Wiki

A wiki ( /en-us-wiki.oggˈwɪki/ WIK-ee) is a website that allows the creation and editing of any number of interlinked web pages via a web browser using a simplified markup language or a WYSIWYG text editor. Wikis are typically powered by wiki software and are often used to create collaborative works. Examples include community websites, corporate intranets, knowledge management systems, and note services. The software can also be used for personal notetaking.

Wikis serve different purposes. Some permit control over different functions (levels of access). For example editing rights may permit changing, adding or removing material. Others may permit access without enforcing access control. Other rules can be imposed for organizing content.

Ward Cunningham, the developer of the first wiki software, WikiWikiWeb, originally described it as "the simplest online database that could possibly work." "Wiki" (pronounced Hawaiian pronunciation: [ˈwiti] or Hawaiian pronunciation: [ˈviti]) is a Hawaiian word for "fast."

History

WikiWikiWeb was the first wiki.[6] Ward Cunningham started developing WikiWikiWeb in Portland, Oregon, in 1994, and installed it on the Internet domain c2.com on March 25, 1995. It was named by Cunningham, who remembered a Honolulu International Airport counter employee telling him to take the "Wiki Wiki Shuttle" bus that runs between the airport's terminals. According to Cunningham, "I chose wiki-wiki as an alliterative substitute for 'quick' and thereby avoided naming this stuff quick-web."

Cunningham was in part inspired by Apple's HyperCard. Apple had designed a system allowing users to create virtual "card stacks" supporting links among the various cards. Cunningham developed Vannevar Bush's ideas by allowing users to "comment on and change one another's text."

In the early 2000s, wikis were increasingly adopted in enterprise as collaborative software. Common uses included project communication, intranets, and documentation, initially for technical users. Today some companies use wikis as their only collaborative software and as a replacement for static intranets, and some schools and universities use wikis to enhance group learning. There may be greater use of wikis behind firewalls than on the public Internet.


Characteristics

Ward Cunningham and co-author Bo Leuf, in their book The Wiki Way: Quick Collaboration on the Web, described the essence of the Wiki concept as follows:

- A wiki invites all users to edit any page or to create new pages within the wiki Web site, using only a plain-vanilla Web browser without any extra add-ons.
- Wiki promotes meaningful topic associations between different pages by making page link creation almost intuitively easy and showing whether an intended target page exists or not.
- A wiki is not a carefully crafted site for casual visitors. Instead, it seeks to involve the visitor in an ongoing process of creation and collaboration that constantly changes the Web site landscape.

A wiki enables communities to write documents collaboratively, using a simple markup language and a web browser. A single page in a wiki website is referred to as a "wiki page", while the entire collection of pages, which
are usually well interconnected by hyperlinks, is "the wiki". A wiki is essentially a database for creating, browsing, and searching through information. A wiki allows for non-linear, evolving, complex and networked text, argument and interaction.[13]

A defining characteristic of wiki technology is the ease with which pages can be created and updated. Generally, there is no review before modifications are accepted. Many wikis are open to alteration by the general public without requiring them to register user accounts. Sometimes logging in for a session is recommended, to create a "wiki-signature" cookie for signing edits automatically. Many edits, however, can be made in real-time and appear almost instantly online. This can facilitate abuse of the system. Private wiki servers require user authentication to edit pages, and sometimes even to read them.

Maged N. Kamel Boulos, Cito Maramba and Steve Wheeler write that it is the 'openness of wikis that gives rise to the concept of 'Darwikinism', which is a concept that describes the 'socially Darwinian process' that wiki pages are subject to. Basically, because of the openness and rapidity that wiki pages can be edited, the pages undergo a natural selection process like that which nature subjects to living organisms. 'Unfit' sentences and sections are ruthlessly culled, edited and replaced if they are not considered 'fit', which hopefully results in the evolution of a higher quality and more relevant page. Whilst such openness may invite 'vandalism' and the posting of untrue information, this same openness also makes it possible to rapidly correct or restore a 'quality' wiki page.”[14]

### Editing wiki pages

There are many different ways in which wikis have users edit the content. Ordinarily, the structure and formatting of wiki pages are specified with a simplified markup language, sometimes known as "wikitext". For example, starting a line of text with an asterisk ("*") often sets up a bulleted list. The style and syntax of wikitexts can vary greatly among wiki implementations, some of which also allow HTML tags. Designers of wikis often take this approach because HTML, with its many cryptic tags, is not very legible, making it hard to edit. Wikis therefore favour plain-text editing, with fewer and simpler conventions than HTML, for indicating style and structure. Although limiting access to HTML and to the Cascading Style Sheets (CSS) of wikis limits user ability to alter the structure and formatting of wiki content, there are some benefits. Limited access to CSS promotes consistency in the look and feel, and having JavaScript disabled prevents a user from implementing code that may limit access for other users.

<table>
<thead>
<tr>
<th>MediaWiki syntax</th>
<th>Equivalent HTML</th>
<th>Rendered output</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Take some more [[tea]],&quot; the March Hare said to Alice, very earnestly.</td>
<td>&lt;p&gt;&quot;Take some more &lt;a href=&quot;&lt;/wiki/Tea&quot; title=&quot;Tea&quot;&gt;tea&lt;/a&gt;,&quot; the March Hare said to Alice, very earnestly.&lt;/p&gt;</td>
<td>&quot;Take some more tea,&quot; the March Hare said to Alice, very earnestly.</td>
</tr>
<tr>
<td>&quot;I've had nothing yet,&quot; Alice replied in an offended tone: &quot;so I can't take more.&quot;</td>
<td>&lt;p&gt;&quot;I've had nothing yet,&quot; Alice replied in an offended tone: &quot;so I can't take more.&quot;&lt;/p&gt;</td>
<td>&quot;I've had nothing yet,&quot; Alice replied in an offended tone: &quot;so I can't take more.&quot;</td>
</tr>
<tr>
<td>&quot;You mean you can't take '&lt;i&gt;less&lt;/i&gt;','&quot; said the Hatter: &quot;it's very easy to take '&lt;i&gt;more&lt;/i&gt;' than nothing.&quot;</td>
<td>&lt;p&gt;&quot;You mean you can't take &lt;i&gt;less&lt;/i&gt;,&quot; said the Hatter: &quot;it's very easy to take &lt;i&gt;more&lt;/i&gt; than nothing.&quot;&lt;/p&gt;</td>
<td>&quot;You mean you can't take less,&quot; said the Hatter: &quot;it's very easy to take more than nothing.&quot;</td>
</tr>
</tbody>
</table>

(Quotation above from Alice's Adventures in Wonderland by Lewis Carroll)

Increasingly, wikis are making "WYSIWYG" ("What You See Is What You Get") editing available to users, usually by means of JavaScript or an ActiveX control that translates graphically entered formatting instructions, such as "bold" and "italics", into the corresponding HTML tags or wikitext. In those implementations, the markup of a newly edited, marked-up version of the page is generated and submitted to the server transparently, shielding the user from this technical detail. However, WYSIWYG controls do not always provide all of the features available in wikitext, and some users prefer not to use a WYSIWYG editor, and as a result many of these sites offer some means to edit the wikitext directly.
Most wikis keep a record of changes made to wiki pages; often every version of the page is stored. This means that authors can revert to an older version of the page, should it be necessary because a mistake has been made or the page has been vandalized. Many implementations (for example MediaWiki) allow users to supply an "edit summary" when they edit a page. This is a short piece of text (usually one line) summarizing the changes. It is not inserted into the article, but is stored along with that revision of the page, allowing users to explain what has been done and why; this is similar to a log message when committing changes to a revision-control system.

**Navigation**

Within the text of most pages there are usually a large number of hypertext links to other pages. This form of non-linear navigation is more "native" to wiki than structured/formalized navigation schemes. That said, users can also create any number of index or table-of-contents pages, with hierarchical categorization or whatever form of organization they like. These may be challenging to maintain by hand, as multiple authors create and delete pages in an ad hoc manner. Wikis generally provide one or more ways to categorize or tag pages to support the maintenance of such index pages.

Most wikis have a backlink feature, which displays all pages that link to a given page.

It is typical in a wiki to create links to pages that do not yet exist, as a way to invite others to share what they know about a subject new to the wiki.

**Linking and creating pages**

Links are created using a specific syntax, the so-called "link pattern" (also see CURIE). Originally, most wikis used CamelCase to name pages and create links. These are produced by capitalizing words in a phrase and removing the spaces between them (the word "CamelCase" is itself an example). While CamelCase makes linking very easy, it also leads to links which are written in a form that deviates from the standard spelling. CamelCase-based wikis are instantly recognizable because they have many links with names such as "TableOfContents" and "BeginnerQuestions." It is possible for a wiki to render the visible anchor for such links "pretty" by reinserting spaces, and possibly also reverting to lower case. However, this reprocessing of the link to improve the readability of the anchor is limited by the loss of capitalization information caused by CamelCase reversal. For example, "RichardWagner" should be rendered as "Richard Wagner," whereas "PopularMusic" should be rendered as "popular music". There is no easy way to determine which capital letters should remain capitalized. As a result, many wikis now have "free linking" using brackets, and some disable CamelCase by default.

**Wiki implementation**

Wiki software is a type of collaborative software that runs a wiki system, allowing web pages to be created and edited using a common web browser. It is usually implemented as an application server that runs on one or more web servers. The content is stored in a file system, and changes to the content are stored in a relational database management system. A commonly implemented software package is MediaWiki, which runs this encyclopedia. See the List of wiki software for further information.

Alternatively, personal wikis run as a standalone application on a single computer. WikidPad is an example.

Wikis can also be created on a "wiki farm", where the server side software is implemented by the wiki farm owner. PBwiki, Socialtext, Wetpaint, and Wikia are popular examples of such services. Some wiki farms can also make private, password-protected wikis. Note that free wiki farms generally contain advertising on every page. For more information, see Comparison of wiki farms.
Trust and security

Controlling changes

Wikis are generally designed with the philosophy of making it easy to correct mistakes, rather than making it difficult to make them. Thus, while wikis are very open, they provide a means to verify the validity of recent additions to the body of pages. The most prominent, on almost every wiki, is the "Recent Changes" page—a specific list numbering recent edits, or a list of edits made within a given time frame.[15] Some wikis can filter the list to remove minor edits and edits made by automatic importing scripts ("bots").[16]

From the change log, other functions are accessible in most wikis: the revision history shows previous page versions and the diff feature highlights the changes between two revisions. Using the revision history, an editor can view and restore a previous version of the article. The diff feature can be used to decide whether or not this is necessary.

A regular wiki user can view the diff of an edit listed on the "Recent Changes" page and, if it is an unacceptable edit, consult the history, restoring a previous revision; this process is more or less streamlined, depending on the wiki software used.[17]

In case unacceptable edits are missed on the "recent changes" page, some wiki engines provide additional content control. It can be monitored to ensure that a page, or a set of pages, keeps its quality. A person willing to maintain pages will be warned of modifications to the pages, allowing him or her to verify the validity of new editions quickly.[18] A watchlist is a common implementation of this.

Some wikis also implement "patrolled revisions," in which editors with the requisite credentials can mark some edits as not vandalism. A "flagged revisions" system can prevent edits from going live until they have been reviewed.[19]

Searching

Most wikis offer at least a title search, and sometimes a full-text search. The scalability of the search depends on whether the wiki engine uses a database. Some wikis, such as PmWiki, use flat files.[20] MediaWiki's first versions used flat files, but it was rewritten by Lee Daniel Crocker in the early 2000s to be a database application. Indexed database access is necessary for high speed searches on large wikis. Alternatively, external search engines such as Google Search can sometimes be used on wikis with limited searching functions in order to obtain more precise results. However, a search engine's indexes can be very out of date (days, weeks or months) for many websites.

Trustworthiness

Critics of publicly editable wiki systems argue that these systems could be easily tampered with, while proponents argue that the community of users can catch malicious content and correct it.[2] Lars Aronsson, a data systems specialist, summarizes the controversy as follows:

Most people, when they first learn about the wiki concept, assume that a Web site that can be edited by anybody would soon be rendered useless by destructive input. It sounds like offering free spray cans next to a grey concrete wall. The only likely outcome would be ugly graffiti and simple tagging, and many artistic efforts would not be long lived. Still, it seems to work very well.[6]

High editorial standards in medicine have led to the idea of expert-moderated wikis.[21] Some wikis allow one to link to specific versions of articles, which has been useful to the scientific community, in that expert peer reviewers could analyse articles, improve them and provide links to the trusted version of that article.[22]
Noveck points out that "participants are accredited by members of the wiki community, who have a vested interest in preserving the quality of the work product, on the basis of their ongoing participation." On controversial topics that have been subject to disruptive editing, a wiki may restrict editing to registered users.[23]

Security
The open philosophy of most wikis, allowing anyone to edit content, does not ensure that every editor is well-meaning. Vandalism can be a major problem. In larger wiki sites, such as those run by the Wikimedia Foundation, vandalism can go unnoticed for a period of time. Wikis by their very nature are susceptible to intentional disruption, known as "trolling". Wikis tend to take a soft security[24] approach to the problem of vandalism; making damage easy to undo rather than attempting to prevent damage. Larger wikis often employ sophisticated methods, such as bots that automatically identify and revert vandalism and JavaScript enhancements that show characters that have been added in each edit. In this way vandalism can be limited to just "minor vandalism" or "sneaky vandalism", where the characters added/eliminated are so few that bots do not identify them and users do not pay much attention to them.

The amount of vandalism a wiki receives depends on how open the wiki is. For instance, some wikis allow unregistered users, identified by their IP addresses, to edit content, whilst others limit this function to just registered users. Most wikis allow anonymous editing without an account,[25] but give registered users additional editing functions; on most wikis, becoming a registered user is a short and simple process. Some wikis require an additional waiting period before gaining access to certain tools. For example, on the English Wikipedia, registered users can only rename pages if their account is at least four days old. Other wikis such as the Portuguese Wikipedia use an editing requirement instead of a time requirement, granting extra tools after the user has made a certain number of edits to prove their trustworthiness and usefulness as an editor. Basically, "closed up" wikis are more secure and reliable but grow slowly, whilst more open wikis grow at a steady rate but result in being an easy target for vandalism. A clear example of this would be that of Wikipedia and Citizendium. The first is extremely open, allowing anyone with a computer and internet access to edit it, making it grow rapidly, whilst the latter requires the users' real name and a biography of themselves, affecting the growth of the wiki but creating an almost "vandalism-free" ambiance.

Malware can also be problem, as users can add links to sites hosting malicious code. For example, a German Wikipedia article about the Blaster Worm was edited to include a hyperlink to a website that would infect the user's computer.[13] A countermeasure is the use of software that prevents users from saving an edit that contains a link to a site listed on a blacklist of malware sites.[26]

Wiki software must also block JavaScript or other kinds of scripting that the attacker may attempt to insert directly into the page during editing sessions.

Edit wars can also occur as users repetitively revert a page to the version they favor. Some wiki software allows an administrator to stop such edit wars by locking a page from further editing until a decision has been made on what version of the page would be most appropriate.[13]

Some wikis are in a better position than others to control behavior due to governance structures existing outside the wiki. For instance, a college teacher can create incentives for students to behave themselves on a class wiki he administers, by limiting editing to logged-in users and pointing out that all contributions can be traced back to the contributors. Bad behavior can then be dealt with in accordance with university policies.[20]
Wiki communities

Many wiki communities are private, particularly within enterprises. They are often used as internal documentation for in-house systems and applications. Some companies use wikis to allow customers to help produce software documentation. A study of corporate wiki users found that they could be divided into "synthesizers" and "adders" of content. Synthesizers' frequency of contribution was affected more by their impact on other wiki users, while adders' contribution frequency was affected more by being able to accomplish their immediate work. In 2005, the Gartner Group, noting the increasing popularity of wikis, estimated that they would become mainstream collaboration tools in at least 50% of companies by 2009.

Wikis have also been used in the academic community for sharing and dissemination of information across institutional and international boundaries. In those settings, they have been found useful for collaboration on grant writing, strategic planning, departmental documentation, and committee work. In the mid-2000s, the increasing trend amongst industries toward collaboration was placing a heavier impetus upon educators to make students proficient in collaborative work, inspiring even greater interest in wikis being used in the classroom.

Wikis have found some use within the legal profession, and within government. Examples include the Central Intelligence Agency's Intellipedia, designed to share and collect intelligence, dKospedia, which was used by the American Civil Liberties Union to assist with review of documents pertaining to internment of detainees in Guantanamo Bay; and the wiki of the United States Court of Appeals for the Seventh Circuit, used to post court rules and allow practitioners to comment and ask questions. The United States Patent and Trademark Office uses a wiki to allow the public to collaborate on finding prior art relevant to examination of pending patent applications. Queens, New York has used a wiki to allow citizens to collaborate on the design and planning of a local park. Cornell Law School founded a wiki-based legal dictionary called Wex, whose growth has been hampered by restrictions on who can edit.

There also exist WikiNodes which are pages on wikis that describe related wikis. They are usually organized as neighbors and delegates. A neighbor wiki is simply a wiki that may discuss similar content or may otherwise be of interest. A delegate wiki is a wiki that agrees to have certain content delegated to that wiki.

One way of finding a wiki on a specific subject is to follow the wiki-node network from wiki to wiki; another is to take a Wiki "bus tour", for example: Wikipedia's Tour Bus Stop. Domain names containing "wiki" are growing in popularity to support specific niches.

The English Wikipedia has the largest user base among wikis on the World Wide Web and ranks in the top 10 among all Web sites in terms of traffic. Other large wikis include the WikiWikiWeb, Memory Alpha, Wikitravel, World66 and Susning.nu, a Swedish-language knowledge base.

Medical and health-related wiki examples include Ganfyd, an online collaborative medical reference that is edited by medical professionals and invited non-medical experts.

The four basic types of users who participate in wikis are reader, author, wiki administrator and web administrator. The web administrator is responsible for installation and maintenance of the wiki engine and the container web server. The wiki administrator maintains wiki content and is provided additional functions pertaining to pages (e.g. page protection and deletion), and can adjust users' access rights by, for instance, blocking them from editing.

A study of several hundred wikis showed that a relatively high number of administrators for a given content size is likely to reduce growth; that access controls restricting editing to registered users tends to reduce growth; that a lack of such access controls tends to fuel new user registration; and that higher administration ratios (i.e. admins/user) have no significant effect on content or population growth.
Research conferences

Wikis are an active topic of research. Two well-known wiki conferences are

- The International Symposium on Wikis (WikiSym), a conference dedicated to wiki research and practice in general.
- Wikimania, a conference dedicated to research and practice of Wikimedia Foundation projects like Wikipedia.

Related regular conferences include:

- The Semantic MediaWiki Conference (SMWCon [37]), a regular meeting for developers of a database-like semantic-wiki.

Rules

Wikis typically have a set of rules governing user behavior. Wikipedia, for instance, has an intricate set of policies and guidelines summed up in its five pillars: Wikipedia is an encyclopedia; Wikipedia has a neutral point of view; Wikipedia is free content; Wikimedians should interact in a respectful and civil manner; and Wikipedia does not have firm rules. Many wikis have adopted a set of commandments. For instance, Conservapedia commands, among other things, that its editors use "B.C." rather than "B.C.E." when referring to years prior to the common era and refrain from "unproductive activity."[38] One teacher instituted a commandment for a class wiki, "Wiki unto others as you would have them wiki unto you."[20]

Legal environment

Joint authorship of articles, in which different users participate in correcting, editing, and compiling the finished product, can also cause editors to become tenants in common of the copyright, making it impossible to republish without the permission of all co-owners, some of whose identities may be unknown due to pseudonymous or anonymous editing.[13] However, where persons contribute to a collective work such as an encyclopedia, there is no joint ownership if the contributions are separate and distinguishable.[39] Despite most wikis' tracking of individual contributions, the action of contributing to a wiki page is still arguably one of jointly correcting, editing, or compiling which would give rise to joint ownership.

Some copyright issues can be alleviated through the use of an open content license. Version 2 of the GNU Free Documentation License includes a specific provision for wiki relicensing; Creative Commons licenses are also popular. When no license is specified, an implied license to read and add content to a wiki may be deemed to exist on the grounds of business necessity and the inherent nature of a wiki, although the legal basis for such an implied license may not exist in all circumstances.

Wikis and their users can be held liable for certain activities that occur on the wiki. If a wiki owner displays indifference and forgoes controls (such as banning copyright infringers) that he could have exercised to stop copyright infringement, he may be deemed to have authorized infringement, especially if the wiki is primarily used to infringe copyrights or obtains direct financial benefit, such as advertising revenue, from infringing activities.[13] In the United States, wikis may benefit from Section 230 of the Communications Decency Act, which protects sites that engage in "Good Samaritan" policing of harmful material, with no requirement on the quality or quantity of such self-policing.[40] However, it has also been argued that a wiki's enforcement of certain rules, such as anti-bias, verifiability, reliable sourcing, and no-original-research policies, could pose legal risks.[41] When defamation occurs on a wiki, theoretically all users of the wiki can be held liable, because any of them had the ability to remove or amend the defamatory material from the "publication." It remains to be seen whether wikis will be regarded as more akin to an internet service provider, which is generally not held liable due to its lack of control over publications' contents, than a publisher.[13]

It has been recommended that trademark owners monitor what information is presented about their trademarks on wikis, since courts may use such content as evidence pertaining to public perceptions. Jarvis notes, "Once
misinformation is identified, the trade mark owner can simply edit the entry."[42]

References
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[18] (Ebersbach 2008, p. 109)
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[35] Cubric, Marija (2007), Analysis of the use of Wiki-based collaborations in enhancing student learning (https://uhra.herts.ac.uk/dspace/ handle/2299/3672), University of Hertfordshire,
Further reading


External links

- WikiIndex.org (http://wikiindex.org) a wiki directory of wikis.
- WikiMatrix (http://www.wikimatrix.org/) website for comparing wiki software and hosts