Exploration and Exploitation: Toward a Theory of Knowledge Sharing in Digital Government Projects

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Das wirklich Harte an Reformen ist das Weiche. (The really hard part of reforms is the soft part.)

- Moritz Leuenberger, Swiss Federal Councillor
Knowledge sharing processes are a central feature of the functioning of government.

This has become even more evident with the onset of digital government (DG) initiatives, as the latter rely on cross-agency collaboration.

- Individuals with differing skill sets and from different organizational units work on a common task in a network.
- With multiple agencies and multidisciplinary knowledge coming together, it is necessary to combine and reconnect the required knowledge.

Two task dimensions of knowledge sharing processes and content in DG projects (DGPs):

- Conception / Implementation of project
- Exploration / Exploitation of knowledge
Research questions

- How is knowledge shared in DG projects?
  - What are the *modes and influencing factors* of knowledge sharing in DGPs?
  - What are the predominant *coordination mechanisms* for knowledge sharing in DGPs?
Social networks – functional subdivision

DGP 1

DGP 2

DGP 3

DGP 4
Toward a theory of knowledge sharing in DGPs

- Exploration
  - Conception
    - Sparse networks
    - Weak ties
  - Implementation
    - Collaboration

- Exploitation
  - Coordination, control
    - Dense groups
    - Strong ties
The implementation of DG requires a balanced mix of exploration and exploitation of knowledge, where

- **Exploration** is more important in the conceptual phase, and
- **Exploitation** dominates the implementation phase

DGPs should rely on sparse networks during the **conceptual** phase of the project, and employ teams or tightly-bound groups when the project moves towards **implementation**
Appendix
How is knowledge shared in DGPs?

- What are the objectives, modes, and influencing factors of knowledge sharing in DGPs?
- What role does the cultural context of DGPs play in their knowledge processes?
- What are the predominant coordination mechanisms for knowledge sharing in DGPs?

- Hierarchies: What roles do standardization, specialization, and authority play in DGPs? How does centralized/decentralized structure affect knowledge sharing in DGPs?
- Networks: What are the structure and content of ties in DGPs? How do they affect knowledge sharing in DGPs?
- Groups: What are the functional, cognitive, and structural interdependencies in DGP groups?
**Conceptual framework**

**Structure**
- Formal coordination mechanisms
e.g., hierarchy, routines
- Informal coordination mechanisms
e.g. social networks

**Interaction**
- Functional interdependencies
- Structural interdependencies
- Cognitive interdependencies

**Content**
- Knowledge sharing processes in DGPs
- Exploratory case study design
- Grounded theory method
- Sampling parameters for DGPs:
  - State-level government agencies in economically advanced settings with comparable jurisdictions
  - A clearly identifiable digital government project
  - Two different countries (Switzerland and the United States of America)
  - Cases in different stages of their project
## Research setting: Case overview

<table>
<thead>
<tr>
<th>Case</th>
<th>Interviews</th>
<th>Location</th>
<th>Project start</th>
<th>Portal launch</th>
<th>Description of group</th>
<th>Status (2002)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DGP 1</td>
<td>6</td>
<td>CH</td>
<td>2001</td>
<td>2003 (exp.)</td>
<td>Loosely connected project members</td>
<td>Expanding (conception)</td>
</tr>
<tr>
<td>DGP 2</td>
<td>5</td>
<td>CH</td>
<td>2000</td>
<td>2003 (exp.)</td>
<td>Core team of five</td>
<td>Ongoing (implementation)</td>
</tr>
<tr>
<td>DGP 3</td>
<td>8</td>
<td>US</td>
<td>2000</td>
<td>2002</td>
<td>Core team of six</td>
<td>Ongoing (implementation)</td>
</tr>
<tr>
<td>DGP 4</td>
<td>10</td>
<td>US</td>
<td>1998</td>
<td>2000</td>
<td>Members of project group part of closely-knit subgroups</td>
<td>Established (running)</td>
</tr>
</tbody>
</table>
Social networks – density of ties

DGP 1

DGP 2

DGP 3

DGP 4
Exploration

Conception
- Loose structured
- Stakeholders’ inputs
- Sparse networks
- Weak ties
- Exchange with other agencies

Implementation
- Loose structured
- Trial and error
- Integration, aggregation
- Meetings

Exploitation

Vision

- Loose structured
- Stakeholders’ inputs
- Coordination, control
- Coordination, control
- Documents and databases

Cooperation

- Dense groups
- Strong ties
- Imitation

Roadmap
- Steering committee
Implications for research and practice

- **Research:**
  - Applies knowledge sharing and organizational learning theory to modern government agencies
  - Contributes to public management literature by shedding light on human processes in cross-agency collaboration
  - Contributes to social psychology by positioning teams in the context of their organizations

- **Practice:**
  - Assists public managers in an effective conception and implementation of DGPs by emphasizing knowledge sharing in cross-agency collaboration
  - Gives specific guidelines for action in each stage of the project along the core categories of the model