INNOVATION DRIVERS AND BARRIERS FOR URBAN WATERWAYS

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Gothenburg
Sweden’s second largest city
550 000 inhabitants
1 000 000 in the metropolitan region
INTRODUCTION

- Capacity limits of on urban access roads
  - congestion
  - emissions

- Urban waterways - unutilized transport capacity

- How can waterways be utilized for urban distribution activities?
1. Novelties emerge in niches

2. Niches provide resources for technical specialization, build up internal momentum

3. Changes at landscape level create pressure on regime

4. Destabilization of regime creates window of opportunity for niche-innovations

Source: Geels (2012)
EXAMPLE: TRANSITION OF URBAN PASSENGER TRANSPORT

- Landscape changes
  - Industrialisation
  - Urbanisation

- Pressures on regime
  - Exponentially growth of transport demand
    - High costs for feeding and stabling
    - Congestion
    - Safety
    - Pollution
  - Window of opportunity

- Niche developments
  - Electric trams
  - Bicycle for recreation and touring
  - Electric cars for touring (luxury activities)
  - Gasoline cars for racing

Source: Geels (2012)
CASE STUDY: DISTRIBUTION WITH URBAN WATERWAYS

- **Demonstrator in Gothenburg**

- **Analysis: Drivers and barriers**
  - Technology & Infrastructure
  - Policy & Regulation
  - Industry
  - User practices & market preferences

Urbanisation
Sustainable development
City planning
Congestion
Air pollution
Safety risks
Demonstrator in Gothenburg
DATA COLLECTION - DEMONSTRATOR

Before
- Interviews
- Observations

During
- Observations, filming
- Time assessment

After
- Interviews
TECHNOLOGY & INFRASTRUCTURE

Drivers

‣ Enabling technology: city container and transshipment ramps

Barriers

‣ Type(s) and state of waterways limits preconditions
  - weather
  - varying water levels (over day - over year)
  - air draught (between barge and bridge)
  - clearing and dredging required
‣ Lack of dedicated and purpose-built barges
‣ Lack of quays
‣ Ownership of quays
POLICY & REGULATIONS

Drivers
- Public incentives
- Public interest

Barriers
- Lack of dedicated regulator for UWW
INDUSTRY

Drivers

› (Transport) industry supports UWW: **curiosity** instead of resistance

Barriers

› Long-term **actor cooperation** required
  - Potential collaboration between different 3PL companies along the river?
USER PRACTICES & MARKET PREFERENCES

Drivers

- High interest

Barriers

- High costs
  - personnel-intensive operation (potential for automation in the future?)
  - investment cost
- Time intensive
  - slow speed
  - loading and unloading
- Security
CONCLUSIONS

- Distribution with UWW works!
  - In small-scale and according to a pre-defined time schedule (As if it were delivered by road)

- Many barriers

- The water is “an unutilized space for transport” – but developments and investments needed

- Potential not fully assessed yet

- Culture may not be a barrier - many actors interested
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For more information visit en.dencity.se
THANK YOU!

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Save The Date

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