

Library

● INFORMATION MAPPING

Lost in Hypertext? Map Your Information!

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Now nearly a quarter century old, Information Mapping - an information management method rooted in cognitive psychology research conducted by Robert Horn in the early 1960's - can be entirely implemented without computers, yet may be the best tool we have to resolve the bottlenecks of "computerizing" documents.

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Introduction

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Increasingly, corporations are getting extra value from their document assets by publishing on CD-ROM or the Internet. However, the end result is often unsatisfactory. Original content may have been written by authors lacking writing skills, or the structure of the documents themselves may not lend itself to these new media.

Quick-fix "band-aid"- type approaches - however unappealing - may be the best available remedy for nearly lost-in-translation legacy content. But these half-baked solutions leave fundamental problems unsolved. Bedrock issues must be addressed to re-engineer the very writing of documents and avoid such built-in limitations, and to ensure that what is written in one medium is as easy to use as possible when transported to another.

The blue-sky benefits of such interpretative engineering are borderline-inspirational: *Imagine finding a way to speed up document authoring that also decreases the time readers need to use the documents. The good news is, that blue sky may be upon us - in fact, this accelerated-authoring methodology predates the computer systems it is so well-equipped to serve.*

Now nearly a quarter century old, Information Mapping - an information management method rooted in cognitive psychology research conducted by Robert Horn in the early 1960's - can be entirely implemented without computers, yet may be the best tool we have to resolve the bottlenecks of "computerizing" documents. Developed by Information Mapping Inc. (IMI), the company founded by Horn in 1967 (and relinquished thereafter), this proprietary method even enables a transition to SGML.

What is a Mapped Document?

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Fundamental to the Information Mapping management method are the concepts of "chunking" and the "Information Block." Like most aspects of this methodology, these concepts are deceptively simple. Indeed, a superficial assessment of the technique might mistake it for just another way of

doing structured writing.

Chunking derives from research performed by Herbert Simon, a Nobel Prize-winning economist and information scientist. Research he conducted in 1956 indicated that humans process information best when it is broken into a small number of related pieces. The optimum number of information pieces probably ranges from five to nine.

In the Information Mapping schematic, the Information Block replaces the paragraph as a fundamental document unit. Information Blocks are any of 200 precisely specified types of information that make up a document. The Information Block consists of one or more sentences or graphical structures, each of which is labeled. As suggested by chunking, no Information Block contains more than seven (plus or minus two) of these chunks of information.

Authors construct Information Blocks following four basic principles: chunking, relevance, consistency, and labeling. The Blocks themselves are usually part of a larger information structure called an Information Map.

The Information Mapping methodology does not stop in the psychologist's lab. Indeed, key to its success is that the method is easy to learn and apply through a standard five-stage sequence. The method begins with analyzing the audience, a so-called Pre-writing Analysis. Next, authors gather and sort information into preliminary Blocks based on Information Type. Organizational analysis, the third stage, is the point at which authors determine exactly what information is required for each task and job in a hierarchy of information. Authors then perform a quality check for completeness, using a special Topic-Task matrix explained in the methodology. Having gathered, sorted, and arranged information, the next step is to sequence it. Sequencing depends on the kind of document being written and the audience that will use it. Tools brought into play here look like story-boarding and organization charts. In the final stage, authors actually produce the final presentation, which they can deliver on paper or via electronic media, or de-ploy on audio-visuals. In fact, the entire process from initial analysis to the final stage is focused on organizing and analyzing information; it is only in the final stage that the production medium's constraints are considered.

Information Mapping, at its core, is not strictly textual or a structured writing course. The method also affirms the principle of using graphics as an integral part of writing, as it emphasizes conveying information, not just presenting information in its native form. Nonetheless, the purveyors of this methodology do provide templates and other tools to work with standard word processors and publishing systems.

Can Old Method-Diehard Learn New Mapping Tricks?

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The main question businesses who deal in high-volume authoring, writing, and document management must ask, then, is whether it is truly feasible and worth-while to re-engineer entirely their writing organization to use Information Mapping, confident that the IMI method makes their CD-ROMs faster to produce and easier to use.

One answer comes from IMI client Unisys, which adopted Information Mapping to make it documents more usable and to enable sharing of common document modules between documents. Using SGML, Unisys writers can not only create multiple outputs from a single document collection without rewriting, they can also preserve their investments in these shared modules.

Taking legacy documents and transforming them through the new methodology is not an overnight task. The results will likely uncover missing or inaccurate information in your old documents and may actually increase the number of printed pages, although some user claim an offsetting reduction of text, making the printed page count roughly the same. Page count increases won't matter on electronic media, of course, but may require a faster transition away from paper.

IMI's research results indicate that the Information Mapping methodology yields dramatic results: reading time decreases 10 to 50 percent, error rates are down 54 percent, and training time decreases by up to 50 percent.

Pacific Bell used the methodology to design its training materials and standards documents. PacBell opted for Information Mapping to achieve streamlined content; uniform, standardized appearance; ease of administration; and easily updated training materials.

PacBell also wanted a positive employee reaction to training. They trained over 4,000 methods-and-procedures writers and course developers to use and teach this methodology. The firm claimed training costs decreased by 34 percent and student accuracy increased over 90 percent as a result of their Information Mapping initiative.

Since they began using IMI's method, Unisys says, their writers no longer format documents. Instead, automatic processes use mapped SGML information with the following benefits:

- product release times are shortened
- corporate standards are automatically enforced
- overall quality has improved, and
- CD-ROM versions of documents are quickly produced.

Mapping SGML and Content-Based Retrieval

Information Mapping provides an excellent foundation for SGML and full-text searching for corporate CD-ROM content developers. Typical corporate documents are quite large, and if the unit of searching in a text retrieval system is an entire large chapter or document, problems can arise. Searching can isolate several very large documents, but the information being sought is only a small piece of these documents. Text search systems slow down when indexing or searching such large chunks of document information. Updating information within the system requires frequent re-indexing, since any change to the large document requires the entire document to be re-indexed. If your search text system is SGML-aware, and the units of documents being stored are not chunked, you are not using it to its best advantage.

Before any organization commits itself to SGML, corporate management must be firmly committed to re-engineering their documents. Some companies must use industry-approved or ISO-standard Document Type Definitions (DTDs) to maintain compatibility with government agencies or simply to use a standard within their industry. Other firms may choose to create their own DTDs, perhaps starting with a standard as a template.

Key to its developing appropriate DTDs is analyzing user requirements, a discipline taught in the Information Mapping methodology. Working with an existing DTD requires using suitable, pre-defined document tags. Again, the Information Mapping technique incorporates this methodology.

Information Mapping promotes the notion of chunking, and SGML is nothing if not chunked. In fact, every single document element in an SGML-tagged document is delimited (some implicitly) by an SGML tag. Authors skilled in chunking information will find the transition to SGML much easier than those with a stream-of-consciousness approach. Once committed to SGML, a firm will want an SGML-based editorial system to implement SGML throughout its publishing functions. Information Mapping and editorial systems work hand in hand to provide structured editing, a description of the hierarchy of information, and classification of Information Types.

The user of Information-Mapped, SGML-tagged documents will be able to ask real-life questions of online and CD-ROM document bases, such as the following:

- What is the definition of [object]?
- How does [object] work?
- What does [object] look like?
- How do I [action] [object]?
- What are the [characteristics] of [object]?
- What types of [object] are there?

The combination of Information Mapping and SGML will increase the usefulness of a business's document base and give its users a powerful method to use that information efficiently. The method will also enable authors to create modular views of information, like special-purpose products targeted to vertical market segments. A firm can set itself up for dual (or multiple) publishing on the World Wide Web - no matter how complex future versions of HTML become - and derive the benefits of SGML in CD-ROM publishing.

Map Your Information and your readers will never again be lost in hypertext. For further information on the application of SGML and XML to Information Mapping, please contact www.texterity.com or mhensel@texterity.com

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