Knowledge Networks:
The Social Software Perspective

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Chapter III
Weaving a Knowledge Web with Wikis

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ABSTRACT

This chapter introduces wikis in the context of social software, focusing on their powerful information sharing and collaboration features. It begins by defining the wiki concept and then discussing the evolution of wikis, explaining how they first emerged and how they have evolved over time. The social software aspect of wikis is then analyzed, examining how wikis can engender collaborative efforts. It investigates ways in which wikis help to develop communities of users, and finally some of the features that enhance the appeal of wikis as social software. The authors hope that by examining a software tool that users may have already encountered, that they will be better able to understand the basic concepts and value of social software. Further, as future trends are discussed, it is hoped that readers will be able to see the value of incorporating social aspects into both existing and as yet undeveloped software applications.

INSIDE CHAPTER

This chapter explores the wiki, an emerging media concept that allows collaborative content creation on the web. Wikis are a form of social software because they facilitate collaborative work. The objective of this chapter is to explain what a wiki is, how it evolved, and how it can be used in education, government, and business to promote collaborative efforts and knowledge sharing. When a wiki is used for content creation, no longer is a single individual responsible for the

information provided by a site. For additional readings on wikis the authors recommend a search of Wikipedia, the most successful example of knowledge sharing through wikis. When perusing the history of the incarnation of the wiki concept, readers should bear in mind how the vision of a single individual can lead to new tools that greatly increase productivity.

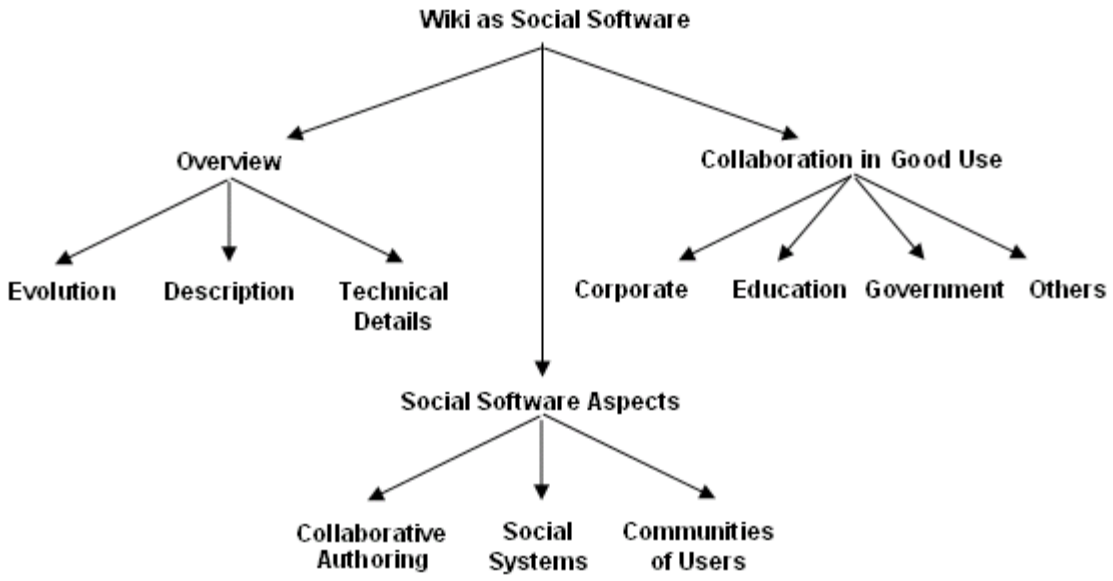
INTRODUCTION

A wiki is a collaborative and interactive website whose contents can be created and edited using a web browser by anyone granted access. It is one of many software tools that comprise Web 2.0, the emergent generation of web tools and applications (Adie, 2006). Web 2.0 complements, enhances, and adds new collaborative dimensions to social networking. Web 2.0 technologies such as blogs, wikis, podcasts, and RSS feeds are commonly referred to as "social software" because they are characterized by a high degree of connectivity, affording users an opportunity to collaboratively develop web content (Alexander, 2006).

Web 2.0 tools are designed for ease of use and rapidity of deployment, making possible powerful information sharing and straightforward collaboration (Boulos et al., 2006). Further, these tools do not require advanced technical skills to use their features, allowing users to focus on the information exchange and collaborative tasks themselves without first mastering a difficult technological environment (Kirkpatrick, 2006). Such "transparent technologies" (Wheeler, Kelly, & Gale, 2005) allow the user to concentrate more on the task because they can "see through" the technology with which they are interacting.

As shown in Figure 1, the objective of this chapter is to explain the concept of wikis, how wikis evolved, and how wikis work. Once those concepts are understood the social aspects of

Figure 1. Chapter topics



wikis can be explored, including how they can be used for collaborative content creation, how they establish social relationships over a domain of social actions, and how they create communities of users.

BACKGROUND

Evolution of Wikis

The concept of the wiki, or a collection of reader-modifiable web pages, was first envisioned by Howard "Ward" Cunningham. His WikiWikiWeb first became available on the Internet in March, 1995. The WikiWikiWeb was so named because Cunningham thought of his project as a quickly evolving web, or quick web, and remembered encountering a Wiki Wiki bus, Honolulu airport's inter-terminal shuttle bus, on a previous trip to Hawaii. "Wiki wiki" is a Hawaiian phrase meaning quick, and he preferred the sound of wiki wiki web over quick web. The original site's URL abbreviated WikiWikiWeb to wiki, and the short form began to be commonly used. In fact, the word "wiki" is now included in the Oxford English Dictionary and is defined as "A type of web page designed so that its content can be edited by anyone who accesses it, using a simplified markup language."

Wikipedia, the open-access, web-based encyclopedia is, without question, the largest and most widely known wiki project on the web (Lamb, 2004). It is a multilingual, free content encyclopedia project written collaboratively by volunteers, and serves as an excellent illustration of a well-executed wiki. Wikipedia was formally launched in January, 2001. Wikipedia has over six million articles in approximately 250 languages (List of Wikipedias, 2007). Anyone with a web browser can create an article, or edit an article created by someone else. It currently ranks as the ninth most-visited website worldwide (Alexa Traffic Rankings, 2007). The accuracy of encyclopedic entries on scientific topics in Wikipedia is surprisingly good; the number of errors in a typical Wikipedia entry is only slightly higher than a comparable entry in Encyclopaedia Britannica, often considered the gold-standard entry-level reference work. (Wiki's wild world, 2005; Giles, 2005).

Wiki Defined

As noted above, a wiki is a collection of reader-modifiable web pages. Wikis enable users to collaboratively create and edit web content directly, using a web browser. In other words, a wiki is a collaborative web site whose content can be edited by anyone visiting the site, allowing them to easily create and edit web pages collaboratively (Chao, 2007). Wikis can serve as a source of information and knowledge, as well as a tool for collaborative authoring. Wikis allow visitors to engage in dialog and share information among participants in group projects, or to engage in learning with each other by using wikis as a collaborative environment in which to construct their knowledge (Boulos et al., 2006).

As defined in Leuf and Cunningham (2001), the proper term "Wiki" is used to refer to the essential concept rather than to any particular implementation, the latter being called simply a "wiki". From a technical standpoint, the Wiki concept rests on the World Wide Web, and the underlying HTTP protocol defines how the client-server communications occur (Leuf & Cunningham, 2001). At the functional level, Leuf and Cunningham (2001) summarize the essence of Wiki as follows:

- A wiki invites any and all users to edit any page or to create new pages within the wiki site, using only a simple web browser without any additional add-ons.
- Wiki encourages meaningful topic associations between pages by making the creation of page links almost intuitively easy.

- Rather than serving as a carefully crafted site for casual visitors, a wiki seeks to involve the visitor in an ongoing process of creation and collaboration that constantly changes the web site content.

Wiki is essentially a powerful collaboration space that provides a way to organize and cross-link knowledge (Leuf & Cunningham, 2001). Some additional features of wikis include the following:

- Wikis were originally intended for multiple users to create knowledge repositories.
- Wikis are designed for collaborative authoring by everyone and allow the public to edit topics directly.
- Wikis encourage knowledge sharing around topics.
- Wikis typically organize information into topics, which are expected to evolve and often expand into something of a permanent knowledge base.
- Wikis show what information is related and make it easy to browse (Woolf, 2006).
- Wikis are useful when information is intended to be modified and enhanced as part of a collaborative effort (Mader, 2006).

How Wikis Work

Wikis are web based, making navigation intuitive. Locating and utilizing information is quick and easy, because wiki content can be linked and cross-linked. Further, wikis enable users to easily edit or update an existing webpage. As the user browses a topic to which they can make a contribution, they can immediately begin editing the page by clicking the appropriate link and making changes from within their browser. It is easy to create pages and links, and there is no fixed taxonomy of the information since the organization of a wiki is based on user contributions and their collective personality (Howley, 2007).

Wikis have two types of writing modes: document mode and thread mode. Document mode allows users to create collaborative documents, usually written in third person. All users leave their additions to the wiki document unsigned. Multiple authors edit and update the content of the document, and over the passage of time the content becomes a representation of the shared knowledge or beliefs of all contributors. Thread mode permits users to carry out discussions in the wiki environment by posting signed messages to which others respond, and eventually a group of threaded messages evolves (Leuf & Cunningham, 2001).

Because wikis are reader-modifiable web pages, they require certain features. Wiki modifications are easy because the processes of reading and editing are both quite simple. In essence, a wiki is a simplification of the process of creating HTML web pages. Simply clicking an "edit this page" link allows instant revisions (Lamb, 2004). Wikis are editable through a browser, and the editing interface is generally simple and easy to use.

Wikis provide a mechanism to record every change that occurs over time as a document is revised. Each time a person makes changes to a wiki page, that revision of the content becomes the current version, and an older version is stored. Versions of the document can be compared side-by-side, and edits can be "rolled back" if necessary. This means that it is possible to revert a page (if necessary) to any of its previous states.

Further, the administrator of the site has control over access, determining which portions are user-editable. Some wikis restrict editing access, allowing only registered members to edit page content, although anyone may view it. Others allow completely unrestricted access, allowing anyone to both edit and view content (Olson, 2006).

Wiki design is based on eleven principles originally formulated by Cunningham (2007), shown in Table 1 below.

Table 1. Wiki design principles

Principle	Explanation
Open	Should a page be found to be incomplete or poorly organized, any reader can edit it as they see fit.
Incremental	Pages can cite other pages, including pages that have not been written yet.
Organic	The structure and text content of the site are open to editing and evolution.
Mundane	A small number of (irregular) text conventions will provide access to the most useful page markup.
Universal	The mechanisms of editing and organizing are the same as those of writing so that any writer is automatically an editor and organizer.
Overt	The formatted (and printed) output will suggest the input required to reproduce it.
Unified	Page names will be drawn from a flat space so that no additional context is required to interpret them.
Precise	Pages will be titled with sufficient precision to avoid most name clashes, typically by forming noun phrases.
Tolerant	Interpretable (even if undesirable) behavior is preferred to error messages.
Observable	Activity within the site can be watched and reviewed by any other visitor to the site.
Convergent	Duplication can be discouraged or removed by finding and citing similar or related content.

Many wiki systems are adding functionalities such as web-based spreadsheets, calendars, documents, photo galleries, private workspaces, hierarchical organization, WYSIWYG (what you see is what you get) web editing, importing Word or Excel files, and even integration with centralized content management systems (Lamb, 2004). WikiMatrix (2007) provides a tool to compare the features of various popular wiki engines. Wiki selection will be discussed more fully in a later section.

MAIN THRUST OF THE CHAPTER

Social Software Aspect

The concept of social software can be traced to the 1960s, when Licklider and Taylor (1968) noted a need for some way of facilitating communication among the people who can contribute effectively to a solution without bringing them together in one place. Allen (2004) notes that the phrase "social software" seems to have been coined in the early 1990s but didn't come into common usage until 2002 probably due to the "Social Software Summit" in November of that year.

As noted earlier, social software is software that connects users, allowing them to develop content collaboratively (Alexander, 2006). Social software offers powerful information sharing and collaboration features, acting as cognitive reflection and amplification tools, and aiding the construction of meaning through the act of self-design of knowledge databases (Jonassen, Peck, & Wilson, 1999). Social software helps to bring about the original vision of the web as a medium in which anyone can participate (Schaffert, Gruber, & Westenthaler, 2006).

Wikis epitomize the definition of social software because they are characterized by a variety of unique and powerful information sharing and collaboration features (Parker & Chao, 2007). Wikis are expressly designed for collaborative authoring, allowing anyone to edit topics directly and encouraging knowledge sharing around topics.

Globalization

Widespread globalization is forcing businesses to rely increasingly on distributed knowledge and distributed work teams that cannot easily meet face to face (Davies, 2004). This displacement of teams into virtual environments intensifies the importance of knowledge sharing (Tilley & Giordano, 2003). Fortunately, wikis have the ability to disseminate knowledge to various domains that are spread across time, distance, and organizations (Gonzalez-Reinhart, 2005).

Organizational Complexity

Evans (2006) asserts that "the scale and complexity of organizations and supply chains have grown beyond the capabilities of typical command-and-control, top-down hierarchies." Companies are realizing that collaborative technologies like wikis offer new ways to tap the creative energy of the critical important stakeholder groups—customers, suppliers, and employees (Evans, 2006). In addition, wikis can be used to facilitate the connection between the business and technology environments to ensure that opportunities for efficiency and effectiveness are not overlooked (Pawlowski & Robey, 2004; Newman & Robey, 1992; Gonzalez-Reinhart, 2005). As open systems, wikis' reach extends far beyond departmental or organizational limits, allowing for the expression of the interests from virtually any community (Lamb, 2004).

Social System

Wikis enable extremely rich, flexible collaborations that have positive psychological consequences for their participants and powerful competitive ones for their organizations (Evans & Wolf, 2005). Wikis encourage information sharing by letting everybody take equal responsibility for the information published (Brännström & Mårtenson, 2006). Wiki-style collaborative efforts work within communities of users because they establish systems of trust and reputation (Evans, 2006).

Wikis help to establish social relationships over a domain of social actions that stem from the acceptance, objection, or rejection of a contribution (Korfiatis & Naeve, 2005). In this social software approach the aspirations of individuals to belong and contribute in a group atmosphere are technically supported (Boyd, 2003; Gonzalez-Reinhart, 2005). Such voluntary group participation is believed to create social connections that help realize personal goals (Boyd, 2003; Gonzalez-Reinhart, 2005).

Wiki pages mirror physical communities through socialization and the exchange of information, leading to the creation of conversational knowledge (Gonzalez-Reinhart, 2005). The collaborative document editing effort that characterizes wikis relies on the contributions of multiple authors in a concurrent system that combines the contributions of the collective in an effective way (Korfiatis & Naeve, 2005). The system is democratic because everyone has an equal voice; anyone who uses the wiki can contribute content or even make modifications to content contributed by someone else (Korfiatis & Naeve, 2005). This fosters the social ties vital for knowledge sharing (Boyd, 2003; Gonzalez-Reinhart, 2005). Each revision is the result of a community effort that involves a certain amount of social interactions embedded in the content modification used as

a mean of expressing them (Korfiatis & Naeve, 2005).

The most interesting feature from a social research point of view is the implicit negotiation process involved in writing and structuring an article. For example, if a user makes a contribution that is not accepted and therefore erased, the user may be able to review the change log to determine how long their contribution persisted and whether one or multiple individuals were responsible for the change. They can resubmit their contribution, either in its original or modified form, and continue the negotiation process. In this submission and assessment process there are interactions that characterize the dynamics of the negotiation process (Korfiatis & Naeve, 2005). This open feature of wikis allows for communication, collaboration, and negotiation to reach a determination of what is collectively considered accurate and pertinent knowledge (Gonzalez-Reinhart, 2005).

Communities of Users

Wikis create a platform for Communities of Practice that facilitates process-spanning exchange of knowledge (Fuchs-Kittowski, Köhler, & Fuhr, 2004). A Community of Practice refers to a group of people who share an interest in a specific area or practice, and who further their knowledge through interacting with each other. Thus, community knowledge is developed within the community itself as community members try to explain their latent knowledge (Campanini, Castagna, & Tazzoli, 2004).

Wikis can be used as a supporting technology for a Community of Practice because they enable users to discuss and provide feedback on concepts, they adapt to situations in which knowledge changes quickly, and they are convenient for those who want to contribute (Campanini, Castagna, & Tazzoli, 2004). Because the success of such communities rises and falls with the participation rate of active users, Hoisl, Aigner, and Miksch, (2006) study how users can be motivated to participate by means of social rewarding techniques. However, the Community of Practice itself helps users to feel part of a greater project, an important motivational factor that should not be overlooked (Campanini, Castagna, & Tazzoli, 2004).

Communities of Practice can be formed for any area of interest. For example, Farkas (2005) shows how they can be used to engage a community of library patrons. She points out that they can be used to enhance subject guides by adding to the collection of useful resources and removing any dead links that they encounter. Likewise, patrons can participate in annotating the catalog by posting synopses and reviews for books they have read, allowing other patrons to capitalize on their reading experiences to help them make informed reading decisions from the library catalog.

Examples of Collaboration in Good Use

The most recognizable uses of wikis are as reference sites like Wikipedia. However, there is a multitude of other uses for wikis, and some of those have been listed by Wikia, a confederation of wiki communities that create free content with the MediaWiki software (Uses of a wiki, 2007). Their list is shown in Table 2.

The list is very thorough (and it should be, since it is the product of a collaborative effort) but there are still more uses that can be found.

Corporate Use

Corporate use of wikis has often been coincidental – someone in the company learns about or has used a wiki before, and believes that it would be useful in a particular situation. Even so, the popularity of wikis in workplaces has increased exponentially in recent years.

Leuf and Cunningham (2001) presented a number of interesting cases in which wikis are

Table 2. Uses of a wiki

Use	Example(s)
Creating a knowledge base on a specific topic	Creatures, Wikimac
Writing documentation or a FAQ	Category:Documentation
Brainstorming	Scratchpad
Collaborative writing	fiction, comedy, poetry, Storypedia
Learning writing through online collaboration	schools
Product reviews and comparisons	beer, Cafe Review, Facial Cleansing Products, shopping, TechCompare
Creating specifications and architecture documents for software or other projects	Scoop
Creating how-tos	How To
Creating promotional material	Mozilla Community
Developing new languages	Baby Sign Language Dictionary, conlang)
Sharing tips and advice	quit smoking, Answers
Translating documents together	Translation
Coordinate and help fill needs of charities, for donations and services or volunteers	fundraising
Sharing tips with gaming communities	Category:Gaming
Discussion of theories	Abaeté
Publishing	academia, Metodologia Científica
Bringing together a community for activism	activism
Consumption guides	Altereco
Exploring fictional worlds	Alternative History, Conworld
Fan sites or fan clubs	Ashlee Simpson, CamarilaRequiem
Developing patterns or best practices	Best Practices, engineering
Support groups	Cancer Help, Celiac Resources, Quit smoking
Parody	Désencyclopédie, Homestar Runner Wooky
Planning and documenting events, maintaining a calendar of local events, or real-time reports on conferences	events, conferences
Developing software features and other inventions	FeatureGarden, inventions, Software testing and development
A meeting place for language communities	Ladino, Ido Korea, Cantonese, Translation
Political campaigns	VoteRice, Eagle Party
Communication between and within communities	
Creating an easily searchable, linkable, and editable website	
Community news and group announcements	
Information and policies about a project	
Easy refactoring of communication on forums and mailing lists (by turning the thread mode of these discussions into a more useful document mode).	
Meeting agendas and notes for organizations	
Project collaboration	
Enriching existing text documents by editing them collaboratively and adding multimedia	

continued on following page

Table 2. Uses of a wiki (continued)

Use	Example(s)
Solidifying an existing community through collaboration and increased connections	
Supporting a shared community goal	
And even for playing games	games

used in workplaces such as RoleModel Software, Inc., New York Times Digital (NYTD), TakeFive Software (now a Wind River company), and Motorola. In most of the cases, they found wikis useful, powerful and successful. Based on the case studies, Leuf and Cunningham recommend a guideline of Wiki workplace essentials covering the areas of wiki planning, wiki selection, wiki implementation, and day-to-day operations.

Majchrzak, Wagner, and Yates (2006) surveyed over 150 corporations about wiki usage. The most common work activities mentioned were:

- Software development
- E-learning
- Project management
- Posting of general information and knowledge management
- Communities of practice and user groups.
- Ad-hoc collaboration
- Tech support
- Marketing and customer relationship management
- Resource management
- Research and development

Other professional uses found across the Internet include

- Defining and describing procedures, policies, etc.
- Requesting feedback, as used in some seminars for post-presentation comments
- Product planning and development
- Procedure documentation
- Brainstorming marketing ideas
- Coordinating event planning
- Collating attendee availability for a meeting across organisations
- Self-updatable staff directory
- News site for company announcements
- Collaborative journalism
- Writing assistance tools when gathering background data or observer comments

Wikis have been adopted as knowledge creation and management tools as well as for organizational coordination in such widely varied industries as management consulting, retail, manufacturing, and software development (Organizational uses, 2006). Wiki use is increasing in the software development industry. Louridas (2006) suggests that wikis can be used as intranet-based applications for corporate projects, and for software activities such as requirement management, defect tracking, test-case management, and project portal. Wikis have also been used in student software project collaboration with positive feedback (Chao, 2007).

A cursory search of wiki sites reveals that wikis are often used for

- Building a company knowledge base.
- Offering support documentation to product users.
- Managing communication for a project.
- Creating a community news website.
- Providing tech support for developers
- Building data dictionaries for databases
- Developing collaborative documentation (Rapid Document Prototyping)
- Providing a knowledge base for IT stuff
- Sharing various materials (guides, training documents, etc)
- Posting and refining user specs
- Developing collaborative annotation
- Scheduling conferences
- Serving as a simple Content Management System
- Communicating company policy, history, and new ideas
- Providing an interactive user help tool
- Serving as a project notes repository

This is by no means an exhaustive list, but rather a representative list identified by an informal search of wiki sites.

Education

Educational benefits of wikis revolve around the fact that they offer an online space for easy interaction and collaboration. Both teachers and students can easily create web pages using wikis without prior knowledge or skill in web development or programming, eliminating the extra time necessary to develop these skills. A wiki offers the ability to interact with evolving text over time as well, allowing teachers and learners see assignments as they are drafted, rather than commenting only on the final draft. Considering the complications of scheduling after-hours meetings for students, a wiki can also be extremely useful for communication within groups. Further, as more organizations adopt wikis for internal and external collaboration and information dissemination, interacting with them at the educational level builds important work skills.

With some ingenuity and creativity, the uses of wikis in education are endless. Duffy and Bruns (2006) list several possible educational uses of wikis:

- Students can use a wiki to develop research projects, with the wiki serving as ongoing documentation of their work.
- Students can add summaries of their thoughts from the prescribed readings, building a collaborative annotated bibliography on a wiki.
- A wiki can be used for publishing course resources like syllabi and handouts, and students can edit and comment on these directly for all to see.
- Teachers can use wikis as a knowledge base, enabling them to share reflections and thoughts regarding teaching practices, and allowing for versioning and documentation.
- Wikis can be used to map concepts. They are useful for brainstorming, and editing a given wiki topic can produce a linked network of resources.
- A wiki can be used as a presentation tool in place of conventional software, and students are able to directly comment on and revise the presentation content.
- Wikis are tools for group authoring. Often group members collaborate on a document by emailing to each member of the group a file that each person edits on their computer, and some attempt is then made to coordinate the edits so that everyone's work is equally represented; using a wiki pulls the group members together and enables them to build and edit the document on a single, central wiki page.

Tonkin (2005) identifies four different forms of educational wikis:

1. Single-user wikis allow an individual to collect and edit his or her own thoughts using a web-based environment.
2. Lab book wikis allow students to keep notes online with the added benefit of allowing them to be peer reviewed and changed by fellow students.
3. Collaborative writing wikis can be used by a team for joint writing.
4. Knowledge base wikis provide a knowledge repository for a group.

Finally, Parker and Chao (2007) elaborate on additional educational uses for wikis

- Supporting writing instruction
- Project planning and documentation
- Facilitating online learning groups
- Semantic wiki to serve as a mathematical resource
- Icebreaker tool
- Course textbook writing
- Student software project collaboration

Lamb (2004) describes various examples of wiki use outside the classroom. Placement centers can use wiki pages to store and organize content for job postings and career development. Wikis can be provided by the university to act as a sounding board so that students can voice opinions about university policies.

Government Uses

Wikis are being used by various governmental bodies as well. Wikis can help government agencies in at least three ways: (1) building a consensus that is crucial for much of the government's work, (2) filling in knowledge gaps to create more complete documents, (3) promoting fairness by representing all sides of an issue (Sternstein, 2005b). For example, the U.S. Chief Information Officers Council posts ongoing revisions to the federal enterprise architecture's data reference model and allows online visitors to read and take part in discussions (Sternstein, 2005a). A U.S. National Aeronautics and Space Administration (NASA) wiki allows users to look at satellite imagery and suggest modifications to the program (Sternstein, 2005a).

Miscellaneous Uses

There are some less easily categorized uses of wikis that are relatively informal. Wikis have been used for such things as

- Organizing class reunions
- RSVPing for events
- Planning weddings
- Training partners for sporting events
- Sharing enthusiasms or passions
- Posting informal classified ads

Again such uses were determined by an unstructured search of current wiki sites.

Industry Examples

Dresdner Kleinwort Wasserstein (DrKW), the international investment banking arm of Dresdner Bank, installed an intranet wiki in 1997 to better link their large number of employees scattered across a broad geographic area. The wiki has since evolved into an enterprise application used primarily for project tracking by frontline employees working with customers, i.e., customer service staff working on customer files (McAfee & Sjoman, 2006).

Ziff Davis Media, one of the largest technology magazine publishers in the United States, uses a wiki for Agile Strategic Planning. They used the tool to plan the development of a new version of their website. The wiki was used to brainstorm ideas for the new site, allowing them to draw upon expertise from social networking,

blogging, gaming, and software development, and they estimate that it reduced development time by 25% (Ziff Davis, 2007).

Truong, Herber, Liguori, and Barroso (2005) describe their experiences using a wiki to prepare and upgrade task-based training courses. The wiki served both as a repository for training materials as well as a daily communication vehicle for multiple co-authors working in both Canada and Austria.

Wiki Selection

There are literally hundreds of wikis available on the market, each with various set of features. Determining the best wiki for a particular situation can be a challenge in itself. Ward (2005) offers the following easy steps for selecting a wiki:

1. Determine your subject matter
2. Define your target audience
3. Establish objectives and measurable goals
4. Determine the required feature set and functionality of your wiki
5. Select the most appropriate technology
6. Set up the wiki and arrange hosting
7. Begin writing
8. Invite other contributors

While most of the steps are reasonable, the tasks in steps 4-5 may leave some question marks. A good starting point for wiki novices might be PBWiki or Wetpaint, two popular free hosted wikis for non-technical users. WikiMatrix (2007) offers an excellent tool enabling users with little or no wiki experience to make an informed decision on selecting a wiki. The WikiMatrix Choice Wizard helps in this process by allowing users to select options that narrow down the number of wikis to choose from. If you know the objectives of your application and are armed with certain criteria, the task of selecting the right wiki can be less daunting. For example, wiki security might be a major concern for business applications, and WYSIWYG editing might be essential for maximizing non-technical user participation. Other major considerations include licensing, page history, page permissions, product maturity, intended audience, usability, system requirements, data storage, development support, programming language, etc.

FUTURE TRENDS

Wiki functionality continues to evolve as more and more useful features such as those discussed in the previous section are offered by individual tools. In addition, the wiki concept itself continues to evolve.

Semantic wiki is a wiki enhanced with technologies developed by the Semantic Web community in order to encode more knowledge than just structured text and hyperlinks (Ontoworld, 2007). Most wikis cannot naturally support structured contents, and this lack of structure can potentially cause information overload and other problems in some Wiki applications. Semantic wiki enhancement allows wiki content to be organized semantically and can make wiki contents easily understood and processed by machines, thus reducing the overhead of wiki management. For example, Klein, Hoecht, and Decker (2005) presented the concept of "Wikitology", which combined a wiki and an ontology for maintaining software engineering knowledge. Decker, Ras, Rech, Klein, and Hoecht (2005) extended the concept by developing a semantic wiki enhanced with an ontology to support self-organized reuse of software engineering knowledge.

As wiki use becomes more widespread and the advantages of wiki technology become better known, wiki features may be incorporated into other applications. Szybalski (2005) predicts that wiki-inspired functionality will likely be incorporated into word processors or blogs, allowing

documents to be editable and viewable by a large number of people over the Internet. He goes on to note that these technology enhancements will result in more large knowledge bases like Wikipedia, and "will also affect the way people work on smaller-scale projects, many of which will be less open than today's wikis."

Lamb (2004) points out that "wikis might simply represent the latest advance in online interaction—a cost-effective and readily adopted knowledge management tool." He further notes that collaborative creativity promises to be a key business skill in upcoming years.

CONCLUSION

The use of wikis proliferates and becomes more commonplace as insightful individuals continue to envision innovative uses. This widespread use has led to the concept being considered more mainstream, with wikis becoming accepted as another option in the gamut of productivity software tools available today. The ascent of social software provides new avenues and new opportunities for increased participation and collaboration. The educational, governmental, and business communities stand to benefit from wise use of wikis and the opportunities for collaboration that they offer. New media formats such as wikis and blogs have given rise to virtual communities and are beginning to fill a gaping void in existing practice (Lamb, 2004). As a major component of Web 2.0, the Wiki has continued to live up to its promise of connecting people through interaction and collaboration, empowering users through its openness and flexibility.

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APPENDIXES

Internet Session: "Citizendium vs. Wiki"

http://www.citizendium.org/essay.html
http://www.nature.com/news/2005/051212/full/438900a.html

Read the essay and the special report in the links above. Provide an argument supporting Sanger's position, and then take the opposite side and attempt to refute his points. Is there a problem with Wikipedia in its current form?

Case Study

A. Protecting Wiki Content

Because wiki content can be modified by anyone, wiki vandalism is quite common. The most common types of vandalism include the addition of obscenities to pages, page blanking, or the insertion of bad (or good) jokes or other nonsense.

Read the wikipedia page on vandalism (http://en.wikipedia.org/wiki/Wikipedia:Vandalism) and other pertinent pages on the Internet .

Watch the video on vandalism at

http://www.nature.com/news/2005/051212/full/438900a.html

Questions

1. If you are a corporate IT manager, what precautions can you take to limit vandalism and to protect corporate knowledge assets?
2. Wikis are designed for knowledge sharing. From a corporate perspective, what are the advantages and disadvantages of knowledge sharing via a wiki?
3. What features would you add to a wiki to prevent vandalism and to insure that content is accurate and up to date? What features are currently available?

Useful URLs

1. Wiki Papa-Ward Cunningham: http://en.wikipedia.org/wiki/Ward_Cunningham
2. Wiki History: http://c2.com/cgi/wiki?WikiHistory
3. Wiki Innovations: http://c2.com/cgi/wiki?WikiInnovations
4. Social Software: http://www.usemod.com/cgi-bin/mb.pl?SocialSoftware
5. More Social Software: http://james.seng.cc/wiki/wiki.cgi?Social_Software
6. Wiki Matrix: http://www.wikimatrix.org/
7. Wikis in education: http://www.wikiineducation.com

Further Readings

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