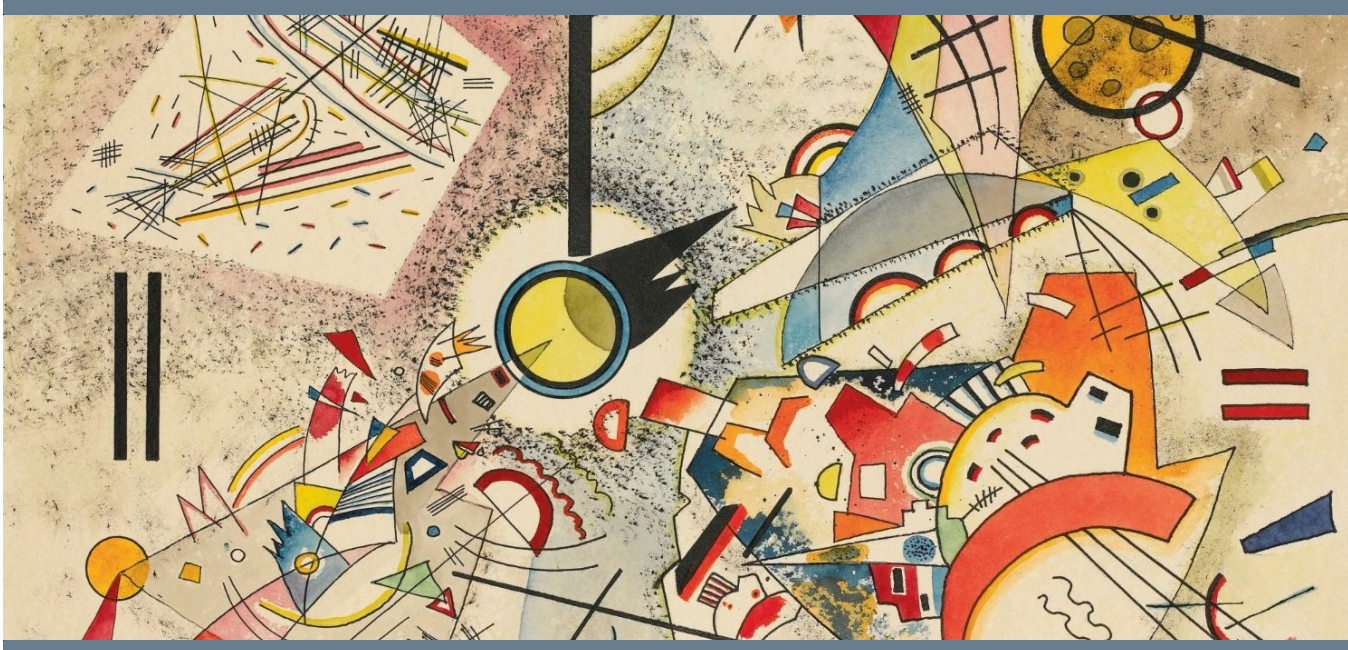




Berner Fachhochschule
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Bern University of Applied Sciences



Towards a National Data Infrastructure

First Insights Regarding Its Design and Its Governance

Opendata.ch Conference, 13 June 2016, Lausanne
Beat Estermann, Marianne Fraefel, Prof. Dr. Alessia Neuroni

Bern University of Applied Sciences | E-Government Institute

How to Deal with Risks and Opportunities Related to Big Data?



Bundesrätin Doris Leuthard anlässlich der Infrastrukturtagung in Zürich, 6. November 2015 (Foto: Thomas Selzam, Berner Fachhochschule)

Strategic Foundations

▶ **OGD Strategy for Switzerland 2014-2018 (April 2014)**

- ▶ Release of official data (according to OGD principles)
- ▶ Coordinated publication and provision of official data
- ▶ Establishing an open-data culture

▶ **“Digital” Switzerland Strategy (April 2016)**

- ▶ A coherent and future-oriented data policy in Switzerland
- ▶ A national data infrastructure in Switzerland

“In the interest of good data governance, the provision of data as an infrastructure resource for free use shall be improved. Like the existing geodata infrastructure, the construction of a national data infrastructure shall help the open data principle permeate the entire administration, the research sector and parts of the private sector.”

- ▶ Swiss citizens have control over their own data

“To implement the fundamental right of an individual to exercise self-determination with regard to information and in order to counter abuses and disparities, it is necessary to revise data protection laws. It is also necessary, in close cooperation with all data processing bodies, to create mechanisms and provide services which give individuals maximum control to allow or block personal and other pertinent data relating to the individual concerned for use by third parties.”

Project « Governance Framework for a National Data Infrastructure in Switzerland »

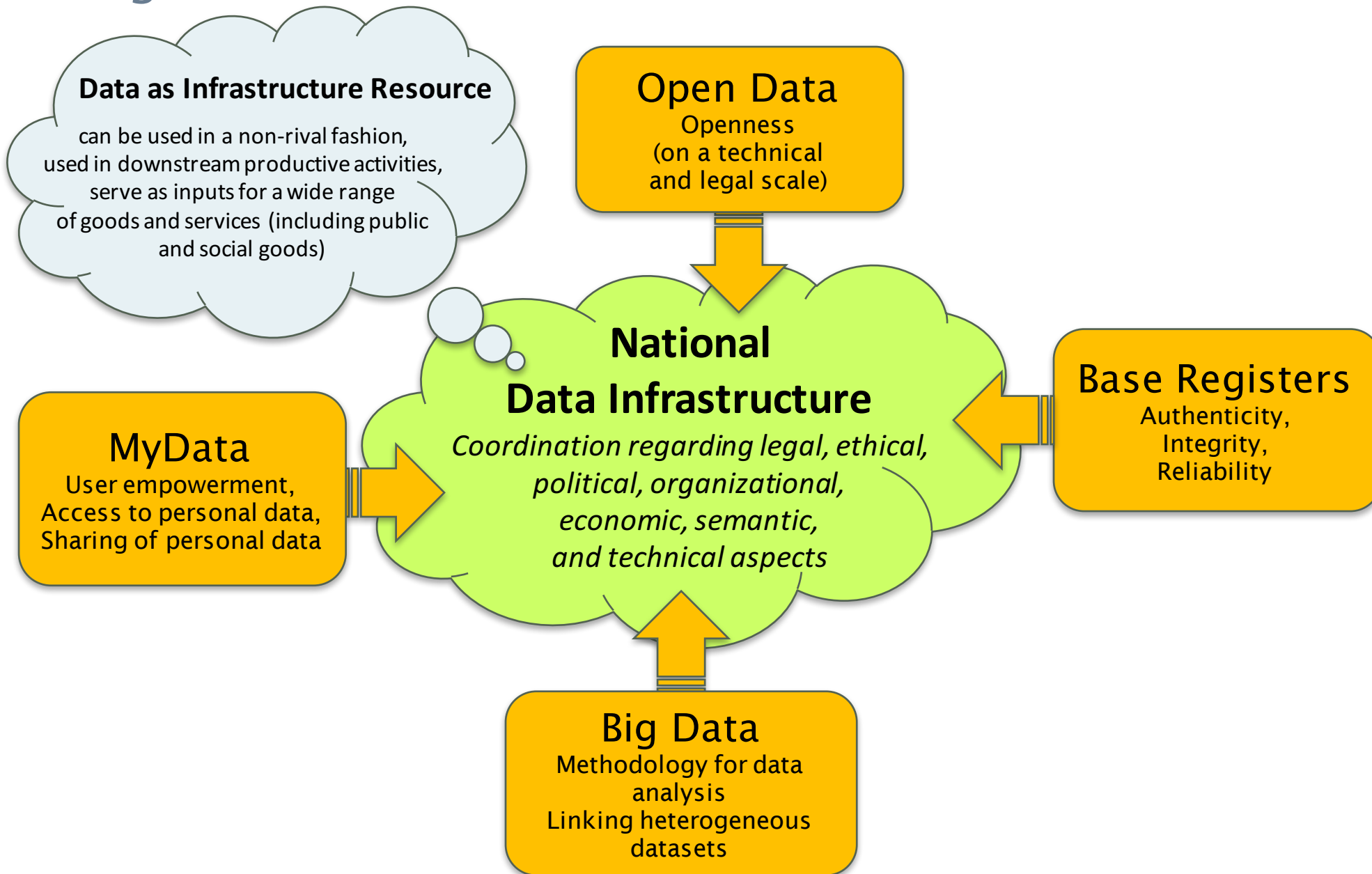
Research Questions:

- ▶ How should a national data infrastructure in Switzerland look like?
- ▶ How should inter-organizational collaboration and participation be organized in view of the establishment and the maintenance of a national data infrastructure?

Methodological Approach:

- ▶ **Preliminary Project (ongoing)**
Cooperation Bern UAS/odata.ch, funded by Hasler Stiftung
 - ▶ Analysis of experiences in other countries
 - ▶ Interviews with representatives from various stakeholder groups (ca. 20 expert interviews)
- ▶ **Project submission within NRP75 «Big Data» (June 2016)**
 - ▶ Prof. Dr. Alessia C. Neuron (Berner Fachhochschule)
 - ▶ Prof. Dr. Philippe Cudré-Mauroux (Université de Fribourg)
 - ▶ Prof. Dr. Daniel Hürlimann (Universität St.Gallen)

Design of a National Data Infrastructure



National Data Infrastructure: Tentative Definition

- ▶ A NDI is a nationwide (distributed) technical infrastructure (portals, platforms, services etc.) that allows the access to and exchange of data on the basis of predefined rules.
 - ▶ purpose: support data-driven value creation / help realize the potential value of existing data
 - ▶ **no monolithic block**
 - ▶ **does not exist in isolation**
 - ▶ provision is at least in part of public responsibility

What data does it comprise?

- ▶ Government data: YES, they are **at the core!**
- ▶ Other data: YES, but which data **exactly requires further clarification**

Purpose of a National Data Infrastructure

- ▶ Efficiency gains
(access to more data, standardized data, inter-organizational exchange of data, and shared infrastructures)
- ▶ Better services for users
(new or improved services thanks to new insights or better integration of information across organizational boundaries)
- ▶ Improved image of government agencies and public enterprises
- ▶ Reduced costs related to data acquisition

For several interview partners the **purpose of a national data infrastructure still needs clarification**, particularly from the point of view of private companies.

Process of Creating a National Data Infrastructure

- ▶ We need a step-by-step process combining a bottom-up and a top-down approach:
 - ▶ **Bottom-up:** publish data; involve citizens and private companies; develop use cases
 - ▶ **Top-down:** strategic framework; political decisions
 - ▶ The two approaches need to be synchronized; civil society needs to play the role of a **mediator**.

Key Stakeholder Groups


Stakeholder Group	Role
Politics	Create the necessary framework conditions Issue a mandate to the public authorities
Public Administration	Provide data Foster the debate, play a coordinating role Contribute to the setup of the technical infrastructure
Public Enterprises	<i>Needs clarification (Contribute to the setup of the technical infrastructure, provide data, re-use data)</i>
Private Enterprises	<i>Needs clarification</i>
Civil Society	Promote the networking and the dialogue between different stakeholders
Universities	Provide data, Provide infrastructure components

Need for Coordination (1 / 2)

Dimension	Areas Needing Coordination
Technical	<p>Basic infrastructure (for the storage, transport, and processing of data)</p> <p>Infrastructure components: data portals, platforms, interfaces for services</p> <p>Identity and Access Management</p> <p>Functionalities related to knowledge management</p>
Semantic	<p>Shared ontologies</p> <p>Metadata</p>
Organizational	<p>Access regime (open vs. club model; private data)</p> <p>Data-lifecycle management</p> <p>Processes (data publication, data use etc.)</p> <p>Knowledge management, sharing of know how, support</p>
Economic	<p>Funding for data provision/basic investment</p> <p>Business models for data enhancement</p> <p>Competitive situation of public enterprises</p> <p>Monetarization of data (as an incentive for their provision)</p>

Need for Coordination (2/2)

Dimension	Areas Needing Coordination
Legal	<p>Regulations regarding data protection and data security</p> <p>Regulations regarding the use of government data (fee system; usage restrictions, e.g. in analogy to copyleft)</p> <p>Regulations regarding data provision (tasks and responsibilities, liability issues)</p> <p>Regulation of the use of personal data</p>
Political	<p>Legal foundations / legal mandate (Clarification of government agencies' responsibilities)</p> <p>Coordination (across sectors and federal levels)</p>
Ethical	<p>Norms regarding the use of data</p>



Thank You for Your Attention!

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Wassily Kandinsky (1866-1944) without title (1923), Public Domain