Modelling Real Estate Business
for Governance and Learning

Erik Stubkjær

Aalborg University, Denmark

FIG Workshop on e-Governance, Knowledge Management and e-Learning
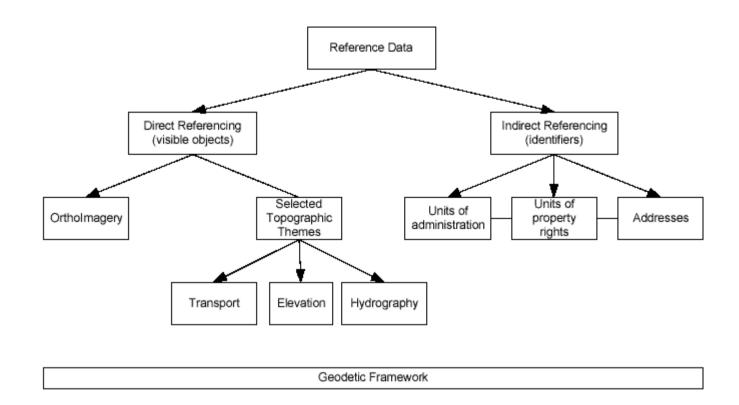
April 27-29 2006, Budapest, Hungary

Overview

1. The context: Higher education in EU related to subject code 07.6

2. Research outcomes of COST *action* G9:

   Modelling Real Property Transactions

3. Two proposals:

   1. A general cooperation scheme: One-semester specializations
   2. an Aalborg offer:

   Land Administration and Cadastral Development

1. The European Union context

1. Networking of mapping (and cadastral) agencies into EuroGeographics
2. Ongoing educational activities:
   - Networking: UNIGIS and EuroSDR
   - Development oriented: Munich, ITC, KTH
3. EU support for networking of university departments: EEGECS
4. EU support for exchange of students and staff: Socrates/ Erasmus subject area code 07.6 Geodesy, Cartography, Remote Sensing
5. Analyses in the field of geospatial information, e.g ETeMII

ETeMII view of geospatial data sets

Source: ETeMII Reference Data White paper. Version 1.0 - 31. July 2001, p 9

Geospatial data sets and their relative economic weight

Topographic objects: 33%	**Socio-economic Units: 29%**
• Transport: 5 % • Elevation: 7 % • Hydrography: 5 % • Other environmental:16%	• Units of administration: 2 % • Units of property rights: 27 % • Addresses: ?
Geodetic framework: 4 %; Utilities: 19 %; Maritime navigation: 15 %; **~38 %**	

Source: ANZLIC Benefit Study, 1995, as quoted in ETeMII, 2001, Annex C, Table 2

NB: In % of production costs. But data use in real estate business triggers much higher economic impact !

2. Research project: Modelling Real Property Transactions

Context: ESF/COST framework: COST G9, 2001-2005, ~10 depts.

Research question:

What are the costs of transactions related to real property?

Why?

We (cadastral professors) assume cadastral processes, etc. to be comparable across countries, but we lack a theoretical framework, cf. Helmert and geodesists.

- Domain: Market in real estate
- Theory frame: New institutional economics
- Methodology: Describe behaviour, using knowledge engineering tools
- Dissemination: Papers in scientific journals

Modelling Real Property Transactions: Research outcomes

Book (2003) + Joint FIG Com7-COST G9 conference Bamberg, 2004 +

journal papers + National reports + STSM reports + Workshop presentations,

see at   http://costg9.plan.aau.dk

The proposed theoretical framework proved useful.

A network and repository for MSc and PhD studies was established.

- UML as base for formalisation of process descriptions
- Ontology (knowledge engineering) approach to process comparison

A continuing, but different project, "Rearrangement of property rights in urban

and rural areas" is in preparation.

The notion of *Transaction Costs*

The sale of a unit of real property requires a number of steps.

This social activity may be described from different theoretical perspectives.

  a. The fulfilment of legal demands (the land law approach)

  b. The activities support information flows (the LIS/GIS approach).

  c. The trading causes costs (the *new institutional economics* approach)

According to NIE, reasoning on market behaviour has to consider not only supply and demand, but also the costs, which occur when assets are exchanged or *transacted*, which is the preferred technical term.

The G9 research was based on and informed by this economic theory

The notion of *Institution*

Kindergartens and other social institutions

Agencies, and other organisations instituted by statutory law

Banks and other financial institutions (not concerned with production)

According to NIE / Douglass C North (1990):

Institution:

The humanly devised constraints that shape human interaction (p.3), e.g. the institution of real property rights, .. or 'the rules of the game'

Organisation:

Group of individuals, bound by some common purpose to achieve objectives (p. 5), e.g companies, agencies, associations, ..

The G9 research methodology

- Modelling the processes of sales, subdivisions, mortgaging (UML)

- Comparing processes across countries / jurisdictions

- Applying knowledge engineering (ontology) approach for comparison

- Assessing costs from the citizens' point of view, and

- assessing costs from a national point of view: System of National Accounts

  (specialised on real estate, like already environment, education, and tourism)

The stony path towards reduced transaction costs

- Compare processes and structures
- Identify terms and concepts of a real estate domain language (ontology), as basis for comparison
- Assess costs of comparable processes and structures
- Identify changes, which tend to reduce transaction costs
- Get political/administrative support to introduce changes
- Repair unintended consequences of change, because you cannot control societal affairs

3. University co-operation under the Bologna umbrella

Bologna: 3 years BSc + 2 years MSc + 3 years PhD

Competition among universities is slowly emerging,

especially at MSc and PhD level.

Head-on competition: Offer 2 year MSc

Gentle competition/co-operation: Offer one-semester study programme

Proposal 1:

Universities offer a one-semester, post-graduate study programme for visiting students, each within their field of specialization.

The study makes a 'minor', which fits the 'major' study programme of the home university.

Proposal 2: Land Administration and Cadastral Development

– An analytical approach

Courses 10 ECTS + 5 ECTS elective subjects:

- The LM/LA/cadastral components
- Country and cultural studies
- Modelling the domain
- Institutions and their change
- Development economics

Project work, 15 ECTS:

- Summarising of thesis or book
- Report on past changes within a specific country, reflecting causes
- Preparing a position paper

The role of eLearning

- Structure communication among staff of sending and hosting universities
- Keep educational activities going while students are on home visits
- Get access to eResources, solving copyright issues
- Provide basis for developing a distant learning study programme (and support organisational learning)

The LM/LA/cadastral components

- Property units, processes, and markets
- Central & local administration and information systems
- The professions

Country and cultural studies

- Perceptions of land and wealth
- Distribution of power over land
- Availability of technical and financial services
- Transparency

Modelling the domain

- IT and domain modelling
- Modelling techniques and tools
- The domain ontology
- Standards

Institutions and change

- Organisations and institutions
- Property rights as an institution
- Transactions
- Policy networks and institutional change

Development economics

- Explanations of global inequality
- The Washington consensus debate
- Institutional, incl. land reforms
- Main donors and their policies

<u>Summary</u>

1. Development of real estate applications of geospatial data has a substantial economic potential.

2. A scientific base is available to support such development as rigorously as Helmert once did.

3. Technology enables much wider cooperation than before, but to achieve scale of economy in our educations, cross-national cooperation must become formalised, e.g in terms of one-semester programmes.

4. A one-semester programme at AaU was presented and motivated.

est@land.aau.dk