

# The Birth of a Company-Wide Wiki

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## ABSTRACT

A small software company with a worldwide presence uses one wiki to store or access most company information. Using open source software, the wiki started as a small team tool and then grew to reach technical people. An innovative content strategy proposal later extended the reach of the wiki to non-technical people. Five years later, the system is still the backbone of the company.

Crucial factors for the unusual adoption of the wiki included technical competence, judicious leadership, champions at the executive committee, and a compelling proof-of-concept.

## Categories and Subject Descriptors

H.4.1 [Information System Applications]: Office Automation – *Groupware*. H.4.3 [Information System Applications]: Office Automation – *Bulletin boards*. H.5.3 [Information System Applications]: Group and Organization Interfaces – *Computer-supported cooperative work*. K.4.3 [Computers and Society]: Organizational Impacts – *Computer-supported cooperative work*.

## General Terms

Documentation, Economics, Management.

## Keywords

Wiki, Content strategy, Documentation, InfoSpace.

## 1. INTRODUCTION

Altitude Software develops a software suite for contact centers, comprising automatic dialing, self-service for calls, and customizable desktops for agents handling calls, emails, and chats.

The Altitude software suite is a technically complex client/server system emphasizing Windows while also supporting AIX and Linux, integrating with major telephony switches and major enterprise software suites, and supporting custom development and integration through a proprietary programming language and APIs for C, Java, and Microsoft environments such as C# and Visual Basic.

The software is developed in the Lisbon headquarters by a staff of 150 people including 50 in R&D, but the company sells software and services worldwide.

The complexity of the technology and the wide range of needs and customer environments combined with the geography place complex demands to a network of 200 sales and services people based in 15 offices located in three continents and complemented with independent partners.

Wiki technology proved to be a good match for the effort needed to share product and project information among employees [3].

## 2. WIKI ADOPTION

Wiki adoption took place over several years, from solving a need in 2002 through expansion during 2004 and 2005.

### 2.1 Wiki Discovery

At the beginning of 2002 the documentation team needed a better way to publish and maintain small notes, because a proprietary XML-based tool-chain imposed an unacceptable overhead when dealing with an increasing number of small documents.

After a small experience with taking notes on a very simple stand-alone system, wiki technology was deemed adequate for the internal technical audience of the notes, even if selecting a solution between the available wiki systems was difficult.

The author selected TWiki [9] because TWiki focuses on the needs of an intranet and features fine-grained access controls. TWiki also uses simple text files for storage instead of a more complex database back-end.

On July 2002, the author installed TWiki and Linux on surplus obsolete hardware and used a mostly automated procedure to move the content of the existing XML notes into wiki pages.

For the next 18 months, the documentation team used the wiki to maintain and publish more technical notes but, usually, a single technical writer would write each note. Although the wiki was not used for collaboration, the team grew comfortable with the wiki philosophy by reading articles on groupware [2, 5] and collaboration [4, 6, 7, 8]. The team also grew comfortable with the software by extending the wiki with custom CGI scripts.

### 2.2 Technical Wiki

Altitude Software used shared folders and email, including email distribution lists, as the main tool to share information among teams and employees. But at the end of 2003, after a downsizing that saw 50% of the workforce leave the company, a specific event showed the limitations of email distribution lists. Two employees had arranged to exchange a project file by private email

and, although the list archive had recorded the arrangement, the specific file was lost when both employees left the company.

To overcome the perceived limitations of email, the vice-president of professional services proposed to adopt a web forum that could hold attachments yet avoided the overhead of moving and storing multiple copies of large attachments in personal computers. The author argued that wiki technology would be a better fit for the problem by capturing the consensus over an issue instead of capturing a discussion thread, avoiding the need to read and reinterpret long threads. After the TWiki comment plug-in was configured to resemble a forum, the vice-president was convinced that TWiki could at least pose as a forum.

A new system (named Technet) was set up in December 2003 using slightly better hardware, comprising: (i) a wiki forum based on the comment plug-in (Figure 1), (ii) a wiki area with the technical notes that originated the first wiki (Figure 2), (iii) a wiki area to manage the documentation team [1], (iv) wiki shortcuts to specialized internal systems like bug-tracking, (v) product documentation in a plain HTTP server, (vi) file sharing to publish files, (vii) an authentication system integrated with the existing pass-word system, (viii) daily email announcements of wiki pages changed, and (ix) an informal wiki area meant to encourage individual experimentation.

### 2.3 Wiki Dissemination

The new system for technical information was announced in early 2004. Professional services engineers were required to use the new system instead of the old email distribution list. However, the system was disseminated to all technical people through a series of short training workshops conducted either locally or remotely through conference calls. The training sessions explained the purpose of the areas in the wiki and taught the basics of wiki editing.

The initial wiki areas proved enticing in unexpected ways. The forum, although initially aimed at services people only, was now a public forum where every employee could participate. In particular, some difficult technical issues noted by services people gained visibility and became harder to ignore. On the other hand, R&D gained a forum to dismiss rumors and settle misinformation.

The organization of the notes created a visible location for hard to find information, especially related to integrations with third-party products. Notes allowed R&D to address obscure configurations and specific issues, or to provide internal documentation in the early stages of development.

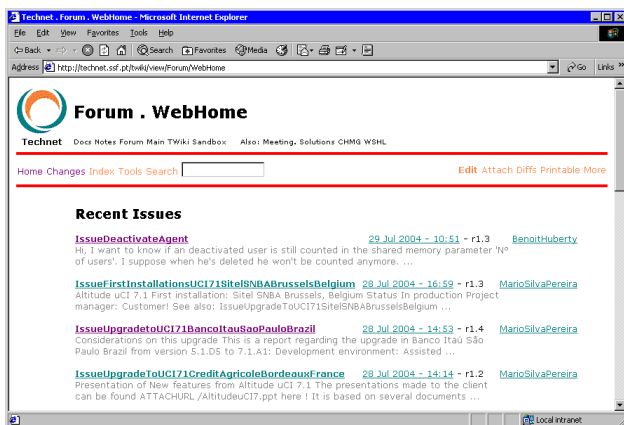


Figure 1. Technet forum

The internal area used to manage the documentation team demonstrated a compelling alternative to the usual practice of emailing documents with meeting minutes.

The placement of product documentation next to the wiki provided a central place of reference and distribution, enabling notes and forum issues to refer to specific documents or topics.

The TWiki access control logged the author of each change, tracking both contributions and misuse while allowing anyone to edit any page, which streamlined collaboration but still recognized individual contributions.

Shortly after the dissemination effort, all the technical departments of Altitude Software were using the new system. Several teams adopted the wiki to manage internal team information, leading to a quick proliferation of private team areas. Although most private areas were abandoned after initial experimentation, the surviving areas became important team tools. The vice-president of professional services, as a champion of wiki technology, also converted the executive team to the new system, even though some executive officers felt uneasy with wiki syntax.

### 2.4 Information Spaces

Documentation, Training and Marketing held regular meetings going back as far as 2002 aiming to identify opportunities to share and reuse work. As part of the effort, the three departments identified the flows of technical information through the company, creating a basis to understand the different users, the information they needed, and the information that they produced.

The study identified, for each department and job role, both the sources of information used and the information produced. For example, a technical writer would use as source technical documents and notes, specification documents, notes on product defects, interviews with developers, and style guides, while producing updated documents, notes, and training workshops.

By focusing on the life cycle of each piece of information, the author determined how the technical information was created,

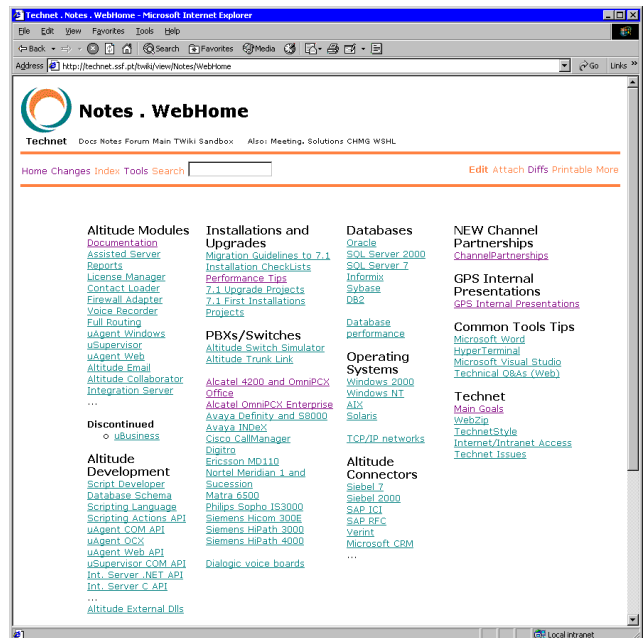


Figure 2. Technet notes

changed, and exchanged by the different departments and job roles. A pattern emerged where information could be classified as collaborative, authoritative, or specialized.

Collaborative information required a place where different departments or different individuals could aggregate related information, and thus became ideally suited for the wiki.

Authoritative information was produced by a department or even a designated individual, and consumed by many. Authoritative information could still benefit from the wiki mechanisms for organization, announcement and comment, even if the information was distributed in a read-only format.

Specialized information benefited from software systems such as a dedicated bug-tracking system. Specialized information could still benefit from the wiki to be found or understood.

By clustering similar cases together, the author developed a set of distinct areas where producers and consumers could meet to exchange clusters of information. The feasibility of each area was validated in separate meetings with key people.

In August 2004, the author formally proposed a content strategy to the executive team and most middle management to move most technical information to the wiki or to areas accessible from the wiki, authenticated by a unified login. The proposal also called for seven editors to become responsible for specific areas. The editors would move existing information into their designated areas at their own pace. Marketing called these areas InfoSpaces.

The proposal also anticipated that specific subsets of information would also be available to customers and partners using separate authentication systems. However, to guarantee that the internal wiki would remain a safe place where employees could freely share information, editors would be required to copy relevant information to external systems as needed, without any provision for automatically sharing internal information.

The content strategy proposal was accepted because it promised to simplify the work of every employee without any significant investment and with immediate benefits.

For collaborative information, the wiki aggregated contributions over time while recognizing individual contributors.

For authoritative and specialized information, the wiki enabled producers to add context and advice to authoritative documents, and enabled consumers to easily find the documents and, more important, to understand when and how to use each document.

## 2.5 IT Takes Over

As Technet prepared to grow, some departments became concerned about the reliability and scalability of the wiki system, which was still run by the documentation team on surplus hardware. By the end of 2004, the company IT department budgeted for new servers and took over the administration of the system.

As an unfortunate technical effect of the change, IT set up authentication in a way that broke several CGI scripts that integrated the wiki with the custom system used to publish the documentation. The loss was accepted as a necessary sacrifice to have the wiki gain wider acceptance.

The change also provided an excuse for some R&D teams that rejected the wiki principles of open sharing to publicly abandon

the effort, claiming the need to carefully control the information and the infrastructure.

## 2.6 Marketing Takes Over

Marketing soon realized how the wiki could improve the company and started by using the wiki to catalog and organize marketing artifacts such as brochures, slide decks, and demonstrations.

In 2005, Marketing became instrumental in extending the reach of the wiki beyond technical people. First, Marketing pushed hard to overcome the reluctance of some corporate departments to establish a presence in the wiki. Then, Marketing renamed the system as Altinet and employed the services of their graphical designers to create a graphical home page and reorganize the navigation in the wiki (Figure 3).

The resulting system complemented technical information with official information from Marketing, customer assistance, product planning, training, customer projects, human resources, IT, and many private team areas.

Finally, Marketing pushed Altinet into sales people worldwide by offering specific training that helped non-technical people find the information they needed.

Altinet replaced vague and *ad hoc* practices with a centralized and visible system that encouraged well-defined practices, enabling people worldwide to access up-to-date information and to contribute with local expertise.

## 2.7 Wiki Consolidation and Challenges

Some InfoSpaces proposed were not feasible in 2004 but, by 2010, only one area is still missing. Most initially unfeasible areas materialized as soon as technical requirements were met or political issues were solved.

The executive team keeps a private wiki as an extra precaution to secure sensitive information.



Figure 3. Altinet home page

After some reluctance in embracing the wiki principles, some R&D teams set up a separate restricted wiki featuring stronger control mechanisms. The wiki was used extensively to plan the next major version of the Altitude Software suite.

As the volume of information in the wiki grew, people started to complain that information became harder to find. Although there have been occasional coordinated efforts to evolve the structure of Altinet, proposals have not achieved the consensus required.

In 2007, Garner described the wiki as “a mission-critical platform for effective collaboration across the entire organization” [3], boosting the confidence of the executive committee.

In 2008, the professional services department replaced the wiki forum with a moderated web forum.

In 2009 TWiki gained the ability to use a HTML editor to change pages, removing a common obstacle for new users. However, wiki markup is still faster and more flexible to edit.

In 2010, most company information resides or is accessible from the Altinet wiki, which provides a central point of navigation and embeds other systems.

### 3. CONCLUSIONS

Even though the sequence of events at Altitude Software was unique, several factors were crucial.

Open source software enabled experimentation and initial deployment using surplus hardware, and lowered the cost of scaling the wiki to hundreds of users. However, open source software required technical competence to learn, customize, and deploy.

The expansion of the wiki required champions at the executive committee, but also a champion with the ability to identify when the wiki was a good fit for a problem and to propose alternatives otherwise.

The training workshops that disseminated Technet created a wave of excitement through the company as team after team learned about the new and fresh tool, but new users had to be coached to overcome initial problems. In particular, users had to learn how to put information in the wiki and why some behaviors hinder collaboration.

The documentation team created a compelling proof-of-concept in 2004, but then relinquished control so that other teams and individuals could embrace and improve the solution.

The study of the flow of information through the company users enabled a very strong company-wide proposal, creating an enticing future where the tasks of most people were easier to accomplish. Although the proposal was the quintessential offer that the company could not refuse, a round of private meetings with key people built consensus even before the proposal was presented.

The proposed information spaces made the jobs of the information producers easier. That was the major factor behind the success of wiki technology at Altitude Software.

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