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Building Governance Capability in Online Social Production: Insights from Wikipedia

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Millions of minuscule contributions do not fall together as complex products by accident.
The problem of governance

Imperfect or lack of knowledge on how to collect and integrate distributed knowledge for the purpose of value creation (von Hayek, 1945).
What makes an online social production system manageable?

Wikipedia lacks organizational foundations assumed by most theories. There are no individual contracts, no managerial authority, no strong community…

Extant research tends to assume static modes of governance: market, hierarchy, community or some mixture of these.
Online social production systems are not static. Their mode of governance changes as they evolve.

Research question

How does a collective capability to create and maintain value emerge and evolve in an online social production system?
To address the question,

1. We extend a capability-based view to online social production

2. We argue that governance can be understood as an evolving capability

3. We do not assume that the governance capability was in place at the beginning
Governance as a capability

Firms integrate knowledge into organizational capabilities to accomplish complex tasks and create value by transforming inputs into outputs (Grant 1996; Nelson & Winter 1982; Jacobides & Winter 2012).

Capabilities are usually found anchored to traditional organizational forms, but it is reasonable to assume that they emerge in other types of collective arrangements as well.
Governance as a capability

Capabilities are embodied in bundles of interrelated routines that encode practical experience and knowledge (Pentland & Feldman, 2005; Nelson & Winter, 1982; Winter, 2003).

Productive arrangement develop many different kinds of routines: production routines (e.g. writing routine), interaction routines (e.g. discussion routine), etc.
Methodology and empirical data

Dataset of nearly 350M contributions from 3.4M users to English Wikipedia 2001–2010; careful reading of selected page histories

- **Descriptive statistics** tell the size and rate of change
- **Theoretical narrative** analyzes the evolution of routines

With a pinch of disciplined imagination (Weick, 1989), we aim to build a plausible story how Wikipedia learns to govern itself.
Figure 1
FIGURE 1

Articles
Talk about articles
Rules
Talk about rules
The number of clusters
The early years: attracting and integrating distributed knowledge resources
<table>
<thead>
<tr>
<th>Governance problem</th>
<th>How to attract and integrate distributed knowledge resources?</th>
</tr>
</thead>
</table>
| Examples of routines | - Writing routine  
  - Version control routines  
  - Reverting routine  
  - Discussion routine |
| Capabilities | Capabilities are focused to the production of encyclopaedia articles:  
  - Individual skills and knowledge in writing on topic  
  - Technological ordering of edits from multiple contributors  
  - Collaborative assessment of edit quality  
  - Discussion focused on article content and its development |
| Learning | Contributors learn from each other in talk page discussions and by observing reactions to edits |
| Social structure of capabilities | Capabilities are anchored to small and fluid groupings of contributors and to the technological platform |

The object to be governed is an individual article.
The growth of complexity: the emergence of a collective governance capability
Governance problem

How to control and coordinate a distributed and rapidly growing production system?

Examples of routines

• Three-Revert Rule (3RR) routines
• Featured Article Review (FAR) routines

Capabilities

New capabilities are anchored to the online social production system rather than to individual contributors or small groupings

Examples:

• Capability to control behaviour instantiated by the writing and reverting routines in a radically open system
• Capability to improve the quality of articles against a common criteria

Learning

Contributors develop new routines by discussing problems on talk pages and writing metatext; they also learn through the enactment of the new routines

Social structure of capabilities

The enactment of production routines remain widely distributed, but some editorial and administrative agency become more centralized and attached to emerging roles

The object to be governed is **the body of encyclopaedic knowledge.**
The age of maturity: maintaining and enhancing the common value
<table>
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<th>Governance problem</th>
<th>How to protect and maintain the online social production system?</th>
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| Examples of routines | • Bot deployment routines  
                      • Flagged revisions routines |
| Capabilities | New capabilities target the collective governance capability itself |
|                  | Examples: |
|                  | • Capability to stabilize capabilities by automating routines  
                      • Capability to balance participation and quality in the production of articles |
| Learning | Contributors are socialized to a regime of principles, rules, procedures, policies, etc.; learning increasingly happens through norms and rules |
| Social structure of capabilities | The enactment of production routines remain mostly distributed despite some selective restrictions, while a concentrated and structured system of administrative capabilities is established |

The object to be governed is **the online social production system itself.**
Governance in online social production is an evolving, enabling and embedded process.
Enabling rather than controlling → supports learning (and allows the initial build-up or resources)

Evolving as the product matures → rights and capabilities are reconfigured to cope with complexity and tackle new situations

Embedded in the interaction system and technology → no inherent distinction between production and governance functions
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<th>Categories</th>
<th>Current perspectives</th>
<th>Capability-based perspective</th>
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<td><strong>Focus</strong></td>
<td>Structures</td>
<td>Processes</td>
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<td><strong>Objectives</strong></td>
<td>Cost optimization</td>
<td>Value creation</td>
</tr>
<tr>
<td><strong>Mechanisms</strong></td>
<td>Control, regulation, choice</td>
<td>Learning, search, knowledge integration</td>
</tr>
<tr>
<td><strong>Logic</strong></td>
<td>Static: system efficiency</td>
<td>Dynamic: system evolvability, generativity</td>
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<tr>
<td><strong>Methods</strong></td>
<td>Static comparative analysis</td>
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<td><strong>Unit of observation</strong></td>
<td>Transactions</td>
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<td><strong>Technology</strong></td>
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<td><strong>Architectures</strong></td>
<td>Coherent institutional structures</td>
<td>Combinations of complementary mechanisms</td>
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Future research directions

1. Develop a quantitative model to assess the theoretical insights in more detail

2. Study the link between evolving governance mechanisms and contributor motivation in Wikipedia

3. Assess the theoretical findings in another and/or comparative setting
Appendix: the problem of governance

Governance issues arise when knowledge relevant to production exists fragmented among different actors (von Hayek, 1945).

It is far from clear how highly distributed knowledge can be integrated and steered to a coherent collective output in the online environment (Foss, 2007; Michailova & Foss, 2009; Grandori, 2013; Langlois & Foss, 1999).
Appendix: “Ignore all rules”

“If rules make you nervous and depressed, and not desirous of participating in the Wiki, then ignore them and go about your business.”

Wikipedia:Ignore all rules page on 17 April 2002
Appendix: remarks on the role of technology

Technological platform embed much of the organizing that happens in online social production (e.g. coordination by version control systems).

Technology makes it possible to capture learning that takes place in production (e.g. article writing) on the same platform (e.g. writing a policy about article writing). This, we believe, is a key to the emergence and evolution of governance of online social production systems.