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Setting the stage for success— Information architecture earns performance kudos from customers

By Judith Lamont of Zentek

Information architecture is the process of organizing and structuring information so that it is logical in design and presentation. It establishes categories and relationships among different pieces of information. It defines metadata schemes, navigation and search interfaces. Good architecture not only helps users find information, but also facilitates updating content by having clear rules for adding new information. And its effects show up on the bottom line with surprising speed when users can get what they need in just a few clicks.

Florida Power and Light (FPL) achieved substantial savings when it restructured its content to improve customer service. Like many companies, FPL launched a Web site during the 1990s that grew without a detailed plan.

“We realized the Internet was going to play an important role in our growth” says Bill Whiting, Web editor at FPL, “and that we needed to take stock of our infrastructure and information architecture.” FPL established an editorial team to participate in developing standards for information contribution. Key representatives from the communications department, information management and customer service worked together to coordinate the business requirements and technical specifications.

The company chose Information Mapping to guide the development of its content structure. Information Mapping develops information architectures using a method which, like the company, is called Information Mapping. It's based on learning theory, human factors and cognitive science, and relies on an understanding of how the human mind processes, stores and retrieves information. The method can be used to organize information for many different types of applications, including content management systems, intranets and Web sites.

“FPL’s research had shown us that the majority of our customers came to the FPL Web site to check their accounts or pay their bills,” says Whiting. “Information Mapping helped us reorganize our information in a much simpler fashion that cuts down on customer clicks and keystrokes.”

The style of writing used in the Information Mapping method promotes chunking of information into logical groups and breaking out key points. FPL was careful not to provide more information than customers wanted or needed.

“If we can provide information to a customer on how to save energy along the way, so much the better,” says Whiting, “but our primary mission is to facilitate the transactions that our customers want to complete.”

Once the architecture was in place, FLP contracted with IBM Global Systems to implement the design and used Merant’s PVCS application for version tracking, along with Stellent’s HTML Transit to convert files from Microsoft Word documents. Transaction applications were developed in-house, supported by IBM systems and services for back-end operations.

FPL’s diligent approach has paid off—its Web site is now handling 180,000 transactions per month that previously would have required assistance from customer service representatives in its call center. Even assuming a modest cost per call, the

savings are impressive. In addition, customers are sure to appreciate the streamlined process for accomplishing their goal.

Engineering metadata

Companies can also develop successful information architectures internally. Fisher Controls, a division of Emerson Process Management, began moving its engineering masters (EMs) for product design and manufacturing from the desktop to an intranet. But after a year of manual HTML coding in which only 25% of some 3,000 EM documents were converted from the original MS Word files, the company decided on a new approach.

Fisher restructured its information and implemented a content management system from Stellent. In six months, the company not only converted 100% of the EMs and made them available on the corporate intranet in PDF format, but also had obtained savings that amounted to nearly twice the cost of the system. The savings resulted from eliminating the costs of manual conversion as well as paper report production and distribution.

The information architecture development was directed by Fisher's corporate librarian, Mark Heindselman. Having been with the company for 20 years, Heindselman had a clear picture of the information needs of employees and a detailed knowledge of corporate content.

"Each set of content that we put into the system has a review or startup phase, in which the group describes how it intends to use the information," says Heindselman. "During that process we identify the metadata that will be required for the search process, and we set up the query screens." Because most users look for the EMs based on document number, that is the default sort value. The system uses Verity's search engine.

Contributors record metadata and the document file name into an Excel spreadsheet that serves as a resource for batch-loading content. A Web interface allows users to update the content with new documents and tags. Five metadata fields are required for every piece of content, and other fields are available depending on the document type. Some of the fields can be populated with data from dropdown menus, to reduce the possibility of input errors.

Another part of the information architecture specifies what data elements will be extracted from the mainframe computer and used to generate operational reports that are disseminated on the Web to Fisher's 65 manufacturing and service offices throughout the world. That portion of the system has attained total savings of approximately tenfold during the past few years against the investment cost of software and hardware. The savings resulted primarily from eliminating the creation and distribution of paper copies and COM reports. Users of the Web-based reports can still search for a specific part or page and print it out if they wish, but they do not need to store large quantities of paper or face a two-week delay in getting information. Additional savings have accrued as more applications have been added, such as engineering standards and internal customer service forms for PC problems.

"The system not only has speeded up the process of disseminating information throughout the company," comments Heindselman, "but has fostered a new way of doing business." In addition, because there is only one version of each document in the system, users accessing it from any other location (such as the Emerson Process Web site) will see the same information. The content managers on his staff and the IT department work together to ensure that the technology supports the business requirements.

Establishing the right metadata schemes is critical to the success of an information architecture, but developing an enterprisewide plan may not be necessary or even desirable.

"Different departments have different needs," says Todd Price, VP of product management at Stellent, "and having too much metadata can slow adoption of the system."

Successful deployment and acceptance of a system requires that users are not overwhelmed with metadata and check-in forms when contributing or searching for content, according to Price. One way to accomplish that is to define some fields such as "Category" across the enterprise, but have different options for that field in different departments. Categories in the HR department might include policy and procedure manuals, while in the R&D department, they might include different technical areas. Personalized metadata options can be based on user roles to reduce the number of fields. In addition, folders can be defined through which metadata can be inherited or implied.

Whether the information architecture is developed in-house or with the assistance of a consulting firm, a close working relationship between content experts and IT is vital. Cadence Group is an information management company with expertise in IT and library services, as well as in knowledge management systems. The company now blends those skills to provide its clients with services in acquiring, organizing and disseminating information. Information systems developers at Cadence Group interact intensively with taxonomists in the company to match technology with content requirements for client companies.

In a recent project, Cadence Group needed to reconstruct a particular series of events that took place in an organization. The

project required integration of a complex group of e-mails, documents, statistics and other information into a single repository. Some was in electronic form and some in hard copy.

“We developed a taxonomy for this set of information,” says Tina Baker, president of Cadence Group, “as well as a database that allowed searches on the events by date and keyword, among other parameters.” The final result was a combination of electronic files and archived physical material that documented a six-month time period at the organization. The technical specifications were carefully developed from an understanding of the content and how it would be used.

Melding art and science

“Information architecture is a mix of art and science,” maintains Carl Frappaolo, executive VP at the Delphi Group, which provides consulting services on effective use of technology in business. If the businesspeople and the IT staff both do their homework, translating the business requirements into technical specs is straightforward, he says. But he emphasizes that the software tools of the trade, such as browsing aids, are distinct from content and are not the primary ingredients of information architecture. At a certain point, content experts such as corporate librarians are invaluable in refining categories and providing insights about what information will be relevant.

Frappaolo also advises design teams not to overlook the potential contributions of records management people. “Their core competency is the ability to organize material in a top-down fashion,” he points out, “and this can be used effectively in developing classification schemes.”

Analysis before implementation

Sometimes the distinction between information architecture and content management is not clear to organizations that are developing an information repository, and they skip the important analytical phase that should precede system development. This phase includes defining user needs and understanding the different types of information, as well as how it should be presented. Content management is less about the structure of the information, and more about the process of maintaining it, including the flow from content developers to storage and then to content consumers.

The information architecture phase ideally should precede selection of a content management system. “Content management systems vary in their emphasis on features,” says James Stewart, director of R&D at Information Mapping, “and users need to think about what strengths they need.” For example, some CM systems are particularly good at Web-based content presentation, or content development. “Some applications such as pharmaceutical products development need a paper trail,” adds Stewart, "and the CM system must support that.”

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