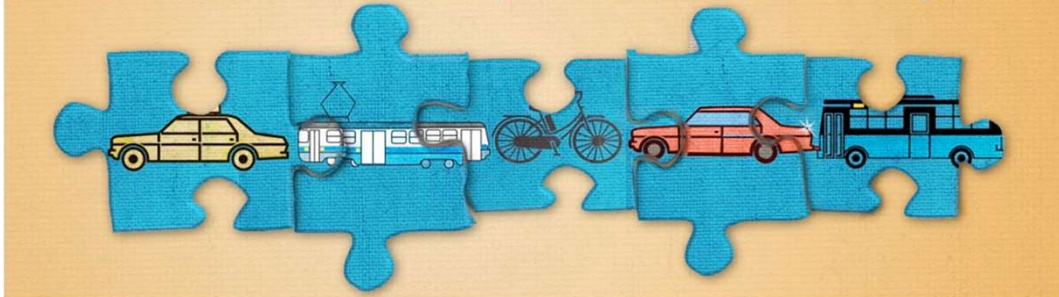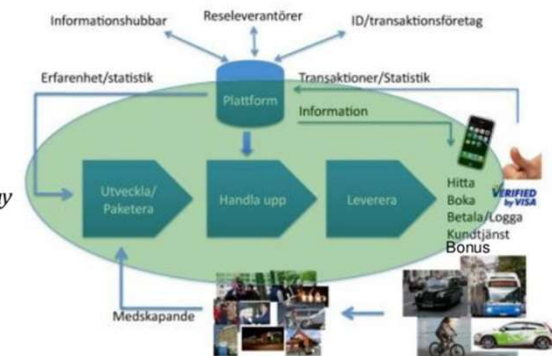
" How can a Combined Mobility Service platform that benefits all of the involved stakeholders be designed? "

Design of study - The plot
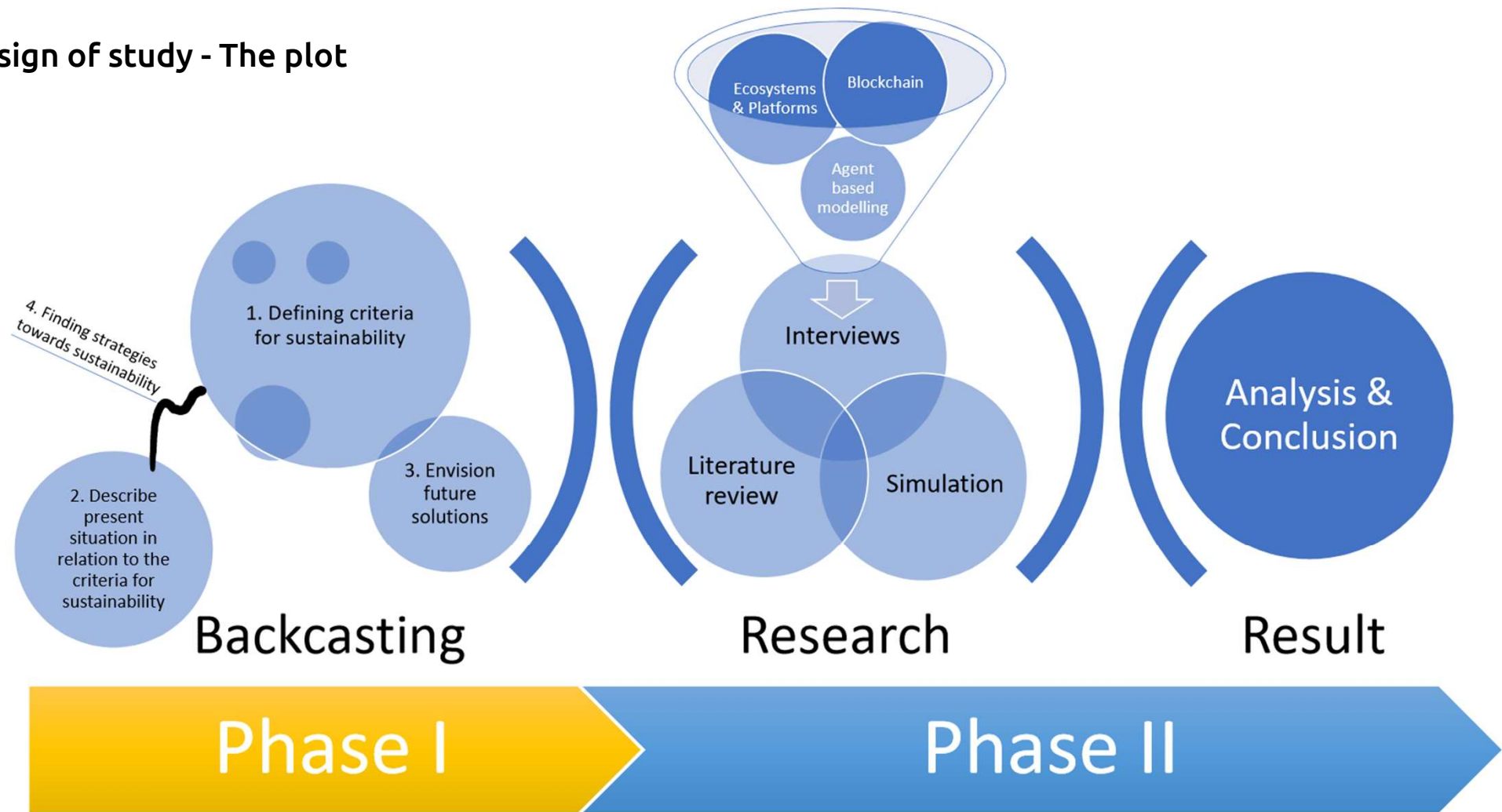
Mobility as a Service (MaaS)

MaaS - Challenges

1. Cooperation in terms of discounts for combined subscriptions

2. Ticketing integration

3. Payment integration

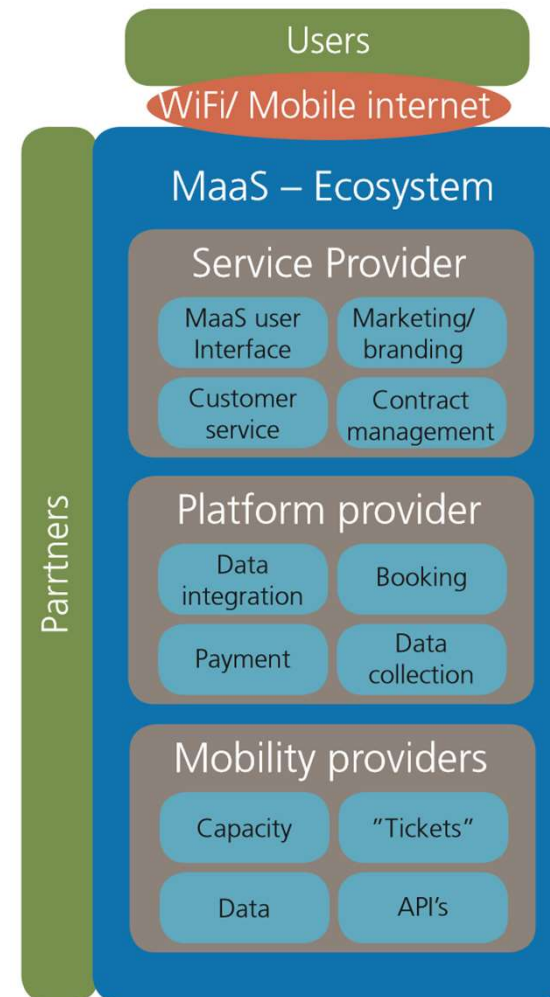4. ICT integration

5. Institutional integration

6. Mobility packages

Differentiation of MaaS services made depending on integration levels.
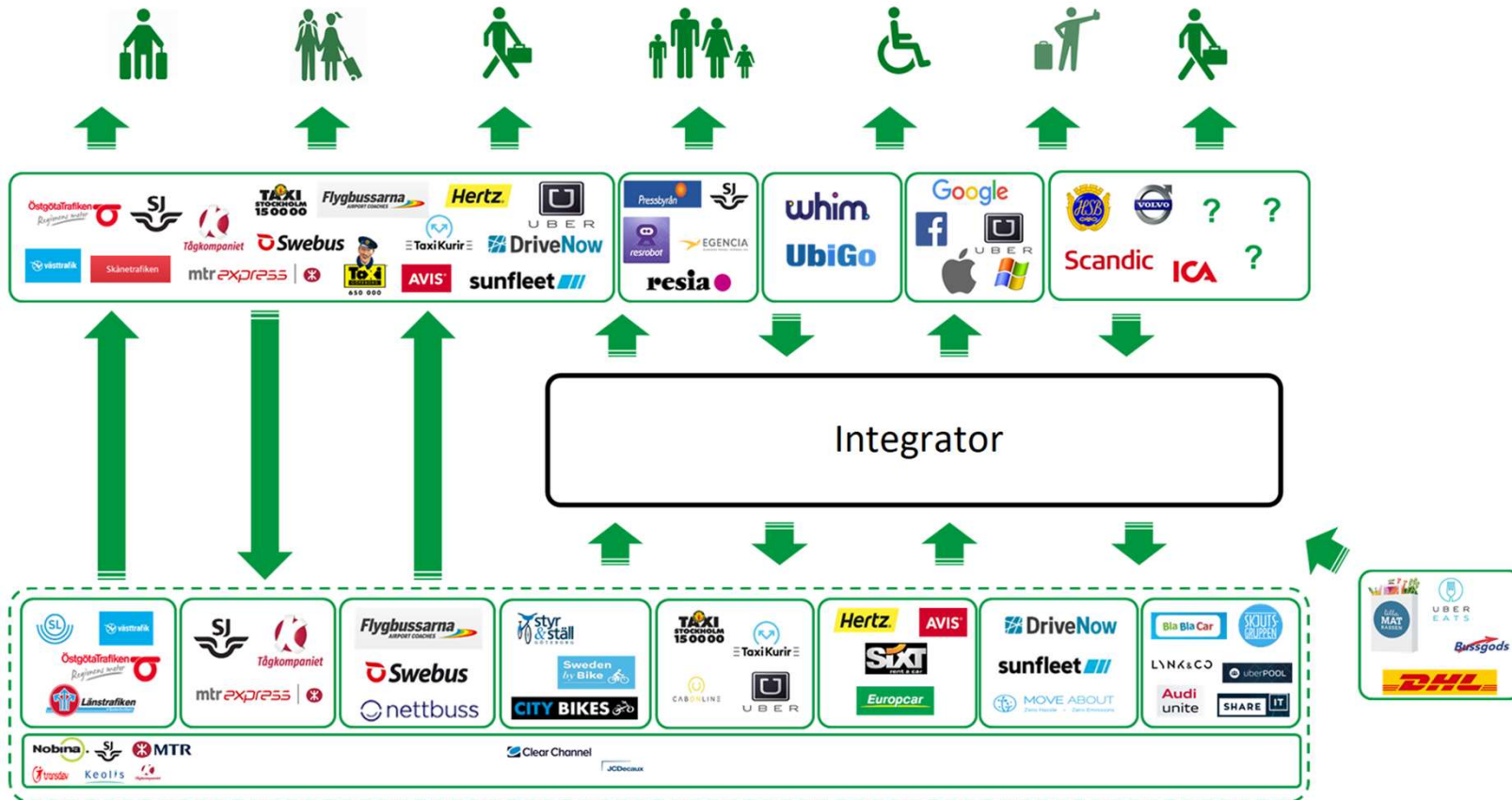**Source: Adopted from MAASiFiE (2016)**

Users

WiFi/ Mobile internet

MaaS – Ecosystem

Parrtners

Service Provider
- MaaS user Interface
- Marketing/ branding
- Customer service
- Contract management

Platform provider
- Data integration
- Booking
- Payment
- Data collection

Mobility providers
- Capacity
- "Tickets"
- Data
- API's

The MaaS ecosystem.
Source: Adopted from E.Lund (2017)

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Mobility a sa Service actor network. Source: Adopted from Samtrafiken (2016)
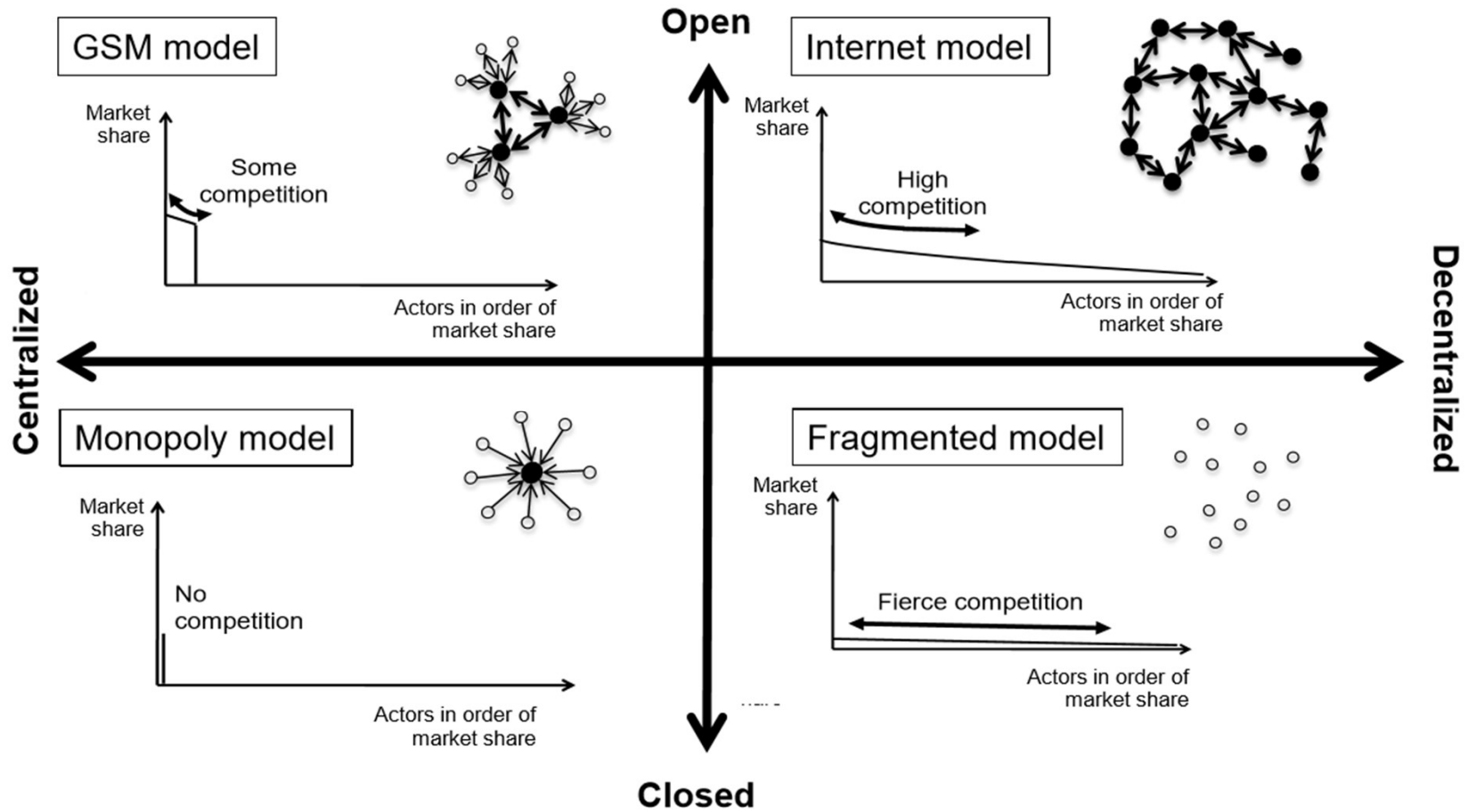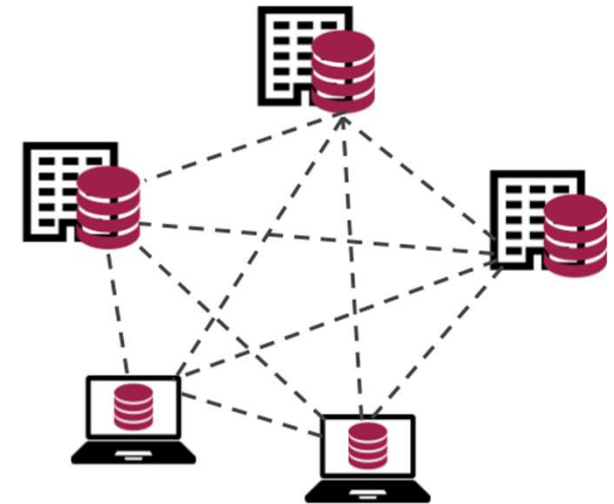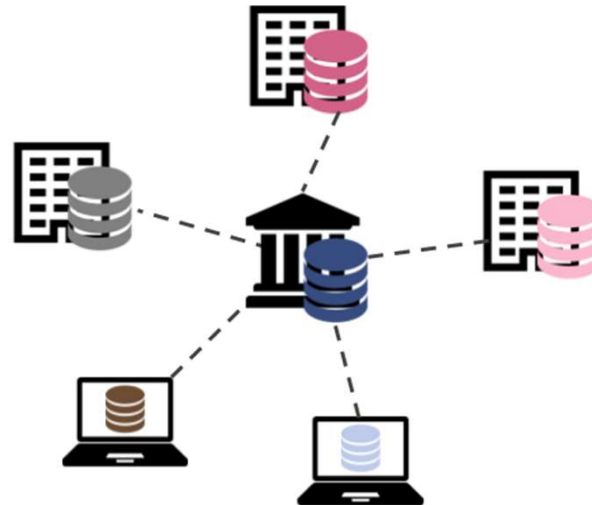
Analysis - framework

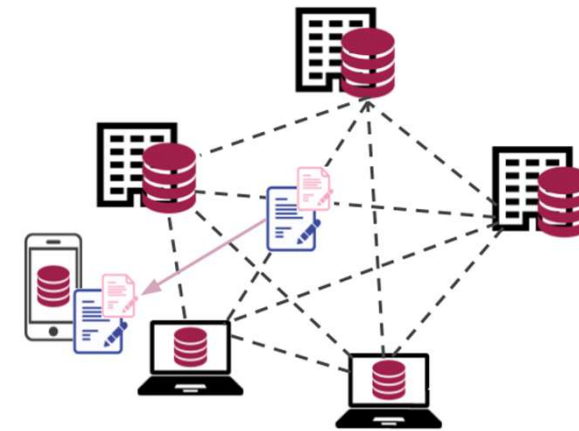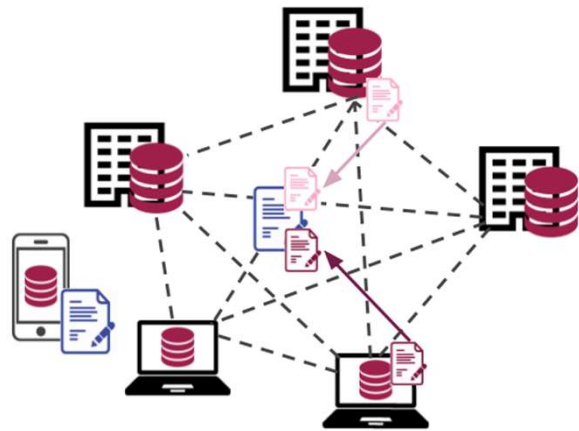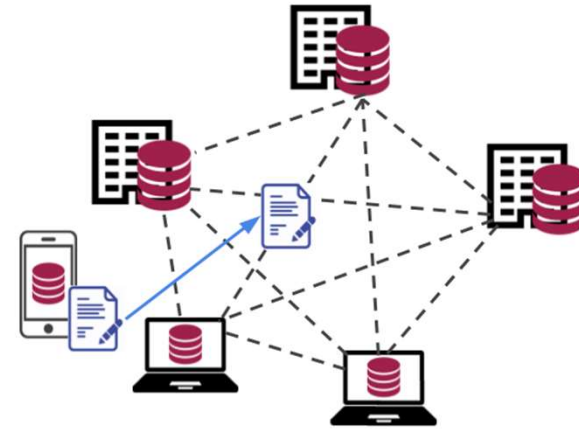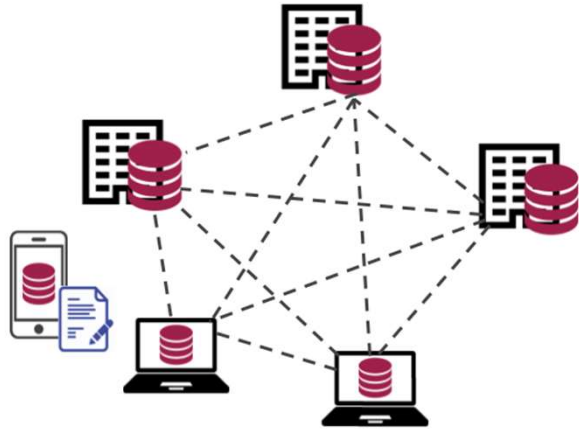Figure1, Four value-system states Source: Adopted from Casey & Valovirta [68,p.8]
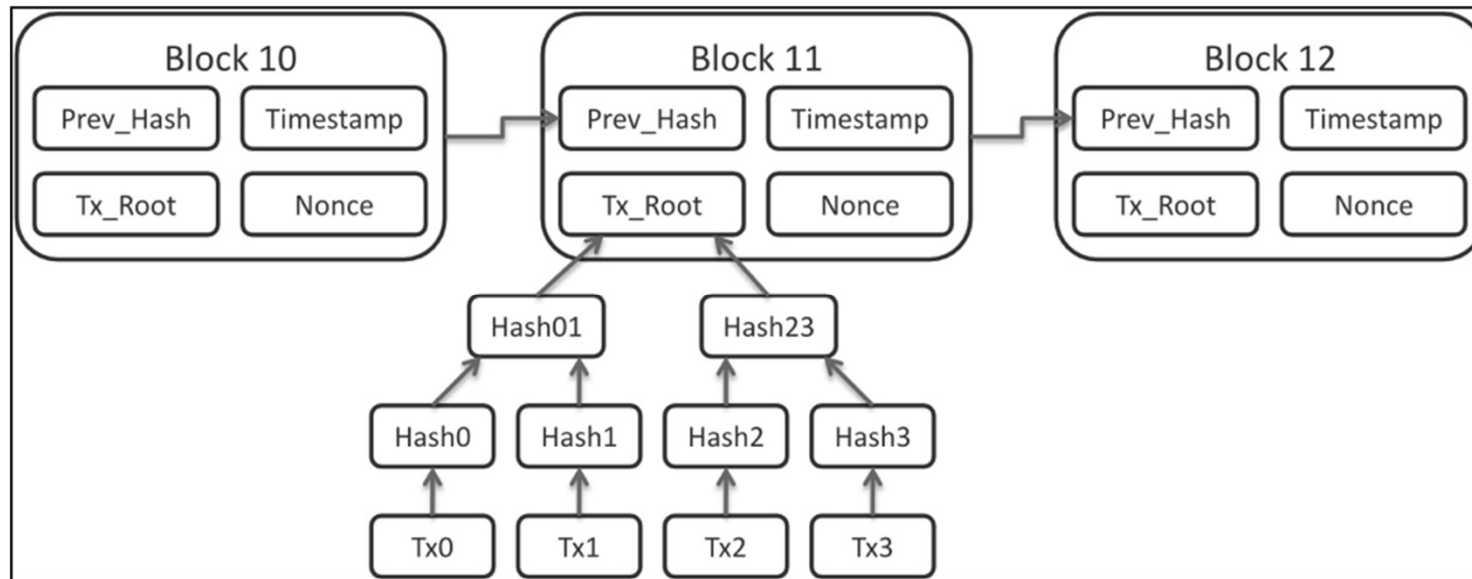
Blockchain technology

Blockchain technology

Blockchain technology - Smart contracts

Blockchain technology

Blockchain technology - Smart contracts

- Self-executing pieces of business logic

  - Ex: If arrived at destination => pay for ride

- Contract "law" without intermediaries

- Rules how to change the database

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Interviews

Requirements of a CMS

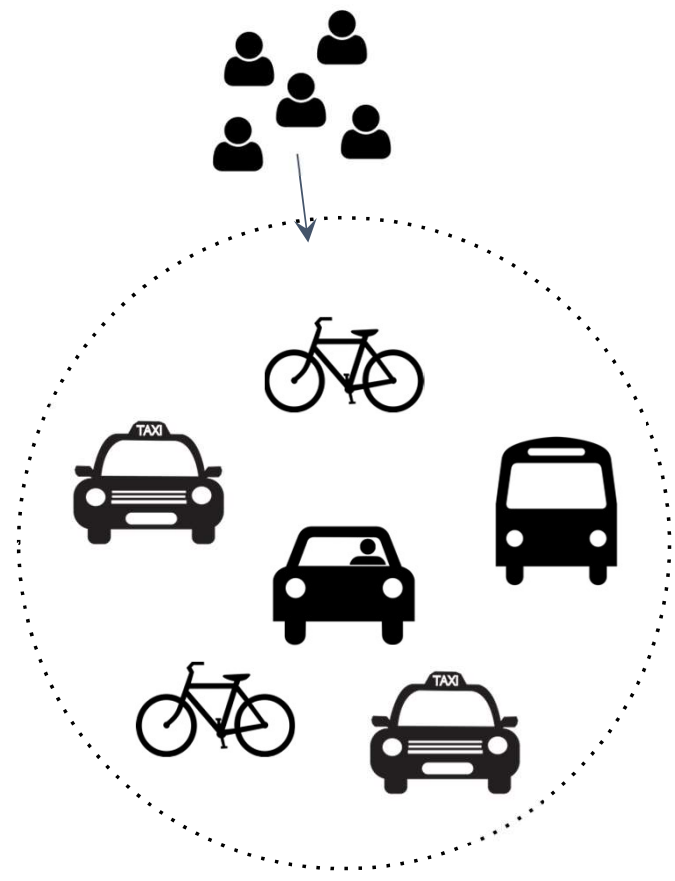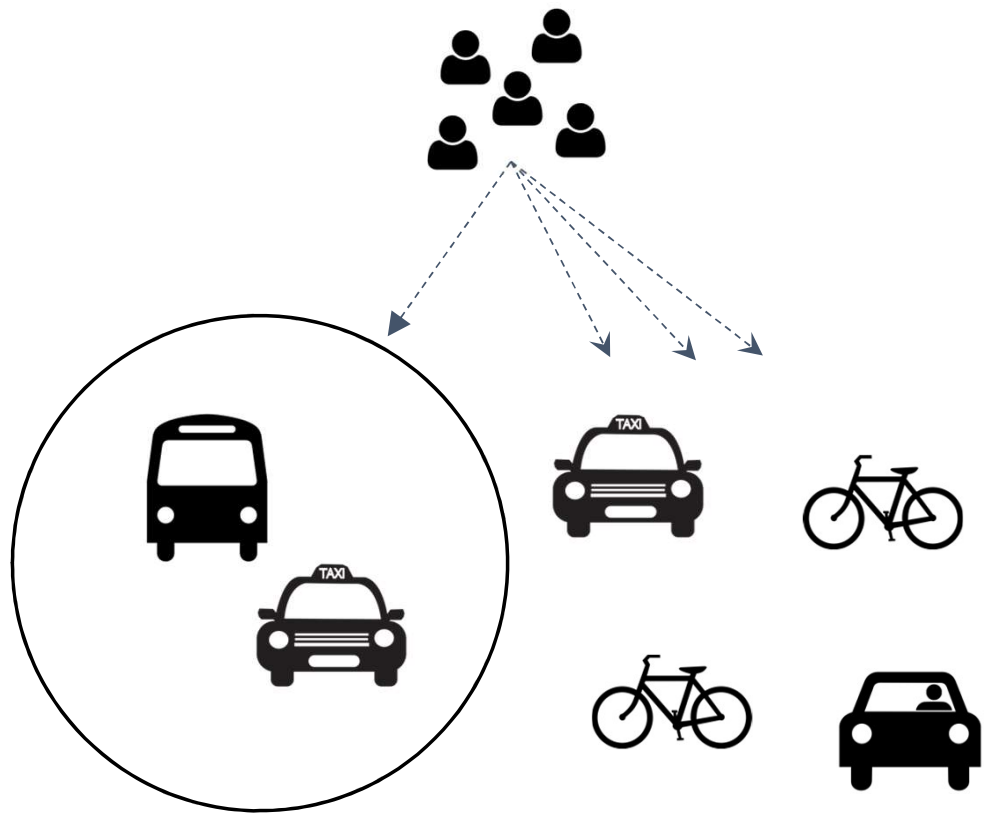- Identification system

- Agreement platform

- Route planning tool

Applications for blockchain in MaaS

Identification & registration

Smart agreements & contracts

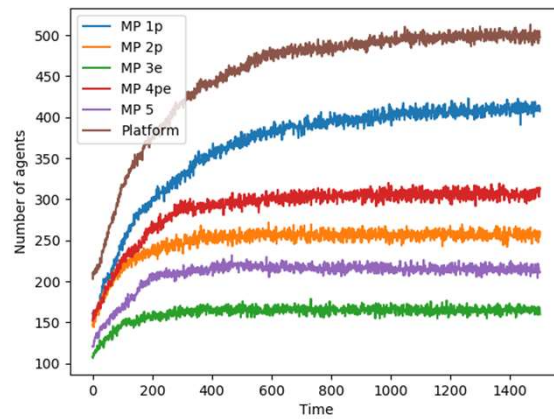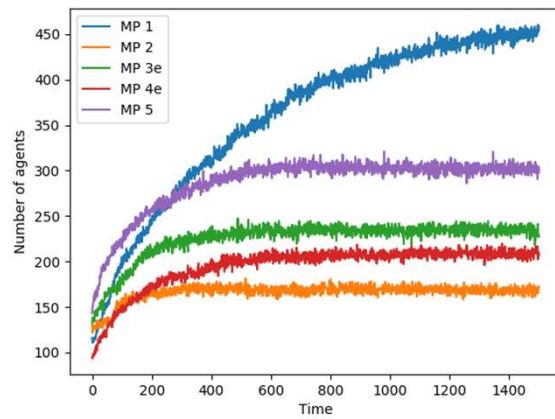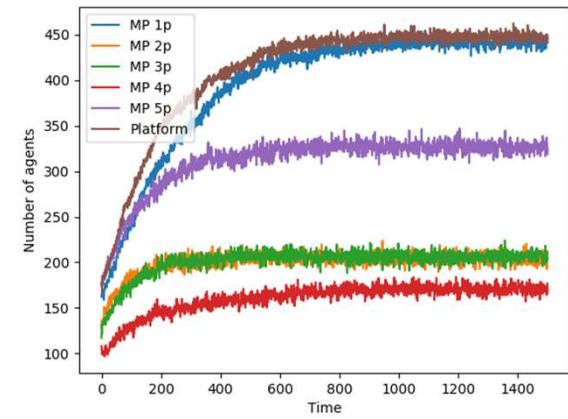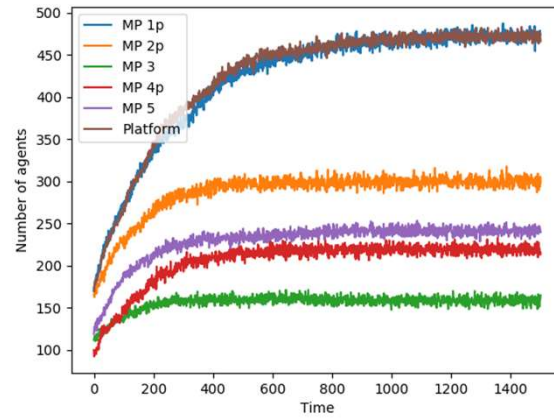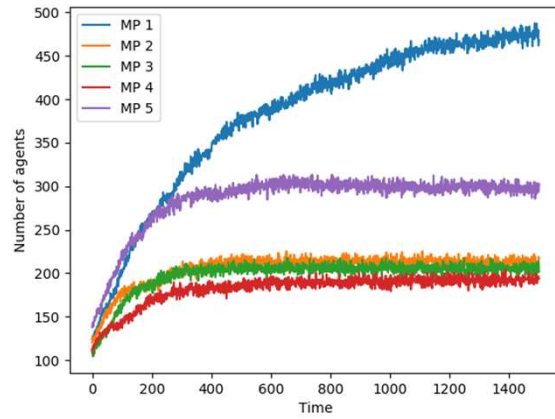# Simulation of a Combined Mobility Service platform
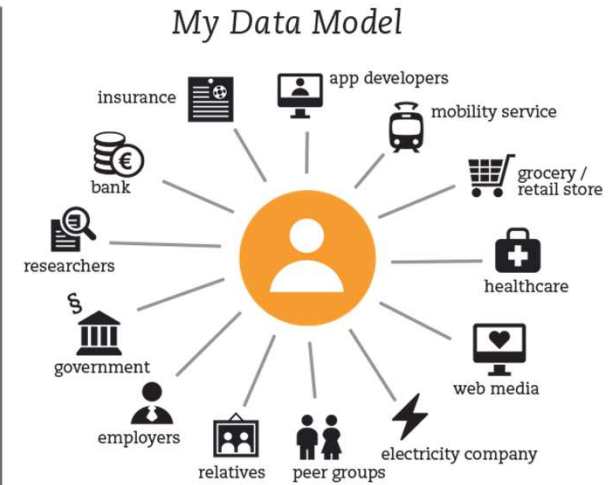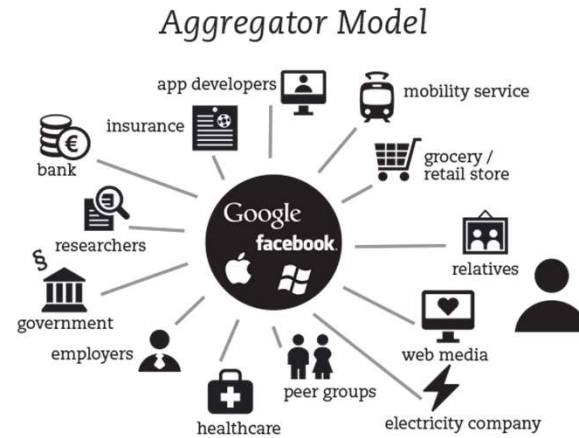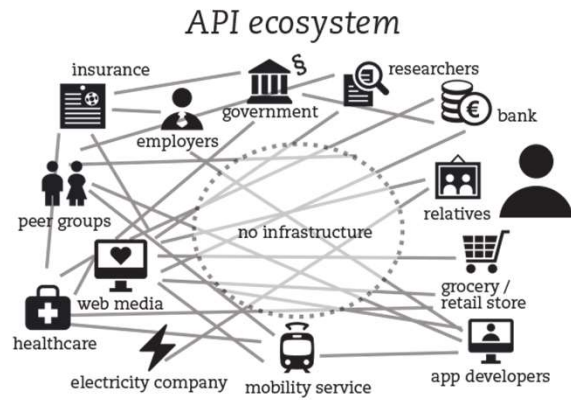
Simulation result
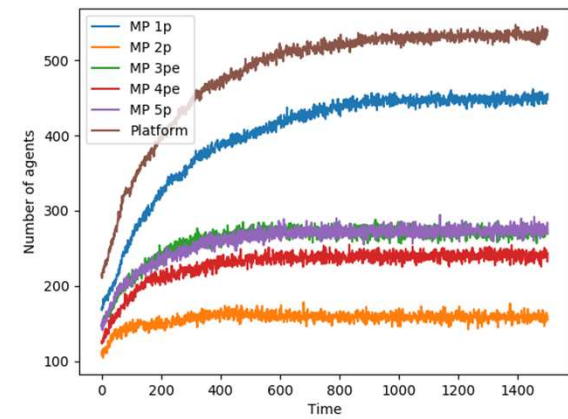
Conclusion

- Blockchain has the potential to solve fundamental problems in MaaS

- Neutrality requires a public blockchain

- Diminish transactions costs

Extras - Current developments

Extras - Current developments

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EY advancing future of transportation with launch of blockchain-based integrated mobility platform

New York, 30 August 2017

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EY today announced the launch of Tesseract, an integrated mobility platform underpinned by blockchain technology. The platform facilitates fractional vehicle ownership, shared use and seamless multimodal transport and it will help lay the groundwork for how autonomous vehicle fleets can be owned in the future and provide access to a variety of on-demand mobility options.

EY's Tesseract solves core mobility issues such as how to share vehicle ownership with widespread shared-use and how a multitude of mobility options can be integrated. As participants on a single platform, multiple stakeholders such as OEMs, mobility and transport companies, and cities and infrastructure providers, among others, will have the opportunity to create new value and revenue streams. Along with shared ownership, consumer demands for expanded mobility services are met, giving them access to the right type of vehicle for their ideal journey, on demand.

Randy Miller, EY Global Automotive & Transportation Leader, says:

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Extras - Current developments

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Thanks for listening!