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XCARCITY Round Table Mobility Hubs

Report of Findings

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XCARCITY Round Table: Mobility Hubs *Report of Findings*

Report: Round Table Mobilty Hubs

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Mobility Hub Round Table : Report

Introduction

On Wednesday, May 29th, MRDH through the XCARCITY Programme organized a round table on mobility hubs in Rotterdam. About 20 people from the XCARCITY consortium, including 4 researchers and representatives from 10 partner organizations, gathered to discuss the challenges and opportunities surrounding mobility hubs.

The event was structured into three themes, each addressing critical aspects of mobility hubs.



1. Theme 1: Requirements (KPIs) for a Successful Mobility Hub

The discussion began with defining the **key performance indicators** for successful mobility hubs. Attendees highlighted the importance of strategic locations, such as proximity to public transport stops or car parks, and the need for multiple mode options like shared cars and bikes. Accessibility, safety, and competitive pricing were deemed essential to enhance utilization and user satisfaction. Participants debated whether hubs should be public or private, and emphasized the importance of identifying different population groups and their specific needs.

The discussion in theme 1 touched on the following 5 core topics: MH locations, Integrating transportation, MH public or private initiatives, population groups

1.1 Mobility Hub Locations:

How do public transport stop locations influence the usage of mobility hubs, and is it important to have mobility hubs close to public transport stops?

The following ideas were put forward as some solutions:

1. that mobility hubs can be placed inside or in vicinity to car parks.
2. The mobility hubs should include different mode options such as shared cars, shared bikes, other innovative micro-mobility options.
3. The location of hubs should be accessible and safe.

1.2 Integrating transportation:

To make transportation more integrated, it was discussed that instead of public transport, Public Mobility term can be used to indicate all the modes which are available for public use. To enhance utilization of mobility hubs, good mobility transition policies are needed such as- competitive pricing, travel time.

1.3 Mobility Hubs: Public or private?

There is still a question of whether hubs should be public or private. Depending on whether the hubs serve an origin or destination, and how much the demand is, the size of the hubs will be determined.

1.4 Population groups:

It was discussed that identifying different population groups and their needs with respect to mobility hubs is very important. From the user's perspective, it is important to focus on reliability (guarantee of availability of modes in the hubs), especially in car free areas. While planning and designing the hubs, the question of what users are getting in return for losing their cars should also be kept in mind. Integrating parking reservations with tickets for events can be explored. Users are reluctant to park away from destinations. Effectively promoting the benefits of mobility hubs needs to be strategized. Benefits such as attractions in hubs, cost-effective mobility options should be highlighted to encourage reduced car dependence.

Theme 1 - Reflection/Notes:

- *Incorporate public transport, shared vehicles, bikes, and other micro-mobility options.*
- *Identify the demographics and needs of visitors using mobility services.*
- *Implement at least two types of mobility.*
- *Ensure the surroundings support:*
  - *Safety measures.*
  - *Walkability to final destinations.*
  - *Availability of mobility options at hubs.*
- *Considering types of Hubs including origins, destinations, public or private hubs.*
- *Address why reliability and availability often drive car ownership.*
- *Consider user reluctance to park far from destinations.*
- *Ensure sustainable management through effective governance and energy considerations.*
- *Explore integrating parking reservations with tickets for events.*
- *Highlight benefits like interesting areas and cost-effective mobility to encourage reduced car dependence.*

2. Theme 2: Requirements for a Sustainable Mobility Hub

Theme 2 focused on **sustainability**. The materials used for building hubs, and the modes they cater to, should be sustainable. Financial planning for investment, maintenance, and operation was also mentioned. The governance of hubs remains a complex issue, with questions about funding, profit sharing, and operational responsibilities needing answers. Stakeholder involvement, especially from the government in both infrastructure planning and promotion, was considered crucial. Long-term sustainability, adaptability, and cooperation between different hubs were also discussed.

The discussion in theme 2 touched on the following 3 core topics: Material for construction of MH, Finance/investment for MH, Spatial requirement for MH

2.1 Material used for the construction of Mobility Hubs

The first point of discussion was that the material needed to build the hubs, and the modes it caters for should be sustainable.

2.2 Finance/Investment for Mobility Hubs

Investment to build, maintain and operate the hubs should be planned in advance. The governance part of mobility hubs is still unresolved. Questions such as who pays for the hubs, how profits will be shared, who maintains and operates them, will hubs be subsidised were highlighted. Stakeholders' involvement is needed in planning the hubs. Government not only needs to participate in the infrastructure planning of hubs but also the marketing/promotion on the hubs, and providing information on virtual platforms as well as having data centres. Data privacy needs to be considered.

2.3 Spatial requirement for Mobility Hubs

Parking space around hubs needs to be optimally allocated. Long-term operational sustainability needs to be considered. Mobility hubs based on free-floating shared vehicles can also be an option, but is more complex to implement. As the world is unpredictable, these hubs need to be adaptable. Different mobility hubs should be able to work together.

Theme 2 - Reflection/Notes:

- *Focus on maintenance, operational costs.*
- *Address collaboration between companies and government for hub sustainability.*
- *Discuss funding sources and responsibilities for hub maintenance and operation.*
- *Strategies to attract sustainable users to existing hubs.*
- *Optimize parking space allocation around hubs.*
- *Ensure long-term operational sustainability.*
- *Implement apps for hub location and availability information.*
- *Share public hub data for user convenience.*
- *Ensure flexibility and sustainability of hub operations.*
- *Support free-floating mobility between different hubs.*

3. Theme 3: Research Questions for Successful Mobility Hub Implementation

The final theme revolved around **identifying research questions to ensure the successful implementation of mobility hubs**. The role of sensors in understanding travel behavior and improving model accuracy was highlighted. Participants discussed the need for criteria to measure the success and failure of hubs, and the importance of case studies on past successful implementations. Several pertinent research questions were raised. The session concluded with discussions on future research directions and the need for similar discussions annually. It was suggested that ministries be included in future consortium meetings to broaden the scope of these discussions.

The discussion in theme 3 touched on the following 4 core topics: Role of sensors, Users of Mobility Hubs, Success and failures of Mobility Hubs and Research Questions for further exploration

3.1 Role of sensors

Role of sensors in designing a successful mobility hub was discussed. The sensors could be used to study travel behaviour pattern of people, and this data can be analysed to determine how utility from the hubs can be maximised. Such data will help in improving the models' accuracy.

3.2 Users of Mobility Hubs

Research is needed to understand who could be the potential users of mobility hubs.

3.3 Success and failures of Mobility Hubs

It is also important to determine the criteria for the success and failure of the hubs. Case studies on successful hub implementation in the past needs to be looked at. Success factors from both operators' and government's perspective are important. It was highlighted that a previous study by Green Wheels found that public transport doesn't influence the success of mobility hubs.

3.4 List of Research Questions to take forward:

- What are the desired interventions and policies required from the government side to make mobility hubs successful? This can also be looked at in the context of car free areas, focused on Almere, MRDH, Amsterdam-Zuidas. Digital Twins can be utilized to conduct assessments and compute relevant KPIs.
- Based on demand and user behaviours in specific areas, what should be the supply of vehicles in different mobility hubs?
- Which spatial variables may influence the success/failure of mobility hubs?
- What special policies should be implemented to cater to the needs of different population groups such as students, families, older people, etc., ensuring service levels and quality?
- In the context of mobility transition, what types of mobility (origin, destination, private, public) are needed? What is the demand in these zones and who are the users? How should parking spots be allocated?

Theme 3 - Reflection/Notes:

- *How do usage patterns determine the availability of services?*
- *Who are the potential users of mobility hubs?*
- *Based on demand and user behaviors in specific areas, how many shared bikes should be available in mobility hubs?*
- *Are there successful hubs that can be studied as case studies for learning and implementation?*
- *What are the key success factors for operators, government, and users regarding mobility hubs?*
- *What special policies should be implemented to cater to different groups such as students or families, ensuring service levels and quality?*
- *What interventions in government policies are necessary to foster the success of mobility hubs?*
- *In the context of mobility transition, what types of mobility (origin, destination, private, public) are needed? What is the demand in these zones and who are the users? How should parking spots be allocated?*

4. Conclusion

The round table resulted in valuable insights, strong connections among partners, and the identification of critical research questions. We hope some of these questions can be answered through the XCARCITY program. If you wish to stay informed about this topic or can help answer any of the research questions, please let us know!



List of Attendees

1. Arjan van Binsbergen – TU Delft
2. Arthur Scheltes - Goudappel
3. Azarakhsh Salem – TU Delft
4. Bart van Arem – TU Delft
5. Carla Robb - TNO
6. Edwin Thoen – CROW
7. Guido Vos - BAM
8. Jelle Derks – TU Delft
9. Joop Veenis – Future Mobility Network
10. Jydtsna Singh – TU Delft
11. Kim Maas - PON
12. Kinsley Adjenughwure – TNO
13. Lobke Zandstra - MRDH
14. Nourhan Shokry - TU Delft
15. Otto Cazemier - Mobycon
16. Patrick van Norden- MRDH
17. Simon van Hees – Witteveen en Bos
18. Sjaak Meijerink – Barendrecht
19. Theo Konijnendijk – RET
20. Yuxing Chang – TU Delft