Governance for migrating to a smart world
Utopia

2016
Leuven, 500th Anniversary

Thomas More - *Utopia*

*De Optimo Reipublicae Statu deque Nova Insula Utopia*

“The Best State of a Republic on the New Island Utopia”

Published in Leuven in 1516
Utopia

An imagined place or state of things in which everything is perfect (Oxford Dictionaries)

An imaginary place in which the government, laws, and social conditions are perfect (Merriam Webster)

Perfect society, which is ultimately unreachable (More, 2016)
Smart world?

Blade Runner, Ridley Scott - LA 2019
Smart world

The converging of the real and digital worlds
Bringing sustainability and lots of new opportunities

Smart World ≠ Utopia?  
Imaginary place?
No – It is our world (planet)

Perfect society?
Not only, it is also about our beautiful Earth

Unreachable?
No, it might be feasible / realistic

Is Smart World perfect?
Up to you to decide
Smart world keywords

Connected
Innovative technologies
Digital
Interoperability
Sensors
Smart cities
Big Data
Interactive
Performance
Quality of life
Efficiency
Service delivery
Objective Presentation

Provide governance recommendations for migrating to a smart world

- Founding technologies for the smart world
- Governance
- Good Governance - Migrating
- Governance recommendations for a smart world
- Summary

Propositions
Founding technologies

- Internet
- Internet of Things – Internet of Everything
- Cloud computing
- Big Data
- Social media
Internet
Internet of Things

- 4.9 billion connected things (2016)
- By 2020, the number of Internet-connected things even exceed 50 billion
- By 2020, a quarter of a billion vehicles connected to the Internet
- Cars driving on their own – Google’s self-driving cars currently average about 10,000 autonomous miles per week
- Internet-connected clothing. 10.2 million units of smart clothing will ship by 2020, compared to a meagre 140K units in 2013
- Total economic impact of up to $11 trillion by 2025
Clouds

- Cloud computing will cross the $270 billion mark by 2020
- 36% of all data to be stored in the cloud - 7% in 2013
- 90% of Microsoft's R&D budget is being used to improve cloud technology and security services
- US Federal Government saved $5.5 Billion per year by shifting to Cloud Services
Big Data

- 1.7 MB new information created every second for every human (2020)
- Growth of accumulated digital universe of data from 4.4 zettabytes (2016) to around 44 zettabytes (2020)
- 40,000 search queries every second (on Google alone)
- Healthcare savings by big data as much as $300 billion a year
- US White House investment more than $200 million in big data projects
- Less than 0.5% of all data is ever analysed and used
Social Media

- 2.1 billion people have social media accounts
- 1.4 billion Facebook users (47% of all Internet users!)
- 4.5 billion likes are generated daily
- Twitter has 284 million active users
- 500 million tweets per day
- 600 million users on Whatsapp
- Earning Social networks $8.3 billion from advertising
Governance

The way that organizations or countries are managed at the highest level, and the systems for doing this (Cambridge English Dictionary)

The traditions and institutions by which authority is exercised (UNDP, World Bank)

The structures, policies, actors and institutions by which an entity is managed through decisions (Berhanu, 2015)
Good governance (- Migrating)

Criteria for good governance:
- Performance
- Responsibility
- Accountability
- Transparency
- Rights and duties
- Policies for guaranteeing results

The effects of good government
The Allegory of good and bad government
Ambrogio Lorenzetti (1339)
Siena
Levels of Good governance

- Corporate Governance: GI Agencies / GI Users / Producers
- Process Governance
- Holding Governance: Territorial/Functional
Governance recommendations for a smart world

1. Balancing governance approaches
2. Provide right answers to right questions: demand driven supply
3. Managing data clouds with individuals
4. Focus on Solutions to Solutions
5. Invest in Interdisciplinarity
Balancing Governance approaches

Hierarchy

direct control (strict ex ante, structural and financial control)
<-> quasi-automatic coordination between agencies and organizations

public sector
Balancing Governance approaches

Markets

- indirect control (mainly ex post control)
- 'horizontal' 'spontaneous' coordination between agencies and organizations
- market creation&regulation and by government

market

public sector
Balancing Governance approaches

**Network**

Coordination = network management + indirect control (agency A - N) + self-coordination

- central government
- agency A
- agency B
- organization C
- organization D

indirect control (mainly ex post control)

'horizontal' 'spontaneous' coordination between agencies and organizations

network management by government

network

public sector
In order to develop a successful Spatial Data Infrastructure, there is a strong need for:

1. Clear rules, laws, and working structures  
   - 24%
2. Competition and market  
   - 3%
3. Profound cooperation  
   - 73%
Proposition 1

IN ORDER TO SUCCESSFULLY DEVELOP A SMART WORLD, THERE IS A STRONG NEED FOR:

1. CLEAR RULES, LAWS, AND WORKING STRUCTURES

2. COMPETITION AND MARKET

3. PROFOUND COOPERATION
Balancing Governance approaches

Three systems:
Neo-Weberian System -> Hierarchy
New Public Management -> Market
New Public Governance -> Networks

Good Governance Recommendation 1
Aim for a well-balanced implementation of the 3 different governance approaches -> Sustainability
Right answers to Right questions

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<th>DEMAND</th>
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<tbody>
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# Right answers to Right questions

<table>
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<tr>
<th>GeoData</th>
<th>No Demand</th>
<th>Demand</th>
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<tbody>
<tr>
<td>No Supply / Offer</td>
<td>1. Ignorance</td>
<td>3. User-Frustration</td>
</tr>
<tr>
<td>Supply / Offer</td>
<td>2. Geo-Provider-Frustration</td>
<td>4. Degrees of Matching Satisfaction</td>
</tr>
</tbody>
</table>
Right answers to Right questions

Right answers to wrong questions:
- Supply driven approach to Demand
- Frustration zones

Good Governance Recommendation 2
- Demand driven approach to Supply
- Strategies to reduce frustrations
- Strategies to increase matching satisfaction
Managing data clouds with individuals

Organisations with Databases

Databases with Organisations

Public Governance Institute
Managing data clouds with individuals
Managing data clouds with individuals

**Public Cloud**
- Limited core data and services
- Key registries
- Public use
- Facilitate Common clouds
- Numerous stakeholders

**Common Cloud**
- Community driven
- Membership (Governance) rules
- Transport, Education, Smart Cities, 3D Cadastres
Managing data clouds with individuals

**Meta Governance Cloud**
Regulating all clouds + interactions with identification, authentication, communication, translation (semantic operability) and security functionalities

Including sub-clouds
- Security
- Rule-Setting
- Enforcement
- Oversight
Managing data clouds with individuals

Good governance recommendation 3
- Managing data clouds with individuals (+ organisations)
- Invest in key registries
- Invest in Cloud Governance mechanisms
Focus on solutions to solutions

Trajectories of Reforming Governance

**PROBLEM**
Perceived lack of:
- Performance
- Responsibility
- Accountability
- Transparency
- Control
- Policy capacity to guarantee results
- ...

**SOLUTION**
- Creation of agencies
- More autonomy
- More specialisation
- Increase of single policy capacities
- Performance Measurement Systems (PMS)
- ...

(1)
Focus on solutions to solutions

From Solutions to Problems

Solutions create new problems:
1. Wrong solutions for right problems
2. Right solutions but bad implementation
3. Right solutions, correct implementation, but solutions disconnect from problems
Focus on solutions to solutions

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(1)

(2)

**SOLUTION = PROBLEM**
- Dysfunctional autonomy
- Centrifugal agencies
- Suboptimal focus on agency outputs, not on policy outcomes
- Considerable transaction costs
- Disconnected single policy capacities
- Perversions of PMS: "Gaming", ...

C
Focus on solutions to solutions

PROBLEM

Perceived lack of:
- Performance
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A

SOLUTION

- Creation of agencies
- More autonomy
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- ...

(1) B

NEW SOLUTION

- New / renewed co-ordination
  - HTM
  - MTM
  - NTM
- Guarantee effective policy capacity
- Audit Capacity increased

D

SOLUTION = PROBLEM

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C
Focus on solutions to solutions

Good governance recommendation 4

- Focus from solutions to solutions
- Be aware of the Problem -> Solution -> Problem –> Solution process
- Focus on the right and relevant solutions together with stakeholders
- Focus on the correct implementation
Invest in Interdisciplinarity

From sequential to parallel/simultaneous dynamics

**Sequential**
Technology -> Legislation -> Finance -> Organisation -> Service delivery

**Parallel/Simultaneous**
Technology
Legal Frameworks
Finances: Financing and Fees
Organisation/
Service delivery
Invest in Interdisciplinarity

Simultaneous Logic

SET-UP

Technology – geo-standards
Legislation
Licensing & Funding
Organisation
Coordination & cooperation

PERFORMANCE

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Invest in Interdisciplinarity

**Recommendation 5**
- Establish multidisciplinary task force(s)
- Operate simultaneously, complementary and not sequentially
- Invest in Semantic interoperability
Summary

Governance recommendations for migrating to a smart world

1. Balancing governance approaches
2. Provide right answers to right questions: demand driven supply
3. Managing data clouds with individuals
4. Focus on Solutions to Solutions
5. Invest in Interdisciplinarity
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Proposition 1

IN ORDER TO SUCCESSFULLY DEVELOP A SMART WORLD, THERE IS A STRONG NEED FOR:

1. CLEAR RULES, LAWS, AND WORKING STRUCTURES
2. COMPETITION AND MARKET
3. PROFOUND COOPERATION
Proposition 2

THE MAIN BENEFICIARY OF A SMART WORLD IS:

1. PUBLIC SECTOR
2. PRIVATE SECTOR
3. ACADEMIA
4. NGOs
5. CITIZENS
Proposition 3

THE MAIN BOTTLENECK FOR THE DEVELOPMENT OF A SMART WORLD IS:

1. TECHNOLOGICAL
2. POLITICAL
3. LEGAL
4. FINANCIAL
5. HUMAN COMPETENCES
6. CULTURAL