

Multi Actor Multi Criteria Analysis for determining the best implementation scenario for the SDI in Flanders 2020

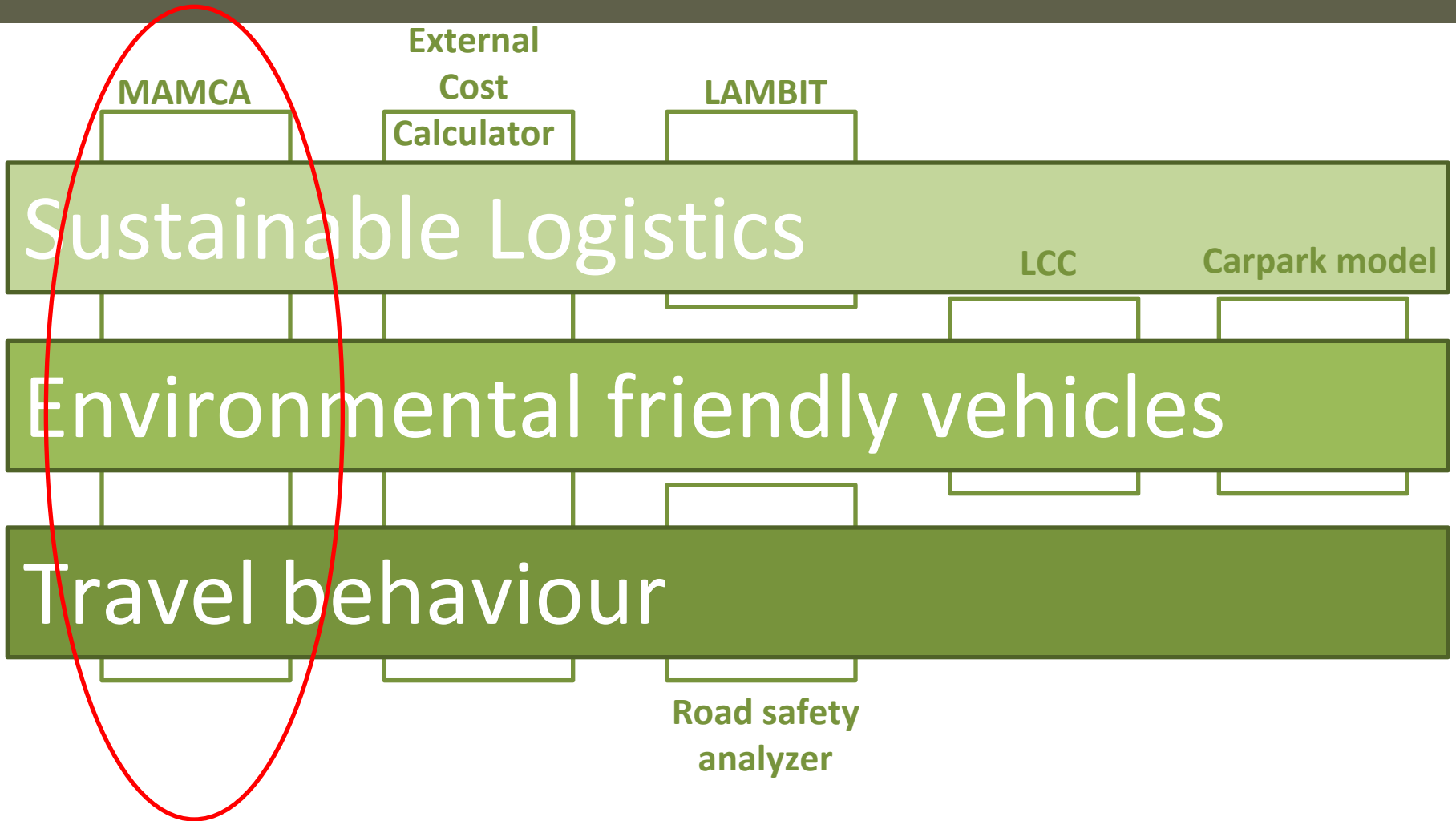
Seminar 'Spatial Data Infrastructures (SDI), latest trends
and research'

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Introduction: MOSI - T



Structure of the presentation

- Introduction
- SDI assessment
- The Multi Actor, Multi Criteria Analysis (MAMCA)
- The case of the SDI in Flanders
- General conclusions

Introduction

Main goals of this research:

1. Asses the multi-disciplinary concept of SDI
2. Incorporate the objectives of different stakeholders and their relative importance
3. Find the best implementation strategy for the further development of SDI in Flanders

SDI assessment

Masser et al. (2007): 4 main challenges arising from the need to develop SDI's in the context of a spatially enabled government and society:

1. Need for more stakeholders-based approaches in terms of governance
2. Importance of promoting data sharing
3. Difficulty to establish enabling platforms
4. Recent changes in the spatial information sector

⇒ Need for SDI assessment

SDI assessment

But, SDI complexity as a barrier/difficulty to asses:

- The ambiguous character of SDI's
- Multi-disciplinary aspects of SDI
- SDI's are multifaceted
- The reciprocal relationship of SDI's with their social context
- SDI assessments are non-trivial

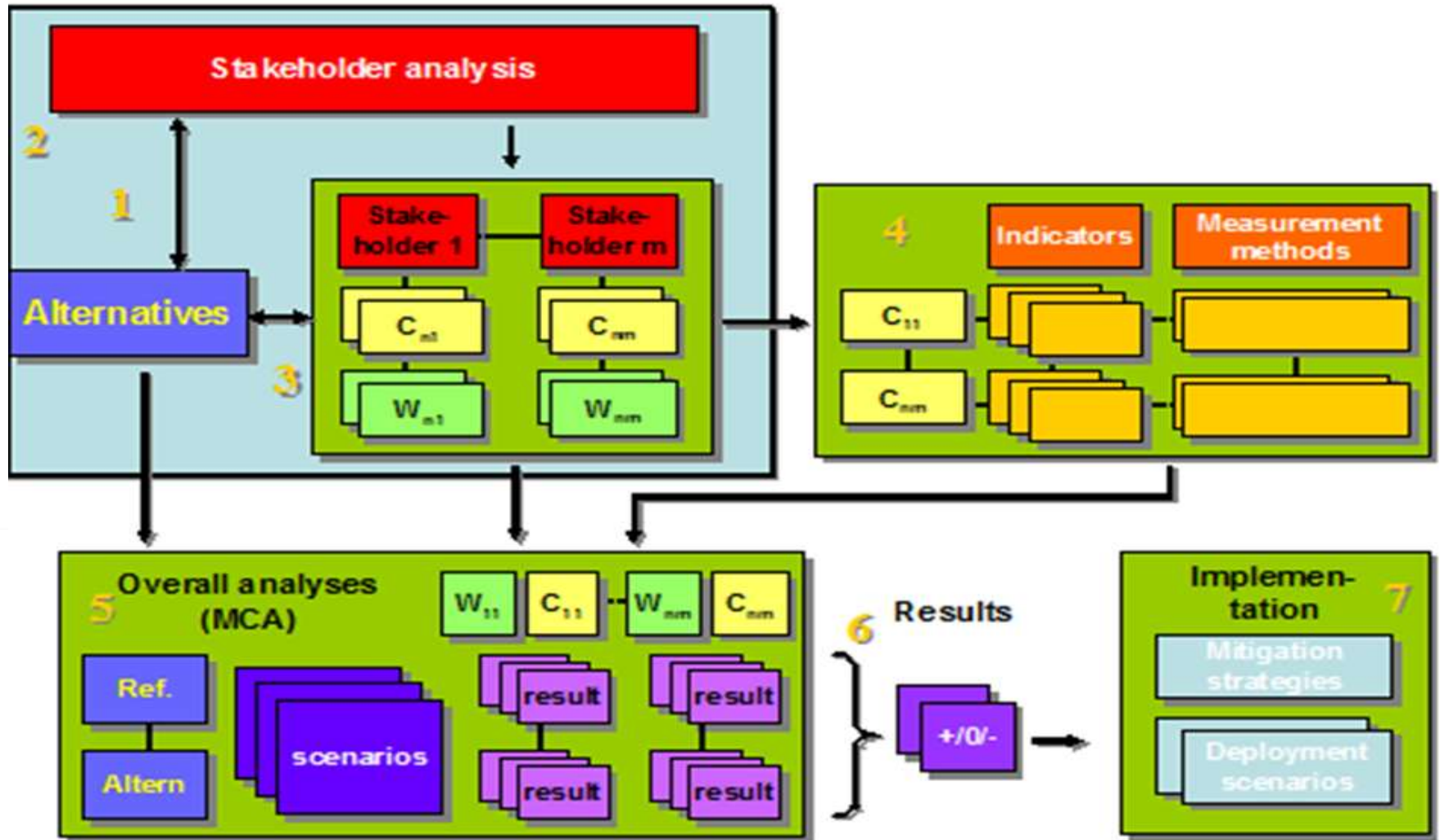
SDI assessment

- Different existing assessment methods
- But, need to:
 - Take into account every disciplinary aspect, because of the multi-disciplinary characteristics of SDI
 - Investigate SDI developments from a user-based perspective.

⇒ Introduction of a new assessment method:

The Multi Actor Multi Criteria Analysis (MAMCA)

Multi Actor, Multi Criteria Analysis



SDI in Flanders: step 1

	Hierarchy	Market	Network
Basis of interaction	Authority and dominance	Exchange and competition	Cooperation and solidarity
Purpose	Consciously designed and controlled goals	Spontaneously created results	Consciously designed purposes or spontaneously created results
Guidance, control and evaluation	Top down norms and standards, routines, supervision, inspection, intervention	Supply and demand, price mechanism, self-interest, profit and losses as evaluation, courts, invisible hand	Shared values, common problem analyses, consensus, loyalty, reciprocity, trust, informal evaluation - reputation
Role of government	Top-down rule-maker and steering, dependent actors are controlled by rules	Creator and guardian of markets, purchaser of goods, actors are independent	Network enabler, network manager and network participant
Resources needed	Authority Power	Bargaining Information and Power	Mutual Cooptation Trust
Theoretical basis	Weberian bureaucracy	Neo-institutional economics	Network theory

SDI in Flanders: step 1

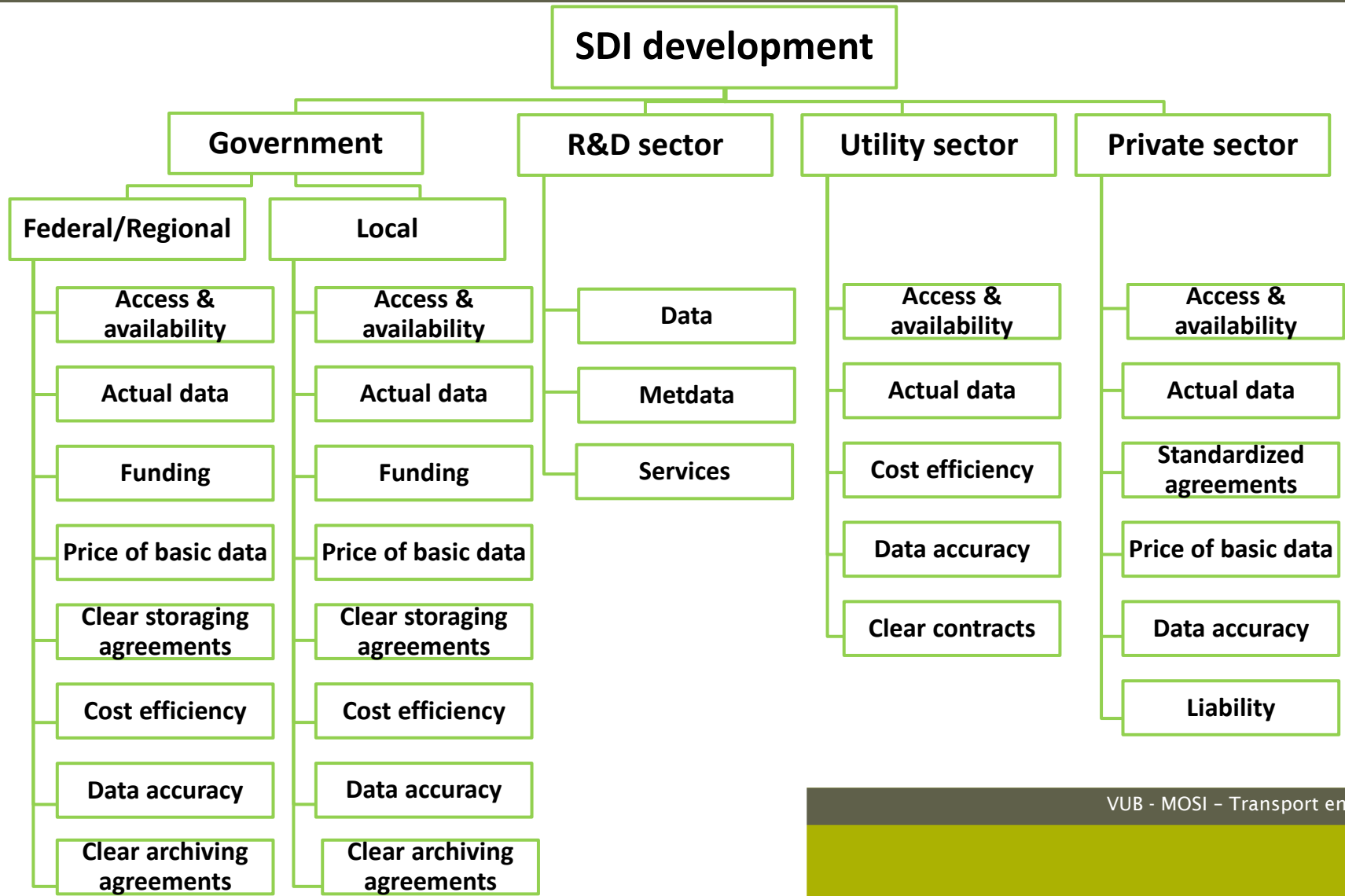
	Going Concen	Increasing Hierarchy	Hierarchy/Market	Decreasing H and increasing N	Decreasing H and increasing M
Context	Development according to the current hierarchical framework	Increasing the legal basis of the SDI by integrating new types of data and services	Current Hierarchy with Market - based approach for non - core activities	Overregulated Hierarchical framework is built down and complemented by Network - based approach	Overregulated Hierarchical framework is built down and complemented by Market - based approach
Role of the government	Top - down rule maker and responsible for funding	Top - down rule maker and responsible for funding	Market controller and participant	Top - down rule maker and network enabler	Top down rule maker and market partner
Role of the private sector	Participant with limited market power	Participant with limited market power	Participant with high market power	Participant with high market power	Participant with high market power
Required governmental funding	Medium	High	Medium	Low	Low

SDI in Flanders: step 2

Step 2: Stakeholders

- The government: the regional/federal and the local level
- The private sector
- The utility sector
- The R&D sector

SDI in Flanders: step 3



SDI in Flanders: step 3

Criteria & weight allocation: Fed./Reg. Government and Local Government

Criteria	Ranking Reg/Fed Government
<i>Actual data</i>	0,177
<i>Access and availability</i>	0,165
<i>Stable and adequate funding</i>	0,157
<i>Data accuracy</i>	0,128
<i>Clear storing agreements</i>	0,120
<i>Cost efficiency</i>	0,098
<i>Price of basic data</i>	0,084
<i>Clear archiving procedures</i>	0,071

Criteria	Ranking Local Government
<i>Actual data</i>	0,273
<i>Clear storing agreements</i>	0,169
<i>Access and availability</i>	0,167
<i>Stable and adequate funding</i>	0,128
<i>Data accuracy</i>	0,103
<i>Cost efficiency</i>	0,073
<i>Price of basic data</i>	0,070
<i>Clear archiving procedures</i>	0,025

SDI in Flanders: step 3

Criteria & weight allocation: R&D sector, Utility sector and Private sector

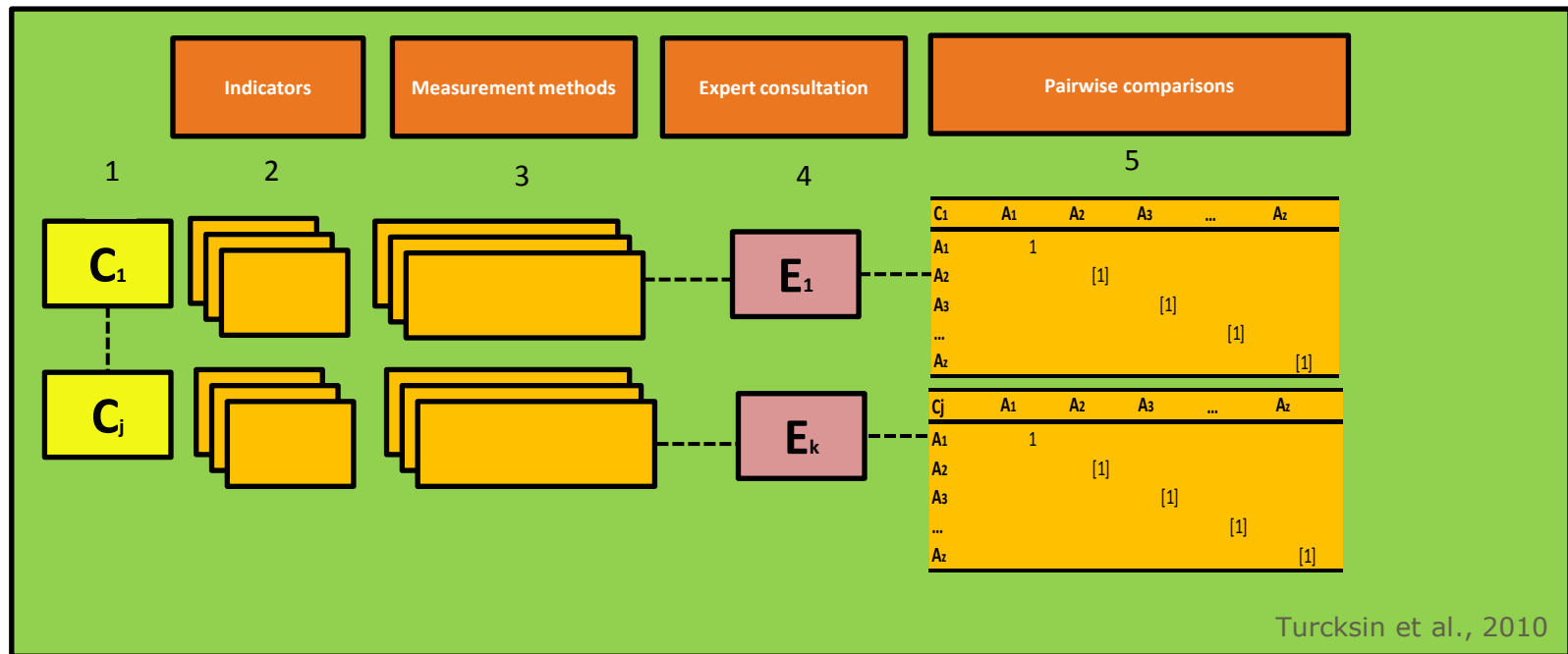
Criteria	Ranking R&D sector
<i>Metadata</i>	0,485
<i>Data</i>	0,317
<i>Services</i>	0,198
Criteria	Ranking utility sector
<i>Actual data</i>	0,262
<i>Data accuracy</i>	0,254
<i>Access and availability</i>	0,243
<i>Cost efficiency</i>	0,176
<i>Clear governmental agreements</i>	0,066

Criteria	Ranking private sector
<i>Access and availability</i>	0,308
<i>Data accuracy</i>	0,230
<i>Actual data</i>	0,169
<i>Price of basic data</i>	0,141
<i>Standardized agreements</i>	0,078
<i>Liability</i>	0,073

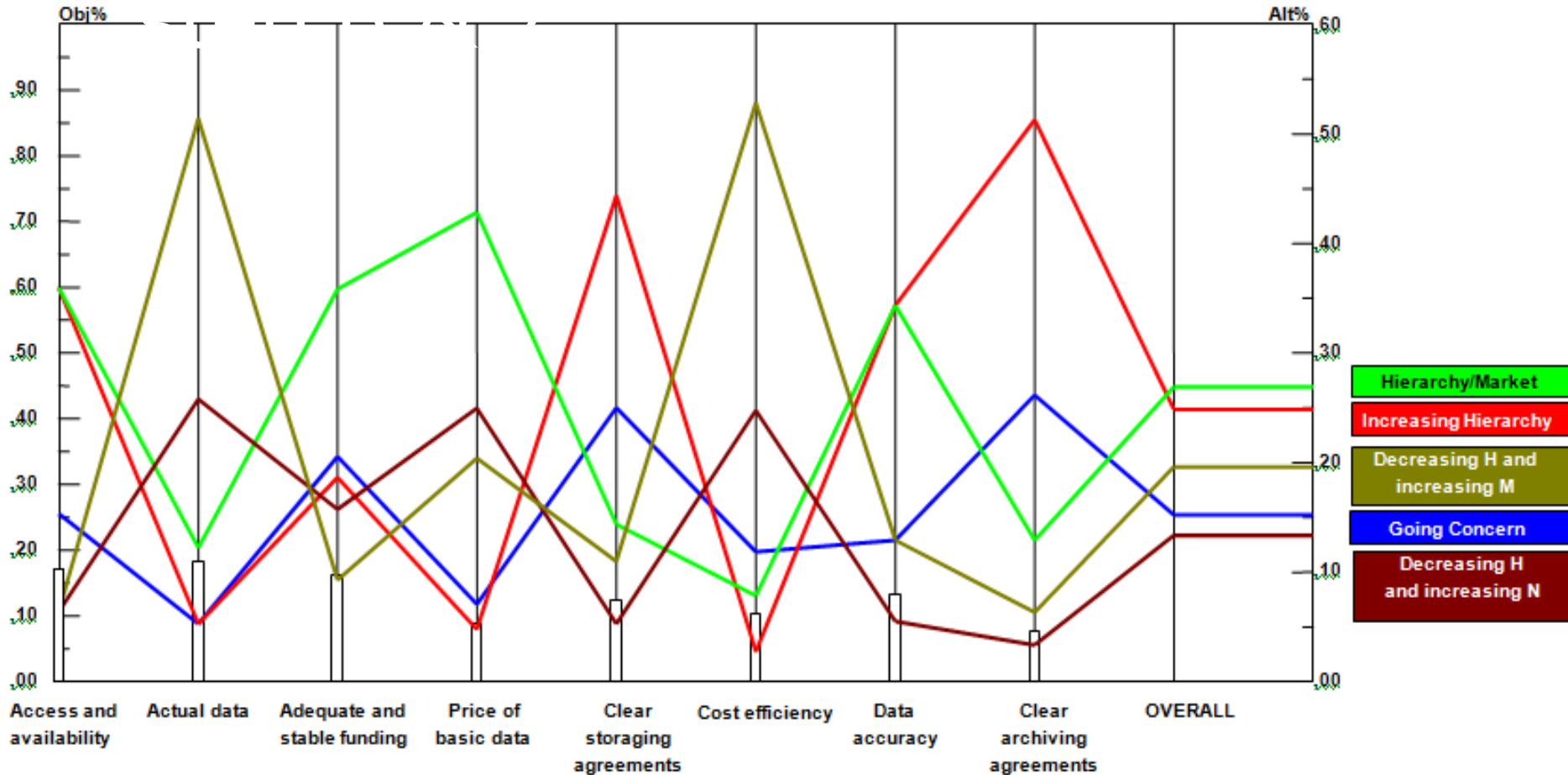
SDI in Flanders: step 4 & 5

Steps 4 & 5: Indicators & analysis

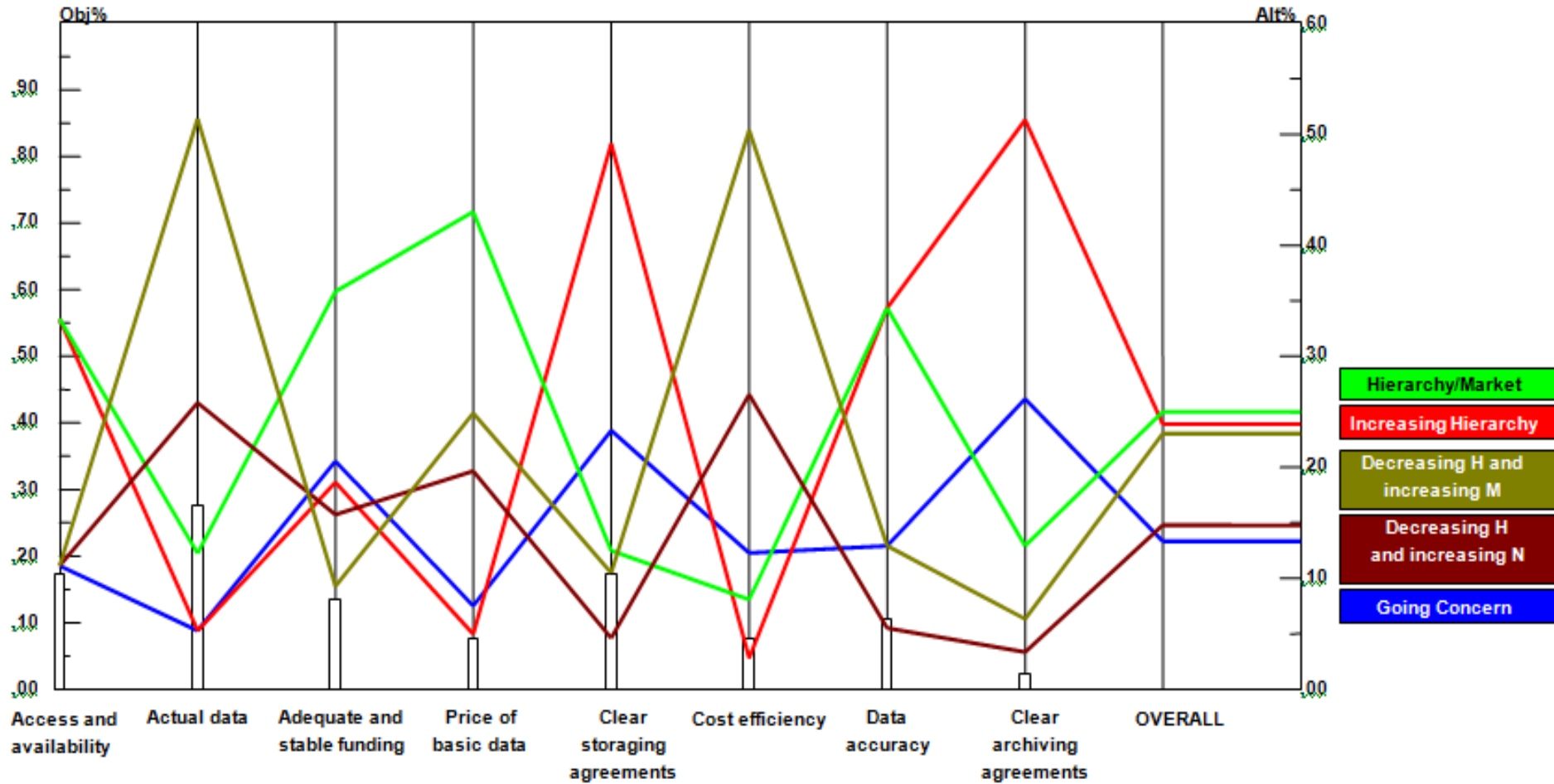
- Operationalizing the criteria, using indicators.
- This allows to measure the performance of each alternative with regard to a single criterion.



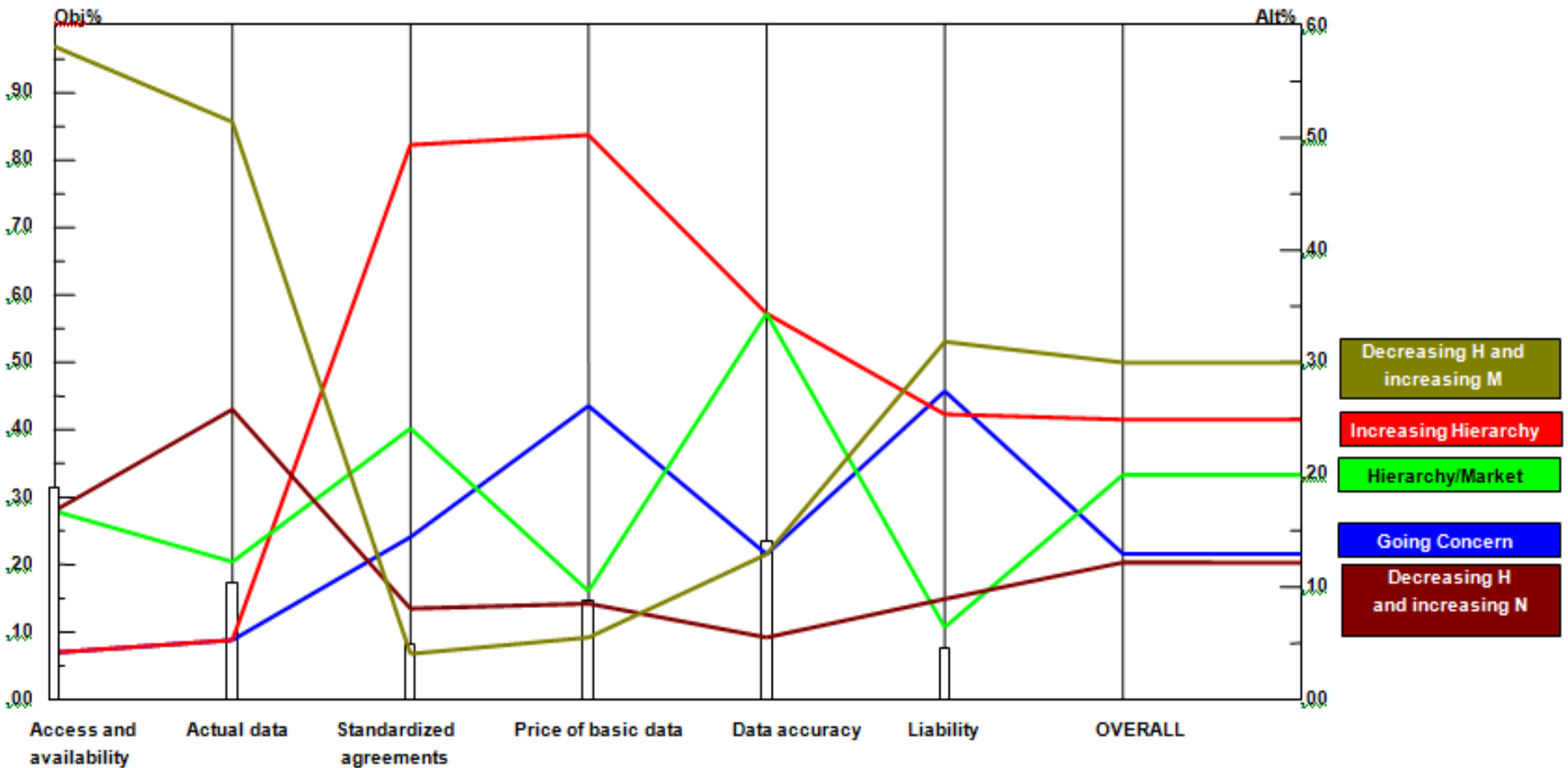
Results for the Regional/Federal Government



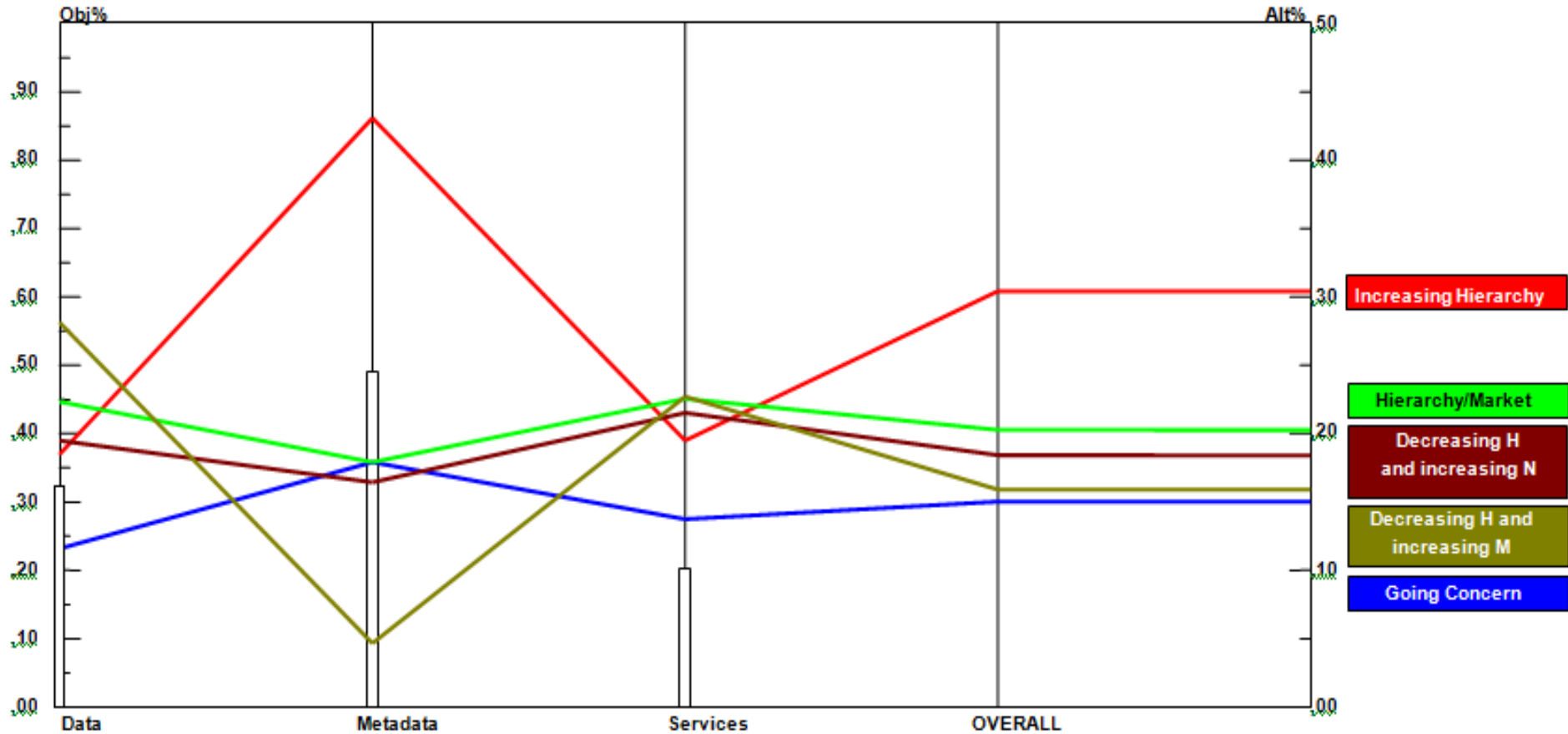
Local government



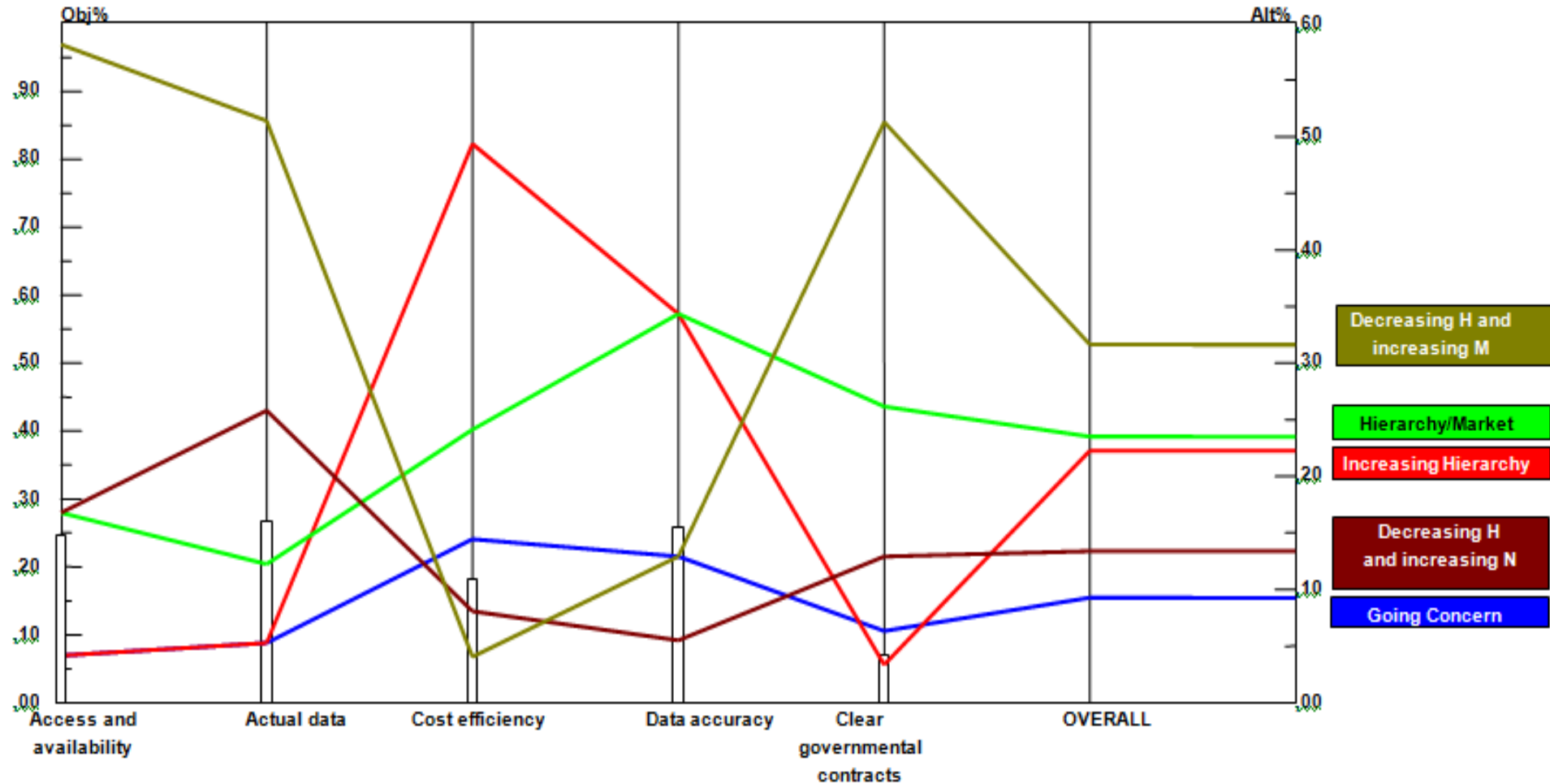
Private Sector



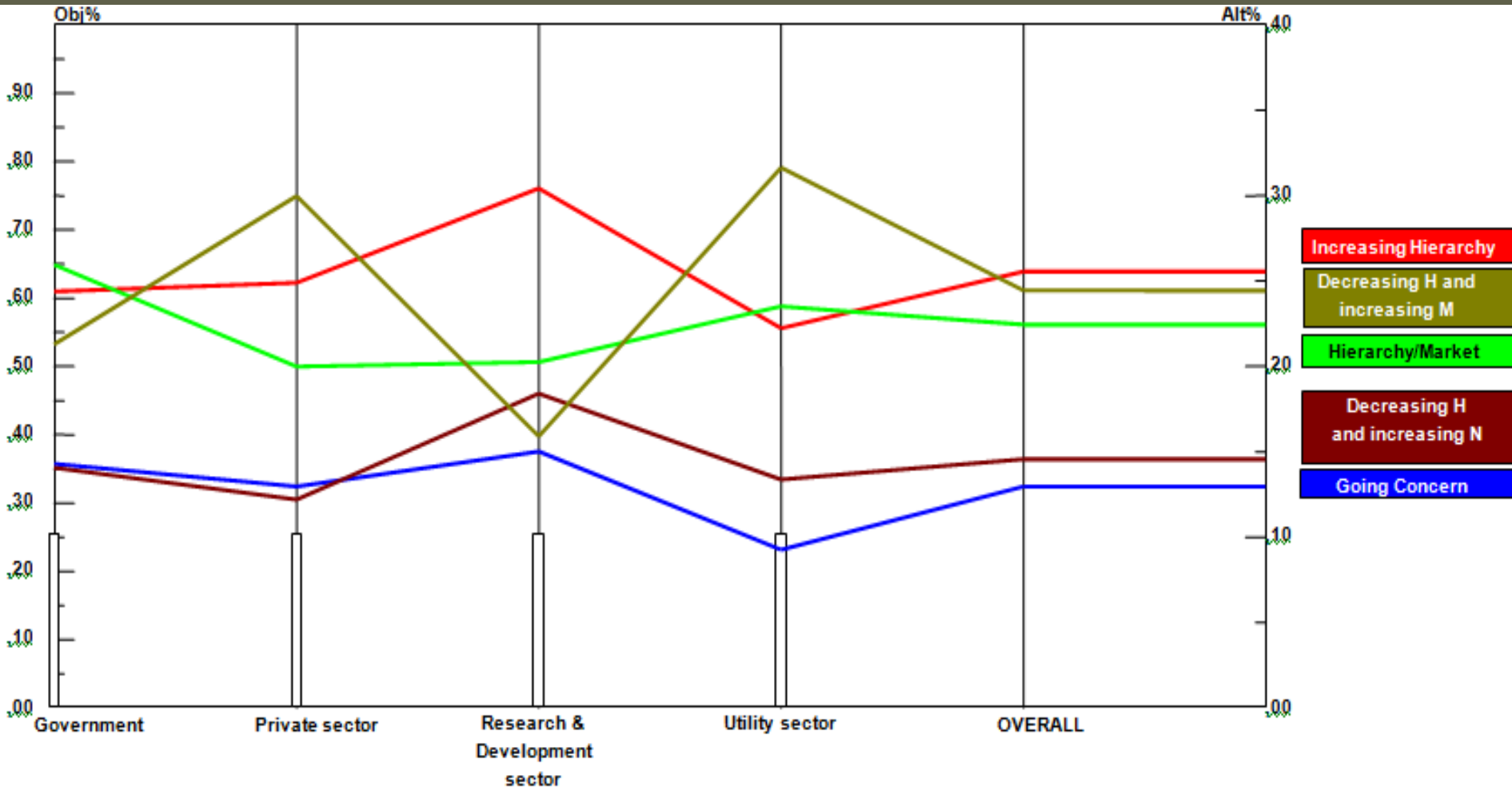
R&D sector



Utility sector



Multi-Actor view



General conclusions

- Main strengths of MAMCA method
 - Clear and visual interpretation of the analysis
 - Takes into account multiple disciplines and stakeholders
 - Views SDI's as a multi-disciplinary concept
 - Evaluates several alternatives regarding the multiple criteria

General conclusions

- Future of the SDI in Flanders?
 - ⇒ The integration of the market in the SDI
 - ⇒ The integration of private and utility players in the SDI can provide new benefits, stimulating innovation and differentiation
 - ⇒ It remains important to maintain the hierarchical framework as mentioned by the INSPIRE Directives