What Makes Corporate Wikis Work? Wiki Affordances and Their Suitability for Corporate Knowledge Work

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Abstract. Wikis were originally intended for knowledge work in the open Internet environment, and there seems to be an inherent tension between wikis' affordances and the nature knowledge work in organizations. The objective of this paper is to investigate how tailoring wikis to corporate settings would impact users' wiki activity. We begin by synthesizing prior works on wikis' design principles; identifying several areas where we anticipate high tension between wikis' affordances and organizational work practices. We put forward five propositions regarding how changes in corporate wikis deployment procedures may impact users' wiki activity. An empirical study in one multi-national organization tested users' perceptions towards these propositions, revealing that in some cases there may be a need for modifying wiki's design, while in other cases corporations may wish to change their knowledge work practices to align with wikis' affordances.

Keywords: Wiki, Affordances, Knowledge Management.

1 Introduction

Wiki, derived from the Hawaiian-language word for fast, is a web-based collaborative authoring application [40,57]. While wikis are similar to discussion forums and blogs, these prior online collaboration tools append to the content contributed by users (e.g. discussion forums); in wikis each user edits the previous version of the page, with the most recent version reflecting the cumulative contributions of all authors. Such features have made wiki-based applications popular for knowledge management (KM) on the Internet (e.g. Wikipedia) and many organizations are now making use of wikis to meet their own knowledge management needs [23,30,42].

Wikis were originally intended for knowledge work in the open Internet environment; the most notable success of wiki technology is Wikipedia. Despite the success of wikis in the public domain, it is not clear that wikis can succeed in corporate settings as there seems to be an inherent tension between wikis' affordances and the nature knowledge work in organizations [3,24]. While the wiki system used in both Internet and corporate settings might be very similar,

wiki-based conversational KM practices may differ substantially from Internet systems such as Wikipedia. For example, over the Internet, wiki editing is open ended, while a corporation may put restriction on access privileges, provide template formats, or calculate users' relative contribution to be used in performance evaluation [6,62].

Because of this tension, wikis may be less successful in corporate environments where incentives and governance structures differ from those of the open Internet. The objective of this paper is to investigate how tailoring wikis to corporate settings would impact their successful adoption in organizations. Participation is essential to the success of communities of practice and online communities. In line with Arazy and Croitoru [2], we use participation as a proxy for the success of corporate wikis. We define 'participation' broadly, to include both active (i.e. editing the wiki by adding new content, restructuring the wiki page, or removing irrelevant content) and passive (reading the wiki) participation.

In particular, our primary research questions are: "How can we reduce the inherent tension between wiki affordances and the nature of corporate knowledge work?" and "Would such manipulations of wiki affordances affect users' wiki participation?" We put forward five propositions regarding how changes in corporate wiki deployment would impact users' wiki behavior and test users' attitudes towards these propositions using a survey of wiki users at IBM with the goal of understanding possible changes necessary for successful corporate wiki adoption.

1.1   Wiki Affordances

Gibson [22] coined the term 'affordance' and defined it as a perceivable property of an object or of the environment that allows a particular individual an opportunity for action. The idea was popularized by Norman [44,45], who brought it to the attention of the design community and, in particular, researchers in human-computer interaction [21]. The notion of affordances is increasingly being used in the information systems area [32,47,63]. The concept is useful since it emphasizes the role of the situated activity of the person who perceives the affordance, and thus allows conceptualizing the relations between the technology's features and organizational work processes.

Prior literature on wikis has described the primary design features of wikis (e.g. [40,57]). However, the notion of affordances is different than 'design feature' as it focuses on the suitability of the tool for supporting a specific task rather than on tool design per-se. Recently, studies have described some of the work practices supported by wikis [41,58,60], and have begun using the notion of affordances. Building on these prior studies [40,58,60], we can identify three broad categories of affordances: (a) affordances that simplify content creation and management, (b) affordances that reduce or remove workflow constraints and the distinction between content creation, editing and administrative tasks, and (c) affordances that support peer-based governance. A key feature of many of these affordances is to remove entry barriers that are typical of traditional knowledge management systems [9,58]. Examples include simple formatting, easy

access, and incremental editing; all features that make it easy to create and update content with little technical training.

1.2 Tensions between Wikis' Affordances and Corporate Practices

Early on, organizational KM approaches focused on knowledge as objects that could be organized to support decision making, and KMS were seen as tools to manage codified knowledge, such that most KM projects were initiated top-down and driven by management. However, the rigid structure of such centrally-controlled KM initiatives exhibited poor incentives to sharing and reuse of knowledge. Peer-based production over the Internet, as exemplified by open-source software development [38] and later Wikipedia [5], has offered an alternative model of KM that emphasized principles such as open access and community governance [7,20,39,57,64]. Rather than centralized control of KM initiatives and the codification of all organizational knowledge, firms increasingly recognize that distributed collaboration is a more effective way of sharing knowledge. However, firms trying to adapt to this new open KM face some substantial challenges. Wiki is a light-weight KM system that is intended to support knowledge work in the open Internet settings, and wikis' affordances are designed for peer-production. As corporations begin deploying wiki technology it becomes apparent that there are inherent tensions between wikis' affordances and organizational knowledge work practices [3], especially in situations where the organization has not fully adapted to open KM. For example, in Internet settings, reducing recognition of individuals' contributions (non-attribution) is viewed as an essential principle for ensuring diversity and protecting users' privacy. However, in corporate settings this feature is often undesired as it impedes accountability and individual incentives; further, recognition of contributions is believed necessary for motivating user engagement. Technology affordances are malleable [47] and organizations are seeking ways to adapt wikis to their existing knowledge management practices.

Recent accounts of corporate wiki deployment [2,3,18,23,36] portray an environment that leverages on wikis' affordances in some cases and adheres to traditional organizational practices in others. In line with 'the wiki way', content is automatically published and users' contributions are not attributed; however, users are often required to register through the organizational system before allowing to access the wikis and there is less reliance on collaborative editing norms and peer-based quality control.

What, then, is the best way for deploying wikis in corporate settings? Is it possible to find a compromise between wiki affordances and corporate knowledge work practices? How could organizations drive wiki adoption? We identify a subset of five wiki affordances where we anticipate high tension with traditional organizational knowledge management procedures, and put forward propositions - one for each of the affordances under investigation - regarding how deviations from the current corporate wiki deployment practices (by either modifying the technology or by changing organizational procedures) would impact users' wiki activity. We are not aware of works in the context of wikis, or more broadly in

the context of knowledge management systems, that have looked at how manipulating certain affordances will affect user behaviors (or attitudes towards behavior) within the systems.

Promoting Collaborative Editing Norms. While the role of editing norms is fairly well documented in Wikipedia [35,56,61], little is known about the extent to which corporations rely on such norms to guide users through the collaborative editing process. Wiki editing is unconstrained, which provides much flexibility, but also raises uncertainty regarding the expectations for use. Corporate users are accustomed to having training on new technology usage; however, wikis are deployed in many corporations from the ground up, with little or no training. Not providing guidance for users on such a flexible technology can have detrimental effects; the lack of norms indicating information to share across organizational boundaries was a major impediment to the adoption of a wiki in a health care setting [23]. An alternative approach for guiding users is modifying wiki technology through the use of templates, constraints placed on wiki pages, or ontologies to ensure consistent wiki page structure and terminology [14,15,25]. A recent survey of corporate wiki users suggests that the use of wiki enhancements that constrain the otherwise open-ended editing process (e.g. templates) can accelerate wiki adoption [18]. Given prior evidence on the important role of editing norms, as well as recent works that attempt to constrain wiki editing, we put forward the following proposition:

Proposition 1. *Promoting collaborative authoring norms will increase wiki participation.*

Attribution. Wikis are designed to promote group collaboration and discourage individualism [40]; pages are not associated with any single author and it is difficult to assess individual authors' contributions [6]. For example, Wikipedia often promotes high-quality articles (i.e. the output of group effort), rather than specific users. Thus, it is difficult for authors to publicize their skills and accumulate reputation [53], in stark contrast to many other popular collaboration platforms, such as Slashdot[1]. In a lab experiment studying the behavioral impact of presenting user contributions, it was found that users contribute more when they know that their work is visible and is valued [49], suggesting that attribution will motivate wiki participation. Given that corporate users are driven by career advancement [28], we expect that corporate users will increase wiki participation if their individual contributions are acknowledged and propose:

Proposition 2. *Attributing contributions will increase wiki participation.*

Allowing Unregistered Editing. Allowing users to participate without revealing their identity has the benefits of the so called "equalization phenomenon",

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[1] http:\slashdot.org

where status and other social cues are removed from the message, allowing collaborators to focus instead on the content [13,17,19,31,48,51]. Most wikis do not include extensive access control mechanisms with the rationale that unregistered editing attracts more participation and increases the size and diversity of the author-group. Some argue that reducing the barriers to participation is the key factor to Wikipedia's success[2] [33,46], with the collective intelligence of a diverse author set resulting in higher quality content [4,7,54]. However, unregistered and anonymous contributions are usually undesirable in corporate settings, where accountability is a commonly accepted principle and free riding is a concern [34]. It is worth noting the tension between the affordance of unregistered editing and corporate users' desire to attribute wiki contributions (see above); if a user contributes without registering, it would not be possible to measure his contribution. One possible approach for resolving this tension is to allow those users who wish not to register to still edit content, while recording the contributions of those users who choose to register. We expect that allowing (but not mandating) unregistered wiki editing will drive participation, and thus we propose:

Proposition 3. *Opening the editing process to unregistered users will increase wiki participation.*

Controlled Publishing. In traditional knowledge management systems, work is structured in such a way that each role is able to perform only the tasks he is responsible for; there is a distinction between content creation, editing, and administrative tasks. Wikis remove many of these workflow restrictions [57] and eliminate the distinction between content authoring, editing, and structuring tasks, such that any writer is automatically an editor, organizer, and publisher [9,40] without requiring the authorization of any administrator [57]. In particular, automatic publishing allows for very quick evolution of page content, thus circumventing the bottleneck associated with traditional content development projects, where administrators are responsible for qualifying and publishing information [1,58]. Nonetheless, manually controlling the release of article revisions may curtail the risks of inaccurate information in a wiki and bring the process of wiki authorship more in line with existing corporate practices. The control could take the form of restricting access to pages in a manner that lets selected groups collaboratively create a page privately before publishing a final version [10] with or without the approval of an administrator. Although there is no evidence to indicate whether such controlled release of new content is effective, we expect that because controlled publishing is in line with standard organizational knowledge management practices, it would be desired by corporate wiki users. Thus, we propose:

Proposition 4. *Controlling the release of article revisions will increase wiki participation.*

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[2] It is worth noting that since 2006, Wikipedia does not allow anonymous users to create new articles, although they can still edit existing pages.

Providing Tools for Peer-Based Quality Control. Since wikis often lack centralized governance, failing to establish peer-based quality control mechanisms could impede wiki project success. In online communities, peer oversight has been found to be as effective as expert quality control [11]; quality is attained through constant error correction and refinement by the user community, enabled by mechanisms for easy error detection and correction [40,59]. Tools such as watch lists, article quality ratings, software bots (to identify vandalism) and features to easily recover from vandalism (by reverting changes) are all used by Wikipedia to maintain high quality articles [52]. Without such tools, wiki content can quickly deteriorate, as evidenced by The Boomtown Times newspaper's editorial wiki, which was abandoned in just three days after being overwhelmed by disruptive users [60]. Prior works on wiki design have tried to enhance wikis with automatic quality control tools (e.g., tools to estimate the quality of wiki pages [27,37]) and such enhancements can motivate users to contribute to wikis [16]. An alternative mechanism for ensuring quality of pages that is specifically suitable for corporate wikis is a rating system, where users rate the quality of content on a wiki page [27]. Tools to measure the quality of wiki pages can signal the reliability of the information and could make users more comfortable relying on that information in their work. Hence, we expect that peer-based quality control tools, such as a rating system, will increase wiki use.

Proposition 5. *Incorporating an article rating mechanism will increase wiki participation.*

2   Research Method

Our research methodology is based on a web survey, where wiki users reported their perceptions on how a specific proposed manipulation (either a change to wikis' design or to the deployment procedure) would impact their wiki participation. There is an extensive body of literature in the information systems area which demonstrates that attitudes towards technology adoption are good determinants of actual adoption [8,12,43,55], thus we expect that users' self-reported attitudes are indicative of the expected effect of various proposed manipulations. The main advantage of our research method is that it enables us to explore the (perceived) effect of a relatively large number of wiki modifications in a single study.

The study was conducted at a large global organization which operates thousands of distinct wikis. The firm chosen as the subject of our study is IBM, which designs hardware, develops software, and engages in professional services. IBM has over 350,000 employees and a large user base of early adopters. An announcement regarding the survey appeared in the homepage of IBM wikis that all active wiki users could have seen, but the exact number of people who read the announcement is not known. This mass announcement would be similar to an advertisement in an industry magazine inviting survey participation. Our web survey was administered internally and was open to all users over a period

of eight weeks. Of the 1,205 users who accessed the survey web site, 919 completed the survey, describing their experiences with 486 distinct wikis. Survey respondents came from various organizational units, with a significant portion from software development (capturing the experience of 5% of all wiki applications). Each subject was asked to rate statements regarding her wiki activity on a 5-point Likert scale.

Prior literature provides only little guidance on how to measure users' perceptions of proposed manipulations to wiki deployment, thus the articulation of the survey questions regarding our propositions was informed by our understanding of corporate wiki practices, and was verified through extensive discussions with IBM's wiki administration unit. This collaborative survey development process ensured that the survey questions would be interpreted appropriately by the IBM employees who chose to participate.

3   Results

IBM wiki users were asked to rate the extent to which they agree with statements suggesting that certain manipulations (changes to wiki software or adjustments in wiki deployment procedures) will enhance their activity. The results of our study show (at least partial) support to propositions 1, 2, and 5, no support for proposition 3, and evidence contradicting proposition 4. Our findings suggest that in some cases wiki users would like to see changes to align wiki deployment with "the wiki way" (e.g. automatic publishing, the use of collaborative editing norms, incorporating peer-based quality control tools such as a rating system) while in other cases corporate users would like to see modifications that are more in line with traditional organizational knowledge management practices (e.g. attributing contributions, not permitting unregistered editing). A summary of the findings is described in Table 1.

Table 1. The extent to which modifications in wiki deployment are expected to increase participation (on a 1 to 5 scale)

Modifications in wiki deployment	Proposition	Support	Mean	Median	Std. Deviation
Promote collaborative editing norms	1	Yes	3.55	4	1.00
Attribution	2	Yes (strong)	3.90	4	0.93
Allow unregistered editing	3	No	2.86	3	1.16
Control publishing	4	No (refute)	2.15	2	1.15
Add a rating system	5	Yes (weak)	3.21	3	1.11

From the five modifications we have explored, *attribution* had the largest impact on users' anticipated participation levels, with over 60% of respondents saying they agree or strongly agree that publicizing their contributions will increase their participation. On the other extreme, over 60% say they disagree or

strongly disagree that *controlling the release of new content* by having an administrator first review changes would increase their activity. Figure 1 provides details regarding the distribution of responses to each of the proposed modifications.
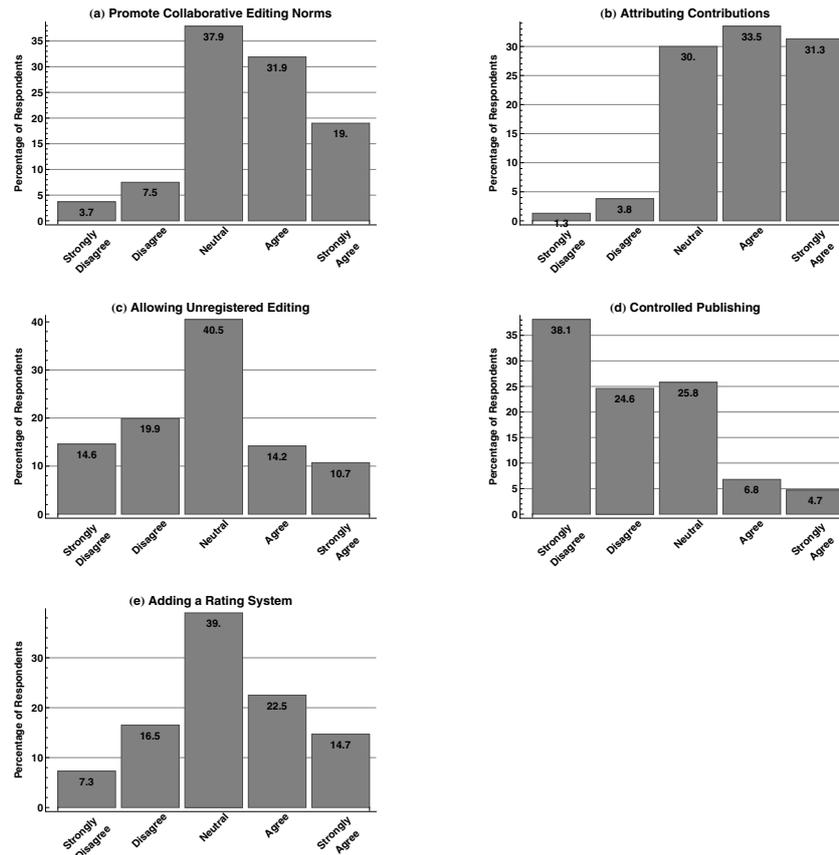

Fig. 1. Distribution of responses to statements regarding the anticipated effects of modifications in wiki deployment

4   Discussion

Wikis are designed for open and organic peer-based collaboration; however, as wikis are entering corporate walls, it is clear that some adjustments are required, since some wiki affordances run counter to traditional organizational knowledge management practices. The few empirical studies regarding wikis in corporate settings suggest that organizations are trying to find a compromise, staying true to wiki core affordances and adapting their work practices accordingly in some cases, and adjusting wiki design to fit standard knowledge management

work in other cases. This work is a preliminary exploration of corporate wiki users' attitudes towards various alternative deployment schemes. To the extent that the perceptions indeed capture users' expected behavior, our findings suggest that wiki adoption would be highest when organizations are able to find a fine balance between their traditional knowledge management practices (such as, not permitting unregistered editing) and the affordances of wiki technology (such as, automatic publishing). This balance is specific to each organization; the corporate culture, employee autonomy, motivation and incentives all must be considered. Following, we discuss the results related to each of the affordances in this preliminary investigation.

Attribution of authorship seems to be the affordance that is most appropriate modification for corporate settings, and users believe that introducing an attribution mechanism will increase their involvement. Our finding supports earlier results from a lab experiment [49] and justifies the investment in an automatic utility to estimate authors' contributions [6,16,26,27,37,50,53]. An additional modification that seems likely to affect users' participation is the **promotion of collaborative editing norms**. Roughly 50% of survey respondents believe that developing and communicating clear guidelines for editing content on wikis will increase their involvement, whereas only 10% disagree or strongly disagree. This result is in line with Giordano's [23] finding on the role of editing norms in wiki implementation success, and provides justification for the efforts to structure wiki communications [14,15,25]. Given that in corporate settings users normally go through training sessions before beginning to use an information system, the grass-roots deployment of wikis at IBM has circumvented this standard activity. Further, due to the openness of wiki technology (wikis are used in various ways - from a web development tool, to a document repository, to a collaboration application [3]), the level of uncertainty regarding how to make meaningful contributions acts as a disincentive for participation.

Prior works on wiki design have tried to incorporate automatic utilities for estimating pages' quality [16,27,37]. However, our findings suggest that providing **peer-based quality control tools** such as a rating system would have only limited impact on users' participation, and such an enhancement to wiki software was viewed as beneficial by less than 40% of respondents. We suspect that this finding represents the relative lack of risks (such as vandalism) in the "behind the firewall" wiki implementation we've studied. However, we believe that when opening wiki participation to external parties (e.g. customers), quality control will be of increased importance, as demonstrated by the case of The Boomtown Times [60].

Overall, wiki users in our sample did not have a clear preference regarding **unregistered editing**: roughly 25% of survey respondents believe that allowing unregistered editors (i.e. anonymous postings) will increase their participation, while nearly 35% prefer contributions to be made by registered users. We believe that there is a link between this affordance and corporate users' interest in attribution and recognition (see discussion above), which is not feasible when editors are not identified.

Research has shown that motivational dynamics in a corporate setting have an impact on wiki participation [29]; thus we collected data to help us distinguish between self-directed use of wikis (motivational drivers such as enjoyment, self-expression, belonging to a community, learning new skills, and other direct benefits) and users who are driven to use wikis (motivational factors such as peer pressure and supervisor pressure). Please refer to the Appendix for details on survey items. Users who feel compelled to use wikis are more interested in unregistered editing (correlations are $0.17 - 0.19$; $p < 0.0001$) and in controlling publishing (correlations are $0.22 - 0.37$; $p < 0.0001$) as illustrated in Figure 2. This demonstrates that these externally-motivated users may shy away from taking responsibility and are less comfortable with features that would hold them accountable.
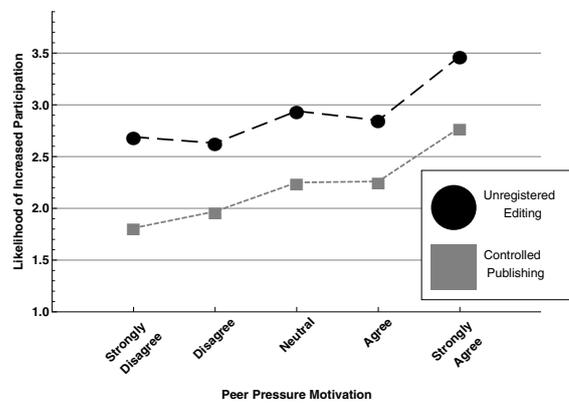

Fig. 2. Likelihood of increased participation for the affordances of (a) unregistered editing and (b) controlled publishing based on the degree to which respondents feel peer pressure to participate in wikis

Finally, **automatic publishing** of new content is expected to have contradicting consequences: on one hand it increases the risks to content quality, while on the other hand it can reduce bottlenecks in the creation of new knowledge. This dual effect was evident in our analysis of wiki roles, which found that content producers have less interest in controlled publishing since it restricts their ability to create knowledge, while content consumers have fewer objections to controlled publishing since it increases wiki content quality, as illustrated in Figure 3. Overall, users in our survey objected to the proposal to have administrators control the release of new content on wikis. We see two possible reasons for this finding. It is possible controlled publishing contradicts the notion of democracy that is associated with wikis [40] and thus is seen by users as a form of censorship and as a threat to author autonomy. Alternatively, it is possible that corporate users are less concerned with quality risks (e.g. vandalism; please refer to our discussion above) and thus do not see a need for a centralized content qualification mechanism.
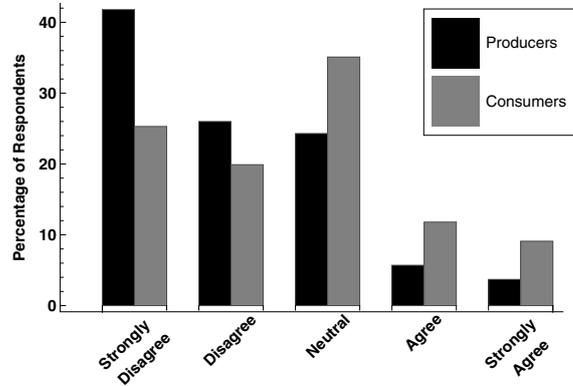
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Fig. 3. Responses regarding likelihood of increased participation if controlled publishing were implemented by user wiki role

Our findings have potential implications for both research and practice. Our study highlights the tension between wiki affordances as adopted from the open Internet environment and corporate knowledge management practices, and challenges the perception that wikis could be successfully deployed in corporate settings as is [3,42]. More broadly, we reveal the potential mismatch between the intended use of a technology and the way in which organizations choose to employ it, indicating possibilities in technology acceptance research. We believe that notion of affordances is very useful in this context, since it brings together the tool and its use. In addition, our results provide justification for works that aim to enhance and modify wikis in various ways - e.g. estimating users' contributions [6], structuring the editing process [14], and automatically estimating pages' quality [16] - suggesting that this is a productive research direction.

For practitioners, we identify a need for organizations to be aware of the disparity between the type of work wikis were intended to support and existing knowledge management practices. For each of these possible incompatibilities, the organization should consider whether it prefers to change wiki's design or alternatively to adapt the organization to "the wiki way". Specifically, the results from our empirical study indicate that corporate wiki users desire recognition for their efforts, highlighting the need for both a mechanism that can estimate and publicize users' contributions as well as to provide clear guidance on the collaborative authoring process while not attempting to impose controls on wiki's automatic publishing affordances.

5 Conclusion

Following the success of internet wiki-based application, such as Wikipedia, business organizations have begun adopting wikis. However, the affordances of wikis seem to run in contrast to traditional tightly controlled corporate knowledge

management practices. The findings from our preliminary study show that successful wiki adoption in organizations will require a hybrid approach to affordances, with some leaning towards settings in line with 'the wiki way' (e.g. unregistered editing, peer-based quality control) and others leaning towards more traditional corporate settings (e.g. attributing contributions). How much corporate wikis pull towards each side is a delicate balancing act, and may depend greatly on organizations' existing knowledge management practices and their ability to change.

This preliminary study has two goals. Our primary goal is in providing evidence regarding the anticipated effects of five proposed wiki modifications. While several studies have recently proposed extensions and modifications intended to adjust wiki affordances, there is no evidence to suggest which of these adjustments is more effective. In this study we investigated five wiki affordances - *collaborative authoring norms*, *unregistered editing*, *automatic publishing*, *non-attribution*, and *peer-based quality control* - and have reported on users' perceptions regarding the extent to which altering these wiki affordances - by either modifying the wiki system or by changing work practices - is likely to increase users' participation. Second, our conceptualization of wiki affordances goes beyond extant literature on the area with the goal of informing studies on wikis' design. While prior literature has described the primary design features of wikis, the notion of affordances is quite different than 'design features' as it focuses on the suitability of the tool for supporting a specific task (rather than on tool design per-se).

Our study provides only a preliminary probing into the suitability of wikis for corporate knowledge work. As such, an important value of this work is in pointing the direction to further research. Below, we briefly review various ways in which this study could be extended. First, we have only explored few possible modifications, and many other possibilities exist. For example, we proposed to change the affordance of 'automatic publishing' by adding an administrative control; however, an alternative modification would allow peers (rather than administrators) to qualify the content before publishing it (c.f. [10]). Second, our study of wiki affordances was based on user attitudes and, although prior research suggests that attitudes towards technology adoption are a good indicator of actual adoption [8,12,43,55], we recommend that future research would validate that actual wiki behavior corresponds to the attitudes reported in our study, either through a lab or field study. A third limitation lies in the ambiguity of the concept of participation. As we were interested in general adoption of wikis, we were less concerned about whether users would be more likely to contribute content (become 'active' participants) or to read content (become 'passive' participants). We believe that there are links between increased readers and increased active participation, and indeed it is possible that we captured cases where current readers believed they could become content creators under different affordance configurations. Follow-up work should include a more formal operationalization of wiki participation in order to provide better insights for user types as well as different user roles within both the wiki and the corporation. A fourth limitation

of this study is the measurement of the likely impact of the proposed wiki modifications. We have used single-item measures, working closely with IBM's wiki administration unit to ensure that the survey questions captured our intentions and were well understood by wiki users. Thus, some terminology adopted in the survey was based on how internal IBM employees referred to the feature (i.e. 'anonymous postings' was used to refer to 'unregistered editing' and a 'rating' of wiki articles implied a peer-based control). Such terminology may have other interpretations and thus caution should be used when adapting the questionnaire items from this study to other contexts. Fifth, future research could also extend the investigation of wiki affordances beyond the impact on participation to alternative indicators of project success, such as user satisfaction or job performance. Finally, we call for further research on wikis across various industries (e.g. business, education, government) and geographical regions. We conclude with a call for future research in this exciting area and hope that others would be able to fill-in the gaps in this study.

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Appendix: Survey Items

Instructions. For all questions below, please indicate the degree to which you agree of disagree with the following statements. Possible answers:

– Strongly Disagree
– Somewhat Disagree
– Neither Agree Nor Disagree
– Somewhat Agree
– Strongly Agree

Table 2. Survey Items

Title	Question
Modifications in wiki deployment	
Unregistered Editing	Allowing anonymous postings will have a positive effect on my wiki participation.
Attributing Contributions	Publicizing (within and outside the wikis) the contribution of wiki users will have a positive effect on my wiki participation.
Peer-Based Quality-Control	Adding Rating to wiki articles would increase my participation.
Promoting Collaborative Authoring Norms	Clearly communicating wiki behavior norms (e.g., no personal attacks, formatting rules) will have a positive effect on my wiki participation.
Controlled Publishing	My wiki participation would increase if all wiki contributions were reviewed by an administrator who decided what to publish
Motivations	
Enjoyment	I enjoy using the wiki.
Learning new skills	Through my wiki activity, I'm learning new skills.
Belonging to a community	Participation in the wiki provides me with a sense of belonging to a community.
Self-expression	Wiki participation allows me to express my views and opinions.
Direct benefits	Using the wiki helps me to get the rewards I'm seeking.
Peer Pressure	I feel pressure from my peers and colleagues to participate in the wiki.
Supervisor Pressure	I feel pressure from my IBM supervisors to participate in the wiki.