



FIG WORKING WEEK 2023

28 May - 1 June 2023 Orlando Florida USA

Protecting
Our World,
Conquering
New Frontiers

Scenario study for future Land Administration

WPLA study

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Megatrends

Define what we do, how we do things and what is possible to do

The Digital Transformation



Globalisation



Urbanisation



Technological Advancement

New Business Ecosystems



Climate Change



Individualisation



Knowledge-based Society



Diversity and Pluralism



Agenda 2030

Expanded role of land authority

- Smart cities
- Integrate planning and building process
- Digital gvrnmt
- Utilisation of UAVs
- 3D/4D and closing the gap between BIM and GIS
- Open data

Requirements for staying relevant

- User-centric but holistic
- Digital trust (digital by default)
- Automation and process improvement
- Interoperability
- Information-oriented
- Authoritative
- Resilience

Background and objectives

- Understand emerging developments expected to shape the future
- Provide LA authorities with a framework based on scenario analysis and used to explore their future and to facilitate national LA strategies
- A dialogue tool (in-country/global) to identify common challenges and opportunities, share best practices for solutions and risk mitigation measures and to improve preparedness for future disruptive changes
- Contribute with relevant thought leadership to the long-term strategic work of the authorities for them to stay relevant

Background and objectives

1. Identify global megatrends and score their relative importance and anticipated impacts on LA within the next 10 years
2. Identify specific drivers/aspects related to the LA domain
3. Define future scenarios
4. Framework report <https://unece.org/info/Housing-and-Land-Management/pub/363124>
 - Trends applied (mega/specific)
 - Scenario descriptions
 - Guiding principles 2030
 - Self-assessment framework
5. Consultations at the WPLA 12th Session 31 May - 1 June 2021

Megatrend analysis

| Megatrend | R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | Average | Ranking |
|---------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|------------|-----------|
| 1. Demographic change | 4 | 3 | 6 | 6 | 3 | 8 | 7 | 2 | 4.9 | 7 |
| 2. Societal disparities | 3 | 2 | 6 | 4 | 6 | 5 | 4 | 3 | 4.1 | 8 |
| 3. Differentiated Lifeworlds | 2 | 2 | 2 | 2 | 8 | 2 | 7 | 6 | 3.9 | 10 |
| 4. The digital transformation | 10 | 10 | 10 | 10 | 10 | 10 | 8 | 10 | 9.8 | 1 |
| 5. Volatile economy | 8 | 6 | 3 | 7 | 8 | 4 | 5 | 3 | 5.5 | 6 |
| 6. Business Ecosystems | 8 | 7 | 8 | 8 | 10 | 4 | 8 | 10 | 7.9 | 3 |
| 7. Anthropogenic Environmental Damage | 5 | 8 | 7 | 7 | 8 | 2 | 8 | 6 | 6.4 | 5 |
| 8. Decentralised environments | 8 | 6 | 5 | 5 | 10 | 6 | 6 | 8 | 6.8 | 4 |
| 9. New political world order | 3 | 5 | 3 | 3 | 3 | 7 | 6 | 2 | 4.0 | 9 |
| 10. Global/regional power shifts | 3 | 5 | 5 | 4 | 2 | - | 4 | 3 | 3.7 | 11 |
| 11. Urbanisation | 7 | 5 | 9 | 8 | 10 | - | 8 | 10 | 8.1 | 2 |
| Average | 5.5 | 5.4 | 5.8 | 5.8 | 7.1 | 5.3 | 6.5 | 5.7 | 5.9 | |

Land administration scenarios

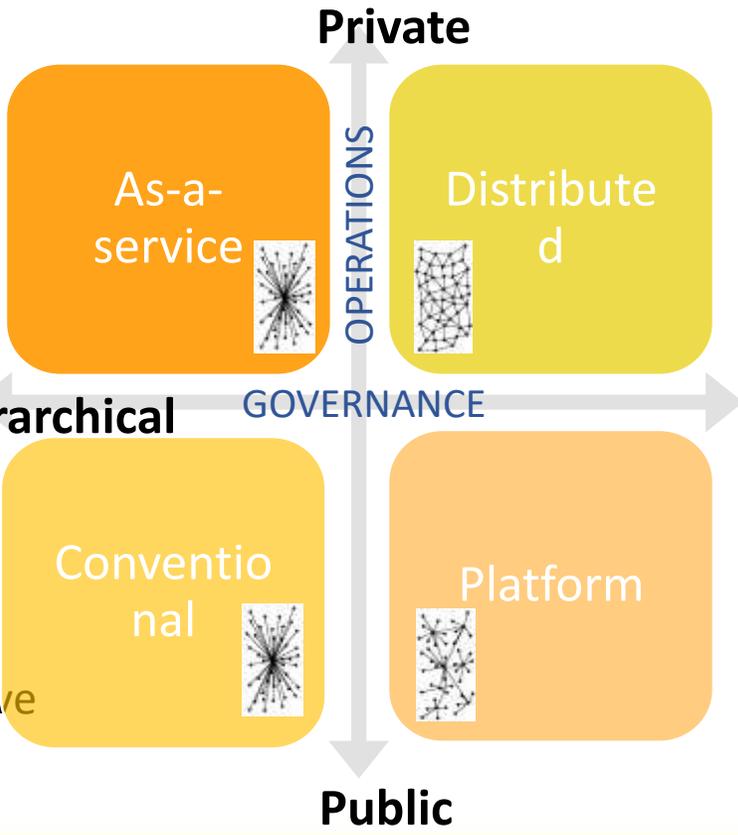
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Defined services
Process-oriented
Regulated
Centralized
Data custodians
PPP arrangements

Traditional/Hierarchical
Centralized, hierarchic
Regulated
Process-oriented
Silo/redundancy
Robust but difficult to evolve
Non-integrated information and services



Multiple actors and data sets
Less or no regulation
Open data
Automated decisions
Distributed value
Crowdsourced
Organic, evolutionary
Interconnected business models

Digitally enabled ecosystem
Integrated gvmt data, products and services
Information-oriented
The once-only-principle
Customer-oriented
Fundamental data sets
Economies of scale

Interactive poll (1 June 2021)

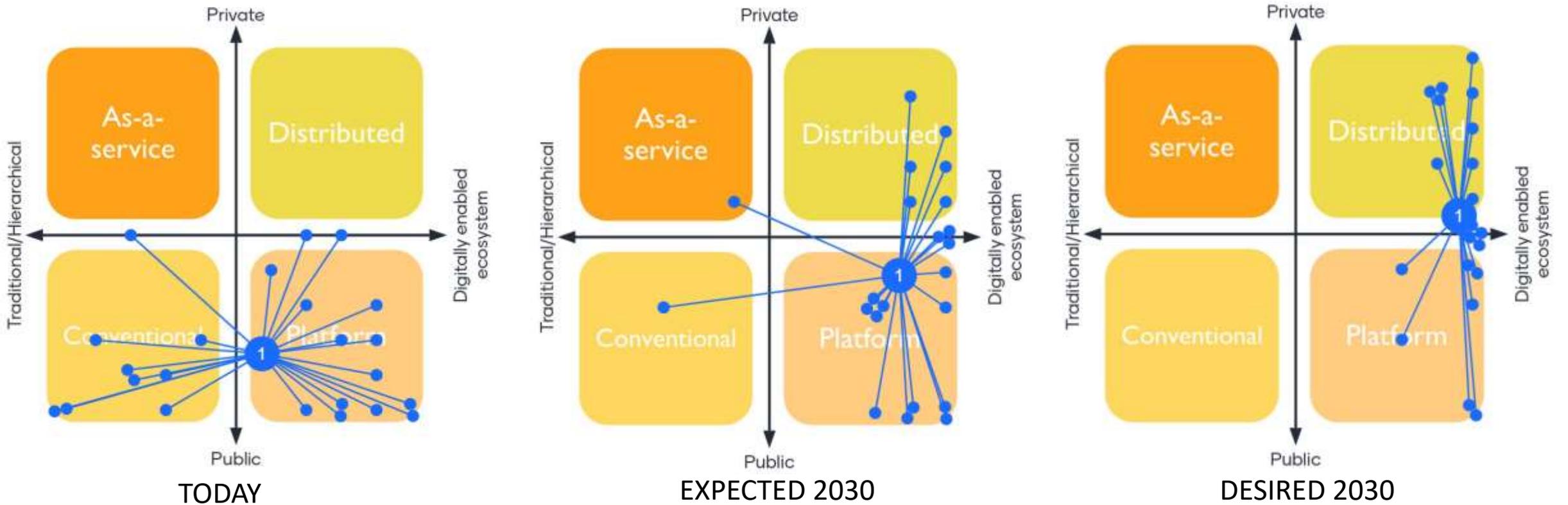




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Strategies of National Mapping and Cadastral Agencies

European experiences

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Background and objectives

- How do European mapping and land administration organisations prepare for the future with their strategies?
- The purpose was to find out about **strategic goals, practices and processes** of these target organizations
- Questions and results were divided in 4 categories:
 - Strategy processes
 - **Strategic goals**
 - Connection between strategy and practice
 - **Drivers of strategy work**

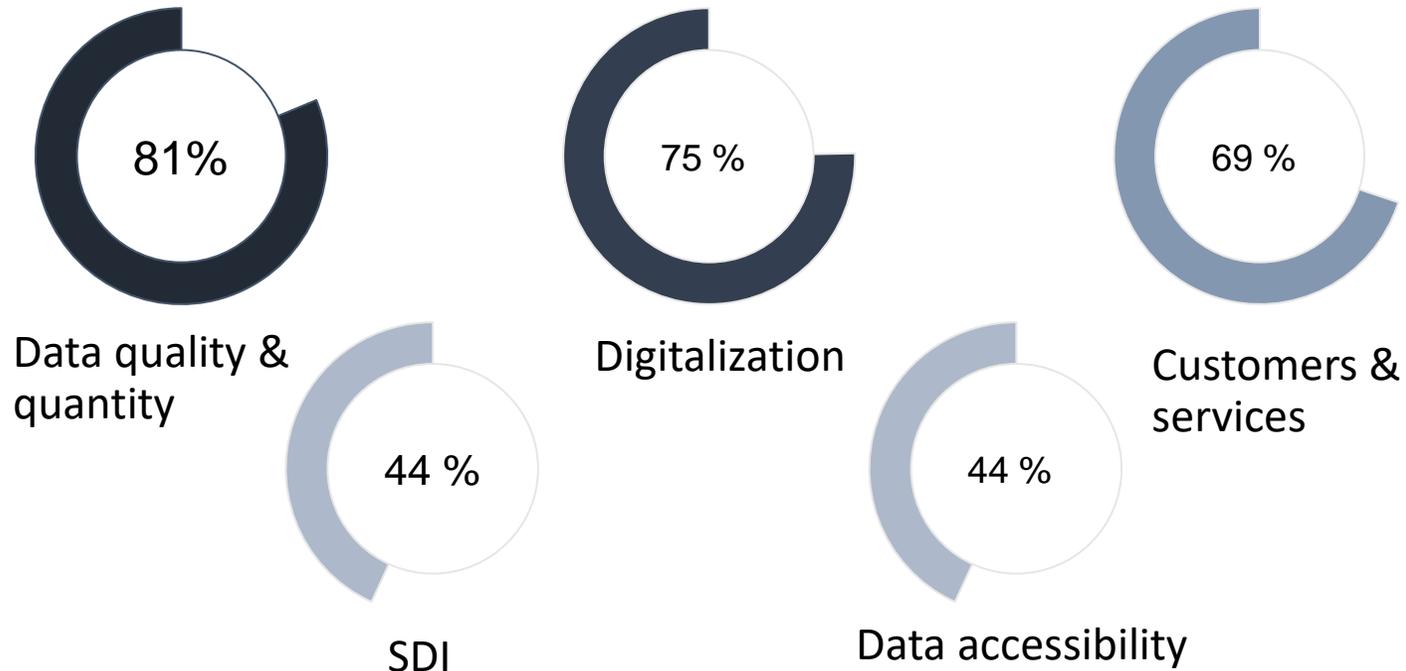
Hämäläinen , E & Krigsholm , P 2022 , ' Exploring the Strategy Goals and Strategy Drivers of National Mapping, Cadastral, and Land Registry Authorities ' , ISPRS International Journal of Geo-Information , vol. 11 , no. 3 , 164 , pp. 1-16 . <https://doi.org/10.3390/ijgi11030164>

Participating organisations

- The questionnaire was sent to 28 organizations, with 18 replies (64% response rate)
- Majority responsible for geospatial activities in land administration (including mapping, cadastral, and land registration activities)

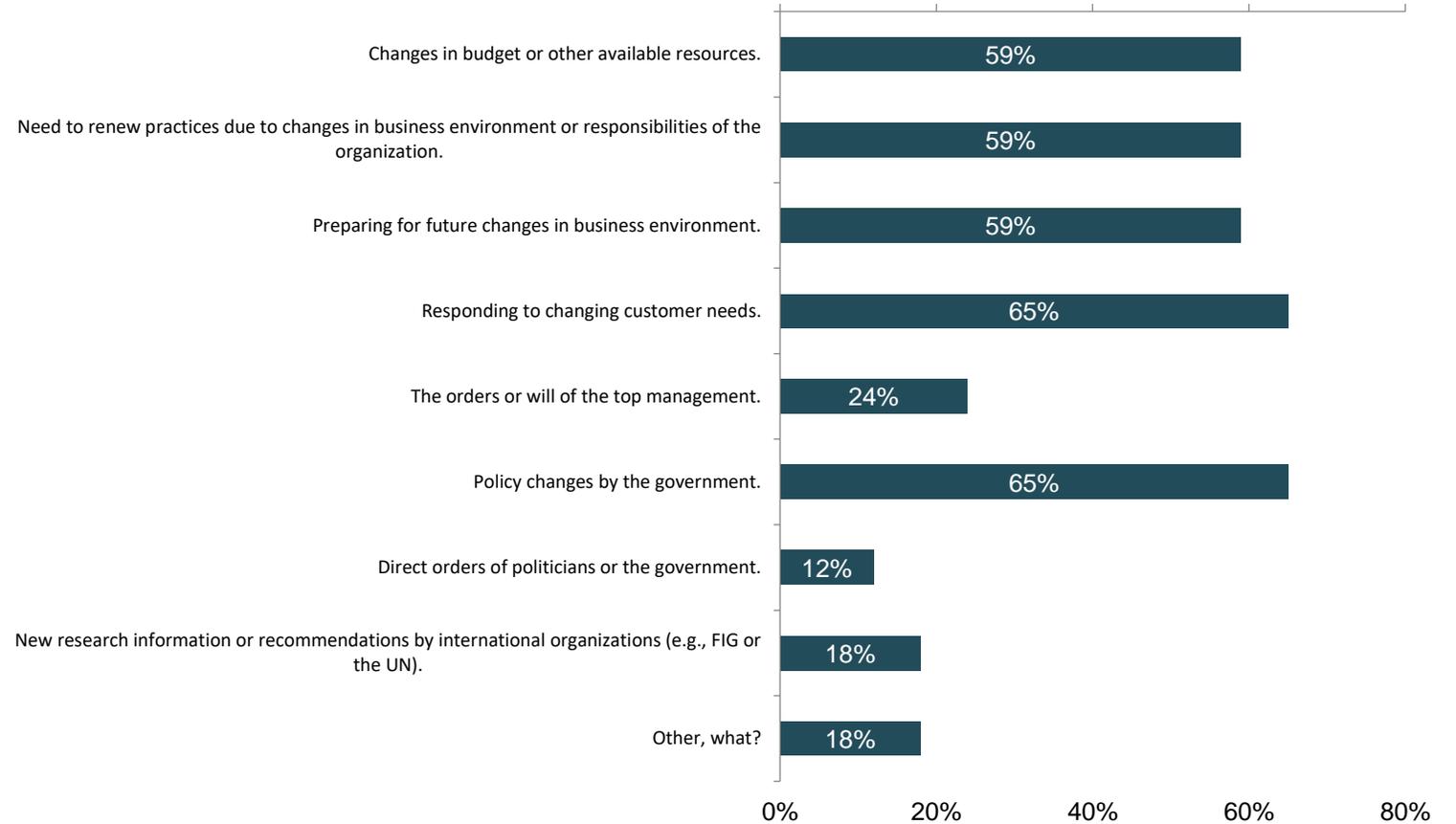
| Country | Agency | Responsibilities | | |
|-----------------|--|------------------|----------|-------------------|
| | | Mapping | Cadastré | Land registration |
| Austria | Federal Office of Metrology and Surveying (BEV) | X | X | |
| Bulgaria | Geodesy, Cartography and cadastre agency | X | X | X |
| Croatia | State Geodetic Administration | X | X | |
| Czech Republic | Czech Office for Surveying, Mapping and Cadastre | X | X | X |
| Denmark | The Danish Agency for Data Supply and Efficiency | X | | |
| Denmark | The Danish Geodata Agency | X | X | X |
| Finland | National Land Survey | X | X | X |
| Germany | Landesamt für Geoinformation und Landesvermessung Niedersachsen (LGLN)* | X | X | |
| Iceland | The National Land Survey of Iceland | X | | |
| Lithuania | State Enterprise Centre of Registers | X | X | X |
| Malta | Malta Land Registry | | | X |
| The Netherlands | Cadastré, Land Registry and Mapping Agency (Kadaster) | X | X | X |
| Poland | Head Office of Geodesy and Cartography | X | X | |
| Portugal | Directorate General for Territory | X | X | |
| Romania | National Agency for Cadastré and Land Registration of Romania | X | X | X |
| Sweden | The Swedish mapping, cadastral and land registration agency (Lantmäteriet) | X | X | X |
| Switzerland | Federal Office of Topography swisstopo | X | X | X |
| Ukraine | The State Service of Ukraine for Geodesy, Cartography and Cadastre | X | X | X |

Most important strategy goals



Strategy drivers

- Policy changes and customer needs were the **most common** drivers
- Changes of the business environment and preparing for future changes were **also important**
- Recommendations from international organizations were **not** common drivers
- The need and will to fulfill the duty of the organization



Conclusions

- Megatrends do influence the operational environment of mapping and land administration organisations -> creates a need for strategic planning
- Choices of organising activities and processes are of key importance to be able to respond to the changes
 - Digitalisation reshapes the processes of the whole society – towards digitally enabled geospatial ecosystem
 - Customer needs are in the core of creating (new) services
 - Cross-sectoral collaboration is needed
 - Striving towards sustainable development
 - Recognizing the pattern of development and making the change
- The whole potential of the geospatial organisations needs to be engaged!



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Stay relevant – prepare for the future!

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