

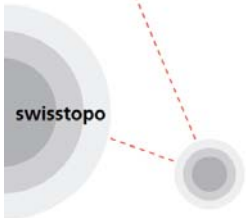


Schweizerische Eidgenossenschaft
Confédération suisse
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Confederaziun svizra



wissen wohin
savoir où
sapere dove
knowing where

Workshop 3: 3D Data Management - Relevance for a 3D Cadastre



4th International FIG Cadastre workshop
9 - 11 Nov. 2014, Dubai, United Arab Emirates

Helena Åström Boss





2 Working Sessions on 3D Data Management

- Sun, 09.11.2014 1400-1530
- Mon, 10.11.2014 1400-1530

Summary

- Tue, 11.11.2014 1600-1730

Participants

- 5 academia
- 5 government
- 1 industry (software company)



Our world is changing,
getting more and more
complex, ...





more demanding
property situations,

much more users
have higher
demands on
cadastral data,





3D Cadastres



new sophisticated data capture and visualisation techniques are available, better computers...





but until now most countries describe the property units and the parcel only in 2D in the cadastral map!

Why?





Questions



- What is the progress of the last years?
- What are the problems?
- What are the potential solutions?
- What are the recommendations of the working session participants?



Progress Of The Last Years



- **New sensor technologies** ▲
- **New 3D graphics hardware** ▲
- **Powerful CPUs for data visualisation** ▲
- **Some specific actions in data modelling,**
such as the Land Administration Domain
Model (LADM) ▲
- **User friendly 3D Cadastre software** ?
- **Data analysis and quality checking tools** ?
- **A few countries work on legal regulations.** ►



Specific for cadastre

▲ = positive, ? = no essential progress known, ► = work in progress



Recognised Problems



There were progress, but main problem remains:

- 3D data management and 3D analysis is in a status where 2D GIS was a decade ago
- What about user friendly software?

Not a different software for every single processing step, at least a package of tools.

Simple tools for cadastre:

- 3D Data Manipulation (creation of new parcel, etc.)
- 3D Data Checking (correct topology, etc.)
- 3D Analysis (in combination with RRR)



Key player of the 3D cadastre market



Driving force!
Describe the
requirements

government



academia



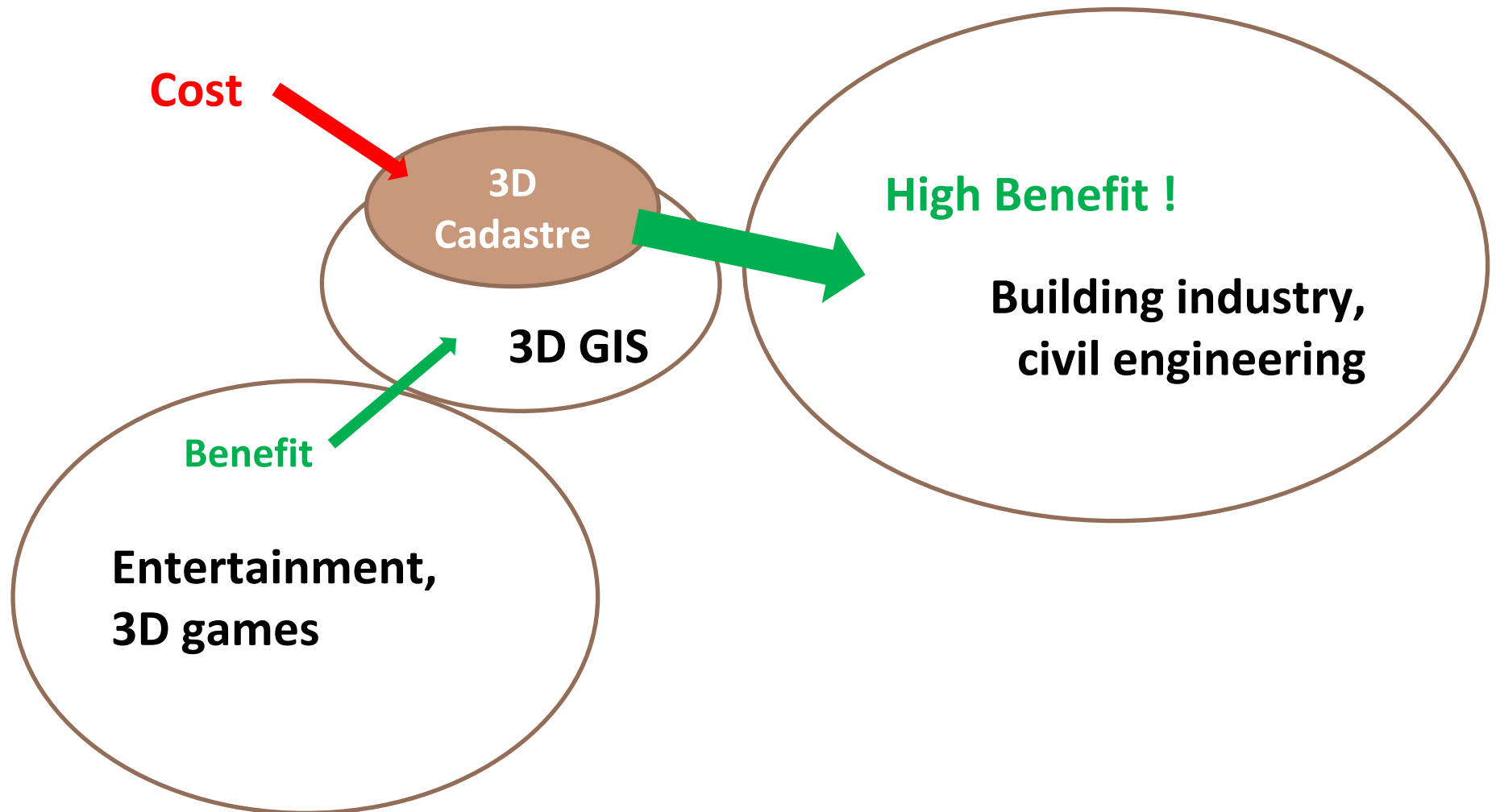
industry

What is possible? Theory
How ? Algorithms

Economic interests
What are the needs?



Markets Cost - Benefit





On the way to Potential solutions



- **Question of awareness!**
 - 3D is an important support of land register.
 - It leads to much higher productivity in an another industry.
 - **It's the new supporting role of 3D Cadastre for the future.**
- Top down decision is needed → Politics
- Institutional question:
 - Working processes in practice must change
 - Need of additional education
 - Etc.



Discussed Ideas



- Open GIS instead of / or additional to commercial solutions (small specialised market - mass market)
- Examples of implementation of LADM in 3D
- Case study of good practice
 - Solutions have to be extended to make them comparable
 - Legal and physical objects: what level of link?
 - Depending on legal system > international view is difficult
- Many sources for 3D data:
BIM, other GIS, utility networks, etc.
interfaces between standards important



Recommendations



- More standardisation? Yes and No
- Land administration and land registration institutions should be more present and active and **describe the requirements** on
 - data management (data amount),
 - data analysis,
 - needed interfaces
 - and special cadastre tools.
- FIG should bring the institutions together and they together with the software industry.



Additional Ideas for the Future of Cadastre



Read the Paper «**Beyond Limits**»
written by the Think Tank
Dimension Cadastre, Switzerland

google «dimension cadastre»