



International Federation of Surveyors
Fédération Internationale des Géomètres
Internationale Vereinigung der Vermessungsingenieure
FIG COMMISSION 7
Cadastre & Land Management



FIG Com7 International Seminar “Cadastre in a digital world - Nordic and Global Perspectives”
23 – 28 Sept 2018, Bergen/Norway

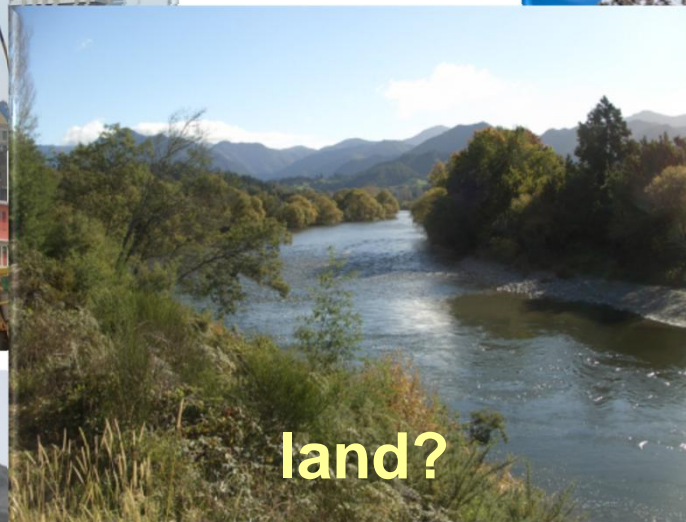
Cadastre 4.0 - a role model for Private-Public-People-Partnership

Gerda Schennach, Austria
Chair of FIG Commission 7



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Who owns.....



From geometry to location to information

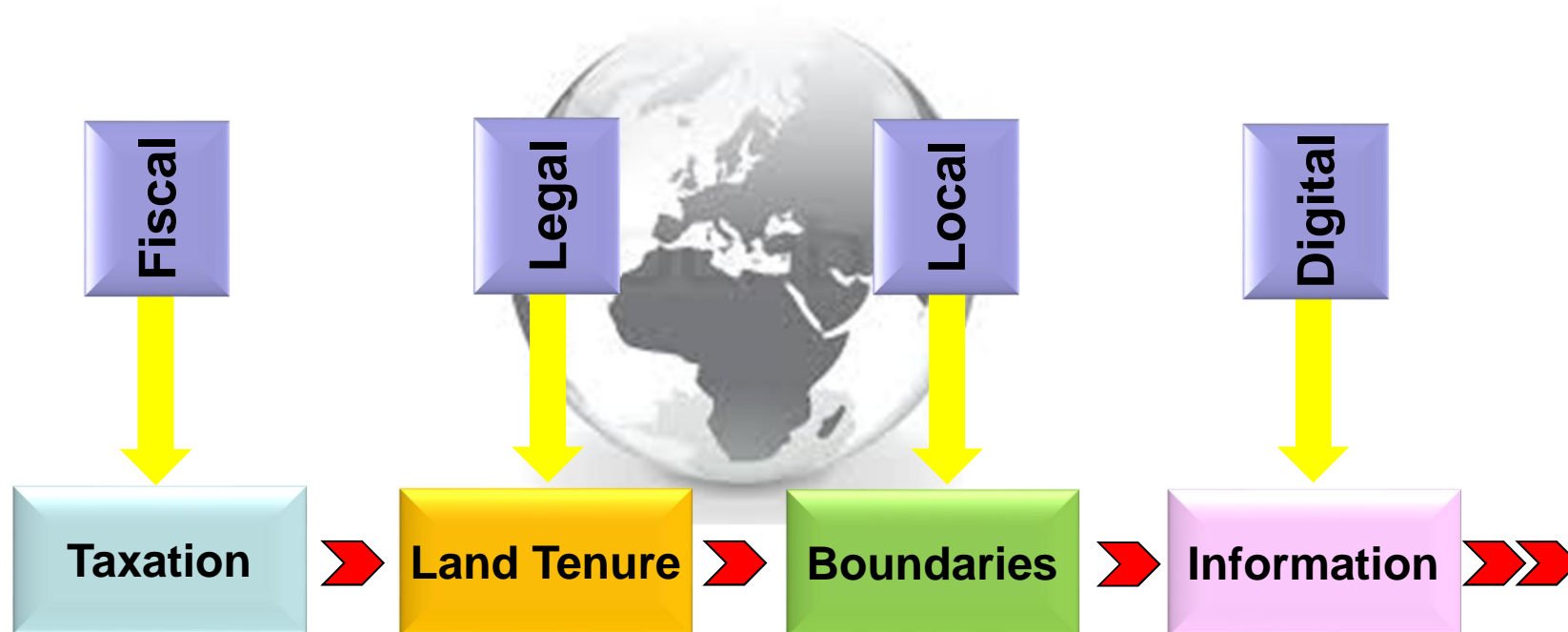
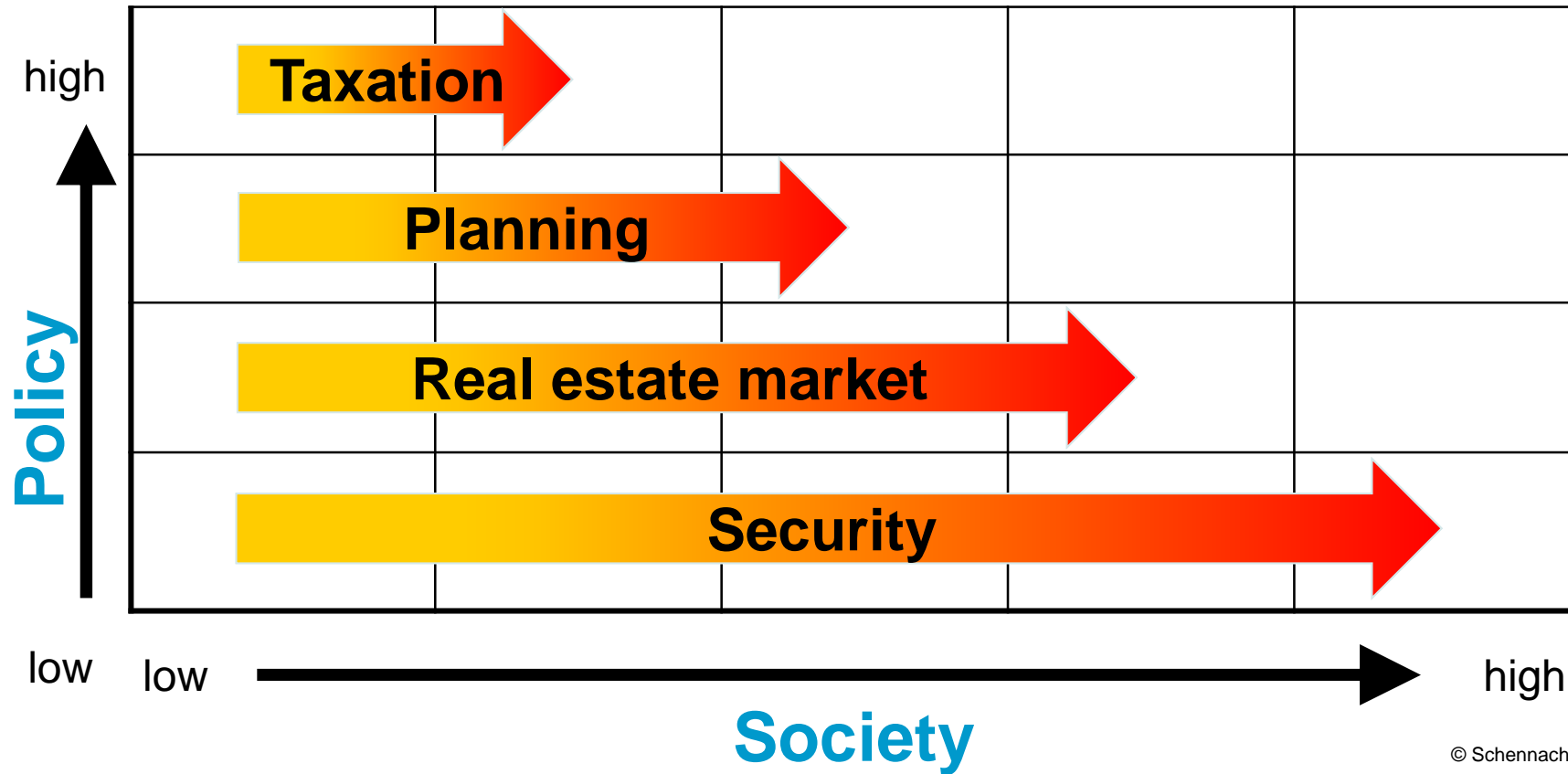


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Relevance of content



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What about the data?

- ∅ internet of things / VGI / sensors e.a.
- ∅ everyone produces and publishes everything
- ∅ data are accessible for everyone and become a public (community) good
- ∅ data reflect visible world ≠ legal status
- ∅ smart procedures for selective processing of big data
- ∅ smart systems – automatic acquisition of data and information
- ∅ work is no longer bound to location of land
- ∅ users (land owners) equal partners in systems
- ∅ users (land owners) may be big players in systems

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The linear cadastral model.....

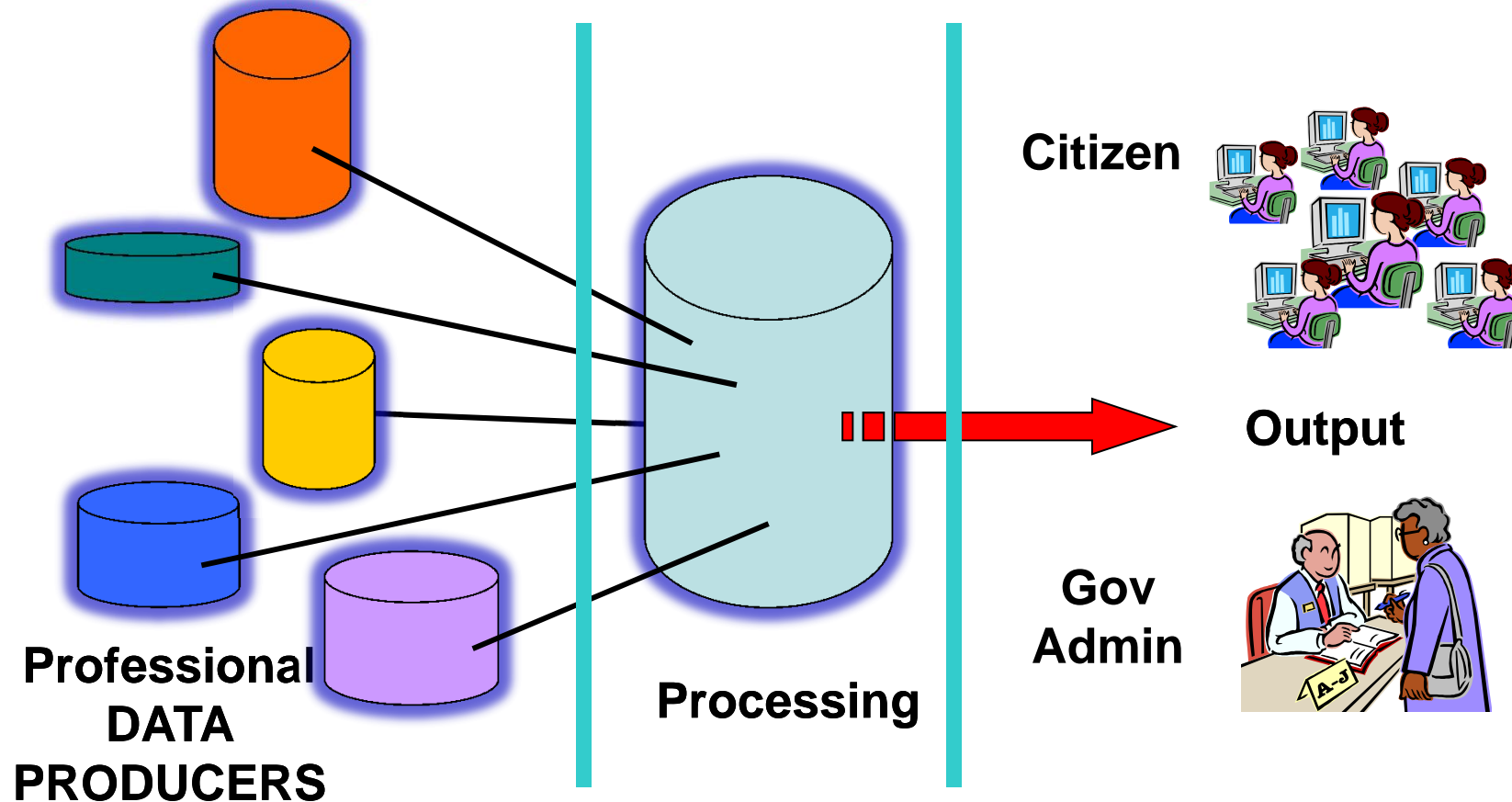
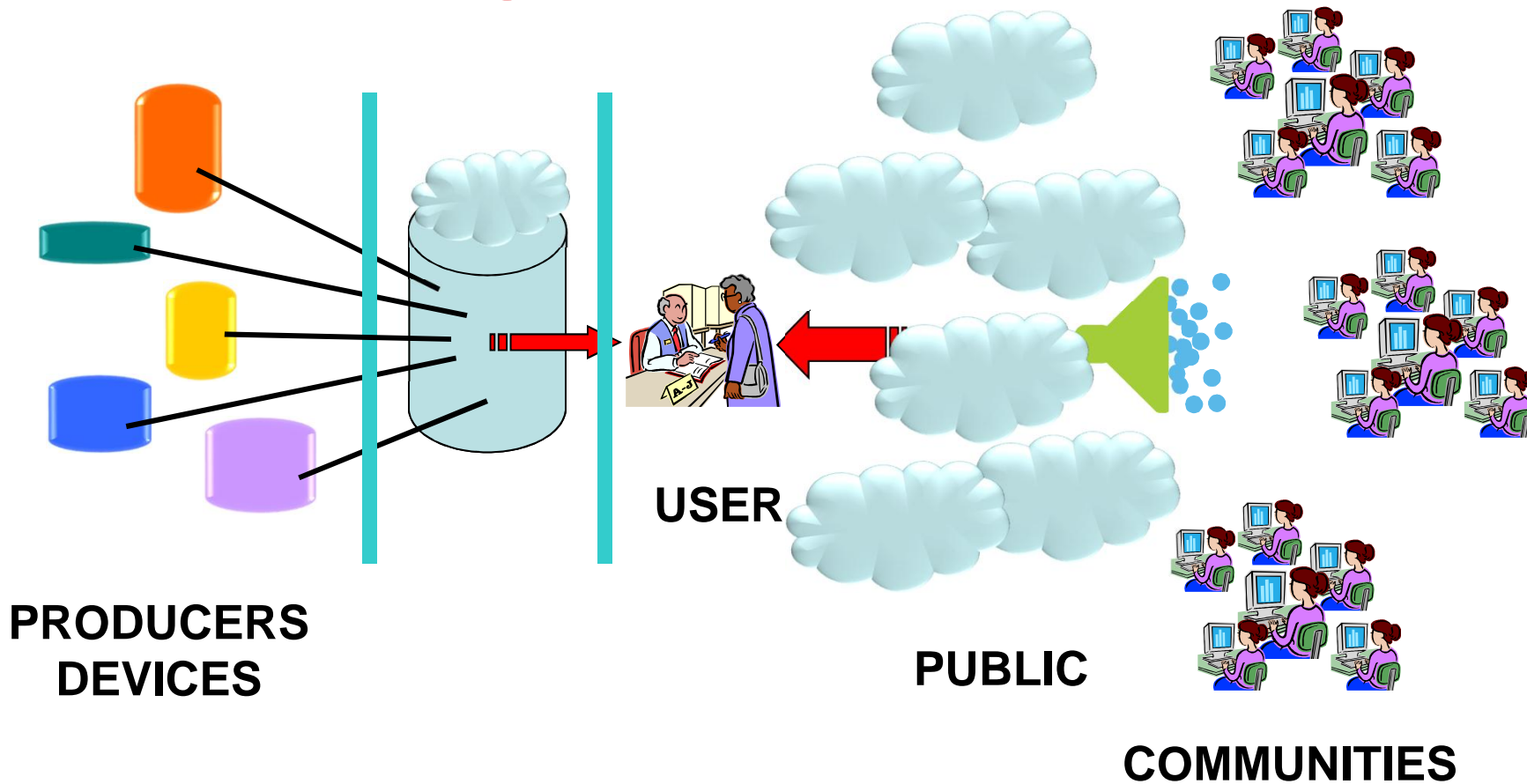
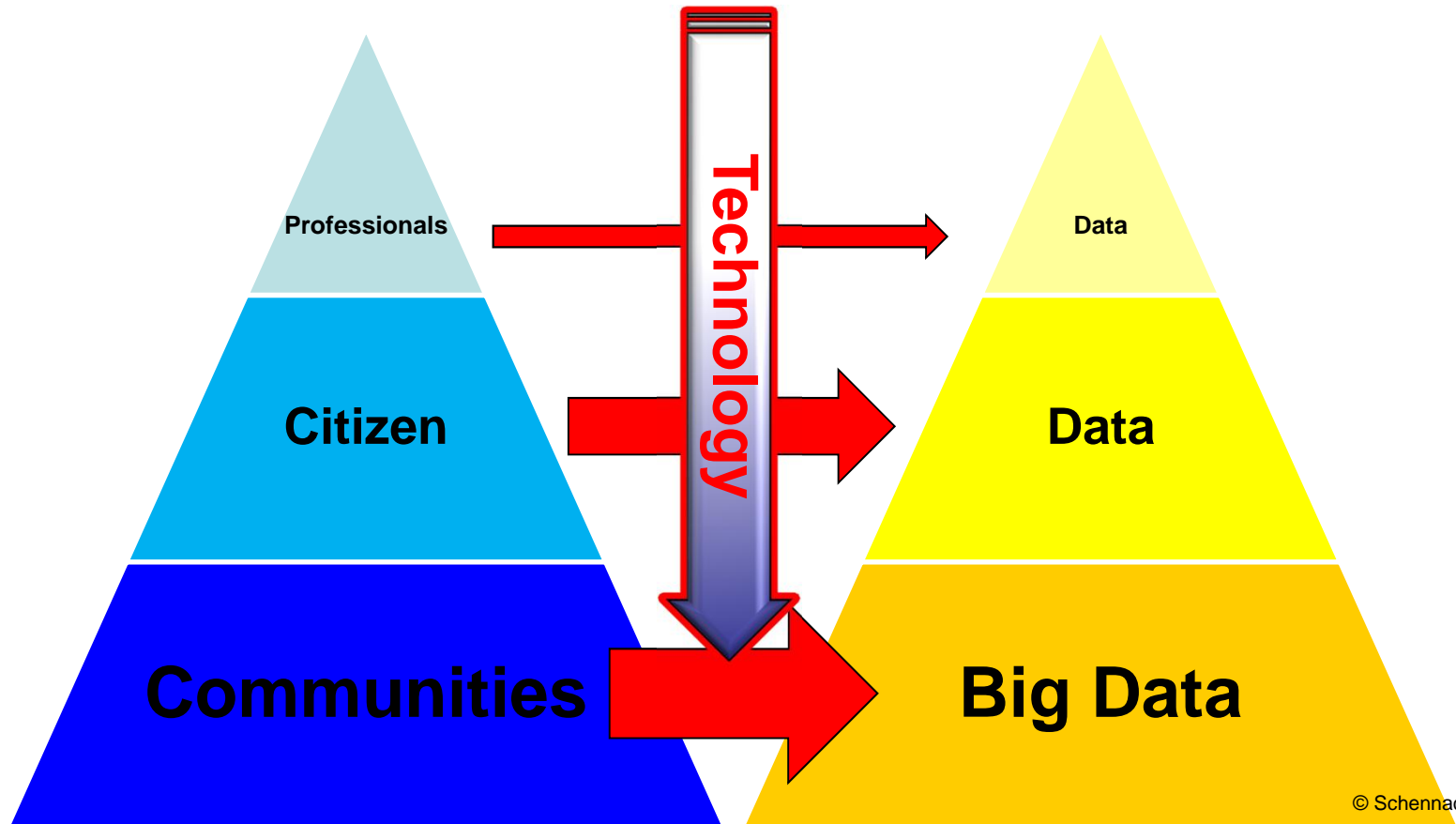


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.....turning into an inverse model



Challenging the models



Some critical questions

- Ø the „Twin world“ (© Nick Land ESRI)
- Ø legal situation vers. augmented reality
- Ø relevance of authentic data
- Ø quality of authentic data (e.g. examples Norway)
- Ø authentic data vers. geographic information
- Ø land registration vers. security of land tenure (role models from US e.a.)
- Ø regulated land registration and real estate markets
- Ø impact on value of land
- Ø are existing models fit-for-people (role models include land owners at a legal level)
- Ø role of the profession (PPP models, e.g. capacity building in SE)

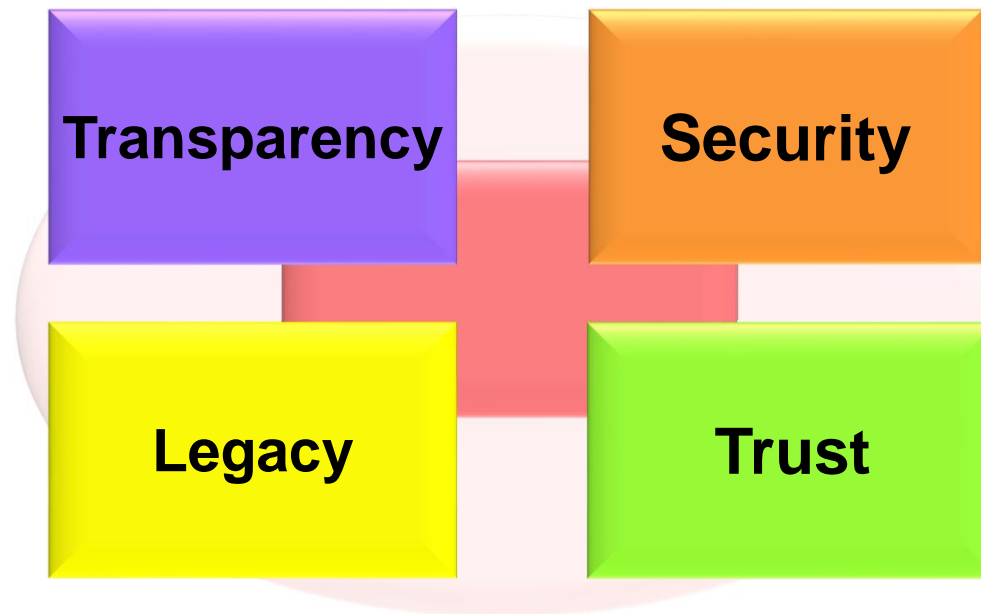
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All about people



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The 4 basic principles



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Back to Cadastre 4.0

- Ø infrastructures and potential of systems for big data mgt.
- Ø self-monitoring systems create **trust** (blockchain)
- Ø flexible processes – defined in moment of request
- Ø **transparent** to users ▶ citizen ▶ land owners
- Ø users and stakeholders intervene directly into the processes
- Ø decentralised steering on demand (authenticity)
- Ø services on demand by users provide **legacy** (cultural variety)
- Ø self optimising processes increase **security** for users
- Ø system finds data which is needed/appropriate from relevant data sources and creates product/service
- Ø datasets know at their creation where they will be integrated

New business models

- Ø communities produce **substitutes**
- Ø society is user **and** producer / **users** equal partners in systems
- Ø open government data vers. open data
- Ø **ownership of data** (citizen, third party, community data....) and structures (hosts, clouds.....)
- Ø financing / self-financing / cost-benefit models
- Ø **shift of power** from public authorities to communities/citizen
- Ø distributed responsibility models
- Ø public / private surveyors take role as facilitator and moderator
- Ø change of paradigm for professionals (qualification, capacity building)
- Ø reach out for other professional groups (GI, IT.....)



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Cadastre 4.0 is a system based on fully automatically processing within a network surrounding of people and devices embedded in technological intelligence

The aim is to get to a self-operating structure built upon intelligent devices and procedures and data collections where the demand is defining the process instead of building upon defined and fixed processes.