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SOCIAL MEDIA AND ORGANIZING – AN EMPIRICAL ANALYSIS OF THE ROLE OF WIKI AFFORDANCES IN ORGANIZING PRACTICES

Completed Research Paper

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Abstract

The evolution of social media has introduced novel possibilities for work and interaction in organizations. The wiki technology is one important kind of social media technologies that is increasingly used to facilitate the creation and sharing of organizational knowledge within communities. Given the increasing use of social media in organizations and the lack of knowledge on their consequences for organizing, we use an affordance lens to explore the enactment of organizational wiki. Using qualitative data obtained through interviews, field visits, and documents from two multinational organizations –CCC and IBM– we first identified eight affordances that describe various wiki possibilities and practices. We then identified four properties of these affordances including multiplicity, referential, situatedness, and communal. These properties represent the main contribution of the paper in that they extend the notion of affordance by theorizing new concepts that describe relational dynamics, situated and contextual conditions, and social factors involved in enacting, perceiving, and exploiting affordances.

Keywords: Wikis, Affordances, Organization, Social Media

Introduction

The social media phenomenon is often perceived as a transformative evolution of the web. It represents what might be seen as a shift from the traditional, static web (Web 1.0) into a more dynamic, flexible and participatory web (Web 2.0) (Stenmark, 2008). Social media are described as internet-based applications that build on the ideological and technological foundations of Web 2.0 and allow for the creation and exchange of user generated content (Kaplan & Haenlein, 2010).

Many scholars have been intrigued with the consequences and possibilities that social media technologies such as wikis, blogs, microblogs, social networks, and others might bring into organizations (e.g., Bibbo et al., 2010; Stenmark, 2008; Majchrzak et al., 2006; Treem & Leonardi, 2012; Hasan & Pfaff, 2007; Yeo & Arazy, 2012, Majchrzak, 2009; Holtzblatt et al., 2010). Often, these scholars tend to suggest that social media have the potential to enable novel possibilities for work and interaction at the workplace. Treem & Leonardi (2012), for instance, noted that scholars often treat social media as a new class of technologies that may alter organizational processes in fundamental ways.

The wiki technology, which is of interest in this paper, is one important kind of social media technologies that is increasingly adopted by organizations. It is often used to enable novel possibilities for the dynamic creation and co-creation of organizational knowledge within communities (Bibbo et al., 2010; Yates et al., 2010). In a comment about a theory of wikis, Majchrzak (2009) discussed how wikis might afford new possibilities in organizations such as democratizing knowledge flows, new emergent roles in moving conversations forward and enabling community-based policing, etc. Other scholars (e.g., Yates et al., 2010; Hasan & Pfaff, 2007; Bibbo et al., 2010) have examined further possibilities of wikis such as knowledge shaping which allows for dynamic forms of rewriting and reorganizing content, democratizing organizational knowledge, fostering collaborative culture, and community ownership of knowledge.

With the evolution of social media and their increasing use in organizations (Yates et al., 2010; Treem & Leonardi, 2012; Majchrzak et al., forthcoming), the potential for emergent forms of work and interactions or new forms of organizing is continually created (Zammuto et al., 2007). Some scholars, therefore, have recently attempted to develop theorization that addresses the relationship between social media and organizations using an affordance lens. The notion of affordance describes the linkage between the capabilities afforded by the materiality of technological artifacts and actor's intentions and goals. Several scholars suggested that an affordance lens is useful to understand the role of technology in organizational dynamics (Faraj & Azad, 2012; Treem & Leonardi, 2012; Robey et al., 2012). Treem & Leonardi (2012), for instance, used an affordance lens to explore the emergence of social media affordances in organizations. They suggested four generic affordances including visibility, editability, persistence, and association. In a similar vein, Majchrzak et al. (forthcoming) used an affordance lens in their analysis of the role of social media in online knowledge sharing. This lens, they explained, helped them to develop a set of affordances that provide theorization about potential shifts in knowledge sharing processes. In this respect, social media affordances describe the features of technology and how they become mutually constituted in the organizational context in which it is embedded (Treem & Leonardi, 2012).

In this study, we also use an affordance lens to explore the enactment of affordances specific to organizational wikis. Wikis are increasingly used in organizations (Bibbo et al., 2010; Yates et al., 2010; Martine et al., 2013). However, little is known about their application and use in organizations, especially in corporate settings (Kosonen & Kianto, 2009; Majchrzak et al., forthcoming; Martine et al., 2013; Danis & Singer, 2008; Bibbo et al., 2010). Danis & Singer (2008), for instance, questioned whether the philosophy of wiki openness can work for enterprise settings and purposes. Martine et al. (2003) raised concerns regarding the use of wikis as intended in organizations. Also, they explained that existing studies do not contribute enough understandings of why wikis succeed or fail, how they work, and what possibilities they may afford in organizations. Most importantly, Treem & Leonardi (2012) pointed to the lack of theory development about the consequences of social media for organizing in current literature.

By using an affordance lens, we aim to develop a theoretical understanding that would contribute with novel insights into organizational wiki affordances. That is, we seek to develop an understanding of the dynamics that underlie the enactment of these affordances by looking at the ways through which people attempt to exploit the possibilities afforded by them. The motive to seek such an understanding is influenced by recent developments in the Information Systems field that focus on the entanglement,

imbrication or melding of the material and the social in practice (e.g., Leonardi & Barley, 2008; Orlikowski, 2007; Leonardi & Barley, 2010; Orlikowski & Scott, 2008; Orlikowski 2010; Leonardi, 2012; Kallinikos et al., 2012; Leonardi, 2011). Theories of affordances (Leonardi, 2011; Leonardi & Barley, 2011) as well as sociomateriality (Orlikowski, 2007; Leonardi, 2012) are two examples which are currently being in focus as ways to capture the relationship between social and material agencies. Hence, in this paper, the affordance lens is used to help us achieve our aim by emphasizing such relationship as a dynamic interaction between wiki properties and social practices that enables the enactment of wiki affordances. So, the main research question in this paper is: how can we understand the affordances of wikis in organizational settings? To achieve our aim and address this question, we offer a qualitative empirical analysis of wiki use at two large, multinational organizations: CCC and IBM. The main contribution from this analysis is centered on theorizing new concepts that extend the notion of affordance in terms of offering means to describe relational dynamics, situated and contextual conditions, and social factors involved in enacting, perceiving, and exploiting affordances.

The remainder of the paper is organized as follows: in the next section we offer a review of key theoretical considerations related to technology and organizing as well as the affordance lens. Then, we provide a presentation of various empirical issues that outlines the research settings and the data collection and analysis. After that, we present our empirical findings of organizational wiki affordances. We later elaborate and extend our findings by discussing the constitution of these affordances and present four key properties of wiki affordances. Finally, we report on the conclusions and contribution of our study.

Theoretical Considerations

As we seek to understand the enactment of wiki affordances and the consequences for organizing, this section is dedicated to discussing key theoretical considerations that provide a basis for our paper. We begin by reviewing general ideas from technology and organizing with emphasis on the relationship between social and material agencies. Then, we present the affordance lens including a discussion of the different perspectives on the concept of affordance.

Technology and Organizing

Recent literature addressing the relationship between technology and organizing, or material and social agencies, suggests an emphasis on the mutuality of this relationship (Leonardi & Barley, 2008; Orlikowski, 2010; Leonardi, 2012; Leonardi, 2011; Kallinikos et al., 2012; Orlikowski, 2007; Orlikowski & Scott, 2008). The aim is to revive materiality and its role which often fades into the background in studies of technology and organization (Orlikowski & Scott, 2008; Leonardi & Barley, 2010, 2008; Orlikowski, 2007). Leonardi & Barley (2010) discussed that for such aim to be realized emphasis should be placed on understanding how material properties of technology enable and/or constrain technology use. The premise here is that all social action is possible because of some materiality (Leonardi, 2012). This is especially true with respect to increasing adoption and use of technologies in contemporary organizations where organizational practices are seen as multiple, emergent and dynamic sociomaterial configurations (Orlikowski & Scott, 2008). It is important to note that there are two competing views concerning the relationship between the material and the social. An agential realism view that suggests that there is no ontological distinction between them, hence sociomateriality, and a critical realism view that suggests that the material and the social are essentially separate and they can only appear to be inseparable through human activity occurring overtime. See Leonardi (2013) and Mutch (2013) for a detailed discussion.

Sociomateriality is one important lens to understanding the inherent inseparability of the material and the social as an entangled relationship in which they are mutually constituted in practice (Orlikowski, 2007; Orlikowski & Scott, 2008). In this view, Orlikowski (2007) suggested that "all practices are always and everywhere sociomaterial, and that this sociomateriality is constitutive, shaping the contours and possibilities of everyday organizing." (p. 1444). Others such as Leonardi (2012) explained sociomateriality as the "enactment of a particular set of activities that meld institutions, norms, discourses, and all other phenomenon we typically call social" (p. 38). In this respect, he stressed that materiality has important consequences for organizing in that it has the power to enable and constrain social actions. Scott & Orlikowski (2012) also argued that social practices are essentially bounded by the material means through which they are performed. Central to these ideas is the unpredictability or indetermination of the effects

of technology in organizing processes. It is suggested that unpredictable forms of organizing emerge as a result of the combination of IT and organizations features and practices (Zammuto et al., 2007).

An important lens that captures such combinations is the affordance lens (Treem & Leonardi, 2012; Zammuto et al., 2007; Robey et al., 2012; Faraj & Azad, 2012). Zammuto et al. (2007), for instance, discussed affordances for organizing as a generic bridging concept that emerges from the intersection of IT systems and organization systems. They explained that affordances for organizing represent technology-organizing possibilities that "depend not only on the functionality characterizing the information technology, but also on the expertise, organizational processes and procedures, controls, boundary-spanning approaches, and other social capacities present in the organization" (p. 752). While the concept of affordance maybe similar to that of sociomateriality, there is still a major distinction between the two. Sociomateriality is an extremely theoretical notion that provides an abstract understanding of the relationship between the material and the social (Leonardi, 2013). In contrast, the concept of affordance may provide a 'factual' understanding of this relationship.

The Affordance Lens

Leonardi (2011) presented the affordance lens in an attempt to find vocabulary useful for theorizing the imbrication of material and human agencies. A technology affordance is defined as "the mutuality of actor intentions and technology capabilities that provide the potential for a particular action" (Faraj & Azad, 2012). The first ideas of affordances were developed by James Gibson (1986), a perceptual psychologist, in an effort to explain how animals perceive their environment. Gibson discussed that an object like a rock can be used differently by different animals because each may perceive the possibilities that a rock can offer in different ways (Treem & Leonardi, 2010; Leonardi, 2011). In this way, Gibson argued that people interact with objects only after they perceive and realize what an object is good for and what it can afford them. Gibson's argument implies that the properties of an artifact exist independently and that people infuse them with meaning relative to their own perception and behavior. In other words, people do not perceive what an object is but what kind of uses it affords them (Treem & Leonardi, 2012).

Leonardi (2011) applied Gibson's ideas of affordances in the context of technology and organizations, mainly the imbrication of material and social agencies. He discussed that technologies have material properties that afford different possibilities for action depending on the contexts in which they are used. Because of that, he further discussed, affordances are seen to be unique to the particular ways in which an actor perceives the material properties of an artifact. He also noted that while technological properties might be common to people when they encounter them, affordances are not because these depend, as stated, on what possibilities people perceive in them in different contexts and situations.

In order to address broader applications of affordances in the discussions of technology Leonardi (2011) discussed two ways of understanding affordances by Norman (1990) and Hutchby (2001). Norman (1990) suggested that affordances are intrinsic properties of artifacts and that a good design means that the affordances of a designed artifact can give strong clues for what its materiality can be used for. One central premise in Norman's understanding of affordances, unlike Gibson, is that affordances do not change across contexts, but they are always there waiting to be perceived. Another discussion of affordances in relation to technology was offered by Hutchby (2001). Hutchby suggested an understanding of affordances that differs from Gibson and Norman in that he sought a middle ground between their conceptualizations of affordances by emphasizing their relational character (Leonardi, 2011). A relational view of affordances suggests that affordances are not exclusive properties of people or artifacts but they are constituted in relationships between people and the materiality of the things they interact with (Leonardi, 2011). Similar to Gibson Hutchby also suggested that affordances change across contexts because people come to materiality with diverse goals, so they perceive technology as affording distinct possibilities for action. Leonardi (2011) explained in this respect "…as people attempt to reconcile their own goals with the materiality of a technology, they actively construct perceptual affordances and constraints. Depending on whether they perceive that a technology affords or constrains their goals, they make choices about how they will imbricate human and material agencies." (p. 154).

In addition, with respect to social media, there is a growing number of studies (e.g., Treem & Leonardi, 2012; Majchrzak et al., forthcoming) that use an affordance lens in order to understand what possibilities for action social media may afford instead of focusing on what their features can or cannot do. That is to

say that using an affordance lens may help researchers to extend their scope in order to understand the role of materiality, or material characteristics of technology, in organizational life (Faraj & Azad, 2012; Treem & Leonardi, 2012). In this respect, Majchrzak et al. (forthcoming) commented on the use of the affordance lens in understanding the influence of social media affordances on online knowledge sharing as follows: "The affordance lens forces the researcher to consider the symbiotic relationship between the action to be taken in the context and the capability of the technology. By treating the entanglement between the human action and the technological capability as a unit of analysis, the affordance perspective provides a language for beginning to examine social media and its role in affecting the process of online knowledge sharing." (p. 2). Finally, it is important to note that possibilities for action offered by affordances do not always mean enablers. This is because people might perceive that a technology offers no affordances for action and it will then constrain them from achieving their goals (Leonardi, 2013). Majchrzak et al. (forthcoming), for instance, showed that there are contradictory influences of social media affordances on knowledge sharing. They discussed that each affordance involves tensions that point to a paradox of social media in-use, and that affordances are simultaneously hindering and helping.

Empirical Issues

The aim from this section is to present the empirical cases as well as the data collection and analysis. We first start by introducing the cases of CCC and IBM and how each organization uses the wiki at the workplace. Then, we describe the data collection process including a description of the methods and the participants. After that, we discuss the data analysis through outlining three different analytical steps.

Research Settings: the Wikis at CCC and IBM

Our empirical investigation took place at two large multinational organizations: CCC and IBM. The first research setting is CCC which is short for Consolidated Contractors Company. CCC is one of the largest construction companies in the world with more than 170000 employees spread over 120 countries. It uses a central wiki run by the Knowledge Management (KM) department since 2007. The wiki is primarily used by communities of practice, as they call them at CCC, as a collaborative platform where community members collaborate together and share professional content mainly obtained in real-life projects. There are eleven communities that use the wiki covering various technical areas and subjects such as piping, hydrotesting, safety, etc. The wiki is fully controlled by the KM department. People who wish to use the wiki need to submit a formal request demanding membership in one or more communities. It is divided into several spaces and each community has its own space where members can collaborate and share content relevant to their areas of concern. The members of these communities are given roles and rights that determine the possibilities they might have in using the wiki. So in each community there are a number of community leaders, captains, subject matter experts and many other regular members. Usually community leaders and captains are senior people with many years of experience at the company. These often lead the community by suggesting topics, inviting new members, etc. Regular members are employees who have an interest in specific areas addressed by certain communities and they often use the wiki to learn new knowledge. The wiki is only accessible through an internal secure network at CCC.

The other research setting is IBM. It is one of the largest companies in the world and has over 400000 employees worldwide. The company is primarily specialized in producing software and hardware technologies as well as offering consulting, hosting, and infrastructure services on a global level. In respect of using wikis IBM has a very different setup of wikis compared to CCC. Wikis in IBM are part of a universal system called IBM Connections. This system includes various social media tools and many other tools that support collaboration and interaction among people. The use of wikis at IBM can be described by fluidity and flexibility in the sense that people can freely use the wiki tool in IBM Connection to create wikis and use them for various purposes. So a global project team may want to create a wiki to share project-related information and collaborate with each other through creating and sharing content on the wiki. In fact the data collected in the current study from IBM suggests that one of the main purposes to use wikis is to develop documentation for software products. So software engineers, information developers, and many others collaborate to develop documentation on wikis. In addition to using wikis for such purposes, people at IBM also use them to create various communities where people share and discuss common interests. So, depending on the purpose, people have the possibility to set up wikis to be

public and accessible by a large audience or private and only accessible by a limited number of people like in project wikis.

Data Collection: A Qualitative Investigation

The empirical data collection was primarily qualitative. The main vehicle for collecting qualitative empirical data at both CCC and IBM was the semi-structured interview method. It is often considered as a powerful research tool and most useful method to obtain qualitative empirical data (Kvale, 2006). The strength of the interview method lies in its potential to engage research participants in a direct conversation with the researcher in their life settings (e.g., a workplace). It is therefore a useful method to seek and generate "contextual, nuanced and authentic accounts of participants' outer and inner worlds" (Schultze & Avital, 2011, p. 35). In this way, obtaining qualitative data using the interview method has helped us to develop a solid empirical foundation to address our aim in this paper by: first emphasizing the participants' natural work settings, second providing closer insights into participants' actual technology use practices, and third offering the potential to account and capture deeper aspects of the studied phenomenon that help in developing theorization that goes beyond the data.

The total number of interviews was 20. An interview protocol was used to guide the interview process and ensure consistent responses across interviewees (Schultze & Avital, 2011). This protocol included a set of questions about wiki use practices, organizational norms and routines, and technology features and facilities. However, the interview process was fluid in the sense that new questions maybe asked depending on the flow of the discussion. We conducted 10 interviews in each company in the period between May and October 2011. The participants from CCC were selected in cooperation with the KM department with emphasis on the diversity of their roles, seniority levels and experience in using the wiki. Four of these participants were seniors with experiences ranging between 20 to 30 years at the company. All of them had senior roles within their communities such as captains, leaders, etc. The other six participants were juniors with experiences ranging between 2 to 10 years. The majority were regular community members with limited roles and rights to read and make comments on wiki content. All of our CCC participants had an experience in using the wiki since its deployment. Six of the interviews were conducted via Skype due to geographical constraints and the other four were conducted face-to-face at CCC headquarters in Athens. The average interviewing time was about 50 minutes. All interviews were recorded using an audio recording device, transcribed and then sent to the participants for validation.

The participants from IBM represented a diverse group of software developers, information developers, social media evangelists, sales professionals, and project managers. Their work experiences at IBM range between 2 years up to 20 years. The range of their experiences in using wikis was between 1 to 10 years. Most of them used wikis for both professional and non-professional purposes such as developing software documentation, planning and coordination, sharing visions and opinions, etc. Few of our IBM participants were in fact charged with writing wiki content and their main role was to work with wikis, for instance, to write content on behalf of their managers. Five interviews were conducted face-to-face at IBM offices in Copenhagen, two over the phone and three via Skype. The average interviewing time was between 45 minutes to one hour. All interviews were recorded, transcribed and then sent for validation.

Data analysis: A Hermeneutical Analysis

Our empirical data analysis is influenced by a relational approach of affordances in that it emphasizes the imbrication between human and material agencies (cf. Leonardi, 2013) as a way to understand potential consequences of social media use in organizations (cf. Treem & Leonardi, 2012). Such approach can therefore help us in addressing this relationship by looking at what the combinations of material and organization features allow people to do and what possibilities might be created that affect organization form and function (Zammuto et al., 2007; Leonardi, 2011; Treem & Leonardi, 2012).

The empirical data analysis in this paper is essentially hermeneutic with the hermeneutic circle as an underlying analytical framework that guided our analytical investigation of the data (Cole & Avison, 2007; Klein & Myers, 1999). The hermeneutic circle focuses on a spiral understanding of the data by looking into the meanings of the parts and then establishing relationships with the whole in an integrative manner in order to develop an understanding of the studied phenomenon. Each circle involves three key analytical

steps including understanding, explanation and interpretation that help in operationalizing the analytical investigation of the empirical data (Cole & Avison, 2007). These three steps represent the backbone of our data analysis in terms of allowing us to move iteratively through the data so that we are able to develop connections between the parts and the whole. The following discussion outlines all three steps that describe the 'circular' analysis of the two sets of data:

First understanding the empirical data was focused on making sense of our participants' meanings and practices from an affordance lens. It was the first step that aimed at analyzing the interaction between material and social agencies in relation to using a wiki at the workplace. This was therefore an effort to make an initial overall analysis and develop an understanding of the data that accounts for such interaction by looking at both material features of the technology as well as the ways by which people perceive and use these features. This initial analysis also involved observing various cultural and organizational differences between CCC and IBM that helped us in understanding how each organization applies and uses the wiki. CCC, for instance, was observed to be a more conservative, traditional, and less eager to use technology. While IBM was a tech-savvy organization that has fluid and open structure.

We used the four organizational affordances of social media, suggested by Treem & Leonardi (2012), so that we can illuminate and see how these affordances maybe relevant to the wiki in the data. Table 1. below shows the four affordances –editability, visibility, association, and persistence– together with key characteristics pertaining to each individual affordance. These characteristics involve features of technology as well as information/actions that make for an individual affordance. In this respect, we looked at how various features of the wiki were perceived relative to people's intentions and goals in different situations. For instance, the editability affordance was identified by seeking empirical instances that describe how people in both companies exploited and perceived the possibility to edit each other's text. Identifying the affordances was achieved through collaboration among the authors of this paper. The two sets of data were examined separately by the three authors. Each of the authors developed a table (cf. Miles & Huberman, 1994) to organize all identified affordances together with several empirical instances that support each affordance. The identification and labeling of each individual affordance was done based on corresponding characteristics and actions/behaviors found in the empirical instances. The tables were manually compared and then combined together in order to select dominant affordances. We could found all four affordances to be relevant to the wiki. But at the same we became aware that the four affordances did not illuminate the whole picture since our interpretation of the data revealed instances that point to situations where other affordances are enacted. Therefore, the outcome from this first analytical step was centered on finding empirical proof of the four affordances shown in Table 1 and also seeing that there are other affordances hidden in the data.

Table 1. Organizational Affordances of Social Media including their features and actions/behaviors after (Treem & Leonardi, 2012)

Affordances	Features	Actions/Behaviors
Editability	- Asynchronous text-based entries. - Previous history of edits. - Revisions permissible.	- Regulating personal expressions. - Targeting content. - Improving information quality.
Visibility	- Display of content contributions. - List of edits of entries. - Notification of content changes.	- Work Behavior. - Metaknowledge. - Organizational activity streams.
Persistence	- Recorded history of discussions - Entries indexed by search engines	- Sustaining knowledge over time - Creating robust forms of communications - Growing content
Association	- List of editors for each entry - List of rights and contributions in profiles	- Supporting social connection - Access to relevant information - Enabling emergent connection

Second explanation is the step which was mainly focused on digging deeper in the data in order to highlight additional affordances observed in the first step and also develop an understanding of their dynamics. Here, the purpose, as Cole & Avison (2007) described it, is to do reflection and reconstruction

in the sense that a "shared meaning is interpreted anew" (p. 825). So, after identifying empirical instances and locating the four basic affordances, we conducted a reinterpretation of the data. As stated earlier, identifying the affordances in the first step was an initial interpretation which helped us to produce an understanding of basic wiki affordances. Then, in this step, which sustains our circle of understanding, the reinterpretation of the data was done through reexamining each empirical instance, already identified in the tables developed in the previous step, and developing a better understanding of newly observed affordances. This reinterpretation of the data was a key step in our analytical investigation for two main reasons. The first reason was ensuring that the empirical instances provide sufficient empirical evidence that supports an understanding of wiki affordances and their characteristics. The second reason was developing labels that could explain the additional affordances observed in the previous step. Our reinterpretation of the data, which was basically driven by further reading of the interview transcripts and discussions among us, helped us to identify other affordances by accounting to new situations and characteristics related to wiki use. We identified several affordances and labeled them as follows: Viewability, Commenting, Validation, Accessibility. These new affordances are discussed in details in the findings section. The main outcome of this analytical step was therefore focused on developing a new meaning or understanding of the data which resulted in an additional set of wiki affordances.

Third is as Cole & Avison (2007) described it "another stage of interpretation" (p. 826). It should be noted that hermeneutical analysis of empirical data requires such an emphasis on interpretation and reinterpretation, since hermeneutics is a theory of interpretation and explicating the meaning of text (Bleicher, 1980). So the three analytical steps presented here are primarily interpretive mechanisms for our circular analysis and understanding of the data. The aim from this step was to develop an informed, more sophisticated interpretation of the data compared to our previous interpretation in the first two steps. Such informed and sophisticated interpretation was mainly achieved by continued examination of the data and active discussions among the authors. The process was fluid in the sense of looking at various aspects of affordances bearing in mind the ways by which affordances were enacted in the course of using a wiki in the two studied empirical settings. In fact, this step helped us to some extent to move beyond the data in terms of taking into account deeper dynamics involved in the enactment of affordances such as how they relate to each other, the context of their enactment, and how they really affect the use of technology in practice. More clearly, in the previous two steps we were focused on interpreting the data in order to identify wiki affordances. But, while iteratively doing so, we were able to develop deeper levels of understanding that helped us to "illuminate and articulate what generally goes unnoticed because it is ubiquitous, common-place, and everyday" (Cole & Avison, 2007, p. 821). That is to say, in this step were concerned with uncovering what lies behind the enactment of affordances and how people perceive and exploit them. Hence, the eventual outcome from this step was centered on identifying a number of key *properties of affordances* that describe basic underlying organizing processes and dynamics involved in the enactment and exploitation of affordances. These properties allowed us to reconceptualize our understanding of the concept of affordance.

Empirical Findings: Organizational Wikis Affordances

The empirical findings from our data analysis are presented here in this section. Eight key organizational wiki affordances are outlined supported by interview quotes. The first four affordances represent the initial affordances, drawn from Treem & Leonardi (2012), used in the data analysis. The other four are identified during the analysis and include commenting, accessibility, viewability, and validation.

Visibility

Visibility, as discussed by Treem & Leonardi (2012), affords people the possibility to make their behaviors, knowledge, preferences and network connections that were once invisible or very hard to see visible to other people in the organization. It also implies that people can easily and effortlessly see information about anyone else. In the context of our study wikis have been observed to afford visibility or openness. As one of the key affordances of wikis visibility is perceived to afford several possibilities within an organization. Exploiting the visible space of a wiki to reach out a wider audience was one key possibility. A Plant Manger at CCC emphasized on this:

> *It is a facility which really helps people display opinions, experiences and knowledge more friendly than lets say you are going to formal more binding emails lets say.*

Another view on visibility was given by a Sales Enablement Professional from IBM who noted:

> *Because the wiki part we use you know it has page history, revision history and so on, it is very easy to go and see who changed what paragraph on what date.*

However the fact that a wiki maybe visible to a large audience and that what people do on a wiki is visible to anyone with access may engender possibilities for limited contributions (e.g., allowing commenting not editing), hence driving constraining possibilities. A Learning Intelligence Leader at IBM explained how this applies in the context where they use wikis:

> *We have the ability to make certain pages visible while not others and so we take a determination of what is going to be sensitive to our organization and things like this.*

Further the visible nature of wiki content makes some people concerned about how they may look in the eyes of others (e.g. stupid, expert, responsible, etc.) and how they perceive themselves as content contributors, especially in a visible wiki space. In practice people tend to be careful, for instance, about the quality of content they contribute into the wiki. They also tend to be cautious about peoples' expectations from them when they make contributions into the wiki (e.g., commitment to continue to contribute). A Learning Intelligence Leader at IBM illustrated his concerns regarding visibility by stating that:

> *Not wanting to put my name out there because I look stupid… I think you know again how open is it that people gonna say well that guy he obviously doesn't know what he is talking about.*

An Information Developer at IBM had a different view on this:

> *It is not so much that i think that I am worried that other people would see what I've edited, i just don't wanna make a mistake.*

A Mechanical Manager at CCC explained his about the commitment to sustain contributions into the wiki:

> *[openness] can encourage us to contribute more … At the same time it is you know once you have contributed, we have also commitment. Once you make commitment you have to contribute, you have to put your comments.*

One of the Client Technical Professionals at IBM also reflected on commitment issues and suggested that visibility may imply more workload:

> *One of the comments I hear when I talk to colleagues about this is that they say well I don't want to be a subject matter expert, I don't want everyone to point to me, I don't want all this fame and glory because typically it adds to my workload.*

Other additional aspects of visibility relate to how content is displayed and made visible on the wiki and the possibility to see who the contributors are. A User Experience Specialist at IBM commented:

> *if they're using the wiki technology to say this is more documentation … then yes i would go in and edit it, because they're not writing it as their own personal document, they are writing as a shared document.*

Finally a Client Technical Professional at IBM explained her view about seeing the contributors:

> *When I look at this wiki I can see that it is very few people working on it, and it is the developers more or less who are trying to put marketing terms into things and try to explain for ordinary users. And if you see almost only the same authors then I have this feeling why should I jump in and write, it is not my job really, kind of let them do it.*

Editability

Treem & Leonardi (2012) described editability as the possibility to spend a good deal of time and effort crafting and recrafting a communicative act before it is viewed by others. In this way it allowed people to revise and modify content to tailor their ideas in a specific context. We asked our participants about their perceptions of these possibilities afforded by editability in the two organizations and observed that

editability affords both enabling and constraining possibilities. Editability as an enabler for the collaborative production of knowledge implies possibilities that facilitate and enhance knowledge sharing by allowing multiple people to collaborate together in the production and co-production of content. An Office Engineer at CCC commented on this:

> *It is not difficult to add and write, to use the software. It is something like using word, excel, something very easy. You can read and write very easily, and you can edit what you write.*

A Social Media Evangelist at IBM also emphasized the quality of wiki editability:

> *The fact that the wiki is a container of fluid information is value. Wikis also usually carry the connotation that this is something that we continue to improve.*

In contrast editability as a barrier has a number of dimensions. Editability is sometimes seen as a barrier depending on the roles and seniority levels of content contributors. So, for instance, some people hesitate editing content made by their managers on the wiki. In some other cases people hesitate editing content contributed by people considered experts in specific areas. Editability might also be a barrier for people who may believe that editing content on a wiki requires a substantial level of expertise that would allow them to be able to contribute by editing others' contributions. This was explained by an Information Developer at IBM who described her hesitation to edit managers' contributions:

> *with managers I hesitate editing their content because I don't think that it is my place and my role to do that.*

Also a Learning Intelligence Leader at IBM reflected on the same issue but had a different view on it:

> *If I were to make an edit for more senior's article or strangers' articles I would need to have a 110% confidence that what I am doing is accurate and correct.*

Other dimensions of editability as a barrier is when people hesitate editing content made by others because they want to be polite and avoid being potentially perceived as rude by content contributors. In various situations people find ways to deal with such issues in order for them to contribute politely. The Information Developer further explained her hesitation behavior:

> *I hesitate to just go in and edit people's content without asking them first. I just don't, maybe I feel like it is being a little rude.*

An IBM Social Media Evangelist also added on this by describing how people attempt to deal with issues related to editability:

> *They are actually calling the person who created that wiki to ask them to make the update for them because they don't feel they the authority to ask for those changes. There is still this mentality that is very much driven by if you don't have the permission don't do it.*

An additional dimension related to editability was described by a Technical Sales Professional at IBM:

> *Normally we correct as a courtesy. I also make sure to alert the authors that I have changed this.*

Persistence

The affordance of persistence refers to communication or content that remains accessible in the same form as the original display after the actor has finished her presentation (Treem & Leonardi, 2012). In this way, as a wiki affordance, persistence affords the possibility for content shared on a wiki to remain available to a large audience. This was emphasized by a Sales Enablement Professional at IBM:

> *for me as an author and as a sort of content creator because it is so flexible it is very appealing to me. Because if I put something there, it lives almost forever, very different than an email.*

It was also emphasized by a User Experience Specialist from IBM who said:

> *I know that's going to be within IBM for as long as I am here.*

Surely this has an important relationship with the affordance of visibility. Persistent content should necessarily be visible so that people can make use of it and in being so it gives people a new way of finding knowledge compared to other ways such as searching email inboxes. An IBM Information Developer

explained her view by stating that:

> *so many people have added their own content and collaborated and it is a dynamically set of content that is always available.*

A Plant Group Manager at CCC added a different perspective on persistence by relating to content available in emails, he said:

> *you will find lots of subjects, issues or materials available for people to go back for rather than going through your inboxes from last year or something.*

Generally there were two main concerns related to the persistence of content on a wiki. The first is related to the validity of content. Since content is developed in an accumulative manner there is a possibility that it gets too messy and difficult to manage. The second concern is related to peoples' contributive behavior. The fact that people can realize that their content might exist for longer periods of time and is always available for people make them either hesitant to contribute or more conservative about their content contributions. These two concerns were illustrated by an Information Developer from IBM as follows:

> *I don't know what still applies, some of it [wiki content] makes sense, some of it was contributed by people who left the company, and it is quite a mess.*

Association

Associations are established connections between individuals, between individuals and content, or between an actor and a presentation (Treem & Leonardi, 2012). As an affordance associations afford the possibility for people to get to know each other within professional groups and communities inside an organization. It allows people to locate experts and makes it possible for junior employees to interact with other senior employees in their organizations in various ways through the wiki. Possibilities afforded by association may have two key consequences in relation to the ways people perceive the use of the wiki. First possibilities afforded by association might be limited because of hierarchical and professional relationships among wiki users. People often tend to avoid making any kinds of contributions into content made by seniors or people in managerial positions. This kind of association describes an association between individuals and content. So even if they are eager to contribute into such content they still weigh their contributions so that, for instance, they make comments instead of editing or choose to just view and read content. In some other cases people may choose to consult with senior contributors by calling them before making any contributions. A Civil Engineer at CCC explained his view on content-individual relationship especially in the case of editing content made by a senior employee at the company and how this might implicate relationships among people, he said:

> *the importance of this issue is the person himself not the audience. The person that might get offended especially with the relationship between a supervisor and a subordinate, it might be critical.*

The second consequence of association is related to the effects on how wiki users create and edit content. For instance because content is sometimes visible people often tend to spend more time crafting their contributions because of their perceived relation to this content in front of other people. They also tend to be cautious when others attempt to edit their content because they believe that it is their own content and that they should be aware about any potential changes made by others. A Software Developer at IBM said:

> *Caring about the correctness makes me perhaps a bit protective about it.*

Another IBM Software Developer further added:□by doing that [editing] this person makes some sort of contact with me. Maybe not directly he

> *makes me aware that he exists and he shows me what he is able to do.*

Commenting

Commenting is an important wiki affordance. It is an affordance that describes peoples' intentional tendency to contribute into the wiki by making comments rather than editing content, organizing content, integrating content, reading content, etc. It is often enacted in specific situations that compel people to

exploit the possibility of making comments in order to be able to participate and contribute into the wiki. The commenting affordance is enacted in situations like when people disagree about content, do not understand the content, think it could be presented in a different way, see that it belongs to specific individuals or communities. Basically the enactment of the commenting affordance describes how people maneuver around possibilities afforded by the wiki so that they achieve their aims from using it. A CCC Senior Administrator explained that she uses the possibility to make comments to understand content on the wiki:

> *I add comments and I try to understand the content…We definitely comment more than we edit.*

An IBM Learning Intelligence Leader described a different perspective on commenting by showing he exploits the possibility to make comments in contexts where he might not have enough expertise:

> *Outside of the team … I might have the confidence to post a comment, this is my opinion xyz, but I don't think I would have the confidence to go and edit somebody else's work.*

Another different perspective was added by a User Experience Specialist from IBM which shows how his group decides about dividing the roles among them in terms of assigning writers, commentators, etc.:

> *The whole wiki is open to everybody but we just have an agreement okay here is the master writer for this one document and sally is the master for this one and Bob is the master for this one and everybody else just comment.*

Commenting affords people possibilities for avoiding conflicts driven by personal opinions when there is disagreement about content, when people are concerned about their own limitations in the sense that if you edit you have to be right but if you comment then the author have to make content better and also when people want to avoid taking responsibility over content. A Civil Engineer at CCC reflected on this:

> *[Making comments rather than edits because] the person might get offended, he didn't write the article unless he has certain background and experience and he's ready to defend it so lets give him the opportunity.*
>
> *If I am unsure, will i understand it [content] correctly or will they know more than I do then I would not edit directly I will comment on it.*

In addition possibilities pertaining to the commenting affordance are also important to tackle professional issues. Some people may favor commenting on content contributed by their colleagues rather than editing so that they are not confused with confidence issues about certain subjects and also ensure that they don't offend anyone and be nice to others. An IBM Technical Sales Professional illustrated his view on this:

> *I don't personally use the wiki very much for overall discussions, create articles, and such. What I do is that I read articles and comment on them because I am not part of the actual editors for that worldwide public wiki. I can be one of the commentators on that.*

Accessibility

In each of the studied organization accessibility was perceived differently and affected how the wiki is used in various ways. As an affordance accessibility does not only mean the ability to access content but it also determines ways of using the wiki and also affects how people may think about the possibilities afforded by a wiki.

Depending on the formal structure and culture of each organization, accessibility determined how people use the wiki. For instance, the dominance of hierarchical relations in CCC resulted in restrictions to use the wiki in terms of allowing certain number of people to edit content while others have only the possibility to make comments or even read. There were also concerns raised by the management at CCC about how open and accessible the wiki can be. Because there was only one central wiki used by various communities only community members were allowed to participate in knowledge sharing and collaboration. These kinds of restrictions on accessibility maybe seen as barriers to exploit the visible and flexible nature of a wiki. Some people at CCC thought that they should not use the wiki because they believed:

> *It (the wiki) is not Facebook where it is completely open … No. You only invite certain number of company employees to share their knowledge. –Plant Group Manager, CCC.*

> *My problem with Fanous within CCC is that I am only allowed to see certain things…I am limited to mechanical estimation and piping references only…when I needed to do something out of my job they gave me access for a week. –Estimation Engineer, CCC.*

In IBM accessibility was more flexible compared to CCC. People had the chance to set up their own wikis and determine the level of accessibility in these wikis. But accessibility was a bit different here in the sense that sometimes people in IBM may 'self-organize' and agree on certain accessibility rights that can allow or restrict them from using the wiki in certain ways. For instance a group may agree to have one or several key content creators who can create and edit content and others can only comment. A User Experience Specialist at IBM explained his experience within his project:

> *An example, in one project I might be the master writer for one piece and everybody else would be the commentator and then somebody else would be the master writer for a different pieces and i would be commenting on that.*

An IBM Software Developer provided a an additional view of how he perceives accessibility to content that he shares with others in the sense that they have to inform him about any possible changes so that he gives them some kind of access by engaging them to improve content, he said:

> *Putting the information out in the open I feel responsible for it and if someone makes me aware that it could be improved then I would engage that person and find out what he means about it.*

Viewability

The affordance of Viewability maybe understood in different ways. It essentially emerges in relation to the various ways and purposes that people use the wiki for as well as other wiki affordances. It can be described as the ability to share, view and make things visible without necessarily implying the ability to make edits or comments. There are a number of dimensions for enacting such an affordance. For instance people sometimes use a wiki to publish personal stuff and experiences that may not be subject to editing or commenting in the eyes of others. In this case the contributor uses the wiki to view or share her knowledge and others are only expected to view or read this content even if it was technologically possible to make edits and comments. Another dimension is related to the way content is often shared on a wiki. Sometimes people format their professional content in a way that suggests that it is not possible to edit or modify which discourages others from making any kinds of contributions. One of the Project Managers at IBM described her experience with wikis that are often created in a way that does not invite contributions by others. She said:

> *Wikis that i have been working with … are pushing knowledge out, i don't think the format of the frame there is actually inviting people to collaborate.*

Also a User Experience Specialist at IBM provided another example that describes how people sometimes use a wiki for personal purposes:

> *My experience is that some people are using the wiki technology as just a simple way to publish things so instead of using a blog or a word document they're actually using wikis not in the Wikipedia sense that says my goal is to create a page and let everybody else to make it better…*

In this vein one of the Software Developers at IBM strongly explained his view about this, he said:

> *I definitely think it is personal contribution.*

Viewing behavior is also related to affordances of accessibility and editability. People tend to choose viewing content when it is made by their managers, , for instance, rather than editing and/or commenting for various reasons (see Editability). They also view content in 'forcible' ways when they don't have the right to comment or edit content (see Accessibility). Sometimes also people believe that content is not up-to-date and there is no reason for them to contribute into that. An additional dimension might be related to Visibility in the sense that when people see certain individuals frequently working on content they tend to view and follow this content rather than engage in dynamic ways of creating content. An Estimation

Engineer at CCC commented on this matter by stating that:

> *the discussion was old and did not see anyone referring to it. It didn't seem like it was looked at.*

Validation

Validation as an affordance describes possibilities related to verifying the truthiness of both content and content contributors. It is often enacted when people try in various ways to validate whether content shared on a wiki is true and whether content contributors posses the right background and level of expertise to make a contribution. This has been observed at both CCC and IBM as we found a tendency by wiki users to share content that is always correct or try to make it so. Some observations from the two organizations include:

> *We have many procedures in the precommissiong community so far … We have four captains to approve these procedures. –Mechanical Manager, CCC.*
>
> *Caring about the correctness makes me perhaps a bit protective about it. –Software Developer, IBM*

People using a wiki exploit the possibilities of this affordance in various ways. For instance verifying content contributed by a specific individual can be done through looking at her profile on the wiki to check for her previous contributions and also examine the level of her expertise and background knowledge in the contributed subject. A Client Technical Professional at IBM expressed his experience:

> *I start by looking do they know anything in this area, have they made any contributions, do they have a job role where I can expect them to know something about it.*

Some people also exploit validation possibilities through modifying and reviewing their content so that they ensure it is correct. Most often people do some kind of content validation before they contribute any content into the wiki partly because they want to share what they believe is true and partly because the visibility of content on a wiki makes them concerned about how others may perceive the originality of their contributions. So they often tend to write elegantly, provide references, and most importantly post what looks like a 'final' version of the content, which in many cases results in an assumption by others that this content is not subject to editing and updating. Persistence also contributes into such behavior in the sense that people realize that their content will be available for others and they often want to show that their contributions are correct or essentially represent 'facts'.

In addition concerns about the validity or truthiness of content often shape the way people use the wiki. So they tend to be more conservative about their ideas in the sense that they only contribute and share if they believe they have the 'best' knowledge which in some ways stifles the dynamic possibilities afforded by a wiki such as editability and eventually results in, for instance, Viewability. An IBM Project Manager explained her concerns about the validity of content contributed into a wiki:

> *Where does that come from, and what knowledge is true more than others, and I think that is of course is a challenge in that way.*

A Sales Enablement Professional from IBM further described how they use the wiki to share facts, he said:

> *We're not personally invested in the wikis and the kinds of ideas that we share on the wiki, it is never an opinion or it is never a discussion it is always facts.*

Summary

The main findings from our data analysis were presented in this section. In addition to showing the four affordances of Treem & Leonardi (2012), these findings also suggest that novel affordances -commenting, viewability, accessibility, and validation- are enacted when using a wiki in the workplace. See Table 2 below for a detailed summary of these affordances. The enactment of these affordances show how people's perceptions of technology features may result in new possibilities for action that imply new behaviors and patterns of use. Each of the new four affordances offers both enabling and constraining possibilities for action in the sense that an affordance may either allow for exploiting certain technology features or constrain their use.

Table 2: Summary of novel Organizational Affordances of Wiki		
Affordances	**Technical Features**	**Actions/Behaviors**
Commenting	- Asynchronous text-based entries - Previous history of comments - Responding permissible	- Less offensiveness - Not taking over authorships responsibilities - Making contacts and asking questions around the content
Accessibility	- Restriction and availability of access to content - Restriction and availability of access to editing	- Making group content - Securing content access - Openness/restrictions of contributions - Power related issues
Viewability	- Readability - Getting notices about content changes	- Viewing and following content 'in silence' - Showing off - Written content for specific purposes or experts fields.
Validation	- Related to combined features available in visibility and persistence	- Only verified content is useful - Reluctance to edit content - Make sure of no public embarrassments

Discussion: Properties of Affordances

Understanding wiki affordances in organizations implied an understanding of constraining and enabling possibilities associated with each affordance. This later understanding was indicative of certain dynamics within and across the identified affordances. We refer to these dynamics as properties of affordances and can be seen as underlying organizing processes that affect the ways each affordance is perceived, enacted and exploited. These properties include multiplicity, situatedness, referential and communal. During our analysis and while trying to understand how affordances are enacted, we uncovered various dynamics related to how constraining and enabling possibilities of each affordance are implicated in relation to each other, how they are related to possibilities of other affordances and to the context where the wiki is used. We found that these properties play an important role in the enactment of various kinds of affordances by providing means to understand, or at least representing ways of thinking about, the possibilities afforded by the wiki. In this view these properties contribute into understanding organizing that occurs in relationship to the dynamic and diverse ways of using technology. The properties are discussed as follows:

Multiplicity: multiplicity of an affordance means that an individual affordance may have multiple enabling and constraining possibilities for action. Each affordance may offer various possibilities for people depending on what people use the technology for and what possibilities they see in this technology. So this property basically determines the kinds of possibilities an affordance may have relative to the ways people perceive the use of technology. It is important to note at this point that there is a difference between the multiplicity of an affordance and a multiplicity of affordances. The multiplicity of an affordance refers to multiple possibilities for action. While a multiplicity of affordances refers to multiple affordances enacted in relation to using one certain kind of technology (Leonardi, forthcoming). So the emphasis here is on what kinds of possibilities an affordance may entail in relation to using a specific kind of technology. This understanding of multiplicity is key to understanding organizing because it emphasizes possibilities for action that essentially make for an affordance. For instance, if we are to understand the editability affordance of wikis one may look at what possibilities editability might offer people who use this technology to share knowledge in a collaborative manner. One the one hand, editability affords people the possibility to engage in dynamic knowledge sharing by allowing them to produce and co-produce knowledge collaboratively. On the other, editability affords constraints for action in the sense that people tend to avoid editing content because of various reasons such as their concerns about how they can use the wiki to write and express their views in relation to what others have written.

Situatedness: the situatedness of an affordance suggests that people may perceive possibilities

pertaining to certain affordances differently depending on different situations or contexts where they use the technology. In line with Leonardi (2011) and his discussion of how affordances might be perceived differently depending on what possibilities people see in them in different situations, this property highlights the importance of the situation where technology is used. Wikis at both CCC and IBM are used in many different ways and for many different purposes which creates a myriad of situations in which wikis are used. This suggests that enacted affordances will vary across these situations and the possibilities that people perceive in them change depending on how people use technology in certain situations. For instance, IBM uses wikis for public communities, private project teams, personal spaces, and so on. Each of these settings represents a unique situation which shapes how people perceive different affordances and possibilities of a wiki. The perception of possibilities afforded by editability, for instance, in public communities is essentially different from the perception of the same possibilities of editability in private wikis. In public communities people often enact the affordance of editability by exploiting possibilities such as co-creation of content, rewriting, integration and restructuring of pages (cf. Yates et al., 2010). In contrast, in private project-related wikis and personal wikis the situation is different and the kinds of perceived affordances are also different. Possibilities afforded by editability in such situations may not necessarily support or allow people to edit content in the same way people do in public communities. Editability, in fact, may afford constraining possibilities that make people hesitant to engage in co-creation practices with others or even participate in any other 'peer production' activities often enabled by editability. Hence, situated perception of affordances and their possibilities may have important implications to the way people use technology and organize their practices.

Referential: this property describes referential dynamics between different kinds of affordances. It is a property that focuses on how people relate affordances to each other and how they make choices about which affordances to exploit in the course of using the technology. The referential dynamics emerge in practice while people attempt to exploit certain possibilities of specific affordances but might not be able to do so. Then, they maneuver around the technology -its material properties and affordances- by relating to other affordances which they can exploit in order to realize their aims from using the technology. So basically the referential dynamic here emerges when the possibilities of one affordance can be exploited but not another. In this way, a referential dynamic describes people's choices of how to go about using the technology and determine the ways that can help them achieve their purposes from using the technology. For instance, when an individual believes that he or she does not have enough knowledge to edit content on a wiki he or she may tend to make comments, hence exploiting commenting affordance instead of editability. The choice to make comments instead of text-editing content is made by relating to the commenting affordance which possibilities can be exploited. This particular property suggests two important ideas related to technology and organizing. First, choices that people make to use or not use certain material properties result from a combined understanding of what these material properties may allow them to do or not do as well as the implications associated with using these properties when people do use them in practice. The second idea emphasizes that by choosing to exploit certain possibilities pertaining to a specific affordance rather than another people are in fact organizing their technology use practices in ways that allow them to decide which material properties might help them to do whatever they want to do, hence exploit the technology.

Communal: this last property of affordances, the communal property, might be particularly specific to using social media technologies like wikis because of their collaborative and malleable nature. Building on Hutchby (2001) and Markus and Silver (2008), Leonardi (2011) discussed the relational character of an affordance as existing in-between humans' perceptions of what a technology can or cannot do in relation to their goals for action. This implies that users of technology may have multiple perceptions and flexibly enact various affordances while using certain technologies. In this respect, one may reasonably argue that the collaborative and malleable nature of a social media technology like a wiki may suggest that how an individual perceives certain affordances of a wiki is necessarily dependent on how other individuals perceive and enact other affordances and exploit them in practice. Having said that, the communal property suggests that understanding affordances of malleable technologies may require attention to how affordances are developed in a communal manner. We have observed that people enact wiki affordances in what could be seen as a collaboration with each other in the sense that they develop some kind of a joint understanding of the kinds of possibilities a wiki may afford them. For instance, senior community members at CCC often perceived various possibilities pertaining to editability such as allowing them to

validate content contributed by other community members. In this case, the validation affordance is jointly enacted by senior members because of their communal perceptions that editability can give them the possibility to validate and verify content contributed by others into the wiki. Similarly, in IBM people often tended to enact the affordance of Viewability in relation to their perceptions that they may need better knowledge and confidence to contribute into content shared by expert people in specific areas. In this case, people often tend to view content on the wiki rather than make direct editing or commenting. Another aspect related to this is the perception that commenting on or editing of content made by others in front of a large audience, when the wiki is publicly accessible, might engender the possibility that others may feel offended or cause embarrassment among colleagues. The development of such joint perceptions of what possibilities a wiki might afford is basically related to the communal or collaborative ways by which these possibilities are exploited by people. In addition, it is important to emphasize that communal dynamics involved in the enactment of affordances are essentially related to the malleable characteristics of a wiki and the participatory and collaborative ways enabled by these characteristics. As such, the dynamic and evolving nature of wiki use practices may have important implications for the kinds of affordances that might be enacted and eventually affect any potential new forms of organizing.

Conclusions

This paper aimed at exploring the enactment of affordances in relation to using a social media technology, a wiki, within organizational settings. In seeking to achieve this aim we have identified a number of enacted organizational wiki affordances that describe various wiki use practices. Most importantly, we have also identified four key properties of these affordances including multiplicity, situatedness, referential, and communal in an attempt to theorize about the dynamics that underlie the enactment of affordances. These properties provide means to understand the enactment of affordances by capturing the dynamics involved in the ways people perceive, enact, and exploit various affordances of a certain technology like the wiki studied in this paper. What is interesting to note at this point is that suggesting these four properties may shed light into new combinations of technological and organizational features that may develop while using technology in an organizational setting. Understanding such combinations is key to understanding unpredictable forms of organizing and technological possibilities that may have an impact on organizations' form and function (Zammuto et al., 2007; Leonardi, 2011). We would therefore conclude this paper by arguing that an understanding of any possible new combinations of organizational and technological features requires attention to the dynamics that evolve in association with the enactment of affordances. The enactment of affordances, as discussed earlier in this paper, is a result of the interaction between material and social agencies. The four properties of may help to examine such interaction, and hence the enactment of affordances or new combinations of organizational and technological features, by offering means to look at what possibilities an affordance might entail, how these possibilities might relate to possibilities of other affordances and the context of technology use in which possibilities are enacted and exploited.

Hence, our contribution in this paper is twofold. First, by identifying a number of organizational wiki affordances, we have contributed with new knowledge about potential new combinations or possibilities afforded by social media technologies and how these may influence organizational practice. Second, with respect to technology and organizing, we have developed and extended the current understanding of the notion of affordance by theorizing new concepts that describe relational dynamics, situated and contextual conditions, and social factors involved in enacting, perceiving, and exploiting affordances. In practice, we believe that this theorizing may help in understanding potential changes in organizations through providing means that explain the kinds of uses and actions certain technologies may afford and how and why people exploit them in a way that affects their work practices.

For further research we would suggest research focusing on examining organizing dynamics in using malleable social media. We believe that this would offer the literature important insights into how the malleable materiality of social media may play out in the enactment of affordances and shape the consequences of using social media in organizations.

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