Integrating Negotiations on Investments in Housing and Mobility

Geo-Based Gaming to Stimulate Land Use Transport Integration

Dr. Sander Lenferink
Radboud University Nijmegen
s.lenferink@fm.ru.nl
Research Project
Problem statement

• Land use transport integration (LUTI) could be improved in the Netherlands: suboptimal plans and investment decisions

• Sectoral divide: mobility vs. real estate
  • Financial sources: national funding vs. local business case
  • (level of) Decision-making: national vs. local
  • Between organisations and within organisations

• Currently effort to further integrate decision-making in new Environment and Planning Act (2021)

• However, unclear what the conditions for integrating decision-making on real estate and mobility are
Goal

“To explicate current decision-making on mobility and housing programming and investments, and to stimulate further integration of this decision-making”

• Simulate decision-making with a serious game:
  • It is real, not a game!
  • Different levels: local, regional, national
• Assess tradeoffs between land use and transport indicators
• Reveal argumentation for investment decisions
Research design: Serious Game

• Combine information on housing and mobility plans in province of Noord-Holland
• Build a game structure for programming investment decisions around 4 indicators
  1. Market balance: supply and demand of housing
  2. Accessibility: change to accessibility due to investments/plans
  3. Finances: sum of revenues (housing) and expenses (mobility)
  4. Spatial goals: degree to which TOD and redevelopment goals are reached
Case region of Zaanstreek-Waterland
Research design: Serious Game

• Combine information on housing and mobility in province of Noord-Holland
• Determine development program voor Zaanstreek-Waterland

But:

• No scripted players
  • Players are free to behave as they would like
• No fixed end goal or total score
  • Players can make their own tradeoffs of goals
Data

• QGIS with Python plugin: real estate and mobility models

• Based on:
  • Ministerial Long-range investment programs for transport infrastructure (until 2030)
  • Provincial mobility and infrastructure plans
  • Provincial inventory of housing development plans
Game facilitation

- 2D Maptive
  - 6-8 participants
  - Direct and inclusive negotiations
  - Link arguments/reasoning to GIS features
- Policy-makers, politicians, mobility experts, real estate experts, developers, etcetera
User Interface
Preliminary results

Increases transparency of decision-making

- Mobility and housing in one overview
- Local and regional level
- Financial consequences of development decisions
  - Housing costs and revenues are more transparent than mobility
  - Raises the issue of compensation between municipalities
Preliminary results

• Priorities of indicators
  • 1) Market balance (housing demand minus supply)
  • 2) Accessibility
  • 3) Finances
  • 4) Spatial goals

• Expert player vs. Decision-maker player
  • Data and indicators are interpreted in several ways
Lessons: Game design

- How ‘serious’ can you make a game?
  - Continuous change: new developments, new actors, new insights, new indicators, new plans
  - Find a balance or else games will be
    - obsolete for policy-making, because new developments are not taken into account
    - will never finish, because new developments have to keep being included in the game
Lessons: Game results

• **Tension between upscaling and implementation of game**
  • Transferring game to other spatial contexts requires generalizations in development (same structure, same information, same players)
  • Generalizations lead to loss of localized information and limits the ‘seriousness’ of a game
  • Strike a balance between locally grounded ‘seriousness’ and transferability of a game

• **Can game experiments really fail?**
  • It is not about the result of the game, but about the interaction between players
  • Participation indicates that organisations are willing to improve
  • But, how are lessons learned applied in daily practice?
Questions?

• Sander Lenferink
• s.lenferink@fm.ru.nl

• www.mobiele-stad.nl