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Modelling developers and the spatial development process in Switzerland

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May 2012

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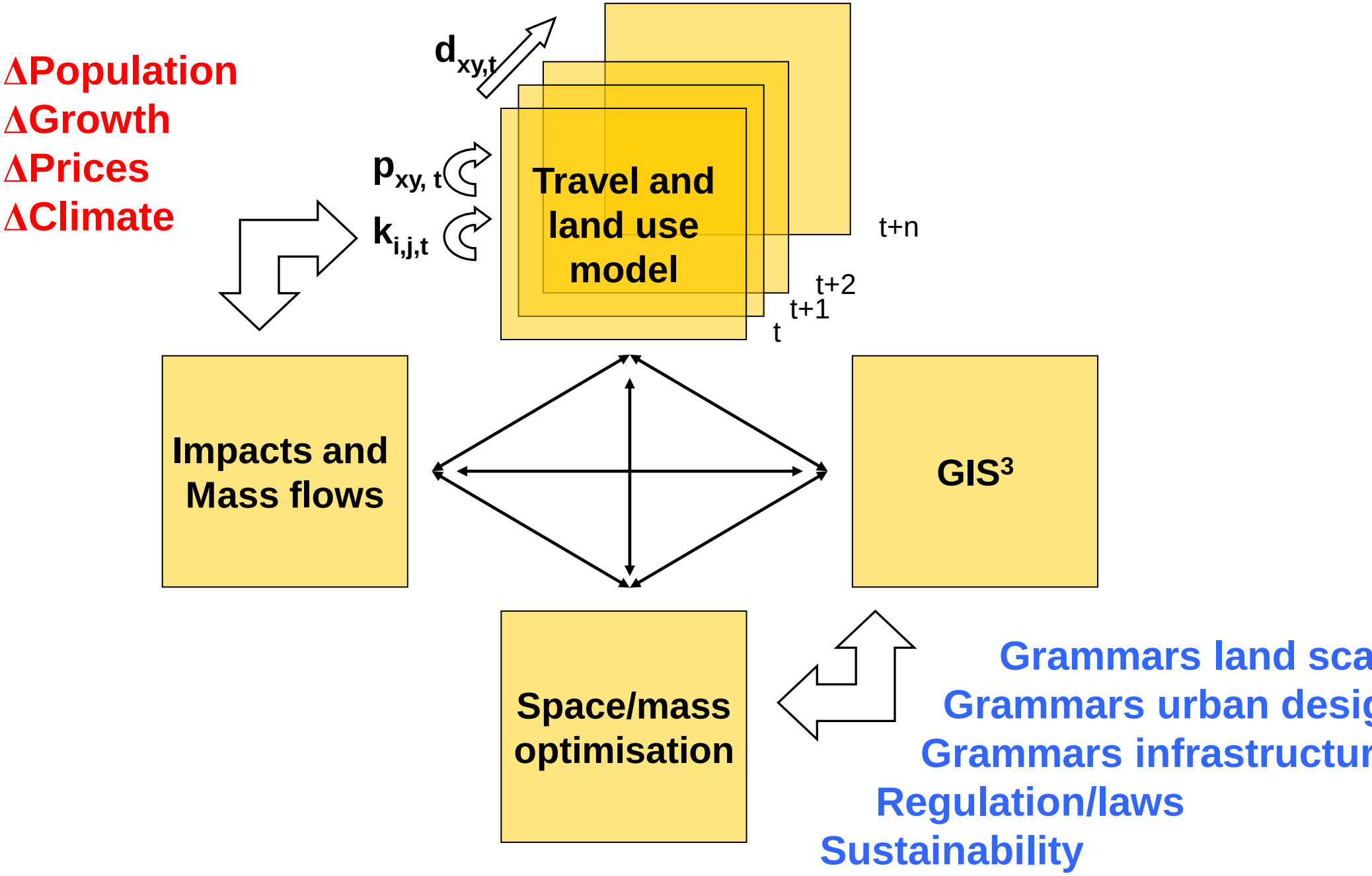
Baden now and then

Integration of land use (optimisation)



Model types

Scale:

- macro (regional production functions; governmental units; years):
- micro (agent-based decision processes; parcels; seconds/days)

Structure:

- Unitary
- Modul-based

Equilibrium:

- In each period
- With delay

Travel demand model

- Integrated
- External and seperate model

Established examples

I/O table – derived; equilibrium

- MEPLAN
- TRANUS

Market clearing equlibrium; choice models

- MUSSA
- Alexander Anas

Incremental; choice models

- DELTA
- UrbanSim

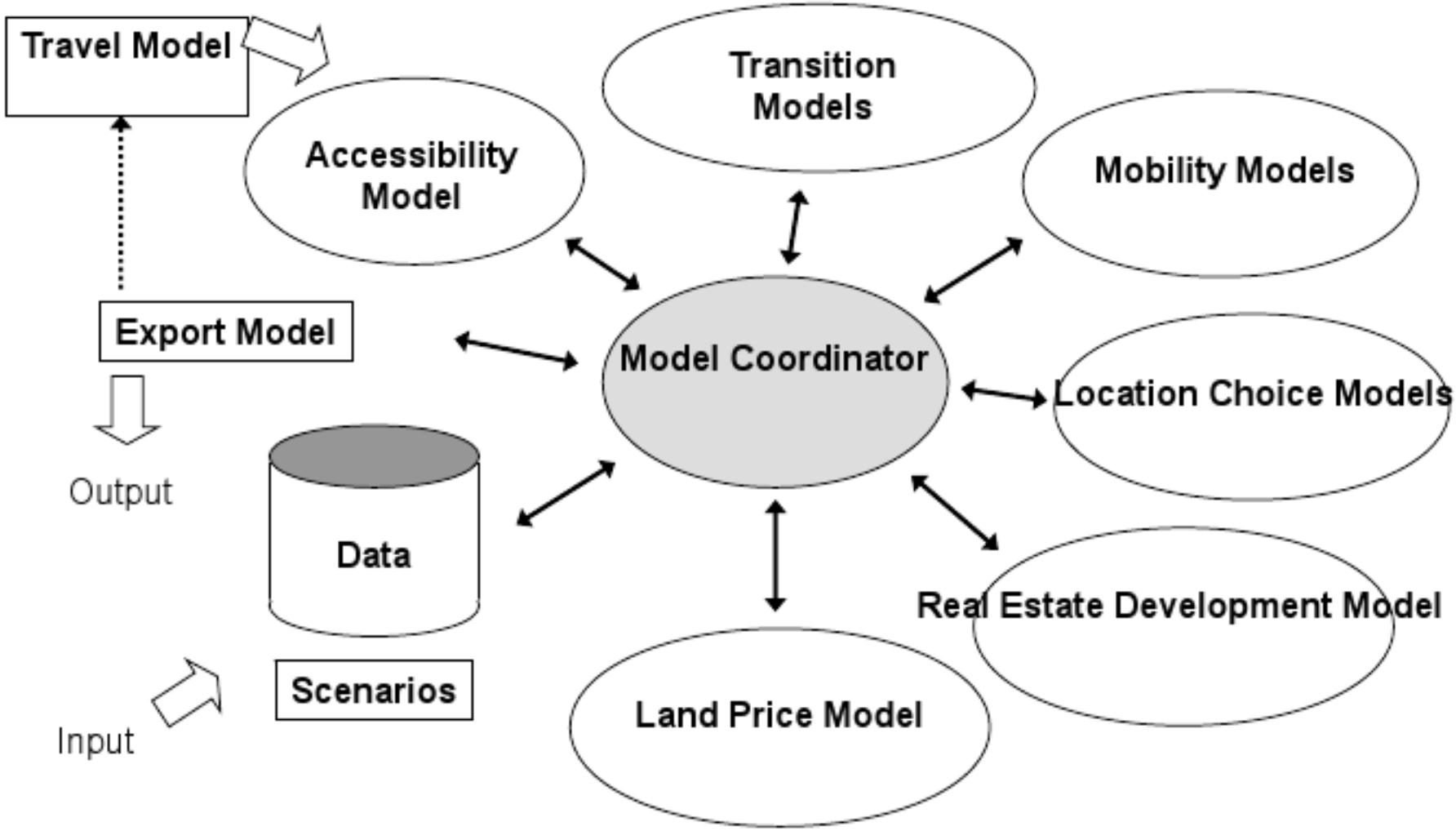
UrbanSim

- Agent-based approach

- Resolution:
- yearly updates
- Parcel, grid to municipality

- Open source (www.urbansim.org)
- Phython based

UrbanSim process

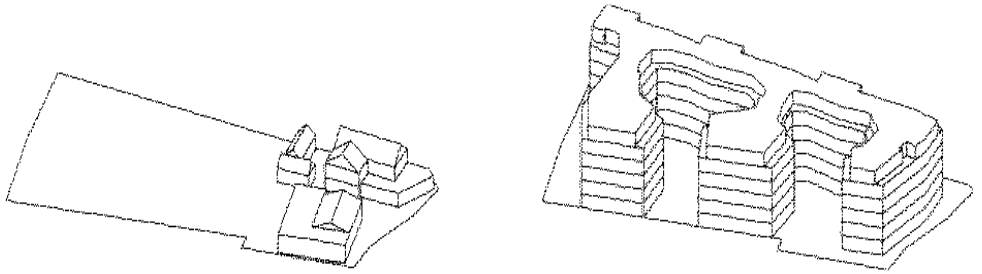


Research questions

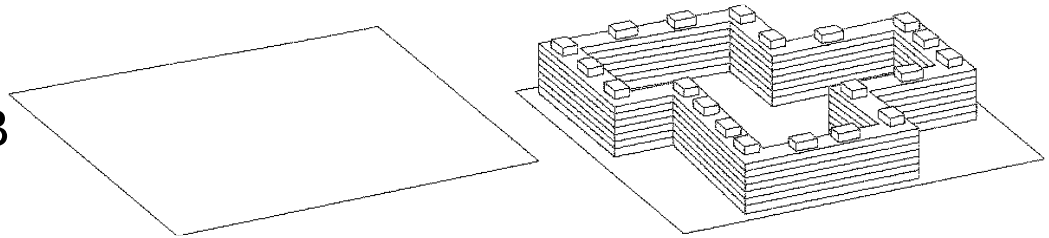
- Understanding the role of the “developer” better
- Including it in formal land use models
- Testing their impact

Urban transformation

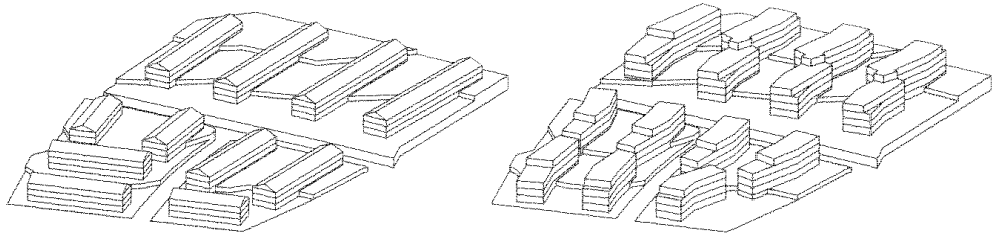
Peter Halter Liegenschaften AG



Genossenschaft BGH and GB



Helvetia Versicherungen



Amt für Städtebau (2012)

General roles

Regulation	**Government**
Land assembly	**Government**, developer, owner
Platting	**Government**, developer, owner
Infrastructre	**Government**, developer, owner, network providers
Programming	**Owner**, **developer**
Building design	Architect
Funding	**Owner, developer**
Sales	**Developer**
Maintenance	**Owner**

Previous international studies

- Haider and Miller (2004)
  - Different utility functions per housing type
  - Spatial inertia present

- Dong and Gliebe (2011)
  - Comparison of MNL, deterministic and probabilistic market segmentation models
  - Market segmentation according to project size (nb of units)
  - MNL without market segmentation predicts as good as more sophisticated models
  - Latent class models work best with 3 segments
  - Attachment to familiar locations (spatial inertia)

Previous Swiss studies

- Ott et al., 2005; Van Wezemael, 2005
  - Renewal of housing
  - What owner types in terms of investment behaviour exist?
  - Types: Owner-occupier, contractors
  - Motivation: Emotional, rational

- Schüssler and Thalmann, 2005
  - Housing supply
  - What hinders housing supply?
  - Types: Promoters, owner-occupier
  - Motivations: Provision of work (ca. 70%), spontaneous opportunities (ca. 55%), market analysis (ca. 20%)

Heterogeneity of real estate developers

Possible variables

- Legal status (Public, Private)
- Objective (Profit, non-profit)
- Strategy (Portfolio, object-oriented)
- Size
- Professionalism (Work oriented, non-work oriented)
- Purpose / Business plan (Promoter, self-owning)
- Organisation (Private person, company)

Methodology

Preparation

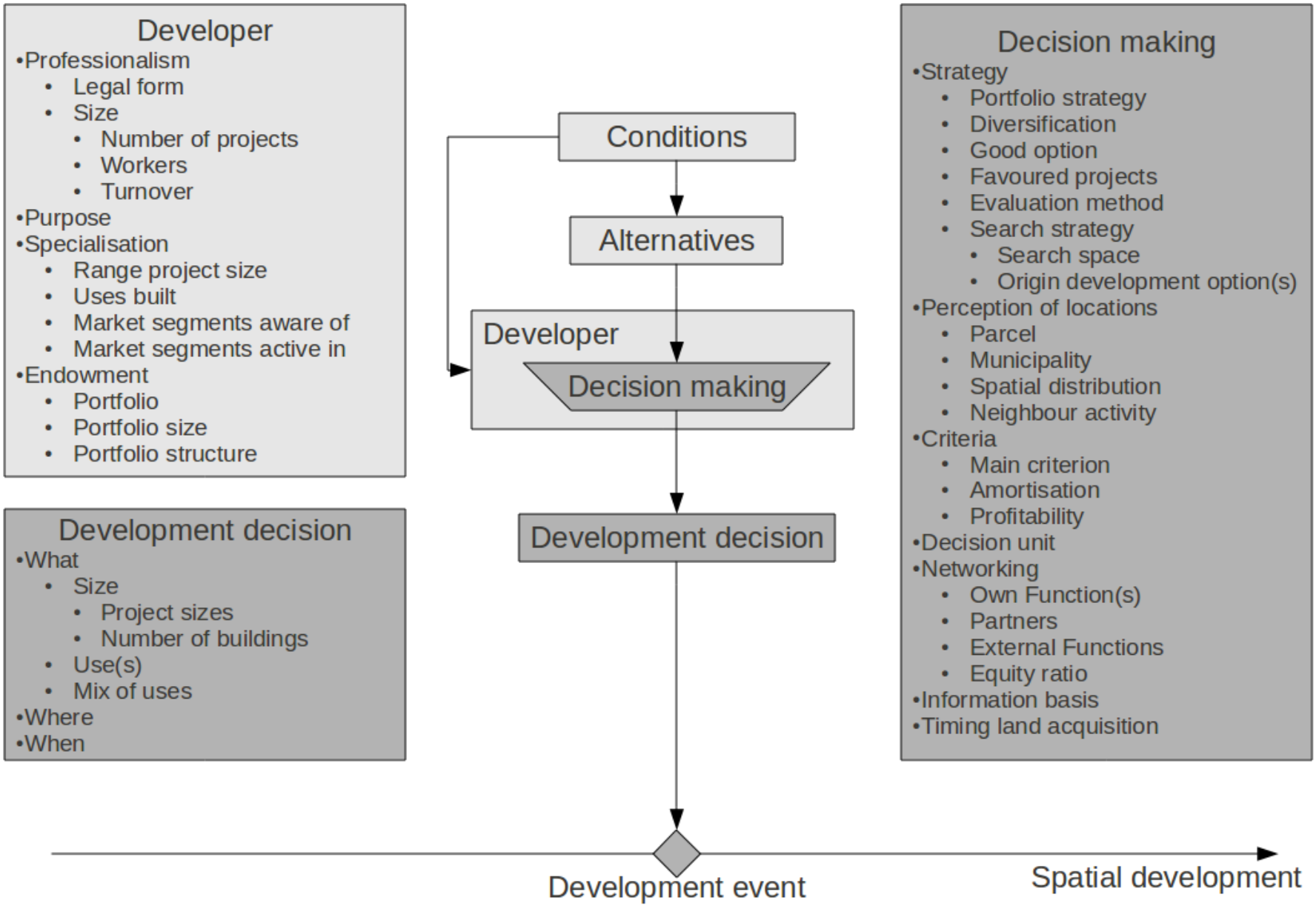
Conduction interviews

Qualitative analysis

- Transcription
- Extraction
- Preparation of content
- Analysis

Interpretation

Theoretical model for interviews



Stratified sampling of contacts from project records

DOUMEDIA data on building projects from 2000 – 2010

- Requests for proposals
- Projects with building permit
- Contact details
- Purpose (Sale, let, own use)
- Number of projects

Systematic sampling of 10 most active developers

Random sampling in three subpopulations

Sample

Code	Type	Purpose	Number of Projects	Number of Interviewees
O1	Unprofessional own use	Own use (letting)	1	2
Om	Professional with portfolio	Own use (letting)	m	3
Smc	Commercial developer	Sale	mc	6

Definition of type *professional* and *unprofessional*

Dimension	Unprofessional	Professional
Legal form	Private person	Company
Number of projects	<5	>5
Number of workers	0	>0
Turnover	Small	More 1 Mio.

Differences in criteria

Criterion	Own use, letting	Sale
Main criterion	Availability of affordable land Conservation of value Cost-benefit ratio positive Nb of housing unit > 100 Location and profitability	Net present value > 0 Profit opportunities Evaluation report positive Fit demand Gut feeling
Payoff time	10 – 210 years	1 – 10 years
Profitability	-20 – 5.3%	5 – 10%
Pre selling	N/A	30 – 70%

Differences in evaluation methods and information basis

	Unprofessional	Professional
Evaluation methods	Study advertisements Looking around Ask around Scouting expeditions Compare with neighbouring projects	GIS-Tools Price calculators Optimisation of budget and parcel Location analysis Market analysis Demographic analysis Consultation of ratings IFRS component approach Sustainability tool Portfolio review
Information basis	Press Personal situation Conditions of parcel Internet Local knowledge Opinion of trusted persons Professionals	Press Zoning Online markets Own market data Local knowledge Professional reports Prepared data Professional tools Statistical offices

Differences in search space

	Unprofessional	Professional
Search strategy	Looking and asking around Use local knowledge Read news	Construction sites offered Systematic search with spatial analysis Activate network of agents
Search space	Local, regional	Local, regional, international

Differences in task spectrum

Task	2	1	10	11	6	4	5	7	8	3	9
Financing	x	x	x	x	x				x	(x)	x
Search for location	x				x		(x)	x	x		x
(Buy property)								(x)	x	(x)	x
Programming	x	x	(x)	x	x			x	x		x
Design						x	x	x			
Construction management						x	x	x	x	x	x
Engineering										x	
Construction								x	x	x	
Marketing							x	(x)			x
Sell property				(x)				x	x	x	x
Sell service						x	x				
Own use let	x	x	x	x	x			x	x		
Own use	x	x									

Legend

Optional task (x)

Conclusions

Developer types expected from literature confirmed in interviews

Different behaviour according to *purpose* and *professionalism*

Business cases:

- Provide development service (fee developer)
- (Buy), develop, sell (speculative developer)
- (Buy), develop, let

Development networks

- in-house tasks depend on business case

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