

# Glance on the economic considerations, trade-offs and consequences related to the establishment of an SDI

AGILE Pre-conference workshop – Multi- and Interdisciplinary Research on  
Spatial Data Infrastructure Development

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# Introduction



- **Spatialist**
  - multidisciplinary research
  - investigates needs and conditions for functioning of SDI in Flanders
- **Economic discipline**
  - Economic aspects relevant for SDI
- **Multi Criteria Analyses and MAMCA**
  - Integration of different disciplines
  - Repercussions of possible alternatives
  - Recommendations for the government

# Introduction

- 1990's rising interest in SDI
  - → SDI related initiatives and studies ↑
  - Focus historically technical
- As SDI implementation ↑, importance SDI ↑
  - Juridical, organizational, economical and social aspects are also important
  - → multidisciplinary approach necessary
- This presentation
  - → economic aspects
  - → interdisciplinary approach: MCA/MAMCA

# Structure

- Economic aspects
  - Funding
  - Pricing
- Interdisciplinary integration
  - MCA/MAMCA
- Research questions and discussion points

# Why economic aspects?

- Many important aspects at basis of SDI have economic background
  - Studies about: cost benefit analyses, funding strategies, pricing issues, monopoly position of the government, make or buy decisions, regulation or free competition, ...
  - Literature: Giff, Lance, Varian, Kabel, Steudler, Joint Research Centre – Ispra Italy: cost-benefit workshop, ...
- Today: focus on funding and pricing issues

# Why funding and pricing?

- **Funding:**
  - necessary for continuation and innovation
  - Where to find resources?
  - Literature: Giff, Coleman, Rhind, ...
- **Pricing:**
  - Pricing always difficult, especially for information goods
  - Hot topic in discussions
  - Literature: Varian, Clark, Haderlein, ...

# Funding: evolution

- First generation out of NMA's
- No long term plan for organization or funding
- Financial support from **government** (tax money)
- Small minority from private and public sector (money from customers)

# Funding: evolution

- Funding model with historical roots
  - → government support taken for granted
- In 1990: evolution in the funding policies of the government
  - → disinvestment in infrastructures
  - → effects on SDI
  - → alternative funding resources

# Funding: possible strategies

- Overview of different models
  - Subdivisions in current model
    - Government through tax money
    - Private sector through payments by customers
    - Public sector through payments by customers
    - Indirect funding

# Funding: possible strategies

- Complete government support
  - taxes
  - Classification of geo-information as a public commodity
- Tax advantages
- Partnerships  
government/private sector

# Funding: possible strategies

- Investments private sector
  - Monetary/non-monetary
- Matching government investments to investments of other partners
- Special banks
  - ex: low interest loans
- Tax free obligations

# Funding: possible strategies

- Access to capital market (loans)
- Service agency (issue stocks)
- Membership fees
- Selling data
- Indirect funding
  - Ex: promotion/commercials
- Combination

# Pricing

- Who will pay for what and how much?
  - → somebody has to pay!
- Pricing is very complex for information goods
- Trade off
  - Cost recovery vs. consumer satisfaction
  - Sunk costs and low production costs

# Pricing: alternative 1 and repercussions

- **Free** geographic information because:
  - Taxpayer has paid already
  - Access ↑ → use ↑ → value information ↑
  - Innovation in companies ↑
  - Development of standards
  - Geographic information is a public commodity → natural task of the government

# Pricing: alternative 1 and repercussions

- **BUT:**
  - Population is governing board of the government, demands ROI on tax money
    - Asking a price
  - Is geographic information a public commodity?
    - ALL citizens benefit, or just a few?
  - Compensation of lost revenue for the government
    - Tax rise or higher debt degree

# Pricing: alternative 1 and repercussions

- Paradox
  - Free information ↔ tax lowering
- Motivation government ↓
  - Government will do no appropriate investments for quality and maintenance
- Is price slowing down companies?
  - Would they not pursue their plans if they had to pay for the information?
- Do private users really mind paying?
  - Quality guaranteed

# Pricing: alternative 2 and repercussions

- A **price** for geographic information:
  - How high should it be?
    - Cost-recovery
    - Reproduction or distribution cost
    - Possibility to make a profit

# Pricing: alternative 2 and repercussions

- The same price for everyone?
  - Citizen lower price than company → how to make this distinction?
- Dependent upon willingness to pay
  - First, second or third degree
- Need for regulation

# Interdisciplinary integration

- Deciding for pricing
  - → repercussions on funding
    - Ex: free data → more government funding required
  - → for all the aspects of the SDI
    - Ex: free data → what about property rights?
  - Multidisciplinary insights and studies that cover all aspects are necessary

# MCA and MAMCA

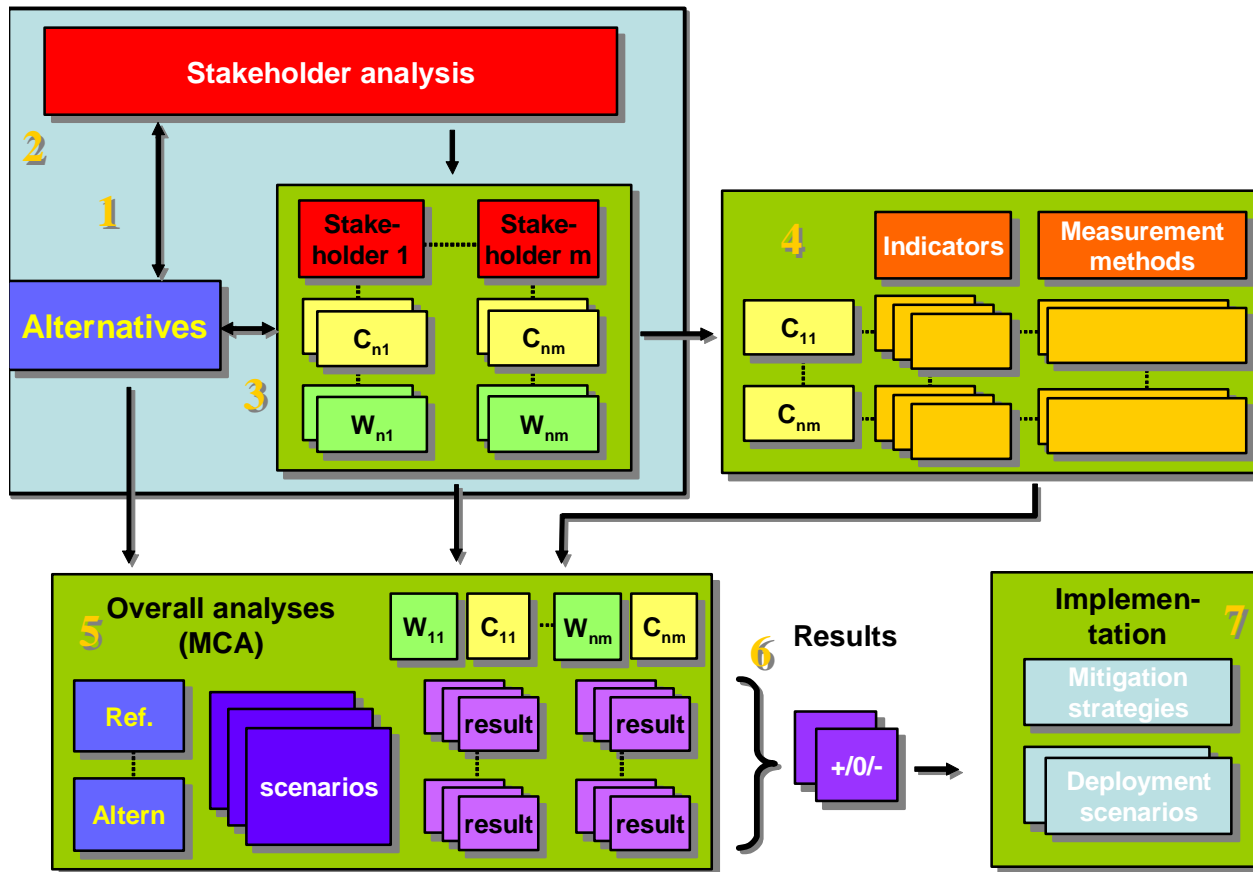
- MCA

- enables to take into account all the aspects involved in complex decisions of the SDI
- Disciplinary
  - Ex: what effect will pricing policy x have on funding policy y?
- Multidisciplinary
  - Ex: what effect will pricing policy x have on the juridical, organizational, technical and social level?
  - Ex: the effects of organizational and technical set-ups on costs, funding, price setting, ...

# MCA and MAMCA

- MAMCA
  - MCA that allows for structured stakeholder participation
  - Possibility to incorporate stakeholder's opinions and preferences from the beginning, cross-check during the analyses, feed-back afterwards
  - General and complete overview, better acceptance in the end

# MAMCA (Macharis et. al., 2004)



# MAMCA in Spatialist

- Stakeholders
  - from all relevant sectors in Flanders
    - Suggestion: government, private sector, citizens
  - Decide on criteria, weights, alternatives and evaluation
- Alternatives
  - build on Hierarchy-Market-Network model
  - Clear description of possible alternatives with repercussions on all the disciplines
- Evaluation and recommendations

# Research questions, discussion points

- What about pricing?
  - Data free for everyone?
  - Data paying for everyone?
  - Data for free → products/services for free?
- What about funding?
  - All from the government?
  - Completely privatized?
  - Influence of pricing politics on funding issues?

# Research questions, discussion points

- MCA/MAMCA
  - Which stakeholders to include?
  - Only government or also private sector, citizens, researchers, ...?
- How to build alternatives?
  - H-M-N?
  - Learn from extremes or focus only on conservative existing possibilities?

# Questions?

