Corporate Wiki Conduct: A Study of Organizational Influences, Emotion, and Motivation

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The development of Wikipedia illustrates the power of human collaboration in the absence of rewards, recognition, and enterprise formalisms. Is it possible for wikis inside the corporate firewall to exhibit volitional and collaborative knowledge development despite compensation, performance monitors, rewards, and management controls? In this study, grounded theory methodology was applied to understand corporate wiki participation behavior. Data collected through employee interviews and journals were analyzed on a continuum through continuous comparative analysis. The analysis of emotion, motivation, organizational influences, and participation behavior resulted in assertions that explain wiki patterns of practice that serve to improve corporate outcomes.

INTRODUCTION

Wikipedia, the world's largest open-community wiki project, illustrates self-motivated collaborative behavior (Li & Bernoff, 2008; Lih, 2009). No formal governance solicits, compensates, directs, or coordinates the development of content, and there are no extrinsic rewards or recognition for contributors. Yet, people contribute their time and knowledge voluntarily. Wiki is not a revolutionary technology, but its egalitarian-oriented content development by open communities "is" (Lih, 2009).

Following Wikipedia's success, companies have acknowledged the collaborative power of the wiki for information sharing, internal and external collaboration, and knowledge creation, yet adoption in the workplace has trailed its open counterpart (Hildreth, 2007; Kane & Fichman, 2009; Laff, 2007; Lynch 2008; Mader, 2008; Mayfield, 2006; Nielsen, 2006; Tapscott & Williams, 2006). Grassroots, egalitarian, open participatory networks, the tenet of Wikipedia, are in sharp contrast with traditional authority and control management (Hasan, Pfaff & Willis, 2007; Meloche, Hasan, Willis, Pfaff, & Qi, 2009; Pfaff & Hasan, 2006).

Corporate behavior is engulfed in cultural norms, evaluation systems, policies, hierarchies, employment responsibilities, and relationships that contrast the Wikipedia benchmark. Wikis represent a shift from capture and disseminate to democratization of knowledge (Pfaff & Hasan, 2006). Some leaders are concerned that corporate control could be weakened, and some employees describe feeling greater personal risk posting ideas and engaging in discussion (Hasan, et al., 2007; Li & Bernoff, 2008; Lynch, 2008; Majchrzak, et al., 2006; Meloche, et al., 2009; Pfaff & Hasan, 2006).

A general principle of volunteerism suggests that participation is volitional; contributors share their time and knowledge because they want to, not because they are required (Clary & Snyder, 1999; Deci, 1971). Tapscott and Williams suggest that wiki participation motives are "intrinsic and self-interested" and "more complex than fun and altruism" (p. 70). Forcing people to volunteer is thought to weaken inner

"motivational force" (Clary & Snyder, p. 158) and distinguish intrinsic motivation (Deci). Do corporate influences infuse a level of obligation and constraint that extinguishes volitional and collaborative wiki behavior?

Wikipedia studies are providing early clues that emotion plays a role in participation behavior. In a study of Wikipedian behavior, Kane and Fichman (2009) reported that "Collaboration on Wikipedia is a much messier, more emotionally charged, and highly contentious process than is typically reflected in most accounts of online collaboration (p. 4)." For example, the Virginia Tech Massacre article resulted in over 10,000 page edits by nearly 2,000 editors, seemingly charged to "get involved" rather than acting as a "passive reader" (Kane & Fichman). In their study of groundswell technologies Li and Bernoff expressed curiosity about the emotional motivation to participate? Studies of emotion and the user experience indicate that feelings affect technology adoption (Kane & Fidhman; Petrie and Harrison, 2009; Zhang & Li, 2005).

Content developed collaboratively, without pay or recognition was described as a concept that "works in practice, but not in theory" (Kane & Fichman, 2009). Since little was known about wiki adoption inside the corporate firewall, the research addressed the following in Gears' (2011) doctoral dissertation:

- Do emotions interact with norms of an organization that influence corporate wiki behavior?
- Do emotions affect motivation directly, or through cognitive judgments of costs and benefits of wiki participation?
- In what ways do emotions (feelings), distinct from cognitive contemplation (thinking), influence decisions about wiki behavior?
- Are organizational influences in conflict with emotions about wiki participation?

PSYCHOLOGY TERMS AND THEORY

Feeling, emotion, affect, motivation, and attitude were psychology terms fundamental to the current research. There is consensus in psychology literature that these terms have evolved over time and spawned many cognitive, motivational, evolutionary, biological, sociological, anthropological, and psychoanalytic theories that define each one and their relationship to each other (Plutchik, 2003). Some psychologists believe that emotions are secondary to cognition and reasoning while others believe "emotions trigger and guide cognition" (Izard, p. 2).

Many in the field agree that emotions involve an external situation, or antecedent condition, which prompts identifiable feelings, functions of the nervous system, and external responses observable in facial expressions (Eckman, 2003; Gorman, 2004; Izard, 1977; Plutchik, 2003; Reeve, 2005). Terms used to identify feeling states have been studied, organized, and tested in emotion research since the early 1960s (Plutchik, 2003). "Happiness" reflected a feeling state (emotion) also described as joy, pleasure, quiet, satisfaction, elation, and love (Turner & Stets, 2005). Several theories have considered basic emotions that direct and energize motivation to a behavioral outcome (Ekman; Frijda, 2000; Izard, 1977; Plutchik; Turner & Stets, 2005).

While there is "no consensus among emotion theorists on the proper definition of **emotion**" (Nielsen & Kaszniak, 2007, p. 362), Ekman provides a useful definition for the research.

> ***Emotion*** is a process, a particular kind of automatic appraisal influenced by our evolutionary and personal past, in which we sense that something important to our welfare is occurring, and a set of physiological changes and emotional behaviors begin to deal with the situation. (p. 13)

The term "affect" is often used interchangeably with "emotion"; however, these have been distinguished in psychology contexts. Plutchik (2003) suggested that psychologists use "emotion" to denote emotional disorders, whereas clinicians distinguished "affect" in patient documentation. In their study of the relationships between affect heuristics, risks, and benefits, Finucane, Alhakami, Slovic, and

Johnson (2000) provided a definition of "affect" appropriate for the current research: "Affect may be viewed as a feeling state that people experience, such as happiness or sadness. It may also be viewed as a quality (goodness or badness) associated with a stimulus" (p. 2). Emotion, feeling states, and affect were used interchangeably in the current research.

Motivation has been defined as an internal state, need, or desire that energizes and directs behavior (Deci & Ryan, 1985; Myers, 2005; Reber & Reber, 2001; Reeve, 2005). According to Reeve, antecedent conditions influence a person's motivation status. For example, a person "in-need" influences the motivation to give, and a personal threat influences avoidance (Reeve). Motives are generally classified as intrinsic or extrinsic, and create desires that are manifested in goal-oriented behavior, physiological responses, and self-reported feelings.

Individuals moved to do something for the sake of the activity itself are said to be intrinsically motivated. Reiss (2000) provided useful descriptions of identifiable intrinsic motivation in The Theory of 16 Desires. Extrinsic motivation manifests in the form of prodding, pressure, rewards, or threats of punishment, i.e., "do this and you will get that" (Deci & Ryan, 1985; Reeve 2005; Reiss, 2000; Ryan & Deci, 2000a, 2000b).

Deci and Ryan (1985) defined theories that distinguish amotivation, intrinsic and extrinsic motivation. Collectively, these theories considered social and environmental contexts and their affect on motivation along a continuum of motivation, including amotivation, various levels of extrinsic motivation, and intrinsic motivation. The SDT combines both content (innate psychological needs/goals) and process (cognitive/regulatory) motivation theories to understand and predict goal-oriented behavior (Deci & Ryan). "Specifically, in SDT, three psychological needs-for competence, relatedness, and autonomy-are considered essential for understanding the what (i.e., content) and why (i.e., process) of goal pursuits" (Deci & Ryan, 2000, p. 228).

Four levels of extrinsic motivation were defined and paramount for analyzing motivation in the current research: external regulation, introjected regulation, identified regulation, and integrated regulation. External regulation classified a motive for external rewards or threats of punishment, i.e., high external control. Introjected regulation classified a motive driven by internalized feelings of guilt, goodness, or pride that affected self-esteem and internalized by societal norms. Identified regulation classified a motive based upon on the importance of something to the individual. Integrated was the most autonomous form of extrinsic motivation that coincided with a person's internal values and needs. For example, while carpooling (outcome) may not be considered fun, it serves to conserve resources and protect the environment (internally valued).

METHODOLOGY

The current research followed an iterative balance of grounded theory study, application of grounded theory methods, reflection, and writing of the findings. Based upon experiences in software development research, Adolf, Hall, and Kruchten's (2008) urged the grounded theorist to avoid mixing methods and apply one chosen methodological approach. Therefore, the grounded theory and coding strategy in the current research followed Charmaz (2006) interpretive grounded theory principles. A data model was developed to help delineate the progression of grounded theory codes and relationships between them.

Subjects participating in the study worked in one of twelve business, technology, or business/technology liaison departments at various locations in Upstate New York. Gender was equally represented in the study, ranging in age from twenty-six to fifty-five. Subjects self-identified their rank as an individual contributor, lead, manager, or senior manager. Subjects were party to unstructured interviews and asked to maintain a journal documenting their thoughts and feelings about the wiki as they occurred. Of the subjects participating, 83% interacted with the wiki in some way, whereas 17% knew about the wiki but did not participate.

The Theory of 16 Basic Desires (Reiss, 2000) was used as a guide to identify the types of intrinsic desires expressed in interview and journal data. Deci and Ryan's (1985) self-determination theory was used as a guide for identifying and distinguishing types of motivation in the data. Control and competence

factors were analyzed in the data to distinguish extrinsic and intrinsic motives. Type of extrinsic motivation was analyzed on the locus of causality continuum (Deci & Ryan). Subjects' self-reported feelings about wiki behaviors were also included in the analysis. The resultant motivational findings were then evaluated in terms of their prosocial motivational nature.

Wiki Behavior Defined

For the purpose of analysis and reporting in the current research, **wiki behavior** was defined as an interaction that occurred between an employee and the wiki. Specifically, wiki behavior within the context of this research included:

> Addition of new content to
>> A new page
>> An existing page
>
> Modification of existing content
>> Grammar or spelling
>> Synthesis through consolidation and rewriting of existing content
>> Addition of new content
>
> Engaging in discussion through comments about content
> Reading (lurking) content only
> No reading, no authoring, no participation in comments

FINDINGS

The findings are the result of applied grounded theory methodology by Gears (2011) that resulted in four assertions about wiki participation, along with interpretations of behavioral motivation and emotion. These assertions move towards the coalescence of Corporate Wiki Engagement Theories. Patterns of behavior were discovered in 543 categorized codes identified from interview and journal data. Definitions from well-established psychology theory served to associate identifiable characteristics of amotivation, extrinsic, and intrinsic motivation with the data.

A Wiki Behavior Concept Matrix (WBC) was developed to organize key concepts in the research and to assess their affect on each other. The WBC matrix fit with Reeves (2005) emotion-motivation framework from psychology that aided the researcher in drawing conclusions.

Each of the four emergent assertions is comprised of multiple theoretical concepts. The assertions, along with their associated concepts, are described. Additional psychological findings in the data are presented that fully address research questions.

> ***Assertion 1****: When required as a work responsibility, employees participate in a wiki.*

Employees participated in the wiki 100% when positioned as a requirement or expectation by managers, projects, or teams. Employees read, added content, and/or collaborated (minimally) when their manager required or expected participation, when project teams used the wiki for managing projects, or when work teams used the wiki for information sharing or content development. Formal rewards or recognition, beyond typical employment agreements, were not offered as incentives for participation. Employees participated by reading, writing, and collaborating when it was an expectation of employment, however, requiring usage negatively impacted longer term usage.

> ***Assertion 2****: In an egalitarian culture with grassroots influences, employees participate in a wiki when they perceive value, are not concerned about inappropriate wiki behavior, and experience positive affect.*

For employees 'not' required to use the wiki, subjects participated in an egalitarian culture, with grassroots influences, when value was perceived, and when corporate conscience and positive affect were experienced. The majority of subjects in this group considered were self-identified as early adopters of technology, someone who likes to learn something new, creative, or innovative. These subjects used the wiki more extensively than other groups by collaborating extensively through discussions and modifying content directly in the wiki.

Assertion 2 Concept: Egalitarian Culture

The corporate wiki in the study evolved from an egalitarian culture and grassroots beginnings. Wiki leaders consciously launched the wiki without the usual project controls and authorizations necessary for other corporate initiatives. The wiki's genesis was swift with intention by wiki leaders, breaking "a few rules to get it started". The wiki was launched and maintained as an open content resource available to all employees. An egalitarian culture was cultivated and maintained, that facilitated wiki participation as described by this group of subjects.

Assertion 2 Concept: Grassroots Influence

A tactical persuasive movement positioned an influential path toward wiki participation. "It was a word-of-mouth, grassroots kind of effort." Wiki leaders and ambassadors invited employees to utilize the wiki through e-mail invitations, and tactical conversations. As wiki exposure grew, word spread through references to published material, a user group, corporate-level training, and talk among employees.

Assertion 2 Concept: Perceived Value

Value was a concept discussed by both wiki participants and non-participants. Generalizing, those who did not perceive value (for themselves or the company) did not participate; those who perceived value, participated in the wiki. No one reported not using the wiki when they perceived value, however, a few reported participating because they were required to, not necessarily because they recognized the value. The notion of value appeared to be related to feelings of emotion, that is, those expressing positive affect also perceived the potential value [of the wiki]. Conversely, those expressing negative affect did not perceive the potential value.

Assertion 2 Concept: Corporate Conscience

Business operations revolved around highly sensitive business and health information, creating an information protection mindset. The threat of confidentiality breaches resulted in a corporate norm of privacy protection that eclipsed information sharing on the wiki for some, and not for others. Wiki openness and privacy protection norms created anxiety, prompting non-participatory decisions by some employees, security department personnel, and some project team members required to contribute.

Those who participated recognized the sensitivity of health and competitive business information and were not concerned about inappropriate content development. These contributors described a corporate conscience that credited each employee's ability to discern appropriate from inappropriate contributions and manipulation of content. Participants were not worried about maliciousness knowing that the wiki maintained a complete activity history, and that one could suffer negative consequences.

Assertion 2 Concept: Positive Affect

Subjects in this group described positive affect when asked about their feelings. "I felt liberated with the freedom to share useful information (quickly) to the entire company," "excited," "surprised [pleasantly]," "enthusiastic about openness," "joy," "happy," and "enthusiastic that that the company was using a 21st century technology within the corporate firewall." "I thought it was a good idea. Excited to learn something new", subjects felt the wiki brought enjoyment to their workday stating that "it was fun!" The researcher could sense enthusiasm and excitement in vocal tone, facial expressions, and eagerness to share during interviews.

Manager attitude, time autonomy, and emotion affected wiki behavior. The gift of time amid work demands, positive manager attitude, and mixed affect [about the wiki] energized participation behaviors. Conversely, subjects with limited time autonomy, no manager endorsement, and who experienced negative affect did not participate. Development of this assertion resulted from statements made by subjects who participated, from those who did not participate, and perceptions from other subjects in the study.

Assertion 3 Concept: Positive Management Attitude

Management attitude toward the wiki was evidenced as a factor affecting employees' intent to participate. Two behavioral patterns emerged from management's attitude toward the wiki: 1) when managers openly shared a positive attitude about the wiki, subjects were more likely to participate, 2) when managers were ambivalent, negative, or expressed no attitude about the wiki subjects were less likely to participate.

Assertion 3 Concept: Time Autonomy

Time autonomy, while not an intuitive influence, emerged as an obvious concept that affected wiki behaviors. Time, an external event that existed outside the workers' sphere of control, appeared to energize wiki behavior when available, amid routine demands of the job, internal and external constraints, and unanticipated events during a work day. The passage and availability of time stimulated employees to think about and make choices about how, when, and where they would apply discretionary effort. The dispersion of time, in conjunction with a desire (interest) to interact with the wiki, affected worker decisions to participate, or not. Time was expressed as a precious commodity with respect to participation intent, given the informal nature of the wiki, that is, not a formally supported corporate tool or initiative.

Assertion 3 Concept: Mixed Affect

Subjects who participated when given management encouragement and time experienced mixed emotions. Initially subjects described feeling "apprehensive," "uncomfortable," and "didn't really buy into it." After creating a page, these subjects recognized the value and simplicity of the technology. They reported feeling "empowered," "happy," "excited," "accomplished," "comfortable," and "good about providing information that was useful to someone else." Conversely, subjects who did not participate in the absence of manager encouragement and time experienced negative or ambivalent emotion.

Assertion 4: *In a traditional culture, where content is thought to be owned by authors (content ownership effect), employees experience negative affect and do not collaborate in a wiki.*

Assertion four resulted from accounts by those who did not modify content authored by others, or from those holding strong opinions about why others did not modify content. A distinct pattern emerged indicating that collaborative changes to content were not made due to a sense of author ownership, anxiety experienced, and traditional cultural norms.

Assertion 4 Concept: Ownership Effect

A strong sense of "ownership" was reflected in nearly every interview, negatively affecting collaborative content development. In the words of one participant, "someone else owns those words, I shouldn't touch them." This spirit of ownership was reported by those who contributed content to the wiki and by those who did not. A theme emerged among those who recognized when modifications were needed but, they personally would not change content. Subjects would rather work through traditional

communication channels and offer suggestions to 'owners' than change content directly. The ownership effect was best described through expressions of anxiety, fear, and nervousness "at the thought of changing another's written word".

Assertion 4 Concept: Anxiety

Fear, anxiety, and nervousness were terms used to describe feelings about changing wiki content originally created and posted by someone else. Some participants in this population used these expressions to describe their own feelings, while others shared the feelings reported to them by their co-workers. Those not engaging in content changes did not perceive the value worth the risk of personal consequences for others, and for themselves. Consequences included: risks to personal reputation, performance assessments, and relationships with peers and managers, along with risks to corporate information quality and appropriateness. In other cases, the consequences triggering anxiety could not be articulated.

Assertion 4 Concept: Traditional Culture

Personal Norms

For those disinclined, their own expectations of personal conduct outweighed the risk associated with altering the content created by others. Changing someone else's words was considered rude, presumptuous, intrusive, and discourteous, i.e., violating personal standards of behavior. The normative expectation was to respect the written word created by another and negotiate through proper channels when an apparent need for changes arose. These thoughts and feelings were reported based on personal expectations of conduct.

Social Norms

While personal norms manifested a standard of behavior held in the individual's conscience, social norms in this discussion were implicit expectations of behavior in a work group community. There was a strong sense that content created by an individual belonged to that individual, rather than belonging to the organization. This pervasively held belief bolstered a group norm of content ownership. Participants expressed fear or concern about making incorrect changes, stating that intended meaning could be lost, information could be wrong (with so many hands in the pot), people would abuse the freedom to make changes, and there was a threat of insulting or offending someone by changing "their" published material.

Corporate Culture and Behavioral Norms

A deeply rooted corporate culture cast a broad shadow on liberties to alter someone else's content in the wiki. Wiki champions consistently expressed concern about the limiting nature of the corporate culture while resistant wiki collaborators held fast to historical conditions of process formalism, authority and control, technology orientation, and a highly sensitive health insurance domain. These conditions created an implicit set of corporate (culture) norms within the corporation that heavily negated the potential for open wiki content development.

Additional Findings: Organizational Influences, Emotion, Extrinsic and Intrinsic Motivation

According to Gears (2011), extrinsic, intrinsic, altruistic, and egoistic motivations were found to energize and direct participation and non-participation wiki behaviors. Positive emotions were associated with extrinsic motivation to participate, whereas negative emotions were associated with extrinsic motivation to avoid participation. Higher levels of autonomy were shown to have a greater impact on wiki behavior decisions than purely extrinsic motivation. Rewards or recognition were not extended to employees, nor were they expected.

Antecedent or contextual conditions associated with extrinsic motivation included employment responsibilities, egalitarian and traditional cultures, grassroots influences, management attitude, privacy-oriented context, corporate conscience, and content ownership effect. Several other organizational influences were found in the data but not considered categorical. For example, writing criticisms, positive

and negative peer attitudes (subjective norm), ease of use, and reprimands for inappropriate content were mentioned by some but not considered as pervasive in the research.

For some, participation was required and served as a purely extrinsic motivator. While the external pressure to contribute in the wiki was necessary to jump-start participation for some, others experienced negative feelings about being told "what to do" that damaged long-term participation. Required participation was not needed for those who "would have contributed anyway." For participation behaviors, higher levels of autonomy were associated with more sophisticated use of the wiki.

According to Reiss (2000), everyone experiences some level of intrinsic desire that varies according to an individual's genetics, experiences, and cultural influences. Subjects who did not participate in the wiki experienced desires for control, honor, and tranquility based upon Reiss' sensitivity theory and 16 intrinsic desires. These subjects experienced anxiety, fear, and frustration caused by the disruption of order, the desire to honor traditional norms, and the desire to avoid negative consequences. Subjects who did participate in the wiki experienced desires for power, independence, idealism, and curiosity. These subjects experienced joy, excitement, happiness, and satisfaction from influencing others, watching the wiki grow in value, learning, advocating, and teaching others how to participate, and liberation from organizational formalisms.

Altruistic and egoistic behaviors were exhibited by wiki leaders and self-appointed wiki gardeners. Wiki leaders in management positions took personal risks to instantiate the wiki in violation, at times, of company rules and normative practices. Motives driving these decisions were strongly held beliefs, regardless of personal consequences, that the wiki would benefit employees and customers through the delivery of accurate information immediately and co-creation of content that would increase corporate knowledge. Self-appointed wiki gardeners were motivated to improve wiki content quality to reduce frustration of others, improve information quality for others, and increase wiki usage to benefit the company, without anticipation of rewards.

IMPLICATIONS

Findings in the research serve to increase the probability and predictability of success for divisions implementing wiki technology in business. Addressing factors that impede and promote participation serve to increase wiki participation rates, thereby increasing benefits of wiki technology within corporate contexts.. The following implications represent a beginning to advancing the field of information systems, business, and psychology.

Wiki Success Depends on Reducing Personal, Social and Professional Anxiety
The research showed that wiki technology performs differently in corporations than customary technologies used to solve business problems and improve productivity. Wiki technology was a catalyst for open, and visible, interaction among humans in a complex mix of organizational influences, personal, social, and corporate norms, feelings, thoughts, and motivation, found to be uncomfortable for many employees. Open, organization-wide publishing exposed perceived individual vulnerabilities and perceived risk, perceived to affect performance assessments and corporate relationships. The research implied that employees experiencing personal, social, and professional anxiety impeded contribution and collaboration development activities.

Wiki Success Depends on Balancing Egalitarian and Traditional Culture
The research showed that wiki technology performs differently in corporations than in open communities. Wiki success in the research was attributed to freedom to participate, unbound by corporate controls and authorities. Open content development challenged traditional corporate governance structures that negatively impacted wiki participation. The research implied that egalitarian structures increased participation and collaborative behaviors that were poised within traditional control and authority.

Wiki Success Depends on Extrinsic and Intrinsic Motivation

The research showed that wiki technology performs differently in corporations where participation can be required and/or intrinsically directed. Wiki participation resulted in total wiki participation when managers and projects required wiki usage, but damaged future participation motives, with limited collaboration. Motivation that scaled towards intrinsic motivation resulted in positive feelings [about the wiki], and more collaborative, creative, and technologically sophisticated participation that increased perceived benefit to participants, other employees, and the company. The research implied that organizations have the opportunity to leverage emotional enthusiasm and increase employee desire to participate by inducing various types of motivation.

Wiki Success Depends on the Corporate Contextual Profile

The research showed that wiki technology performs differently depending upon characteristics inherent in corporate contexts. Treatment of time, management attitude toward the wiki, community attitude toward computing, and information sensitivity affected wiki participation behaviors. The research implied that factors in the organization's context affected contemplated wiki participation decisions.

FUTURE RESEARCH

Four assertions were proposed in this research using an interpretive grounded theory methodology. These proposed theories created an opportunity for researchers to formalize hypotheses and apply quantitative methods to verify findings. Future research can further evaluate the relationships between variables.

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