

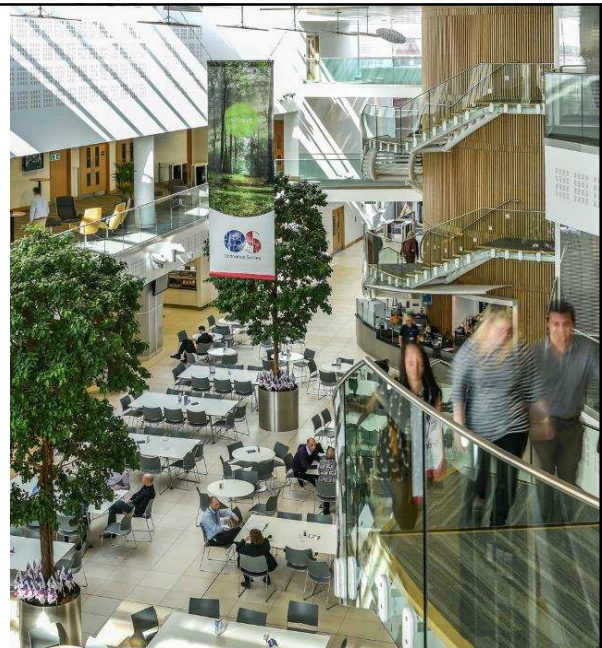
# Fit-For-Future Land Administration: Unlocking the Benefits of Sustainable, Cost-Effective Technologies

Fredrik Zetterquist  
Ordnance Survey

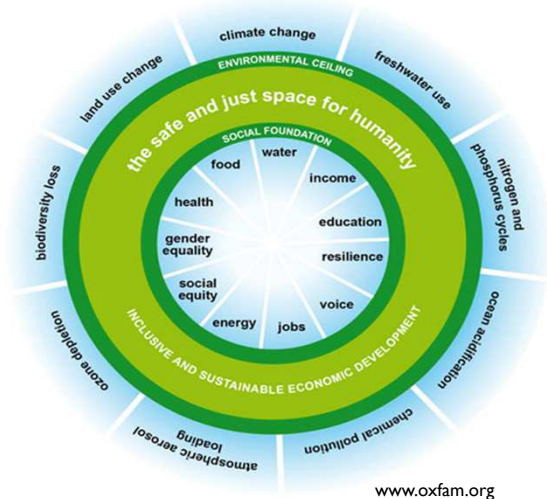


## Agenda

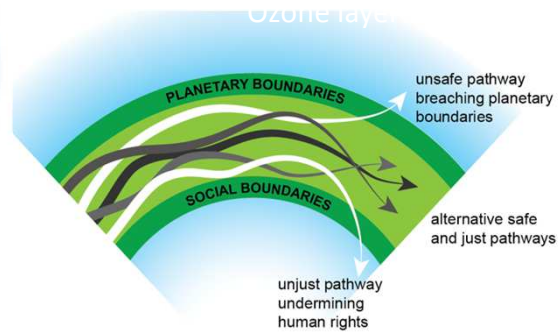
1. Global trends, expectations and constraints
2. Future scenarios
3. Data-driven solutions
4. Evolutionary technology
5. Conclusion



# Development within social and planetary boundaries



## Transformation within boundaries



www.oxfam.org  
Just, Secure, Inclusive, Sustainable



# Megatrends

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

	The digital transformation		Globalization	
		Urbanization		Technological advancement
New business ecosystems		Climate change		Individualization
	Knowledge-based society		Diversity and pluralism	
				Agenda 2030



## 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	



## Feedback comments

### Business ecosystems:

*“Open data and less motivation for citizens to pay for the services. We do not have customers but open data”*

*“Enable new ways for land administration, especially due to platform economy and data integration”*

### Urbanization:

*“Need for better tools for planning, information in 3D/4D. Also increased need for tools to deal with illegal buildings and slums”*

*“Will lead to increased importance of rights, responsibilities and restrictions affecting land, real estate and infrastructures”*



## Feedback comments

### Digital transformation:

*“We are moving into an age where our core business will be delivering ‘digital trust’. Digital networks may become so strong that the land agencies may have no added value anymore if they keep operating in the ‘classical’ way”*

### Differentiated livelihoods:

*“The shift towards a more liberal direction regarding the perception of the relationship between citizens and public institutions result in that the rights and obligations nowadays start from the individual and it is then for the public institutions to respond to the citizens' preferences”*

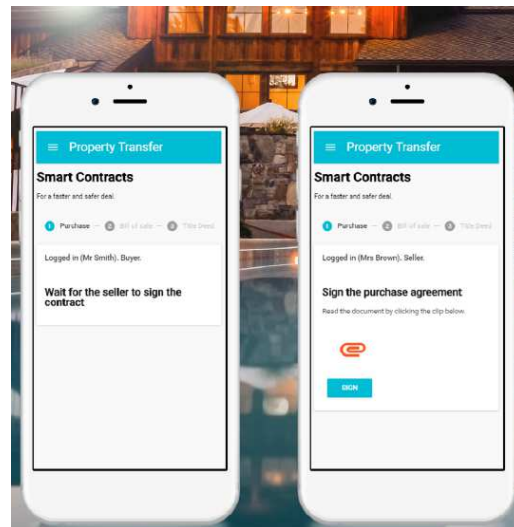
### Decentralized environments:

*“PPP. Authorities need only for “stamps”, private companies' role is increased”*



## + Expectations

- People want to make sound judgements for themselves
- Land information on demand
- Mobile device for property transaction and geospatial data capture
- Origin of data clearly defined
- More advanced RRR
- Legal and environmental data increase to better manage megatrend effects



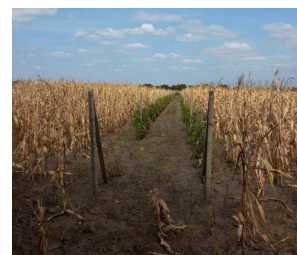
## + Involvement in state priorities

- Housing - 700 000 in 10 yrs
  - Climate change initiatives
  - Smart cities
  - Digital first – speed up planning and building process
  - E-government
  - Framework for national 3D geospatial data
  - Blockchain technology
  - Standardized geospatial processes with local gvmt
  - Update national Geospatial Strategy focusing on solving future challenges in the society
  - Licensing of dissemination of information from UAVs
  - 3D/4D and closing the gap between BIM and GIS
  - Open data - consequence analysis
- Increased interaction
  - More complex decision-making processes
  - Make necessary priorities
  - Control processes
  - Designate accountability
  - Increased business intelligence and international collaboration




## + Constraints

- Unsustainable custom-made systems
- Human resources constraints
- Financial constraints
- No holistic policy
- Limited political will
- Weak performance of services
- Siloed data and institutional overlaps/competition
- Low data quality and coverage
- Legal barriers
- Paper-based systems
- Exclusion from formal system



# Data-centric organisations - 'the world's most valuable resource is no longer oil, but data'


**Data integration** – geospatial + RRR + thematic data + key registers  
**Data-driven approach** to facilitate decisions supporting sustainable development



The Economist  
 Theresa May v Brussels  
 Ten years on: banking after the crisis  
 South Korea's unfinished revolution  
 Biology, but without the cells


**The world's most valuable resource**

Data and the new rules of competition

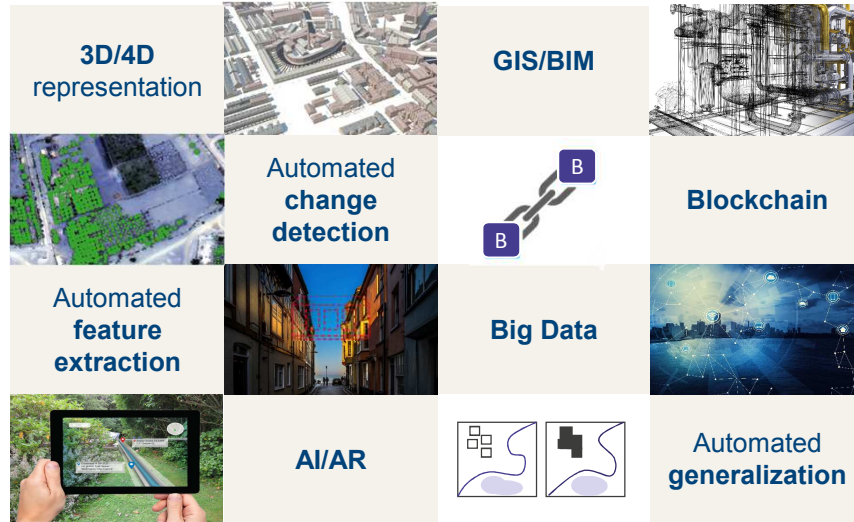


## Unlocking the data – integration across government, business and citizens

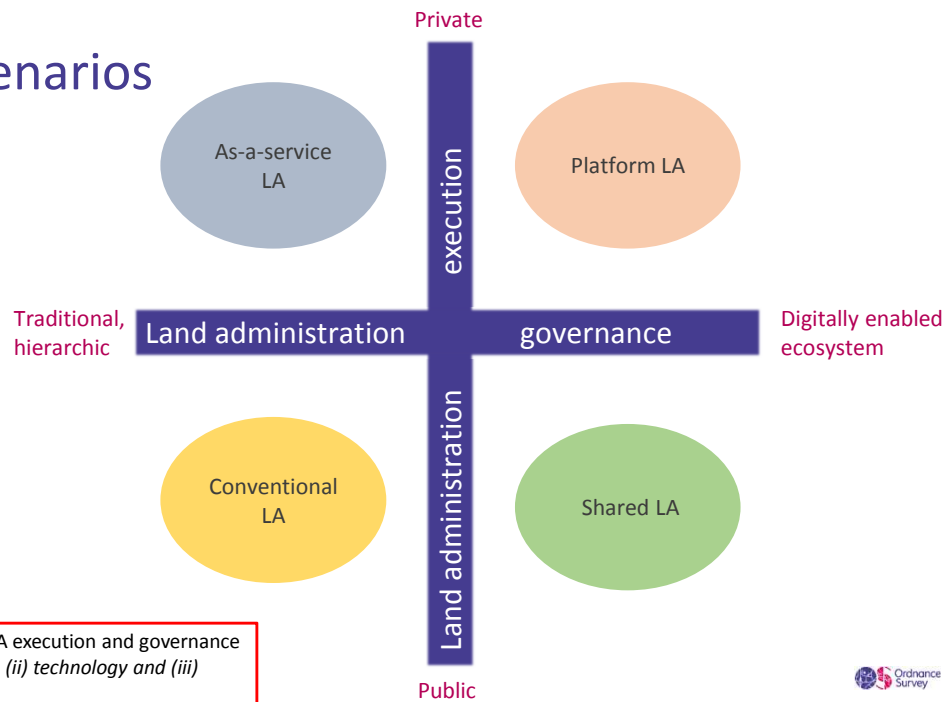
Enables:	Government benefit:	Business benefit:	Citizen benefit:
Faster property transactions	Thriving economy	Increased profitability	Improved citizen satisfaction
Simplified property searches	Improves property asset management	Confident decision making	Greater accessibility
Greater breadth of property information	Comprehensive decision-making	Lower risk decision making	Lower risk decision making
Single version of the truth across multiple agencies	Greater national resilience	Efficient working processes	Improved user experience
Transparency of information	Citizen confidence in Government	Confident decision making	Greater trust in Government



## Built-in evolution: scalable solutions and digital trust



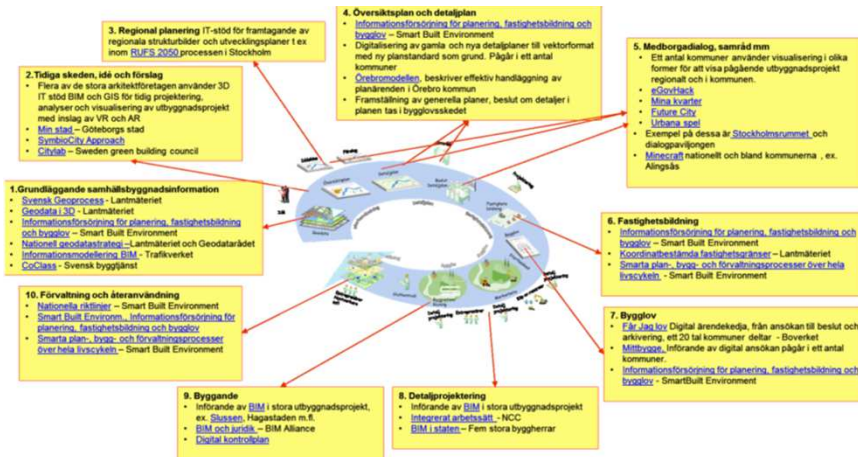
## Future scenarios



Three *aspects* from which LA execution and governance should be studied – (i) data, (ii) technology and (iii) functions/processes



# Platform technology for land development and building process



## Unlocking the benefits of new technology and aaS


Solution Attributes		Customer Benefits	
<b>Cloud-based</b>	<ul style="list-style-type: none"> <li>Scalable architecture</li> <li>Ubiquitous access</li> <li>Flexibility in hosting</li> </ul>	<ul style="list-style-type: none"> <li>Data sharing and collaboration improvements</li> <li>Alignment with new business models and ecosystems</li> <li>Ability to expand storage and processing capability</li> <li>Data security</li> </ul>	






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<b>Modular architecture</b>	<ul style="list-style-type: none"> <li>Embedded capabilities</li> <li>Highly configurable</li> <li>Global/shared platform</li> <li>Accept flexibility in data source</li> <li>Capable of swift evolution</li> <li>Schema-driven approach which will natively support multiple data structure epochs</li> </ul>	<ul style="list-style-type: none"> <li>Increased ability to deal with change – swift evolution</li> <li>Allow for differing levels of data completeness and quality</li> <li>Easily configurable workflow and business rules</li> <li>Enable content transformation and easily adapt to process and legislative changes</li> <li>Quickly absorb new types of data (e.g. 2D -&gt; 3D)</li> <li>Reduced upgrade costs and re-engineering work</li> <li>Resilient to architecture erosion</li> </ul>



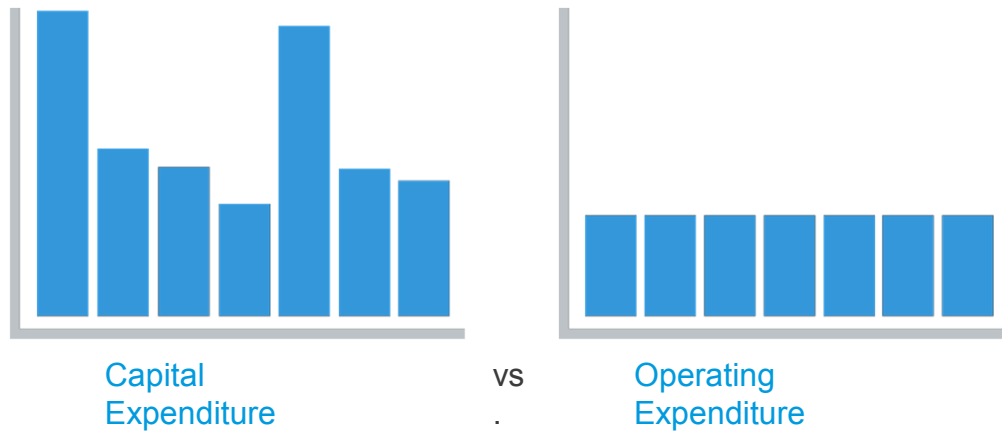
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<b>Configurable as-a- service model, leverage domain expertise</b>		<ul style="list-style-type: none"> <li>De-risk capacity constraints</li> <li>Inherit new functionality as technology evolves</li> <li>Reduced up-front investment and maintenance cost/time</li> <li>Faster time-to-deployment</li> </ul>



## Reducing the need for upfront cost

plus levelling the cost of technological innovation over time.



## Sustainable, trustworthy land administration



Thank you for your  
attention !

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