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Building Governance Capability in Online Social Production: Insights from Wikipedia

Aleksi Aaltonen
Warwick Business School

Giovan Francesco Lanzara
University of Bologna

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WIKIPEDIA
The Free Encyclopedia

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.

E.g. Aaltonen & Kallinikos, 2013; Cornford, Shaikh, Ciborra, 2010; Fitzgerald, 2006; Forte, Larco & Bruckman, 2009; Halfaker, Geiger, Morgan Riedl, 2012

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).

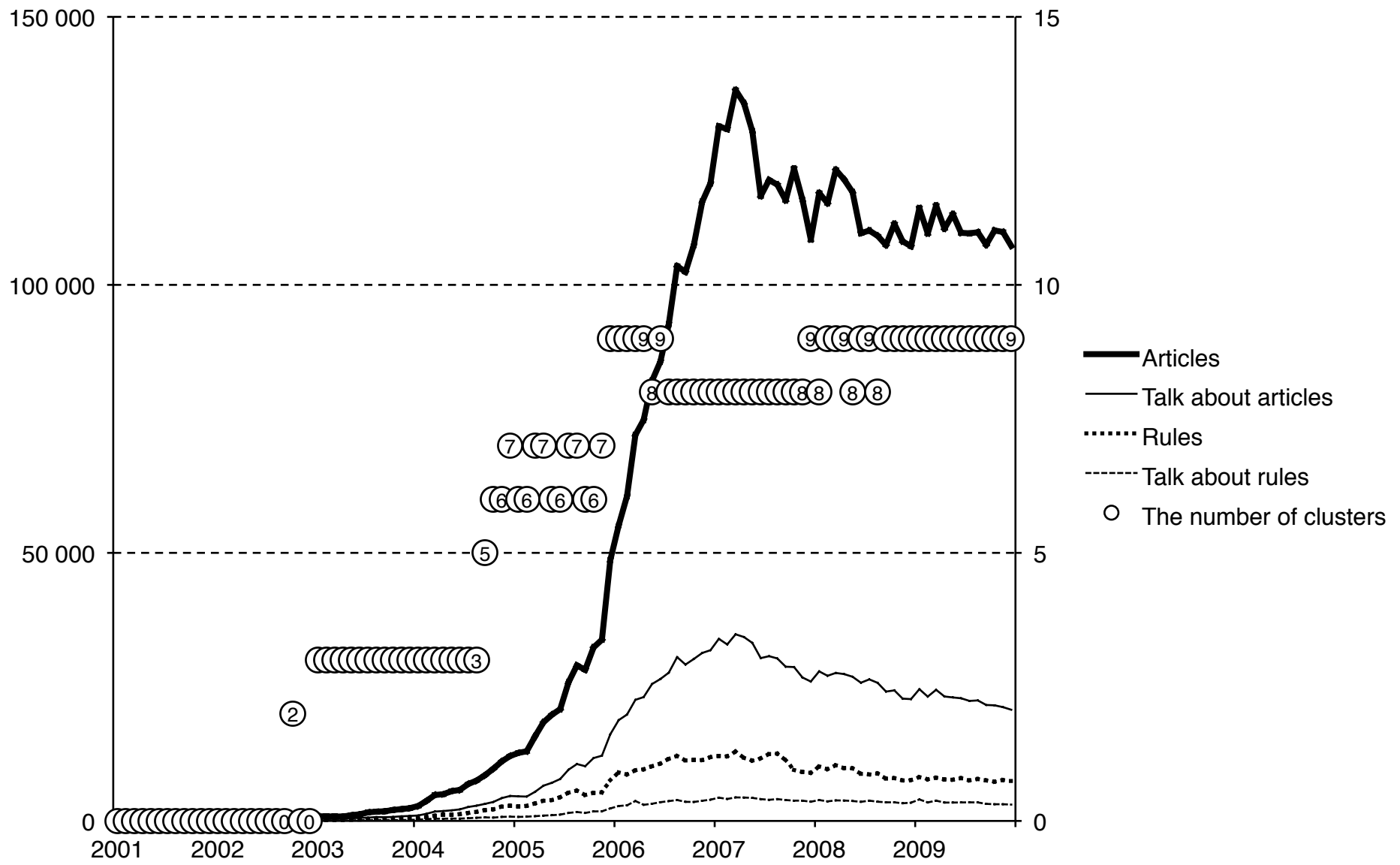
Productive arrangement develop many different kinds of routines: production routines (e.g. writing routine), interaction routines (e.g. discussion routine), etc.

Methodology and empirical data

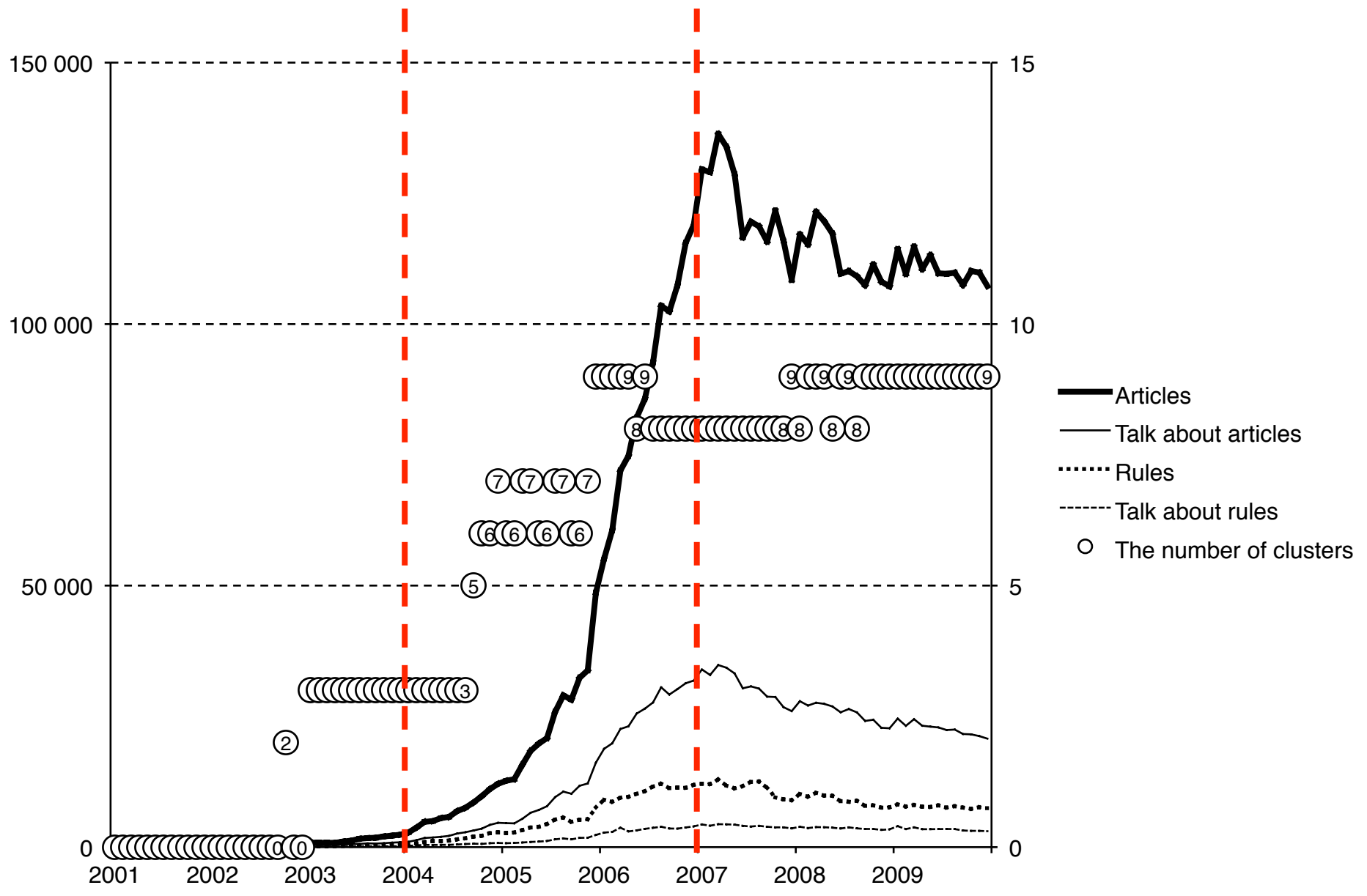
Dataset of nearly 350M contributions from 3.4M users to English Wikipedia 2001–2010; careful reading of selected page histories

- **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.



- Articles** (thick solid line)
- Talk about articles** (thin solid line)
- Rules** (dotted line)
- Talk about rules** (dash-dot line)
- The number of clusters** (circles with numbers)



- Articles** (solid thick line)
- Talk about articles** (solid thin line)
- Rules** (dotted line)
- Talk about rules** (dashed line)
- The number of clusters** (circles with numbers)

The early years: **attracting and integrating
distributed knowledge resources**

Governance problem	How to attract and integrate distributed knowledge resources?
Examples of routines	<ul style="list-style-type: none">• Writing routine• Version control routines• Reverting routine• Discussion routine
Capabilities	Capabilities are focused to the production of encyclopaedia articles: <ul style="list-style-type: none">• 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	<ul style="list-style-type: none"> • Three-Revert Rule (3RR) routines • Featured Article Review (FAR) routines
Capabilities	<p>New capabilities are anchored to the online social production system rather than to individual contributors or small groupings</p> <p>Examples:</p> <ul style="list-style-type: none"> • 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**

Governance problem	How to protect and maintain the online social production system?
Examples of routines	<ul style="list-style-type: none">• Bot deployment routines• Flagged revisions routines
Capabilities	<p>New capabilities target the collective governance capability itself</p> <p>Examples:</p> <ul style="list-style-type: none">• 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 of 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

Categories	Current perspectives	Capability-based perspective
Focus	Structures	Processes
Objectives	Cost optimization	Value creation
Mechanisms	Control, regulation, choice	Learning, search, knowledge integration
Logic	Static: system efficiency	Dynamic: system evolvability, generativity
Methods	Static comparative analysis	Longitudinal, process-oriented analysis
Unit of observation	Transactions	Routines
Technology	Information processing tool	Mediating platform
Architectures	Coherent institutional structures	Combinations of complementary mechanisms

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.