

E-Tools of Change: An Analysis of a Corporate Intranet Promoting Organizational Change

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Through analysis of a qualitative case study, this paper argues that aspects of a hospital's environment affect the process of change promoted through the intranet. Specifically, the conditions of network readiness and continual change allowed the intranet to be accepted by organizational members and accomplished both surface change and deeper cultural change.

Keywords: Organization Development, Organizational Change, Technology

Planned change is fundamental to the field of organization development (Cummings & Worley, 2001; French & Bell, 1999) and is often described as moving from a current state to a desired state of being (Lewin, 1947). Organizations struggle with how to handle the speed of change in a global economy. A critical piece to this struggle is how organizations are best able to leverage expertise and an increased reliance on technology. Web technology has allowed for the growth of corporate intranets to help manage an organization's knowledge and to communicate quickly and efficiently with stakeholders in a relatively secure fashion. Corporations once known for pursuing vertical integration are now using corporate intranets to attain virtual integration where technology is used for strategic alliances (Reddy & Reddy, 2001). Corporate intranets encourage egalitarianism (McChesney, 2000) as more people participate in the process of managing corporate knowledge. Bennett (2006) argued that corporate intranets are knowledge management systems that have a greater ability to reflect organizational culture and social dynamics than traditional information systems. These ideas suggest that corporate intranets should not be overlooked as tools that can affect and effect change. The ability to use language, symbols, colors, sounds, and graphics to create a distinct look and feel of web pages suggests that elements of organizational culture—and potentially counter-culture—can be located on a corporate intranet and unpredictably influence functions.

French and Bell (1999) stated that an organization's culture must be altered for planned change to become permanent. Some companies implement new technology and fail to alter human resource practices because the technology is considered to be independent from the social system (Brynjolfsson, Renshaw, & Alstynne, 1997). The risk of not paying attention to the culture during times of change is unintended consequences or outright failure. We know that an organization learns when knowledge is embedded in corporate systems and structures. Watkins and Marsick (1999) termed this 'crystallization.' Therefore, learning, culture, and present change may be embedded into intranets and affect future change processes. Given an environment of instability, the challenge for organization developers is to support change process toward healthy and innovative outcomes. Corporate intranets may be used to promote change but this aspect has not been studied, perhaps due to the proprietary concerns and a narrow interpretation of the technology as publishing tool rather than the potential to mirror organizational dynamics. Little is known about the ability of intranets to enable both unintended and designed change. This study was developed to begin filling a substantial gap in the literature about organizational web technology, culture, and change.

Research Purpose

The purpose of this study was to understand how organizational culture and change are embedded in an organization's intranet. This paper focuses primarily on the facet of organizational change, guided by the research question: How does the corporate intranet promote organizational change?

Theoretical Frame and Literature Review

Organizational change theory is the primary theoretical frame for this paper. Lewin (1947) provided a seminal 3-step model of change, which encompassed the steps a) unfreezing, b) moving, and c) refreezing. He also suggested that there are environmental forces that act for and against change. Lewin's model seems incomplete because it does not explain how the phases occur nor does it capture the complexity and confounding nature of constant change. Schein

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(1997) extended Lewin's work by adding three processes that are necessary to create motivation to change during unfreezing. These are: (a) disconfirming data that causes disequilibrium, (b) the anxiety-producing connection of disconfirming data to goals and ideals, (c) psychological safety that allows change without loss of integrity. For effective change management at both the individual and institutional levels, threat (or survival anxiety) must be balanced with psychological safety so that there is motivation to change. The moving stage of Schein's model is called "cognitive restructuring" in which there is a fundamental change in core assumptions. He suggested that overt behavior change is not necessarily enough to cause the redefinition of assumptions, and once coercive efforts are released, people return to their old ways. Refreezing occurs when the desired behavior and new cognitive structures are reinforced through feedback. His theory does not seem to address whether change can occur through non-cognitive faculties such as intuition or emotion. Bridges (2003) has a similar perspective. He advanced there is a fundamental difference between change, which is situational and surface in nature, and transition, which is a psychological process of coming to terms with a new situation. Transition has 3 phases: a) ending, which includes grieving and letting go of the old, b) the neutral zone in which neither the old nor the new are operational, and c) new beginning that entails new identity and purpose. Both Schein and Bridges have steps in their models that require an acknowledgement of the old and an emotional element that can prohibit immediate change.

According to Shepard (1975), change agents must understand the organic nature of organizations, which requires flexibility, understanding of context, and interdependency amongst subsystems. Intranets are tailored to the organizational context and therefore are integrated to varying degrees with the corporate structure. Sentell (1998), grounded in chaos theory, suggested creating change-capable organizations that can adapt to new conditions as they appear on the horizon. His change theory is built on a foundation of "memes," which, like genes in genetic transfer, are the smallest units of information conveyed to build ideology. The transfer occurs brain to brain. Resistance to change comes from the force of memetic assimilation. Assimilation seems similar to unfreezing in the Lewin and Schein models; however, Sentell's model reduces shared assumptions down further. This helps us understand how seemingly small incidents can cause big changes. Potentially, transfer of memes could occur through intranets.

Since change is connected to organizational culture, it is difficult to separate organizational change from culture change. Culture change can be the desired result or a byproduct of an intervention. It can also provide institutional resistance or support. Change can be resisted as part of a defensive routine that makes some subjects "undiscussable" (Argyris, 1990), whereas items posted on an intranet may be explicit and more easily subjected to analysis, especially given there is a rhetoric to intranet design (Jackson, 2000). Schein (1986) suggested leaders have access to the "levers" that change culture. Hiring people with characteristics that fit a future organizational culture is another tactic for changing organizational culture (Sentell, 1998). Training and communication are also important strategies for change. For example, a hospital study showed that utilizing change teams to help disseminate information and track implementation was found to be more effective than simply posting new work guidelines (Wallin, Rudberg, & Gunningberg, 2005). Another study found that change was adversely affected when middle managers perceived a lack of communication from executive leadership about organizational vision and the rationale for a major change and, therefore, were unable to bring clarity to frontline staff (Valentino, 2004). Technology can alter communication patterns simply because it allows for more direct communication. Communication technology was seen as pivotal for changing the role of a school's principle because it created a more collaborative environment with direct communication to teachers and external knowledge networks (Haughey, 2006). Similarly, the availability of intranet technology can alter organizational communication channels. Myerson and Scully (1995) believed that promoting change through informal interactions requires a change agent to be able to speak in multiple languages (e.g., talk accounting language to accountants and engineering language to engineers) so how a web document is written can affect communication about change.

Learning is a dynamic and inextricable part of the change process for individuals and, consequently, organizations (Cummings & Worley, 2001). Williams, Dobson, and Walters (1989) found that most organizations they studied used training as a mechanism for culture change, which is informative since intranets are increasingly being used to provide training. Cameron and Quinn (1999) suggested that organizational culture is best illustrated through stories that reflect desired values and behavioral principles. Describing incidents and events that reflect new values helps to provide context to change and can be embedded in web pages. Aaltio-Marjosola (1994) found that the organizational culture of a telecommunications company changed from an entrepreneurial grand narrative to a modernistic and rule-oriented grand narrative in part through story-telling, which quickly reinforced the old culture as "bad" and the new culture as "good." Storytelling appears to be an effective way to promote change although managers cannot completely control the meanings members draw. Senge (1990) indicated humans both fear and seek change, and that there is a creative tension between current reality and future vision. Bateson (1994) suggested that rigid structures can prevent reinterpretation of events into richer meaning in a spiral fashion. Technology can cause disrupt change if it is implemented without reforming human resource practices. The perspectives presented

here suggest a balance needs to be sought between present structures and the future supported by reinterpretation and mean-making. This is especially critical for clinical organizations that struggle with the growing volume and complexity of research knowledge as in evidence-based medicine (Aveline, 2005). Technology, though enabling some functions, can also appear overly inflexible as a primary mode of change communication.

Research Method and Limitations

The method chosen for this study was qualitative case study, which is appropriate for researching phenomena in a bounded system (Merriam, 1998). Data collected over five months included documents, interviews, and observations. Case studies typically have two levels of sampling (Merriam, 1998). The first was the case organization, which was an exceptional case (Stake, 1995) that met pre-determined sampling criteria that included having an intranet strategic for fulfilling organizational mission and in at least its third year since inception. Strategy was demonstrated when the organization calculated return on investment of intranet applications and articulated the connection between corporate mission and the intranet. A second level of sampling was the selection of organizational members as the primary source of data. Employees had to be in at least their third year of employment so ensure a foundation of cultural socialization. A sampling matrix (Handwerker, 2001) based on a modified version of Schein’s (1996) typical subcultures helped capture as much of the range and variation (Merriam, 1998) possible. These subcultures were: operative, management, engineering (or technical), and clinical groups. Variations of rank, gender, ethnic background were also purposely captured and are represented in Table 1. Of the twelve, two participated in observational interviews to demonstrate intranet use at their workstations and ten participated in semi-structured interviews. More than 400 intranet pages, messages, and other corporate documents were collected. Field notes captured general observations of organizational activity and meetings. All data were coded and analyzed for content using the constant comparative method (Merriam, 1998). This study is limited by the small, purposive sample. Case findings cannot be considered statistically significant. The case selected was a non-profit hospital in the southeastern region of the United States, which limits the similarities of the case organization with others. While attempts were made to achieve range and variation, not all possible variations were captured, however, sampling and analysis continued until saturation was reached. Also, subjectivity of the researcher is inherent in qualitative interpretation. Member checks and audit trails were used to minimize bias and to maintain rigor.

Table 1. *Participant Characteristics*

Name	Age	Years	Gender	Race	Education	Job Category
	at BCH					
Amy	35-49	14	Female	White	High School	Operative: Human Resources
Betty	35-49	5	Female	White	Masters	Clinical: Occupation Therapy
Bill	35-49	15	Male	White	Associates	Clinical: Critical Care Nursing
Courtney	35-49	3	Female	White	Masters	Management: Volunteers
James	35-49	2.5	Male	Black	Associates	Technical: Network Support
Jan	35-49	13	Female	White	*NA	Operative: Security Services
John	35-49	8	Male	White	*NA	Technical: Network Support
Max	50+	7	Male	White	Bachelors	Management: VP of HR
Paul	21-34	7	Male	White	Bachelors	Technical: Web Services
Priscilla	50+	8	Female	White	Bachelors	Operative: Biomedical Dept.
Star	35-49	5	Female	Black	Some College	Management: Housekeeping
Steve	50+	17	Male	White	Masters	Management: Info. Services

Note: *NA means “not available”

Case Description

The organization studied was a community hospital with the pseudonym, Beacon Community Hospital (BCH). BCH is in a city of 100,000 in the Southeast of the United States. It serves more than seventeen counties with a combined population of 500,000. The hospital maintains 315 beds and 15,000 admissions per year. There are about 30000

employees, including full-time, part-time, and relief people. BCH is open 24 hours a day, 7 days a week, and 365 days a year. The intranet was created in 2000 and was in its fifth year of operation during the study. Administration calculated a cost savings of more than a million dollars for services such as intravenous bag order and electronic educational quizzes required for accreditation. After initial development, the intranet was renamed "Information as Needed" or "IAN." IAN served up 1.9 million pages in the month of August 2005, which eclipsed the quarterly estimate of 200,000 thousand pages served by the hospital's public website. IAN is continually under development and it contains pages that are generally accessible to all organizational members and private areas that are limited to specific departments or role types. This includes special rights for departmental representatives to post information to departmental web pages. Employees sign-on to a personalized form of the intranet, called "Your Intranet," which allows them to view and alter their own demographic data, access past performance reviews, and meet educational requirements on-line. Because of the Health Insurance Portability and Accountability Act (HIPAA), patient information is tightly controlled by a separate clinician's intranet and was not part of this study. IAN is the pathway through which the clinician's intranet and other pages, portals, and databases are accessed. IAN is both an entity of its own and an organizing strategy to tie together diverse systems.

Findings

As a preface to the findings, three types of change were evident in the data that help place the concept of change within the hospital context. These are a.) Future-oriented Change, b.) Unexpected Change, and c.) Grassroots Change. Future-oriented change is change that is typically strategized and initiated by management to develop and improve the hospital. An example of future-oriented change is renovation of the Emergency Department (ED) to handle an increased demand for services but it comes with short term hassles and expense. Unexpected change stems from events that were not predicted. An example of unexpected change is financial crisis that followed a reduction in insurance reimbursements. Some hospital services were terminated with ensuing employee layoffs. Grassroots change bubbles up from within the ranks of organizational members rather than administration and appears to be consistent with the decentralized structure at BCH. An example of grassroots movement occurred during the financial crisis. Priscilla described how some employees tried to save jobs by offering to take a pay cut but this was rejected by hospital administration. The grassroots reaction to the layoffs reflects a potential interaction amongst the three types of change that hints at the complexity of organizational change as initiatives are met with acceptance, resistance, and alternative ideas. Three major findings were found to answer the research question.

Serving as the Primary Source for Communicating Change

The first way in which IAN promotes change at Beacon is by Serving as the Primary Source for Communicating Change. A pivotal time of unexpected change occurred when Beacon went through a fiscal "belt tightening" in which people were laid off to reduce costs. The leadership turned to the intranet to communicate how the crisis was being handled. According to Paul, the still-new intranet was into the hospital's primary source for communication, which he likened to a town crier. He stated, "IAN became the legal organ...of this information because not everybody has e-mail. And so it has definitely become a 'hear ye, hear ye' stump for official news." The intranet allowed every employee access to the same information about the reductions. The effect was to draw the community together and disband rumors that were circulating around the hospital. An important function of the intranet is to debunk speculation and to ensure that change has the best chance of success. BCH has a potent rumor mill that spreads information and, sometimes, misinformation. Although none of the study participants recalled information on IAN that specifically stated it was addressing the rumor mill, there is an expectation that IAN is now the source of by which informal communications are validated. For example, Betty stated "If I do hear a rumor, I want to get to the truth I know where to go to look for it." James indicated that the author stamping feature on the intranet "validates" information because organizational members know who posted the information and to whom they should address questions. This is a feature that the rumor mill cannot offer and makes the intranet more trustworthy.

Since the time of financial crisis, the intranet serves to provide information about different types of change, particularly changes to policy and implementation of special projects that are generally future oriented change. Both Steve and Bill noted that IAN sends out alerts when there are policy changes. These policy changes used to be distributed only by hardcopy, which was expensive and slow. IAN contains a news announcements section that has become a primary mode of organizational communication. One month of data, or 201 news announcements, were analyzed for content. Seven percent were specifically about the progress of change projects and many of the other categories also contained changes to policy, personnel, and scheduling that supported change initiatives. In some cases employees who went beyond the call of duty in dealing with change were praised in the news section.

One IAN page is wholly dedicated to the ED construction project. It shares the story of the project as phases are completed and even shows pictures of the construction taken over time so that members can see the metamorphosis. One problem for the hospital community is the routing of patients and guests throughout the hospital so intranet maps depict routing patterns. Communication about change is critical for helping members understand why change was needed and for setting expectations about the change. Star said phases of one change project were presented to her department through IAN. She stated, "This helped our staff to understand what was happening and why it was happening, not that they're just doing something, but they could understand the outcome of it." Helping employees understand the change process and setting expectations for future completion eases their concerns. When phases occur as planned it builds confidence in the change process and this confidence can be conveyed to customers. Betty uses the intranet to keep her patients informed about change projects that could affect their visits and to make better decisions about when to schedule appointments for individuals with physical disabilities. Even if an employee is not directly involved with a particular change, Amy believes that the hospital wants everyone to be "a little aware" of new initiatives. Steve noted that intradepartmental communication depends on the leadership style of the manager whereas the intranet equalizes this factor. As the primary source, IAN conveys a consistent message that sets change expectations and helps ease transition.

Fostering Participation in Change

The second way in which change is promoted through IAN is by Fostering Participation in Change. Communicating change is only part of the equation for change to occur. As people learn about change they react to it and choose what to do with the information. Amy and Courtney suggested the hospital's strategy for dealing with market competition is to plan rather than react to maintain service excellence. During development, Paul saw the intranet's potential for fostering participation in change. Although he was not a member of a building construction committee, he took it upon himself to take pictures of the project and post them on the intranet because "being able to tell people about it seemed like a service we should be providing." This was a new action that was started a grassroots level and made possible by IAN. It eventually became a routine feature. Star said that pictures allow her to visualize the future outcome of changes. Artist renditions of the new ED were posted to IAN, which helps her understand the future vision and allows her to share the vision with her employees. As she sees the project unfold she matches her knowledge of individual employees with the phases so that those less tolerant to change or physically limited can be routed as smoothly as possible. She said, "We're going to need someone who is flexible....It gives us a chance to look at our schedules and say "Hey, this person may not be the best person for fit over here."

Organizational members may participate in a change initiative by using information found on IAN to query external knowledge networks or to volunteer help. For example, Max was reviewing committee meeting minutes that discussed BCH's plan to become a "Magnet" hospital, which would make them an employer of choice for clinicians. Max is not a member of this committee but he recognized that the status could affect the hospitals' compensation structure. He received information from other Magnet hospitals in the state and has since put together benchmarking teams to visit them. In another instance, employees volunteered to be shuttled in from an off-site location when a parking lot was demolished to make room for hospital expansion. A call for volunteers was placed on the intranet and drawings for gift certificates were held each week to reward shuttling employees. This method of fostering participation was preferable to management making the decision. The examples in this section show that the intranet fosters participation in change when employees see information communicated about change and decide how to react to it. An essential element is the ability to engage in future planning, which means taking general change information and applying it to specific situations to smooth transition.

Altering Cultural Belief

The third way in which the intranet promotes organizational change is by Altering Cultural Beliefs. The evidence indicated that there is a culture change underway at BCH that followed the same trajectory as intranet development. According to Steve, the culture at BCH has not been "technically savvy," particularly amongst clinicians who viewed paper records as the reality by which decisions should be made. The reliance on paper and face-to-face communication is still heavy but this is changing in a grassroots fashion. At the heart of the culture change are beliefs about how to locate, communicate, and improve the hospital's perception of reality. The value placed on technology to manage their perception of reality appears to vary by functional groups, particularly technical and non-technical employees. Clinical and operative interviewees placed a greater emphasis on paper and personal, two-way communication. Priscilla, for example, expressed discomfort with web forms that do not allow for personal contact. Technical employees, like Paul and James, were very comfortable with communicating through the technology and value the intranet for decision-making. James, for example, enjoys using the IS department's intranet-based troubleshooting program named "WebMagic." Calls are entered into the system by helpdesk personnel and then assigned to specific technicians by the technicians themselves or other employees in the

department. James looks at the trouble tickets to strategize how to order responding to the calls. Paul prefers to receive work requests by email because “a lot of times a phone conversation can evolve into a thirty minute monologue about somebody’s day or something” whereas technology allows for more targeted communication.

Amy suggested that the disparity in valuing technology also stems from generational gaps. According to Steve, younger doctors and nurses are more facile with technology than older ones. He estimated the average age of nurses is around forty years old, many of whom did not grow up with computers. Bill sees himself caught in the middle of a technical divide with nurses younger than him being more comfortable with technology. Information in paper format has been valued, including policy manuals, forms, and patient charts. Information transferred on paper, however, can increase mistakes when patient data is transposed or lost. Bill explained that “reams and reams” of paper follow a critical care patient and he is hoping that “everything will be put on IAN” in the near future. One item that has been placed on IAN is an artifact of the paper culture. Both Star and Max described the “blue slip,” which is a personnel action form that changes an employee’s status or salary at the hospital. It is called a blue slip simply because it was once printed on blue paper and this term was retained to maintain the same understanding of the form’s purpose. Some items like the blue slip are retained while other items change frequently. Paul discussed that the dynamic nature of the intranet means that information can be old within even a few seconds, requiring frequent refreshing of the web browser. Indeed Steve, Max, and Amy believe that IAN is now the “location of truth” for the hospital. Truth, here, is the reality by which decision are made. As reality changes so does the information on IAN. This constant refreshing of truth requires employees to be continually checking the intranet for new information.

There is a growing technical competence at BCH. Several participants commented that the Classifieds on which employees can sell personal items such couches and baby clothing have little corporate function but they draw employees to IAN. Amy commented that as people learn to use the Classifieds, they become more comfortable with using other features of IAN. This draw to the intranet supplies the impetus for grassroots change as the technical skills to read and post Classifieds translate to other intranet features. Paul noted there is a perception shared by some directors that clinical and janitorial employees do not use IAN. His department ran log-in statistics and found that greater than 90% of employees use the intranet. This disconfirmation of the perception shows how widely embraced the intranet is at Beacon. New employees, too, are oriented to the intranet in a thirty minute class at the outset of employment. To them, the intranet is presented as part of the cultural fabric at Beacon as if it has always been there. Some departments began recognizing that technical competence on IAN is beneficial for new clinical information systems that will be implemented in the future. The Labor and Delivery Department, for example, started giving out prizes for employees using the intranet the most. The culture change at BCH involves the move to embracing technology in a profession that has not been technology oriented. Steve commented that medicine is a field of fragmented specialties; a hand doctor generally knows little about heart surgery. Technology may bring a more holistic approach to medicine, and this requires a culture change. Betty has “seen a huge change in the culture. I’ve seen more computers at each of the stations, more people using the computers, more nurses using the computers and less reliance on the chart and on people telling me things.” The growing independence for accessing data moves them more quickly from finding information to applying it.

Steve believes that the culture change underway is critical for the future of medical practice, evidence based medicine. Evidence based medicine requires clinicians to keep abreast of new studies and procedures that change over time. He used this example, “How many times have eggs caused cholesterol/don’t cause it/cause it/don’t cause it. Leads to heart disease/don’t lead to heart disease. What does the evidence really show?” The best practices that doctors learned in medical school may not be valid years down the road as the field learns more about various diseases. The volume of new medical information is simply not possible to digest by any one person because of biological limits so technology becomes a partner in the care of patients. At BCH, the growing technical competence and acceptance of technology was accelerated by the development of IAN. The widespread use of the intranet is creating cultural change that alters fundamental beliefs about the organization, including the location of truth.

Conclusion and Implications

The findings show that the IAN promotes change in a dynamic process in which the changes are both surface and transitional (Bridges, 2003) as fundamental and deep beliefs are altered. The key to the power of the intranet for promoting change is the regular use by a majority of employees at BCH. Change creates new content that allows for reinterpretation of the organizational context. As the organization learns to deal with what’s new, culture and change are embedded into intranet features and a dynamic change cycle results. Organizational members see change and learn from IAN on a daily basis as they read announcements or explore departmental pages. For this process to work successfully, two organizational conditions were uncovered that affect how the BCH intranet promotes change. A major conclusion of this study is that network readiness and continual change influence the embedding process.

Network Readiness

Network readiness is the degree to which cultural and environmental conditions allow organization to embrace and improve upon the communication abilities of the intranet. The organizational culture at BCH both shapes the intranet and is shaped by the intranet, similar to Palloff and Pratt's (1999) view of communication technology. Network readiness is part of the culture at BCH that allowed the development of the intranet to take off in a grassroots movement. The movement cannot be explained simply by the level of technical competence of the staff since there was a wide disparity of technical skill at BCH, especially amongst clinicians. In fact, both Bill and Amy noted that they see a generational gap with younger workers being more facile. Although there may have been individual instances of disconfirming data necessary for Schein's (1995, 1997) change model, this study did not reveal disconfirmation of data leading to the widespread growth and acceptance of IAN. One explanation is that the culture already had some level of psychological safety, which could be related to the corporate structure. The culture may have been ready to be networked through the technology because of the strategically decentralized structure that was determined to be characteristic of the BCH culture. This allowed employees a high level of freedom in their work when they are not dealing with universal issues such as legal or financial material. Theoretically, network readiness could allow for faster transition of "memes" or cultural bits (Sentell, 1998) and for members to see the potential of IAN to help their professional goals. The intranet appeals to personal and professional interests. The skills people learned from using the classifieds for personal reasons translated into understanding how to use the intranet for professional tasks. The perspective that the intranet encourages egalitarianism (McChesney, 2000) may be applicable here since employees enjoy more direct access to information, which helps manage a decentralized environment. Additionally, like Haughy's (2006) study, the technology facilitated direct communication but on a larger scale. An implication of this is for change agents to analyze the network readiness of their organization when implementing a change initiative, especially if the change involves instituting new technology. This would be the case in other healthcare organizations that are attempting to implement clinical information systems and disaster recovery plans.

Continual Change

The second organizational condition is continual change. The intranet is the primary source for communicating small and large scale corporate change initiatives. Since the practice of medicine is constantly changing, there is a need to use the intranet as a portal to disseminate new knowledge, including managing evidence-based medicine (Aveline, 2005). The organizational system has to deal with continual change in the organization and in the medical field, which is a draw to the intranet. If IAN's content were static and rarely provided new information, there would be little reason for Beacon employees to access it regularly. This organizational condition necessarily influences the embedding process since it helps motivate intranet use. It also allows for the continual reinterpretation of events and organizational values, which could reflect Bateson's (1994) notion of spiral learning that leads to mean-making. Balancing present reality and future vision (Senge, 1990) is easier when anticipated outcomes were posted to IAN, such as the artist's rendition of plans for the new ED department. Postings such as these allow members to envision the future. Additionally, the news announcements analyzed provided stories of people who successfully negotiated change, which would fit Cameron and Quinn's (1999) theory that story-telling can encourage change.

Cultural change is also part of the continual change. Use of the intranet is creating cultural change at BCH by altering cultural beliefs. IAN is becoming the source of "truth" for the hospital, both in terms of change initiatives and also in terms of professional standards of practice. As the intranet is expected to contain valid forms of truth, the use of the intranet is reaffirmed and a dynamic cycle results. This is akin to Schein's (1997) shared assumptions about the nature of reality as members agree on what is true. The ability of BCH to use the intranet for continual change seems to reflect a way in which organizations can become change-capable (Sentell, 1998) and alter in small ways daily. The change process can be so subtle that it is not recognized immediately. It may seem chaotic since a definitive beginning point found in the change models (see Bridges, 2003; Schein, 1997) may not be discernible.

Integrated Implications

Network readiness and continual change at BCH indicate organization learning or what Watkins and Marsick (1999) called "continuous learning" supported by the culture. Learning is embedded into the BCH intranet and it fosters new learning in a dynamic fashion. An implication of this is intranets can help an organization manage continual change but only if they are utilized by employees and if the employees trust the content. Organizational developers should look to basic cultural assumptions about information technology, whether it is considered separate from regular operations and controlled by a small group of technologists or whether it interconnected and in partnership with the organizational system. This could be pivotal for the implementation of change through other corporate intranets. Additionally, for any field focused on top-down change this study revealed that grassroots change can occur. We do not know as a general principle whether the way in which organizations are networked could increase the incidents of grassroots change and the advancement of alternative paths to organizational change.

This study furthers understanding of how web technology can help human resource and organizational development professionals implement successful change initiatives by utilizing corporate intranet resources. It also suggests ways in which environmental conditions are connected to intranet use. There is still a tremendous gap in knowledge about intranets that can be bridged through future research. Replication of this study in different sectors would yield insight into diverse uses of web technology. Studying how intranets support reorganization, mergers, or planned cultural changes would extend knowledge critical to the field. Finally, given the emergence of generational issues, future research could illuminate if younger employees more readily accept change through technology.

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