Development of future mobility scenarios in a SUMP process using a simulation game

ISB - RWTH Aachen University

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Civitas Dynamo

- Project co-financed by the European Union
- Goal: implement sustainable mobility planning in four cities/regions
- Started in 2012

- Each city/region is going to implement a SUMP / SUTP
- The simulation game will be considered in the SUMP-process

Source: Civitas Initiative
Need for the simulation game

- Complexity of prediction of future mobility
- Multiplicity of stakeholders
### Need for the simulation game

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<th>Government / Authorities</th>
<th>Businesses / Operators</th>
<th>Communities / Local Neighbourhoods</th>
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<tr>
<td>European Union</td>
<td>National Business Associations</td>
<td>National Environmental NGOs</td>
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<td>Ministry of Transport</td>
<td>Major Employers</td>
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<td>Other National Ministries</td>
<td>Regional and National Businesses</td>
<td>Trade Unions</td>
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<td>Regional Government</td>
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<td>Local Authorities</td>
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<td>Neighbouring Cities</td>
<td>Town Centre Retailers</td>
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<td>Local Transport Authority</td>
<td>Small Businesses</td>
<td>Local Interest Groups</td>
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<td>Other Local Transport Bodies</td>
<td>Transport Operators/providers</td>
<td>Cycle/Walking Groups</td>
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<td>Other Local Authority Bodies</td>
<td>Transport Consultants</td>
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<td>Politicians</td>
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<td>Other Decision-Makers</td>
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<td>Citizens</td>
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<td>Partnership bodies</td>
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<td>Project Managers</td>
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<td>Citizens in Neighbouring Cities</td>
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<td>Professional Staff</td>
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<td></td>
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<td>Landowners</td>
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<td></td>
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<td>Transport Staff</td>
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</tbody>
</table>

Source: Guidemaps Consortium 2004, p. 11

- Complexity of prediction of future mobility
- Multiplicity of stakeholders
Goal of the simulation game

• Introduce involved stakeholders to complexity of mobility related forecasts
• Reduce prediction complexity by limiting considered factors and creating thesis
• Build up common scenarios of future mobility by analyzing and discussing the stakeholders simulation game results
Use case of the simulation game

- Game contains general thesis relating to future mobility
- During SUMP development process
  - Involved Stakeholders play game
  - Game results are analysed and used as base for building up future mobility scenarios
Game structure
Game structure

Areas representing
- Functional parts of a city
- Mobility and transport offers

Click leads to
- Issue with two or three theses

Functional parts
- Expand or contract

Traffic volume
- Increases or decreases

Control bar
- Cancel
- Results
- Start
- Save

Background
Context
Content and functioning
Results and analysis
Conclusion
The popularity of online commerce continues to increase. In response to this increase, freight transport throughout the city also increases. Private shopping traffic decreases.

The popularity of online commerce does not increase. Freight and private shopping traffic stay roughly the same.

The popularity of online commerce increases. Customers, however, still travel to shop. The result of this is that freight and private shopping increase.

Source: ISB – RWTH Aachen
Choice and consequences

- Each choice influences
  - The later analysis
  - The image of the city
    - Districts grow or shrink
    - Traffic increases or decreases
    - New mobility options appear

Source: ISB – RWTH Aachen
Output

• Image file with final state of the edited city and user data for visualization of the results

• Data set with user choices and user data is saved in a data base for aggregate analysis of the results
**Analysis**

- Choices of user and additional user data (e.g. job/function; role in process, are saved on a web server)
- Data is evaluated automatically

**Results and analysis**
Analysis

- Choices of user and additional user data (e.g. job / function; role in process, are saved on a web server)
- Data is evaluated automatically

Source: ISB – RWTH Aachen
Conclusion

• Sim. Game developed for use within SUMP process
• Goals: introduction in complexity of mobility based forecasts | basis for compiling common scenarios
• Choices of all participants are saved and can be evaluated automatically
Bibliography


- Rupprecht Consult 2011 Guidelines: Developing and implementing a sustainable urban mobility plan; Cologne