SOCIAL NETWORKING TECHNOLOGIES IN KNOWLEDGE MANAGEMENT

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ABSTRACT

This paper discusses the Internet phenomenon known as Web 2.0. It explores Internet use, Internet users, and the continuous improvements being made to the Internet. The purpose of this paper is to explain the impact that social networking has on the modern enterprise. Each application is also applied to a practical business setting. The benefits and challenges of each application are discussed and examples of organizations that are implementing Web 2.0 strategies are presented. Some limitations and concerns of Web 2.0 are discussed. The paper concludes with an examination of the implications of Web 2.0 on companies and their business and marketing strategies.

Keywords: Knowledge management, Web 2.0, social networking, collaboration

INTRODUCTION

Today's knowledge management (KM) systems focus on centralized sets of repositories, organized around established business processes. The current knowledge management systems are expensive to implement and the long-term commitment of the major resources of their deployment, maintenance, and daily operation can be seen as a huge burden. Consequently, even customized solutions end up going unused, with the knowledge workers running these custom KM solutions not having the information technology (IT) tools to provide support for their responsibilities. Based on these underutilized KM systems, the continuing evolution of Web 2.0 is providing a new KM solution, a collaboration based solution [12]. Social networking technologies provide immediate solutions to the large investments for the deployment, maintenance, and daily operations for today’s KM systems [3] [7]. It is time for organizations to start looking at tomorrow’s knowledge management solution and realize this new solution is a more efficient and effective model for today's enterprise knowledge management systems. Each time a new system is implemented; large investments into systems that have promised automation and seamless integration to share knowledge across the organization rarely become a reality [8][16].

To understand the most fundamental aspects of knowledge management, one must first understand the process of knowledge acquisition, the use of intellectual property and the use of non-material assets. It is the knowledge within the organization that is the basis of an organization's development and allows them to find solutions to business problems. The knowledge management system becomes an essential tool for all the organizations actions, with the goal being that decisions can be made quicker and are justified and strengthened by the
knowledge within the system itself. Using these systems to have knowledge about clients, similar to a customer resource management system also increases the level of success in providing them with the best solutions. In proving solutions to clients, the knowledge that is captured also allows the knowledge system to help drive innovation. The learning organizational culture is a requirement for the constant changes in business processes and management practices that are driven by staying focused on the KM system and continuing to improve that knowledgebase [10].

Web 2.0 social networking (SN) technologies provide organizations with a set of tools to facilitate the knowledge acquisition, transformation, and sharing. Employees using SN to interact with other coworkers and teams will create an environment where information is exchanged with ease. SN eventually promotes a learning organizational culture that engages these people, connects information, and establishes strong relationships.

The knowledge management system should help maintain continuous innovations that lead to the creation of new goods and/or services and establish new business processes. Knowledge management is a solution that requires organizational, human and technological resources to provide the assets for the system. Choosing not to focus on any of these aspects will many times lead to failure of the system. It is the values of the organization which is the general problem in the realm of knowledge. And more accurately it is the human component that will determine the level of success of knowledge management systems [10]. Building trust across the organization so everyone trusts the KM and the solutions it will provide. Trust in the people that help create the organization is important and a lack of it is one of the biggest reasons of failure from human aspect of knowledge management. Once organization implements Web 2.0 and SN tools, talent and expertise can be retained through portal, networking and relationship building.

The purpose of this paper is to explain the impact that social networking has on the modern enterprise; particularly, when it comes to collaboration and knowledge sharing. The growth trajectory of Web 2.0 software such as social networking, blogs, tags, RSS feeds, wikis, YouTube videos and widgets are presented and each component is outlined in detail. Each application is also applied to a practical business setting. The benefits and challenges of each application are discussed and examples of organizations that are implementing Web 2.0 strategies are presented. Some limitations and concerns of Web 2.0 are discussed. The paper concludes with an examination of the implications of Web 2.0 on companies and their business and marketing strategies.

WEB 2.0

Web 2.0 is defined in many ways by a variety of different sources. The term Web 2.0 describes the transformation of websites from silo information sources to interlinked computing platforms [15]. Traditionally, websites presented static information that was rarely updated. Companies and organizations published information on the web and users consumed what was offered. There was no ability to interact with others on the web. However, the emergence of Web 2.0 has transformed the way the web is used, managed and developed.

Web 2.0 allows for a richer user experience. It embodies interactive functionalities such as social networking, blogs, tags, RSS feeds, wikis, YouTube videos and widgets. These applications enable users to become active participants in the web. They are no longer forced to passively
consume the information available. They can contribute to and improve content on websites such as Wikipedia in real time. They can develop social networks with other users through platforms such as MySpace, Facebook and LinkedIn. They can share life events through YouTube and they can publish their own content on blogs.

Web 2.0 allows users to share information, opinions, and thoughts through blogs. It enables users to improve free source software and redistribute it for free. According to Tim O’Reilly, founder and CEO of Sebastopol-based O’Reilly Media, the company that coined the phrase Web 2.0, “the heart of Web 2.0 is the community – building collective intelligence from the mass of people that you can reach and interact and hear from – like customers which make this community” [15].

![Web 2.0 Meme Map](image)

**Figure 1.** Web 2.0 Meme Map (Source: [15])

In addition to transforming the user experience, Web 2.0 is forcing companies to consider how they can take advantage of this groundswell of technological advancement [3]. Forrester Research reports that 29 percent of the U.S. population watches user generated videos on the web. Twenty-five percent read blogs, visit social networking websites such as Facebook and MySpace, and read reviews and ratings on line at least once a month. People are spending more of their time on-line than watching TV, reading newspapers, and listening to the radio. People ages 16-24 years old consume the least amount of television. Eighty three percent spend their time on-line playing games, downloading music, using instant messenger (IM), participating in social networks, and inhibiting virtual worlds. They are increasingly on the move. Ninety five percent of them own mobile phones [1]. Moreover, wireless hand held devices like BlackBerrys and personal digital computers (PDA) enable people to log on to the Internet from remote locations anywhere in the world at any time.
Figure 1 outlines the components of Web 2.0. It is built on the cornerstone concept of the web as a platform where the user controls the data. The core competencies transform software packages into services, a participative architecture, cost-effective scalability, interchangeable data sources and data transformations, software above the level of a single device, and the harnessing collective intelligence. On the periphery, Web 2.0 focuses providing rich user experiences where open source functionalities require trust and decentralization. Tagging is emphasized in place of taxonomy and user participation and contributions are promoted in place of traditional web publishing [15].

**SOCIAL NETWORKING**

Social networking (SN) builds web-based communities. SN software gives web users the ability to create profiles that foster interaction between groups of people based on interests and expertise. Typical SN applications include blogs, wikis, bookmarking/tagging, RSS feeds, and mashups. A mashup is a web page or application that combines data or functionality from two or more external sources to create a new service [6]. The result is typically a new and distinct Web service that was not originally provided by either source. Hence, SN software includes majority of the Web 2.0 technologies. Figure 2 indicates the connections of a typical SN.

SN complements traditional working practices by creating opportunities for extending sales, marketing, recruitment, research, and technical support. SNs can be leveraged as a customer relationship management tool for companies selling products and services. Using SN, these companies have been able to drive traffic to their own online sites while encouraging their consumers and clients to have discussions on how to improve or change products or services. As SN applications become integral to an organization’s activities, they achieve legitimacy and value that puts at the same level as enterprise applications [11][18].

The need to create, acquire, store, organize, search, filter and visualize information for business purposes will only increase in coming years. Therefore, despite initial trepidation, enterprises; especially those with highly skilled employees working in remote locations, are coming to the realization that SN tools can help build a corporate culture in which knowledge is quickly located and shared [11].

**SOCIAL NETWORKING AND KNOWLEDGE MANAGEMENT**

Knowledge Management (KM) is a set of tools and processes companies use to create, track and share intellectual assets. The first wave of KM involved digitizing and tracking documents using tools like content management systems. It quickly became clear that it was too hard to share those documents, so companies adopted collaboration tools. Organizations are already actively leveraging the power of social networks to find new business opportunities, but SN tools show clear potential for improving collaboration and knowledge sharing within organizations. With social networks, companies are extending KM to make it easier to connect employees and information [8][16][18]. SN can be effectively used for finding expertise quickly and easily, particularly for people working remotely who feel part of the broader community with the use of SN [4][14]. Since businesses operate globally, social networks can make it easier to keep in
touch with contacts around the world. Additionally, employees are typically familiar with SN since they use them outside of work [8] [11]. The following section of this paper addresses the business advantages of SN in many perspectives.

Existing business tools for knowledge sharing and collaboration primarily consist of email, work productivity desktop applications and portals. These tools are very structured and rigid in their set up and interaction, and do not provide a free-form medium for users to leave their impressions and opinions behind in the way that SN applications do. Bookmarking/tagging and other SN tools help bring order to the abundance of information that employees have to sift through [5][9].

SN helps people find and connect to co-workers through user profiles, expert search, and social graphs—visual maps of an employee's connections with co-workers. This makes it easier to stay in touch with a greater number of people than would be possible with one-to-one interactions. SN also helps workers find content and people relevant to their work, share information easily, and offer insights to each other on a continuous basis. For instance, experienced senior staff members can offer insights to junior staff members in small doses and in a casual style [5].

Many organizations are still divisionally segmented. SN can bridge groups so they can see what is going on outside their own area. For instance, an employee whom reads blogs outside of his/her own business group can understand the bigger picture of what is happening in the organization [5] [11].

If used properly, SN lets firms accelerate business by bringing faster response time to all facets of the business. In order to support growth, firms need ways of expediting innovation and SN tools supports the agility needed in today’s economy [11]. SN tools bring people from different locations or business functions to participate in solving problems or creating innovation. Rapidly sharing ideas and complementary skills can help firms reduce development time. The theory here is that good ideas get validated and bad ideas get discarded more quickly, which leads to faster product development [5][8].

SN tools have made it possible to tap into the decision-making capabilities of the collective on a greater scale than ever before by opening discussions to a greater sample of resources, with greater disparity of areas of knowledge [13]. A growing number of applications have shown that a large enough group of diverse, independent and reasonably informed people might outperform and get to an end result that reflects a complete truth more effectively than a single expert or closed group [2][4].

For many problems that a company faces there can be a solution far outside of the traditional places that managers might search, within or outside the organization. Furthermore, decisions made at the head office may not fit local or field realities. The knowledge of those who have the necessary information from being in the field can be more effective than the use of top-down, template-based decisions. Collective intelligence accumulated via SN can help provide a diversity of viewpoints and input that can deter self-serving bias and belief perseverance, and can help combat pattern obsession and negative framing effects [2].
Most business people are familiar with SN sites like MySpace, Facebook, and LinkedIn, other online communities and SN tools. Since SN has become a part of these people’s lives outside of the office, they will be eager to use these tools; potentially leading to more business collaboration [8].

Social networks are also easy and intuitive. There is great business opportunity here since there is always demand among learners for easy-to-use tools that simplify processes and SN tools can be used to replace more complicated collaboration tools. This ease of use epitomizes SN’s potential for companies that want to tap the knowledge of their workers [8].

The foundation of SN is its social context. Sharing is encouraged, and the open, visible contributions and interactions reduce barriers to information flow. The personal nature and immediacy of SN can make interaction less impersonal and artificial than older bulletin board, mailing lists, and collaboration tools [9]. Adding a face and personality to the names of coworkers and business partners can go a long way toward supporting productive interaction [11]. For instance, a SN application like Facebook could act as a virtual employee water cooler [8]. Some individuals who might not otherwise interact as extensively with co-workers are actively participating. Formerly, people were forced to give up their knowledge, but with social networks, people willingly give up their knowledge.

SN exchanges are preserved, creating a record of previous conversations. Within a SN, employees search, view, bookmark/tag, rate, comment on, and edit information. In doing so, employees leave “digital fingerprints” on the content they access and these “digital fingerprints” provide insight into what is influencing the daily work of employees [7]. Capturing this valuable engagement data and making it actionable presents organizations with a clear opportunity to visualize and improve the way information is both consumed and contributed to by employees. These findings are important for businesses since they point to the nature of how people find and internalize information and more importantly how organizations can then make these traits part of their best practices [9].

**LIMITATIONS AND CONCERNS**

There are several limitations and concerns in bringing SN into the business environment. SN requires that firms turn over the technology experience to the end user. That is not normal, nor is it comfortable for companies, especially information technology (IT) departments [3] [18]. Also, SN applications often lack any explicit refereeing process that might provide some degree of quality assurance, which could lead to unwanted and undesirable outcomes. Communities of interest could drown out any voice of reason leaving the majority view essentially unchallenged [13]. Further control concerns include unpredictability, unassigned liability, and data leakage from staff gossiping freely in an open environment. Consequently, one of the biggest issues with respect to control is whether to include outsiders in the process [2] [18].

Companies have reservations about SN privacy and security, and rightfully so. SN opens up new avenues for the introduction of malware and phishing scams practiced by cyber-crooks. Also, businesses should be wary of potential about open access to the company servers as a result of lax and outdated attitudes toward passwords [8][18].
The assumption that an unmediated open group of resources will always come to a better conclusion than a single expert or closed group is dangerous. Companies can collect information from myriad sources and then perform some sort of averaging. In this case, the whole is equal to the sum of its parts, but the key is to maintain the right balance between diversity and expertise. Certain problems are more appropriately addressed by a diversity-based approach than others, but no amount of diversity will help if the group is completely ignorant of the issues. Therefore, firms need to decide which people to involve in group decisions and whether or not each participant should be given an equal voice. Even an application like Wikipedia, which might look simple on the surface, relies on a complex hierarchy of carefully selected editors [2][13].

Companies have generally been convinced of the value of connectivity and sharing information, but SN communities sometimes lack focus. Personal SN sites such as MySpace, Facebook, and Twitter, have been given a bad rap and are often seen as vehicles for sophomoric self-aggrandizement [5]. This has lead some to argue that SN interaction in the business environment is a nonproductive use of time. It also raises policy questions around moderating employee behavior and the use of network bandwidth [18]. Also, introducing SN into the enterprise presents a learning curve for workers whom are not familiar with SN and are used to communicating in specific ways. Firms not fully convinced of the business value of SN stand to waste significant time with employees needing training [8].

Use of SN as business tools lacks a reliable formula for measuring return on investment (ROI). When these tools are used to connect with customers and partners, there are usually ways to calculate a payback, but when companies provide them to employees, they're often going on gut instinct that SN will be good for business [5]. It is hard to come up with a reliable yardstick to measure the cost of the tool versus cost savings due to time saved or new opportunities created. There is no real way to know how solutions will fit in a firm’s environment until they have been implemented and used by employees and customers [18].

**DISCUSSION AND SUGGESTION**

With thousands of active user groups already contributing to social networks, companies have been cautious when adopting SN technologies. SN is here to stay so it is important for businesses to find a practical way to adapt to it and work with these SN sites [18]. Following are some suggestions for firms when considering in rolling out SN applications.

**Create Community**

As a collaborative tool for KM, SN must be embraced by all employees and should inspire the frequent sharing of valuable knowledge. What motivates people to participate in a collective undertaking can vary widely so organizations must provide a continuous flow of new, enthusiastic participants to keep engagement high, or they need to provide incentives to sustain people’s motivation over time [2] [14]. Rewards and recognition are not necessarily monetary in nature. Instead, a community of practice (CoP) should be formed around a recognized identity that all members can relate to and feel part of.
For a CoP to be successful, the community must become part of the practice itself. Community members must be able to easily see a direct benefit from being a member of the CoP and the community must take on a sufficient level of importance to its members. Otherwise, it becomes easy for them to lose interest in contributing. The “what’s in it for me” factor is lost and the pressure of day-to-day business outweighs any reasons to contribute. Members of communities rely on other members for assistance with work-related issues, problem-solving and professional support. They need to know that they can trust their colleagues if they are to share openly and they must also feel that they are treated with appropriate respect [17].

**Do Not Let Fear Strangle Growth**

Many organizations are wary of giving a voice to employees because they do not know what they will say. Businesses also worry that employees will overdo the social aspects of these applications. This may tempt organizations to police employee-generated content, either through monitoring or pre-approving contributions. However, it is important to resist that temptation, as it will drastically affect employee participation. Employees need time to become comfortable with the idea of speaking up, sharing ideas, and participating in company-wide conversations. A SN project will likely wither before it has a chance to grow if people fear the thought police [5].

**Resist Exclusivity**

Business units or teams may want to build gated communities, but that approach defeats the purpose of a social network. The value of SN is in broadening the number of individuals who are generating or evaluating solutions. A company may want to tap into people or groups that it has not traditionally included when collecting and evaluating ideas. For instance, it might want to reach across business functional barriers or even groups outside of the company [2][5].

**Standard Code of Conduct**

When people are allowed to contribute to decisions, the likelihood that some will misbehave increases with group size. An implicit code of conduct like e-mail protocol helps govern people’s behavior [2]. The development of standards would also help to establish SN more firmly in the corporate world [11][17]. This is not to be confused with policing. As mentioned earlier, policing an enterprise SN will kill it.

**Select the Right SN Technology**

SN technology should be as simple, effective, and transparent as possible and applied as needed in order to support key community functions and effective group development. An important element with choosing technology for a SN is to be very clear from the start on exactly how the technology will best serve the community. Even though a particular platform is either popular or easily available at a given point in time, it may not necessarily be the best solution for all communities [17].

Search underpins the value of a SN so insufficient indexing and searching capabilities will make social applications less useful. The point of SN in business is to let people provide input into the
relevancy of content and people, so make sure SN has a search engine that allows for user-generated feedback such as tags and content-rating systems [5].

CONCLUSION

SN continues to expand across businesses and enterprises. Social network software could have a more far-reaching organizational impact than technologies adopted in the 1990s. Vendors including IBM, Microsoft, Adobe, Novell and Oracle are adding SN tools to their products. Similarly, vendors such as Jive and Ektron have gotten into the act by offering SN toolboxes with their core products, and Yammer, a tool that works much like Twitter but is intended for business use, includes a SN component that gives employees personal pages.

The bottom line is that SN tools are helping businesses streamline the processes of researching projects, forming teams, and sharing knowledge. The personal nature, familiarity, and ease of use of SN attract executives and employees to improve their collaboration and relationship. Clearly, the future of collaboration and knowledge sharing can be enhanced by SN tools. We are seeing the beginnings of a new era of how information and knowledge will be discovered, created, distributed, and utilized inside organizations.

In order for companies to stay ahead of the curve and, more importantly ahead of their competitors, companies and organizations need to seriously determine how they can implement effective marketing strategies that incorporate Web 2.0 capabilities. They need to interact in a more personal way and create favorable user experiences by proactively reaching out and connecting with their customers. Web 2.0 has introduced a new level of technological sophistication. RSS feeds enable companies to stay engaged with customers by delivering updates to them directly, without requiring them to visit the company’s website. YouTube marketing strategies offer companies the ability to showcase their personalities provide and offerings in a way that can be more authentic. It also provides a platform for viral marketing campaigns.

Companies that fail to think outside of the box, and that fail to think about the opportunities presented by Web 2.0 strategies, will be at risk of being surpassed by their competitors. Web 2.0 is revolutionizing the Internet and the way users interact with the Internet. It will continue to have a very powerful effect. Adoption or lack of adoption will eventually be the difference between the companies that succeed and those that do not.

References


