

Creating Knowledge Bases for the World Wide Web

I first became aware of web knowledge bases as a user. Trying to make my PC's sound card work with Windows 95, I discovered the knowledge base on the Microsoft web site. I was intrigued. Here was tons of information on the dozens of Microsoft products, all of it aimed at solving problems, and all of it accessible by searching. I started thinking about what it must take to gather all of this information, validate its accuracy, format it for the web, and maintain it. I started looking at other web knowledge bases from the technical communications perspective. In fact, I became fascinated with them.

What is a Web Knowledge Base?

Historically, the term "knowledge base" refers to a database of expert information and answers to common questions. It is the database used by "expert systems," a species of artificial intelligence. By processing its knowledge base using rules called heuristics, an expert system can respond to a series of user questions and choices and diagnose a problem as though the user were talking to a human expert in a particular field.

Today, the term knowledge base has developed a second meaning in the context of the World Wide Web. In this domain, a knowledge base is simply a database of technical information and solutions related to a particular product or system, and normally provided as a customer service on a corporate web site. While some of these web knowledge bases use expert system or other artificial intelligence logic to diagnose problems, most rely on simpler search engines, like those generally used to search the web as a whole.

Why Build a Web Knowledge Base?

Knowledge bases are an excellent resource for providing technical documentation and customer support information on the web. They offer many advantages both to the companies that build them and to their customers:

- Information on the web is cheaper to distribute and easier to maintain.
- Customers always have the most up-to-date information, available to them anytime, from anywhere in the world.
- The information is searchable, making for faster access.
- A knowledge base supplements traditional task-based documentation and context sensitive help by providing recovery information and solutions to problems. It supports technical audiences responsible for configuring and maintaining systems, as well as advanced users who only want help when things go wrong.

- A knowledge base can evolve into a central storehouse of communal knowledge for a product or business. Everyone--developers, support technicians, even customers--can contribute to the knowledge, and everyone can benefit. This is one reason I call the knowledge base a "treasure house."
- By reducing customer support calls, a knowledge base can have a positive impact on a company's profitability. (And this is the other reason I think of it as a treasure house.)

Because of all of these advantages, I believe knowledge bases represent an area of real growth opportunity for technical communicators in the years ahead.

What Does It Take to Build a Web Knowledge Base?

Assuming your company already has a web site, there are only a few key components you need to put yourself in the knowledge base business. Of course, you need information, the knowledge in the knowledge base. Secondly, you need one or more tools to format that information for display on the web. A search engine is absolutely essential; since searching is the primary means of user access. Finally, you might want to consider adding a structured table of contents as an alternate, secondary means of accessing your knowledge base. Let's look at these components one at a time:

Information: Perhaps 80% of the content in web knowledge bases today is technical support information, most of it in the form of problems and solutions. If you want to do this kind of work, plan on spending lots of time with your company's tech support group. Some companies take trouble reports straight out of their support database or call logs and convert them into knowledge base articles. Others may use an automated help desk system that builds knowledge base articles as one of its functions. Certainly, technical communicators can apply their skills to making this process more efficient and productive--as well as to designing and writing better articles. But if you want the knowledge base to become a true repository of information, it should not be limited to support data. Existing documentation, product overviews, error messages, tips, version information, frequently asked questions--all of these types of information make good candidates for knowledge base articles. In fact, any information that any customer, employee, or business partner may want to know about your company's products might make suitable content for your knowledge base.

Tools: If you're a technical communicator and you're not already creating web content, chances are you will be one day soon. The good news is that web development tools are plentiful, inexpensive, and getting easier to use all the time. Whether you insist on pounding out your HTML tag-by-tag in Notepad, or choose a WYSIWYG program like FrontPage, you'll find that the amount of authoring you'll need for knowledge base work is minimal and easy to learn.

Search Engine: A search engine is simply a program that runs on a web server. It responds to a query submitted from a browser, searches a defined body of files based on the query, and returns pages of results. If your company's web site is hosted by an Internet Service Provider (ISP), you'll need to work with them to ensure you can use a search engine. If the site is hosted in-house, you may need the help of your network administrator or webmaster, or you may need to acquire and install the search engine yourself. Even if this is the case, don't be intimidated. There are a number of search engines available for downloading from the web, some low-cost and some free. Implementing one typically means coding the query and results forms (in HTML) and then setting some parameters in the search engine itself.

Finding a Search Engine

If you want more information on search engines for local web sites, the following URLs are good resources. Which search engines will work for you depend on your web server software and operating system.

- Microsoft Index Server: <http://www.microsoft.com/syspro/technet/index.htm>
- Digital AlphaServer: <http://www.americas.digital.com/success/search.html>
- EWS (Excite for Web Servers): <http://www.excite.com/navigate>
- Glimpse: <http://glimpse.cs.arizona.edu:1994/index.html>
- ICE: <http://www.informatik.th-darmstadt.de/~neuss/ice/ice.html>
- Harvest: <http://harvest.cs.colorado.edu>

Table of Contents: Not all knowledge bases provide a table of contents, and it's certainly not a requirement. But if the information can be organized into a sequential or hierarchical structure, then consider adding content pages. Some users like to see the relationship of different topics in online information, and some prefer browsing to searching. If you do decide to include a table of contents, using HTML frames is ideal. You can place the contents page in a left-hand frame (with each topic coded as a link, of course) and the articles in a right-hand frame. That way, the contents can remain displayed as your users browse from one article to the next.

Build, Test, Revise

As with any online project, it's critical that you validate your design. You can circulate a paper prototype within your company for review, or build a small prototype on a secured area of your web site and make it available only to employees or a small group of customers. You can also get ongoing feedback once your work is live on the web. Many knowledge bases now include a small form at the end of each article, asking if the information met the user's needs and inviting more comments.

Into the Future

In the next several years, we'll see the growth of new technologies for providing information over the web: natural language interfaces, expert systems, software agents that track questions and escalate them to human experts or help desks when necessary. These resources will take advantage of computer intelligence first, and human intelligence second, to provide answers in the most efficient and economical manner. Web knowledge bases are only the start of this revolution. But the great thing about web knowledge bases is that we can build them now, with tools already at hand.

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