Don't Look Now, But We've Created a Bureaucracy: The Nature and Roles of Policies and Rules in Wikipedia

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ABSTRACT

Wikis are sites that support the development of emergent, collective infrastructures that are highly flexible and open, suggesting that the systems that use them will be egalitarian, free, and unstructured. Yet it is apparent that the flexible infrastructure of wikis allows the development and deployment of a wide range of structures. However, we find that the policies in Wikipedia and the systems and mechanisms that operate around them are multi-faceted. In this descriptive study, we draw on prior work on rules and policies in organizations to propose and apply a conceptual framework for understanding the natures and roles of policies in wikis. We conclude that wikis are capable of supporting a broader range of structures and activities than other collaborative platforms. Wikis allow for and, in fact, facilitate the creation of policies that serve a wide variety of functions.

Author Keywords

Wikis, Wikipedia, community, collaboration, policy, policies, rules, dynamics.

ACM Classification Keywords

K.4.3. [Computers and Society]: Organizational Impact – Computer-supported collaborative work, H.5.3 [Information Interfaces]: Group and Organization Interfaces - Collaborative computing, Web-based interaction, Computer-supported cooperative work, H.3.5 [Information Storage and Retrieval]: Online Information Systems.

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INTRODUCTION

"The Wikipedia online encyclopedia — written by thousands of individuals working without a boss – shows the way…" [28]

Wikipedia is characterized by many as emergent, complex, messy, informal, popularly uncontrolled, non- organizational, and radically different from traditional organizations [5, 11, 22, 42, 52, 53]. Consistent with this characterization, one of the founding principles of Wikipedia is "Ignore all rules," which states that if a rule inhibits developing Wikipedia, the contributor should ignore it [45].

Yet examination of the administrative structures of Wikipedia reveals a complex structure of rules, processes, policies, and roles. There are 44 wiki pages in the "Wikipedia Official Policy" category as of September 2007[1]. There are 248 wiki pages categorized as "Wikipedia guidelines" which are organized into at least eight subcategories. In addition, these do not seem to be sufficient, since there are 45 pending proposals for guidelines and policies, not to mention the 200 rejected proposals for guidelines and policies.

Even the principle of "Ignore all rules," labeled as one of the official Wikipedia policies, is not immune from such "development" [45]. While the "Ignore all rules" policy itself is only sixteen words long, the page explaining what the policy means contains over 500 words, refers readers to seven other documents, has generated over 8,000 words of discussion, and has been changed over 100 times in less than a year.

Studies of Wikipedia activities [5, 11, 42, 43] and anecdotal discussions among participants [49] suggest that these policies, rules, and guidelines play an important part in both the day-to-day operations and overall success of Wikipedia. These arguments are consistent with findings and arguments made with regard to other types of online collective action, such as online communities [19, 24, 32], open source development [15, 16, 26, 41, 44], and virtual organizations [1].

The purpose of this study is to propose a conceptual framework for understanding the nature and role of policies and rules within wikis. Drawing from prior studies of rules and policies in a variety of contexts, including teams, traditional organizations, and legal systems [29], different images of rules and policies are considered. In each case, examples and evidence are drawn from Wikipedia to illustrate that view of rules and policies. Following this we discuss the implications of the framework for understanding both the potential and likely outcomes of wiki efforts and design implications of the different perspectives for both wiki implementation and development of infrastructures for supporting wiki-like initiatives.

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[1] All references to Wikipedia content are based on data exported from the site in September 2007. Since the policies undergo perpetual re-editing and reconfiguring, the data presented here represents a snap-shot.

RULES, POLICIES AND GUIDELINES

In the broadest scope, terms like rules, policies, and guidelines all refer to the "explicit and implicit norms, regulations, and expectations that regulate the behavior of individuals and interactions between them" [29 p. 5]. Taken in its most general sense, this definition can also be seen as including informal or implicit norms and constraints that can significantly affect behavior and interaction, even though they are not formally recognized or recorded.

Given the widely discussed importance of informal norms in contexts such as open source projects [35, 41] and other online social settings [3, 4], it may be beneficial to equate formal and informal rules. In particular this approach suggests that insights and results from the study of explicit, formal rules and policies may be useful for understanding the development, application, and impact of informal rules and norms. However, in this study we focus on formal, or written, policies, rules, and guidelines.

We use the terms rules, policies, and guidelines interchangeably. While there are some contexts in which these are clearly conceptually distinguishable, the difference between and application of the terms vary from context to context. This suggests that while some aspects require distinguishing them from each other, there is not ready agreement on what they are or how the terms should be used. Furthermore, and for our purposes perhaps more importantly, this conceptual equivalence is reflected in the Wikipedia definitions which state:

"A guideline is any page that is: (1) actionable (i.e. it recommends, or recommends against, an action to be taken by editors) and (2) authorized by consensus. Guidelines are not set in stone and should be treated with common sense and the occasional exception.

A policy is similar to a guideline, only more official and less likely to have exceptions." [48]

This study focuses on formal written policies for both practical and conceptual reasons. Practically, formal rules are ideal for study because of the relative ease of determining what the policy is, when it was put in place, who participated in creating it, when it was referenced, and, in some cases, when it was removed. This is particularly true in the context of a wiki because of its facilities for archiving and managing collaborative documents.

However, beyond the practical issues, formal written rules and policies are significant because of their role as boundary objects [33, 34], or as specifications of how the content will be used and communication will occur. They can serve a variety of purposes by virtue of the fact that they are explicit and external. Because they are explicit and visible, though, written policies and rules are often sites of conflict [29 p. 18]. These same characteristics also mean that written policies have greater potential as levers for developers, designers, and managers to affect a community or collaborative effort [10, 19].

Hence, while it may be the case that informal norms are important, it makes sense to focus on the nature and role of formal written rules and policies in the operation of a distributed collaborative effort like Wikipedia.

IMAGES AND ROLES OF RULES AND POLICIES

Because of their centrality in so many aspects of society and organizational and individual behaviors, rules and policies have been studied by scholars in a wide variety of fields, including law, sociology, political science, economics, management science, anthropology, linguistics, and organizational studies. While these scholars typically adopt definitions similar to those described above, the assumptions they make about the source, nature, and implications of rules and policies can vary significantly.

While this lack of consensus can present challenges, it also provides a basis for characterizing the multifaceted nature of rules, policies, and guidelines.

In particular, prior work provides several perspectives which can be used to view rules and policies, including rules and policies as:

- Rational efforts to organize and coordinate
- Evolving, competing entities
- Constructions of meaning & identity
- External signals
- Internal signals
- Negotiated settlements and trophies
- Control mechanisms

In the following sections, we consider each of these perspectives. For each one we begin with a discussion of the core assumptions that are made about the nature and implications of policies playing this role with reference to principles and examples drawn from studies of rules in traditional organizational and social contexts. We then consider examples from Wikipedia that illustrate how the policies and guidelines there are consistent with the perspective.

The purpose of these discussions and examples is to illustrate how the guidelines and policies in Wikipedia, and the systems and mechanisms that operate around them, are multi-faceted. As such, these perspectives should not be treated as a set of mutually exclusive categories, but rather as a set of potentially overlapping lenses, each of which highlights different aspects of the policies and guidelines that exist within Wikipedia.

Rules and Policies as Rational Efforts to Organize or Coordinate

All groups are faced with challenges created by communication and coordination problems which must be solved if the shared objectives are to be achieved [7, 13, 14, 21, 38, 41]. In this view rules are conscious, intentional actions put in place for the purpose of improving collective performance. Rules and policies address, or at least substantially increase the chance of addressing, the problems of communication and coordination by creating a context in which distributed actions are taken in reliable and consistent ways [27]. In other words, rules and policies are means of solving communication and coordination problems by increasing the reliability and consistency of action (i.e., eliminating the need to explicitly communicate and coordinate) [29]. Rules in this role assume that all parties have the same motivations and goals.

Rules and policies for coordination and communication have been identified as particularly important in contexts where there is high turnover (people coming and going on a regular basis),

where there is substantial autonomy of action, and where explicit coordination is costly and yet important to success of the activity [9, 25].

Rational Efforts to Organize or Coordinate in Wikipedia

Wikipedia has high turnover in that a large majority of the editors make only a few changes once, the editors are distributed globally, and coordination is necessary in order to continuously provide a functioning product (i.e., an encyclopedia) on demand.

For Wikipedia, this perspective on rules and policies suggests that policies and guidelines are being put in place to achieve consistency and reliability in terms of how things are handled and coordinate efforts [23], but also to confirm the authority of those most likely to implement the policies: the administrators. For example, a policy was created which outlines the process which should be taken to block a user or delete an entry in Wikipedia. The 48 policies under consideration on the Wikipedia Policy proposals indicate the administrators' continual need to reinforce their limited power over the dispersed population of this community.

Because of the decentralized nature of the role of user (i.e., editor) in Wikipedia and the high turnover, more written policies and guidelines are needed to facilitate the transfer of knowledge [40] from one user to the next and maintain consistency during the editing. Alternatively, fewer policies will be specified for administrators than users. There are more rules, therefore, for editors, since their population experiences greater turnover and their activities are more dispersed than those of the administrators [13, 14]. Also, since this population gains members more frequently than the administrators, written policies assist new people by lending them direction with their contributions, in a similar fashion as Frequently asked questions pages in online communities [6].

Wikipedia policy
Article standards
Neutral point of view
Verifiability
What Wikipedia is not
No original research
Biographies of living persons
Working with others
Civility
No personal attacks
Resolving disputes

Figure 1. Wikipedia Policy Box

Most policy and guideline pages provide a box with general information about Wikipedia policy or guidelines, respectively, in the prominent upper right hand corner, as shown in Figures 1 and 2. The policies selected for emphasis are divided into two sections: one discussing procedures for editing articles and the other reminding users about behavioral standards.

These boxes serve to introduce first time participants to the norms of the hybrid community/document paradigm and remind more experienced and committed members about the essential rules. After all, according to the Wikipedia contributors, these policies and guidelines help make Wikipedia successful [48]. Also, since the items in these lists are links, they point readily to the written document for each of these policies.

Wikipedia editors suggest that policy is often enacted after it has been used in practice and recognized as important [48], such as to increase the speed, efficiency, or reduce the cost of administering the encyclopedia. These enactments embody the rational efforts of this role of a policy or guideline.

A case where a process was "policy-fied" to accomplish these goals is the policy outlining the Criteria for Speedy Deletion [50]. The deletion policy is written exclusively for administrators, for they are the only community members empowered to determine what pages should remain in Wikipedia and what pages should be removed. This policy is written in extensive form and with multiple categorized subsections to accommodate the autonomy of the administrators and to support consistency in their decision making. Written policies of this sort ensure coordination among administrators and prevent arbitrary decisions. Additionally, written policies establish guidelines for behavior so that each decision does not require the endless time expense of lengthy discussion and consensus development.

Implications for Rational Efforts to Organize or Coordinate

Wikipedia policies and guidelines can be seen as intentional efforts to solve coordination and communication problems by either eliminating the need for direct coordination or communication or significantly reducing the costs of such communication. Reduction of costs is often achieved by codifying the interaction, and hence, reducing the effort needed to engage in the exchanges. These mechanisms remain important even though communication and coordination costs are lower (at least theoretically) because of the technology infrastructure due to issues such as information overload [17]. At least for large-scale wikis, such as Wikipedia, the need for organizational mechanisms to reduce communication and coordination cost remains.

Rules and Policies as Evolving, Competing, Self- propagating Entities

Rules can be seen as self-propagating entities that are the result of an evolving, competitive process. This perspective rejects the idea of intention, design, and agency as the primary drivers of policy development, largely because of the bounded rationality of individuals and high levels of complexity in the organizational system. Instead it is argued that rules are the result of competition for shifting attention. This results in systems of policies in which dynamics of rule development have the following features:

- Rules generate more rules (either exponentially, linearly, or at a declining rate)
- Areas or problems can be saturated, so modification or adaptation of rules will drop off as the space gets "populated"
- Developing manner rules in one area will draw attention and people from other areas [29]

Evolving, Competing, Self-propagating Entities in Wikipedia

For Wikipedia, the basic conditions of this perspective definitely apply. Wikipedia is an extremely complex system of documents, people, roles, policies and guidelines, yet individuals possess bounded rationality [39]. This suggests that we should see these kinds of dynamics of

Wikipedia guidelines

Content
Autobiography
Don't copy sources
Disambiguation
Don't create hoaxes
Patent nonsense
User page

Article Inclusion
Notability

Classification
Subpages
Cats, lists, boxes
Lists
Categories

Editing
Be bold
Build the web
Edit summary
Article size

Discussion
Talk page guidelines
Sign on talk pages
Build consensus
Conflict of interest

Behavior
Etiquette
Do not disrupt Wikipedia to illustrate a point
Don't bite the newcomers
Do not 'game the system'

Style
Manual of Style

See also policies

Figure 2. Wikipedia Guideline Box

rules in the formation and modifications of the policies and guidelines in Wikipedia, and the archives bear this out.

One useful measure of increased complexity is the change in lengths in terms of word count alone of the policies from the first version to most current. All policies studied grew enormously.

- Copyrights: 341 words ➜3200 words: 938%
- What Wikipedia is not: 541 words ➜ 5031 words: 929%
- Civility: 1741 words ➜ 2131 words: 124%
- Consensus: 132 words ➜ 2054 words: 1557%
- Deletion: 405 words ➜ 2349 words: 580%
- Ignore all rules: exceptional case

The first version of the Ignore all rules policy is only 23 words long, stating, "If rules make you nervous and depressed, and not desirous of participating in the Wiki, then ignore them and go about your business" [45]. The current version is actually shorter, only 16 words, and says, "If a rule prevents you from working with others to improve or maintain Wikipedia, ignore it" [45]. However, as suggested earlier in this paper, while the actual wording of this policy declined 69% and it appears on the surface to be the least bureaucratic of the policies, the supplemental page directly linked to this policy contains 579 words, indicating that the policy swelled over 3600% [45].

The Deletion policy appears to grow less than most of the other policies, but this statistic is misleading as the deletion policy is continually broken down into smaller subcategories in order to prevent discussion of particular instances of deletion decisions from appearing on the general policy page. The Deletion policy, therefore, is a policy of tremendous proliferation and complication.

Increased complexity is apparent in the Copyrights policy, among others, where the diction and syntax emulate that of legal documents. The first version of the policy, for instance, starts with: "The goal of Wikipedia is to create information that is available to everyone." The current version, starting after a disclaimer note, begins: "The license Wikipedia uses grants free access to our content in the same sense as free software is licensed freely." The earlier version uses simple sentence construction and vernacular diction. The current one relies on words from the legal profession, such as license, grants, access, and later in the policy, permission, obligation, rights.

Implications for Evolving, Competing, Self-propagating Entities

This role of rules and policies is necessary because it attempts to take the complex system that is Wikipedia and make it manageable. The evolutionary aspect of this role also promotes the continuous updating and modification of rules, which is needed in this type of dynamic environment.

Rules and Policies as Constructions of Meaning and Identity

Rules and policies answer questions about "who we are" [29]. They also indicate the way things "should be" (i.e., ideals). Lastly they serve to define and exemplify the "talk" of the place.

Previous work has looked at the role of shared group and community identity [2, 12, 14] and individual identity [18, 30, 37] construction.

Constructions of Meaning and Identity in Wikipedia

For Wikipedia this includes policies that serve the purpose of defining what Wikipedia is and is not, either explicitly (e.g., What Wikipedia is not page) or through the articulation of policy pages on community principles (e.g., Ignore all rules page).

Meaning and identity are also likely to be reflected in discussions of policy changes that center on whether or not something is consistent with the "core principles" of Wikipedia. An example of these discussions is that which centers around the Neutral Point of View policy. This policy contains detailed definitions of bias, carefully organized guidelines for how to maintain neutrality in an article, and specifically outlined procedures for handling conflicts [51]. The archived discussion pages on this policy are so voluminous that many of them contain the discussions held within only one or two days [51].

The What Wikipedia is not policy sets up a clear sense of identity, but less through a description or definition of it (i.e., what we are) than through a negative approach. This policy is divided into three sections: Style and Format, Content, and Community. The first section differentiates Wikipedia from printed and published encyclopedias that are written by paid experts. The second section defines the term encyclopedia. The third one is perhaps the most illustrative of the identity of the group, however, for it lays out explicitly norms for community behavior, and for the purposes of this paper, "Wikipedia is not a bureaucracy" is the section most directed towards policy. Interestingly, it denies the bureaucratic nature of this organization: "Wikipedia is not a moot court, and rules are not the purpose of the community. Instruction creep should be avoided. A perceived procedural error made in posting anything, such as an idea or nomination, is not grounds for invalidating that post. Follow the spirit, not the letter, of any rules, policies and guidelines if you feel they conflict. If the rules prevent you from improving the encyclopedia, you should ignore them. Disagreements should be resolved through consensus-based discussion, rather than through tightly sticking to rules and procedures."

The irony of this statement is that discussion surrounding policy development and modification turns to policy for support on a regular basis. The Three-revert rule policy, for instance, refers to the Copyrights, Spamming, Non-free content, Biographies of living persons, Blocking, and Consensus policies in its statement alone, with reference to those and other policies and guidelines proliferating through the discussion pages.

Implications for Constructions of Meaning and Identity

Rules in this role allow the wiki and its users to develop a sense of identity and meaning, which can be viewed, literally and figuratively, by new and current editors. These editors can then measure their fit with the community and decide on their intended level of participation. For example, someone looking for a wiki focused on social interaction may not be satisfied with one which focuses on purely identity formation [36]. In a volitional environment, such statement of meaning, values, and identity can become highly influential and rallying.

Rules and Policies as External Signals

Sometimes rules are ways of indicating to outside stakeholders or concerned parties that things that they care about are being attended to. The rules can be symbolic; can reflect action, or both. It is possible to discern these responses through media coverage of Wikipedia that provoked changes in policies or the creation of new ones.

External Signals in Wikipedia

For Wikipedia, the Copyrights policy illustrates a rule acting as an external signal. Based on an analysis of the Copyrights guidelines, it appears they were developed in response to external complaints or concerns about the unpermitted use of protected material [47]. It is perhaps because of this external stimulant that this policy's discussion pages, while devoted extensively to copyright rules in general, often devolve into discussions of particular cases, especially those concerning images [47]. Also, perhaps because of the need to signal recognition of an issue by Wikipedia, this page developed from a simply stated list of rules into a more extensively organized but also more linguistically complicated treatise, as mentioned above. The language evolved from simple sentence structures and vernacular style into the more complicated grammars and dictions of the legal profession, possibly due to the hiring of general counsel [8], but also as the need for greater credibility and as a reflection of the community's pressures to protect itself and its reputation from outside attacks or influences.

Another example of a policy acting as an external signal, or at least being heavily oriented toward external stakeholders, is the Biographies of living persons policy [46]. Notable characteristics of this policy include:

- It includes full contact information for Jimmy Wales as the "Designated Agent" (which references specific requirement of US Law) unlike the other policies. It also includes a link to the Wikimedia Foundations Board of Trustees in a related readings section.
- It explicitly references external legal structures requirements ("Such material requires a high degree of sensitivity, and must adhere strictly to the law in Florida, United States and to our content policies"). The other policy that turns to this type of language is the Copyrights policy.
- It uses very insistent language ("Editors must take particular care...", "...must adhere strictly to..." (emphasis in original), or "We must get the article right" (emphasis in original)).
- In internal discussions, explanations for the policy and changes to the policy are described in the third person (they, them, he, her) not first person (we, us, I, me).
- External attention triggers changes to the policy and concerns of the external stakeholders are one of the factors referenced in discussions of the policy, such as a comment on the Biographies of living person page stating, "I started this due to the Daniel Brandt situation."
- The policy is referenced in statements to external stakeholders and media. While the Biography of living persons policy is an extreme case, which came about because of a very high level of external attention to a particular aspect of Wikipedia, other examples do exist, such as the sock-puppeting of external organizations that edit the content of the entries on them or the revelations that editors were not as qualified as they claimed.

Implications for External Signals

External signals serve the role of demonstrating that the wiki and its members recognize an issue as important or significant. However, doing this too often can weaken the impact or message that an external signal sends to the external audience. It is important to note that rules which act as external signals speak to external audiences and are not necessarily meant for internal audiences, or members. Theoretically, a rule which serves only as an external signal could be removes and not change the internal dynamic of the community.

Rules and Policies as Internal Signals

Policies and rules can be used to signal to the community what the community finds important, such as creating a policy about a particular issue or behavior which is significant to the community. *Internal Signals in Wikipedia* An example of a policy developed as an internal signal is the Civility policy. Its function is to promote polite interactions between members of the community, rather than to recognize or call significance to an issue for an external audience. Perhaps as a result of its role, this policy's current form differs from its original form the least of all the policies and generates the fewest discussions or dissensions. Policies fitting into this category are not threatened by outside forces, so their language can remain less formal in contrast to rules acting as external signals. As such, they also will not serve as the foci of editorial pressures faced by those responding to external signals.

This policy also acts as an internal signal via its prominent placement on the list of policies for first-time users [48].

Implications for Internal Signals

Internal signals demonstrate values and identity to internal stakeholders. It is significant to note that while internal signals speak to the internal stakeholders, they can be triggered by either internal members (e.g. via complaints or problematic events) or external viewers.

Rules and Policies as Negotiated Settlements and Trophies

People have different interests or perspectives. Rules and policies are negotiated settlements or trophies. Settlements are creating to avoid the cost of continued conflict, while trophies are created to give credibility and influence to the "winner" in future discussions.

Negotiated Settlements and Trophies in Wikipedia

In Wikipedia, references to "that has already been decided" or references to policy changes as having been determined in one side's favor or another

Figure 3.
Wikipedia consensus flowchart
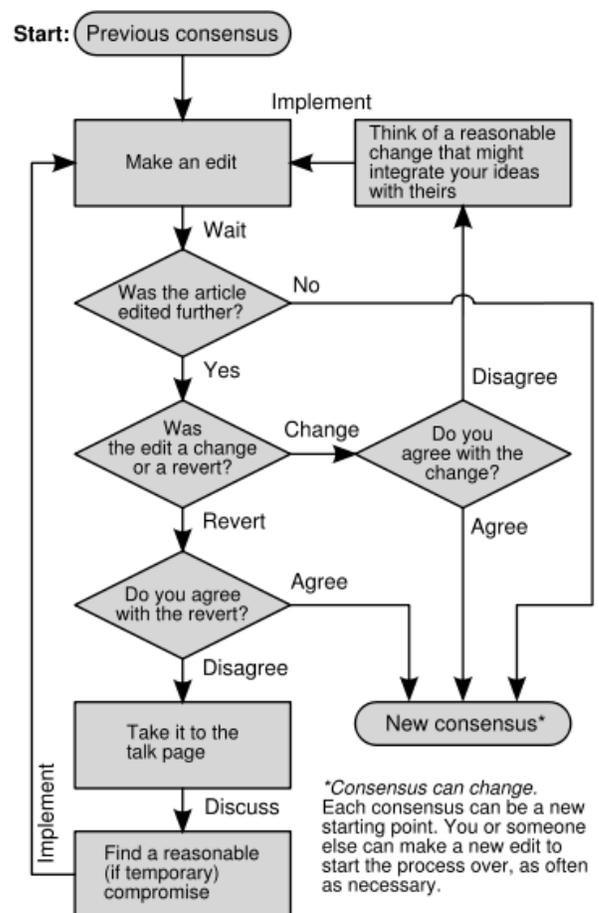
reflect this perspective. An example of this "trophy" type situation occurs in the Consensus policy. As mentioned previously, extensive discussion surrounds the development of written guidelines to assist smooth negotiations and to achieve acceptable compromises. For the Consensus policy, this type of discussion focuses on whether to use specific numbers for confirmation of consensus or not. That is, should the group need 80% or 75% of the population's approval? Or should the policy simply state that general agreement is all that is required for consensus? An active member wants polling results to determine consensus, but he "loses" this effort in 2005; consensus is explained through the organizational structure of the flowchart in Figure 3. In July 2007, someone starts adding the numbers requirement back into the Consensus policy, and the administrators talk about it and remove it each time. In August, there is more discussion of consensus versus the supermajority, and then it appears that it might be the original participant who lost the battle who is adding the numbers back to the policy, and even if it is not, he is actively participating in discussions to bring back the "numbers" [49].

As an example of the discussion leading away from decisions through polling, one administrator says, "for all but uncontroversial trivial propositions, it is unusual for decisions on Wikipedia talk pages to operate on a true consensus. Instead they operate on a rough consensus where it is recognised that a minority are in opposition. The question then arises is how large must the majority be to ignore the opinions of a minority?" [49].

When the policy is revised to respect the majority of decision makers, the discussion is titled, "The numbers came back again." The first comment reads, "So I removed them." The response to it, by the "losing" contestant says, "Did you not read the section above? There is not consensus to remove them," in an assertion that previous decisions support this, but the response to this remark is: "I have read the section above. There is clearly no consensus to include them. Stop adding them," reinforcing the community's adherence to "rough consensus" as opposed to numerically-based decision-making.

Implications for Negotiated Settlements and Trophies

Policies, therefore, reflect a continuous process of battles engaged in and won or lost, so that no conclusion is achieved. Much discussion of these policies includes a continuous recycling of old fights and unresolved contentions.

Rules and Policies as Control Mechanisms

To complete tasks and meet goals, rules and policies are often written to act as control mechanisms. Control is defined as any effort made to ensure appropriate action [31]. In the systems development literature, control has been defined more specifically from the behavioral sense as attempts to ensure that individuals on a project team act in accordance with a previously agreed-upon strategy to accomplish desired goals and objectives [21]. Control mechanisms are "devices used by controllers to ensure

proper controllee behavior" [20]. Both formal and informal control modes rely on control mechanisms to influence behavior, but formal modes control via performance evaluation and rewards while informal modes control via socialization to reduce goal differences [20]. Wikis draw upon informal modes of control by writing policies which describe ideal work output or

behavior.

Explicitly highlighting this role of rules and policies also allows for consideration of ways that rules are used to manage divergence of individual and organizational goals, a phenomenon that is an important element of organizational evolution.

Control Mechanisms in Wikipedia

Wikipedia's hierarchy of roles creates a class of people who apply the control mechanisms for the group: the administrators. Though, it is sometimes claimed that this hierarchy does not exist. Administrators are the only ones who can, as the Wikipedia site suggests, "protect and delete pages, block other editors, and undo these actions as well." Also, in its categories of policies, Wikipedia devotes an entire section to what it calls, "enforcement," a term for controlling the behavior of others. Two in this section that require administrator participation are Deletion and Blocking. Since control mechanisms ensure consistency between the goals and actions of the individual and those of the community, and since the goals of individuals are sometimes destructive, such as vandalism, a policy like Blocking prevents chronic disrupters from damaging the group or its efforts. Blocking is the term for the prevention of editing rights for those participants who refuse to support the goals of the organization. An interesting feature of the Blocking policy ameliorates its punitive approach: it is not meant for "retaliation," but instead for "encouraging" appropriate behavior. A control mechanism of this sort, therefore, guides normative behavior rather than punishes deviance.

The Three-Revert Rule (called a "rule" but considered a "policy" by Wikipedia) is a community-specific control mechanism. It states that an editor may not make more than three changes to an encyclopedia page within a twenty-four hour period. The stated purpose for this policy is to prevent what the group calls "edit wars," or conflicts between two or more editors over an entry that result in the constant effort to assert the validity of one version of it over another. Administrators established this rule because, as Wikipedia founder Jimbo Wales says, "revert warring has become an absurd drain on us." This control mechanism, therefore, protects the administrators from overload created by editors who refuse to negotiate about the contents of an entry.

Implications for Control Mechanisms

Where coordination assumes that all participants in a community have the same motives and merely need to understand how to get something done in terms of sequence or procedure, control suggests to the community what not to do and establishes rules of prevention of behaviors that will disrupt the process of the organization. These mechanisms are exceptional, for they can largely be applied only by administrators, by those with power acceded to them by the group through their demonstrated degree of participation in editing and through the acknowledgement of those efforts by the other power holders and wielders in the system.

IMPLICATIONS FOR CREATION OF WIKI-BASED SYSTEMS AND DESIGN OF PLATFORMS

We suggest, therefore, that pursuing the "policyless" ideal that wikis represent is a pipedream. Policy creation and maintenance is an important aspect of the work that must be done to keep the

community running

Providing tools and infrastructure mechanisms that support the development and management of policies is an important part of creating social computing systems that work. For example, work has been done on policy extraction that focuses on identifying rules which can be embedded in the infrastructure to support coordination and organization. This study suggests that policies vary in their intention to support coordination and organization, thus the application of the work on policy extraction is narrowed. For example, a rule acting as an external signal has less intention for coordination and organization. As a result, it may not be appropriate for it to be embedded in the infrastructure to support coordination and organization. Looking at the language used in writing the policy may signal its intention to support coordination and organization and, subsequently, whether it is a candidate for embedding in the infrastructure. More detailed systematic studies can provide insight into a policies candidacy for embedding in the infrastructure.

While there is something to be said about treating policies as coordination mechanisms that are automated or at least embedded directly in the technology, that approach is not without its pitfalls. Since policies can also be highly symbolic or meaning-filled, embedding them or automating them may not work because it could remove this function or make it less effective for this purpose. Furthermore, it may be possible that different rules playing different roles have varying importance for the success of the wiki at specific phases in the wiki lifecycle.

This work raises important questions for organizations implementing wikis and collaborative technologies for internal use. When organizations invest in these technologies, such as Lotus Notes and Microsoft Sharepoint, their first step is often to put in place a collection of policies and guidelines regarding their use. However, less attention is given to the policies and guidelines created by the groups that use these systems – which are often left to "emerge" spontaneously. The examples and concepts described in this paper highlight the complexity of rule formation and suggest that support should be provided to help collaborating groups create and maintain effective rulespaces.

Lastly, the Wikipedia archives suggest that facilitating, supporting, and managing this system of rules may not be simply a matter of data collection. Rather, serving this system well is a matter of promoting situational awareness and strategic intervention in a complex, evolving system.

CONCLUSIONS

Wikis have captured the imagination of many because as a technology they support unencumbered, highly flexible, very visible, and accessible collaboration [5, 11, 22, 42, 52, 53]. These features have led many commentators and authors to wax eloquently about the possibility of new types of work and organization which are peer-based, non- hierarchical, non-bureaucratic, emergent, complex, and communal.

While it may be the case that wikis do in fact provide a basis for this type of work arrangement, the study reported here suggests that the true power of wikis lies in the fact that they are a platform that provides affordances which allow for a wide variety of rich, multifaceted organizational structures. Rather than assuming that rules, policies, and guidelines are operating

in only one fashion, wikis allow for, and in fact facilitate, the creation of policies and procedures that serve a wide variety of functions – and as a result they are capable of truly supporting a much broader range of structures and activities than many of the other more structured, collaborative platforms.

This suggests that not only are wikis a platform that has greater potential in organizational and public use, but also that, from a design perspective, they provide a valuable opportunity for using the "sidewalk design strategy" of providing a field of grass and watching where and how the users walk, or so-called desire paths. This study provides a basis for describing these paths. Future studies in particular applications would do well to ask how these issues are addressed, capabilities are used, and how the activities and mechanisms that come into play can be helpfully reinforced or supported through the interface and infrastructure.

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