Stakeholder Analysis on the integration of autonomous vehicles in the cities’ mobility system

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OVERVIEW

1. The AVENUE Project
2. Stakeholder Analysis RQ & aims
OVERVIEW

3. Methodology
OVERVIEW

4. Desk research results
5. Empirical research results
OVERVIEW

6. Conclusions
The AVENUE Project

- AVENUE aims to design and carry out full-scale demonstrations of urban transport automation by deploying fleets of autonomous minibuses.

- EU-funded project under Horizon 2020.

**Geneva – Extension of public transport**

**Lyon - Door2Door Services**

**Copenhagen – Autonomous Mobility Cloud**

**Luxembourg – Personalised Services**
WP2 – Stakeholder Analysis and strategies
Stakeholder Analysis

- A stakeholder can be defined as “any group or individual who can affect or is affected by the achievement of the organization’s objectives” (Freeman, 1984).

- Research Question & Aims
  - to identify main stakeholders involved and affected in the field of autonomous driving development and implementation
  - to explore the stakeholders’ perceptions, interests, strategies, attitudes, obstacles and interactions regarding autonomous e-minibus and the future mobility in order
  - to develop recommendations for cities and the EU (WP9)
Stakeholder Analysis

Methodology

Stakeholder Analysis comprehended: identification, selection and in depth analysis

Desk research: Initial Stakeholder Scan

Desk research: Stakeholder map based on literature review

Empirical Research: Semi-structured interviews with selected stakeholders
Stakeholder Analysis

Desk research

Avenue Stakeholder and Mobility Services Map

Stakeholder Map based on literature review
Stakeholder Analysis
Desk research

Initial Stakeholder Scan
- Brainstorming matrix with all potential stakeholders,
- Power grid interest,
- Impact Attribute grid,
- Onion diagram,
- Formal network diagram.

Selection of stakeholders for in-depth analysis:
- Public transport operators,
- Manufacturers,
- New competitors,
- Software developers,
- States/countries, local governments/cities,
- Driver unions,
- Environmental non-governmental organizations,
- End-users (customer)

e.g. Power-Interest grid towards the implementation of autonomous vehicles in the public transport system
Stakeholder Analysis
Empirical research

- **Sample structure**
  - Number of stakeholder groups interviewed: 5 target groups
  - Planned number of interviews conducted: 2 to 4 per group
  - Number of stakeholder interviews conducted per group:
    - TPO’s/ new competitors: n = 4
    - Manufacturers: n = 2
    - Software Developers: n = 3
    - Driver Unions: n = 3
    - Environmental NGOs: n = 3

- **Data collection**
  - Semi structured interviews (45-60min)
  - 7 EU countries and USA

- **Qualitative analysis**
  - Longitudinal analysis: report of each interview, analysis, presentation of the main findings and stakeholder map

- **Further steps:**
  - Stakeholder crossectional analysis
Public transport operators

- **Role**: offer public transport services link between AV’s and end user
- **Interest**: strong need to be competitive in the future
- **Barriers/Obstacles**
  - Technological challenges
  - Social acceptance
  - Regulatory framework
  - Business model
- **Offered solutions**
  - focus on end users and additional services

“…we’re gonna have a better world once the autonomous vehicles are fully implemented in a lot of different perspectives.”

„Key topic for the future“

“We will not reach level 5 within the time-frame of the AVENUE project”
Stakeholder Analysis
Empirical research – first results

Manufacturers

- **Role**
  - Offer new solutions on mobility
  - Contribute to a shift from individual mobility → public transport

- **Interest**
  - to establish themselves alongside providers of classic mobility solutions and expand into new markets in the future.
  - social and environmental benefits

- **Barriers/Obstacles**
  - legal framework is a constraint
  - social acceptance
  - research and development is very cost-intensive

- **Offered solutions:**
  - to close a gap in the mobility / first and last mile operations.

“One of our aim is really redefining the traffic flow in your city through giving new mobility offer which complete transfers network system. (…) And for that, we have developed several kind of mobility solutions, all autonomous, electric, and shared.”
Software developers

- **Role**
  - assure safety, efficiency and customized mobility system for the end users

- **Interest**
  - to change the mindset people have regarding mobility systems,... Changing transportation time to a more productive use of time

- **Barriers/Obstacles**
  - responsibility of the cities to set the regulatory framework use of AV’s
  - technology and regulatory framework limit the full demonstration of mobility services (e.g. on demand)

- **Offered solution**
  - partnership and mobility data for a better traffic flow

“We take the vehicles from the others and we equip that with our software and the sensors and make highly automated project together with a company”

“We really focus on shared and pooling (...) and how to serve more people with less vehicles.”

“The goal is (...) to equip as many different vehicle types in different environments and scenarios with our technology and to learn basically from the environment (...).”

„unregulated market for AV’s, gap on standard regulations for AV’s“
Driver unions

Role
- improving the drivers’ working conditions
- advices/information
- education/formation

Interest
- AV’s can contribute to better job positions, the need for more skilled drivers and consequently, better salaries

Barriers/Obstacles
- "drivers will be always needed"
- "We are more scared, when a company like Uber uses digital platforms to disrupt the taxi industry and the workplaces by offering passengers/customers very cheap transportation without paying taxes, without paying decent wages for the drivers.”

Offered solution
- "Our work and most important role is to create or being part of the discussion before all changes have been completely disruptive for the sector”

“We have a lot of willingness to negotiate, bargain, make agreements and compromises and bring the work organizations together”

“for us is more about re-educating people … there will be a big need for skilled workers”
Environmental NGO’s

- **Role**
  - to promote means of transport that are more efficient and environmentally friendly than nowadays

- **Interest/attitude**
  - uncertain positioning: supporting or opposing
  - need for more scientific data and studies specific for EU context/cities

- **Barriers/Obstacles**

- **Offered solution**
  authorities are vital to pave the way towards these target systems by coming up with adequate regulations → NGOs role providing studies, recommendations and awareness for policy building

Policies may point the future that we aim, and technology is adapted to it

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“industry alone will not necessarily advance towards this new future mobility systems by itself”

“People are really overly optimistic in technology…”

“I see mainly two big uncertainties: The first one is whether autonomous vehicles will be electric (…), the second risk is also that these vehicles are not shared but privately owned (…) If you don’t share these autonomous vehicles, you run a huge risk of making your congestion problem even worse.”
Stakeholder Analysis
Empirical research – first results

e.g. Stakeholder map from driver unions’ perspective
CONCLUSIONS AND NEXT STEPS

- Interviewed stakeholder groups picture the future outlook for autonomous vehicles in very different ways
  - Ambitious/optimistic approach – autonomous, electric, shared vehicles
  - Uncertainties and unstable position (e.g. NGO’s, Driver Unions)
- Common points: gaps on Regulation and Policy, lack of studies/data on EU

NEXT STEPS:
- Semi structured interviews with - policy makers/urban planner
  - customer associations/organizations
- Crossectional analysis
- Common stakeholder map
LITERATURE


THANK YOU FOR YOUR ATTENTION!