IF LINKS COULD TALK
by Jerry Michalski

Why are Web bookmarks so hard to manage?

This question is more significant than it may sound. Consider that your bookmarks -- if you use and mind them -- are a record of the things you have found in cyberspace and deem worthy of revisiting. They are your memory, your bread crumbs in the wilderness. With luck, you can use them to wear your own familiar paths through the info jungle. They help you and others create context for activities online. By passing your favorite bookmarks to friends and acquaintances, you create social bonds and do your part to weave the greater Web.

Bookmarks are stored links, formally known as URLs (Uniform Resource Locators; see box, page 3). There would be no Web without these extensible, world-spanning links. All the components for a web were present before the Web, but they weren’t able to connect. Content existed before, as did online transactions. The Mac did a wonderful job of integrating multimedia in 1984 -- as long as you viewed the files on a Mac. Simple hypertexts with internal links existed before the Mac; Sun (originally the Stanford University Network) was pitching network computing in 1982. Years before Tim Berners-Lee came up with the World Wide Web, Arpanet researchers could telnet, send e-mail and ftp to hundreds of sites around the world.

Most early hypertext developers were influenced by visionaries such as Vannevar Bush, Doug Engelbart and Ted Nelson, but they were limited by the tools then available and they typically built closed systems. There was no practical way to connect computers on different networks or even information from different applications on the same computer. When Berners-Lee put anchor tags (which contain URLs) inside Web pages, he tied together many technologies and created a unified information space.

Then, Marc Andreessen added images and other media in the Mosaic browser, computer makers taught their systems the Internet’s protocols, the US Government acknowledged reality and eased its restrictions on commercial use of the Net... and the rest is making history.

Not just glue

Links are the Net’s glue -- and more. Of course, links trigger activities such as jumping to a new spot or ➔ THE FORUM’S FILLING UP!
launching an application. Links also show relationships (e.g., page two is a footnote to page one) and create context. They make communications more efficient (why transmit a document and its application or viewer when a link to it will do?). They have value (will you link to our site?), mark boundaries (we do not warrant content after this link!) and cross them. When you pay attention to links, you see them everywhere. It’s like realizing the role that silicon plays in our daily lives.

Links are the newest component of the ever-increasing information deluge. The fact that links can point to just about anything on the Net cuts both ways: It makes links amazingly efficient pointers, and it makes the task of managing them incredibly daunting.

Links are becoming ubiquitous in cyberspace, but we still lack the means to manage and mine their value. Links are still pretty dumb. How can they become more precise and more descriptive?

This month and next, Release 1.0 explores the many ways that links are changing our electronic environment. This first half of the excursion starts with ways to deal with the deluge and turns toward positive ways to mine the expressive power of links, particularly in visual displays. The topics covered this month include:

- **Link management.** When did you lose control of your bookmarks file? What applications can help you regain control?
- **Authoring.** Today, authoring tools largely ignore links. How can links play a more integral role in the creative process?
- **Sharing.** Hot-list swapping was popular when the Web was young. Collaborators now have better tools for creating shared contexts.
- **Visualization.** Links show relationships. Why is it so hard to express yourself visually on the Web? How do links help us get around?

Next month we will focus on how links are reshaping the broader environment, including topics such as:

- **Link economics.** Banner swapping, CPM, front-page link deals: Links can be expensive.
- **Boundaries and politics.** How do links create separate spaces? What happens when someone doesn’t want you linking to them? What legal status do links have?
- **Local order, global structure.** How does hypertext scale? Is there an optimal size for chunks of content and a best way to link them?
- **Culture and expression.** Links change information sharing, storytelling, application design and more. Are new forms of hypertext-influenced rhetoric emerging on the Web?

The Web’s links should be the envy of the print and broadcast worlds. Look at the newsletter you’re holding. When we refer to a back issue, we know that the odds that you still have, can find or will bother opening and searching through any specific other issue we point to are extremely low. When we mention a URL, you still have to get to a Net-connected device and type it in. (Of course, we’re smug in the knowledge that this much text is painfully hard to read on a screen... so far.)
Catnip for the curious

Online, links are trivially easy to follow -- so much so that you risk being dragged away from your current context and mission, returning hours later after a steeplechase through descriptions of your competitor’s products, Website design firms, their other clients' sites, pictures of the Mars rover and recipes for cheesecake.

It’s seductive. As Jakob Nielsen, Sun’s human-factors wizard and a hypertext expert, puts it, "You always have the feeling that just one more click will give you something good." There’s the constant promise of something better over the horizon, even after you suffer disappointments. Thank goodness most people’s Net connections are so slow they discourage too many such meanderings.

Intro to URLs

URLs have three parts: the protocol to use, the server to query and (optionally) the path name of the file to request. If there is no path specified, the server will send a default document, usually the Web page called "index.html."

In the URL http://www.edventure.com/release1/release1.html, "http" represents the hypertext transfer protocol, the Web’s way of requesting and transmitting the components of Web pages. URLs can also invoke other protocols, such as ftp (file transfer protocol) and nntp (net news transport protocol).

The "://" merely separates the protocol from the second part, "www.edventure.com," which is the server to query for the item. The Internet’s Domain Name Service resolves this easy-to-remember text name to an Internet Protocol number, which is what routers understand (e.g., 205.135.32.121). The rest of the URL is ignored until it reaches the destination server, which uses it to locate the requested file. In this example, it is a document called "release1.html" in a Web-accessible directory labeled "release1."

The document release1.html may contain URLs for other document parts, such as images, audio clips or animations, which the server automatically sends and the browser assembles and presents. It may also contain URLs to documents or components outside the current page, which the browser renders as the well-known highlighted hypertext links. To see what this looks like, simply "View Source" in your browser, but make sure you’re on a relatively simple Web page. The Web has grown complex quickly.

Inventive Web developers have created many variations on standard URLs that add great power, including passing parameters that act as stored queries or show what machine made the request (useful for tracking whose machine your ad clickthrough came from). More on this in a moment.

The Web itself often promises more than it delivers. "If you have a real problem in mind, it’s hard to find an answer on the Web," says Nielsen.
Part of the problem is the Web's youth. Links are only as targeted as their authors' ability to define and describe them, an art we are only beginning to master.

**Parameters passing in the night**

Links can be more than just hypertext jumps. Web developers have learned to load links with queries, instructions and dozens of other parameters. For example, when you click on an ad banner, its URL is designed to inform the site you're linking to exactly who fed it the lead. The ad banner is usually served from the ad aggregator’s servers, not the site owner's. Its dynamically generated link URL contains a unique identifier for the site owner. If the site visitor follows that link, the site owner’s ID is delivered to the advertising site, which can then analyze which sites are bringing it the most business.

Links can also carry usage information or jump to different places based on user-specified criteria (e.g., novice vs. experienced user, in battle vs. in training, business vs. play). The Web is a relatively primitive hypertext system. Other, older, closed ones have "fat" links with extra features such as link types, links with multiple destinations and bidirectional links.

A new service called WebSiteGarage can trace links backward: It tells you who links to your Website by running a query on Infoseek for Websites that mention your URL. Next month we will examine where links are headed.
LINK MANAGEMENT

Indulge us for a moment with a deeper look at what it takes to manage bookmarks with either of today's state-of-the-art browsers. Keep in mind that every extra step that it takes to get a task done dramatically lowers the likelihood that anyone will attempt the task (one of our theories of interface design).

These browsers' bookmark features could help us find our way through the info-jungle, if they weren't so underpowered. Netscape's latest Communicator improves slightly on the previous release's bookmark feature. It's tolerable but not nearly as powerful as it could be. It would be useful, for instance, to be able to move more than one bookmark at a time.

In contrast, Microsoft's otherwise-laudable Internet Explorer 4 is a spectacular failure when it comes to bookmarks. Microsoft calls bookmarks "favorites;" IE4 makes them look and behave as much like Windows 95 shortcuts as possible (no surprises there). The favorites list pops up quickly in a handy new browser pane on the left, but just try to move your favorites around or change them. It's ridiculously cumbersome.

You could avoid that problem by filing your favorites as you collect them, but it takes so many mouse clicks that it interrupts the flow of whatever you are doing. More often than not, you cruise along dropping those bread crumbs and return to tidy them up later, if at all.

IE4's "Organize Favorites" dialog box should make managing your favorites easier, but instead it is a model of terrible interface design. Moving a favorite from one folder to another can require clicking ten or twenty times, then repeating the whole process for the next bookmark. It's easier to go to the file system, find the folder that contains the shortcuts and mess with them directly, the way you can move and rename files. Three more strikes: You can't annotate the favorites, there's no simple way to search them, and IE4 insists on alphabetizing them. No wonder most people don't maintain their bookmarks.

Alternatives

If you would like to upgrade or replace the bookmark function in your browser, there are several options -- almost none of which is compelling. In the early Web days, First Floor offered an application called SmartMarks (now called Smart Bookmarks), but it was as big a program as the browser itself and more difficult to operate than the primitive bookmark function that came with Navigator at the time. SmartMarks didn't catch on.

Search the Web today, and you'll find a small number of bookmark-management tools, including Aladdin Systems' CyberFinder, Blue Squirrel's GrabNet, CE Software's WebArranger and Frontierland's Clay Basket. There are also a few bookmark utilities. Starfish Software's QuickMarks stores bookmarks in one file for use with both browsers. Eastgate Systems' Web Squirrel tracks links and creates site maps. Some of these applications make handy PIMs (Personal Information Managers), but in general they improve bookmark management only slightly.
Web authoring tools take links seriously, but few make it really easy to find just the link you need, and most of these tools are designed for programmers and developers, not end-users.

KNOWING IT ALL

Grasp Information's Know It All, a Windows application that helps you collect and manage "snippets" of information, goes well beyond bookmark management. Snippets are smaller than entire documents. They can be parts of Web pages, e-mail messages, standard documents and so on, which makes it easy to save only the parts of a page or document that you're interested in.

When you minimize Know It All (KIA), it turns into a toolbar into which you can drop snippets -- the ReaderBar. You can define multiple versions of your ReaderBar, which lets you refine your categories. When you return to full-screen mode, you can use the built-in outliner to organize the snippets you have collected.

KIA is smart about excerpting content. It captures more information than you would find in a bookmark, including who designed the page and what publication the page is from, if that information is present. It also wraps the HTML properly so you can work with the snippet outside its original page. KIA also preserves the formatting of snippets from other PC applications such as Word.

In organizing mode, snippets appear as Post-It colored notes in a window on the right; an outline is on the left and the contents of the current snippet are below on the right. Originally, KIA had more ambitious graphics tools to allow users to express relationships between snippets by drawing them, but those functions didn't make it into the shipping product, which is more corporate and less colorful.

Although Know It All's toolbar is an easy way to collect bookmark-style information, it can't replace your bookmark file because it can't launch the browser to particular URLs. That's unfortunate, because the application already contains so much of the information needed to do that. KIA 1.1 costs $50. You can download a beta of version 2.0 from the Grasp Website.

LINK AUTHORING

Whether link creation is automatic or requires a person's attention, it should be as transparent as possible. This section examines a variety of ways that links are created and used, from highly visible, manually typed links in correspondence, to programming and Web-development tools that use links automatically and a writer's tool that makes it possible to create complex, linked documents without mastering programming or HTML.

Links are increasingly a normal element of online conversation. Publishers are mastering the art of dropping teaser links in their e-mail broadcasts. Many applications detect when a user has typed a URL and make it clickable automatically. HTML mail is coming, slowly, and should accelerate the use of live links in mail.
Links are also invading other media, such as photobubbles and video:

- **Live Picture**'s latest application, Reality Studio, lets developers embed links inside 360-degree photo stills. You can "hang" a high-resolution FlashPix image inside a picture frame or make a part of the panorama a clickable link to a Web page.

- **Ephyx**'s V-Active lets content creators embed links inside videos. You draw a border around the object you want to make active, then repeat the task for a few more key frames. The software turns the area you defined into a clickable sprite that floats "above" the video image.

Many programming and Website-development tools are built using HTML and are full of links. Did something fail to compile? A link takes you to the error in the source code. It could also refer to the latest bug-fix reports, sample corrected code to cannibalize, similarly flawed segments elsewhere in the source code, technical documentation, training materials and more. In a well-linked world, documentation no longer has to ship with the products and is easily kept up-to-date.

**AgentSoft**, a subsidiary of Accent Software, has created an application called Linker, which weaves links directly into Web content dynamically. This makes it possible for the mention of a Ford Explorer in text to be followed by a link to a site where you could buy an Explorer. Linker, a client-side application, can also insert stock-price checking links after company mentions, movie review links after movie titles and so on.

This level of automation hasn't reached content creators, who still create their text in Word or struggle with page-oriented Website development tools. Here's one authoring tool that's trying to make that job easier.

**TRELLIX TACKLES AUTHORING**

**Trellix**, a Cambridge, MA, startup, is exploring new ways for ordinary people to author complex linked documents -- or maybe we should call them document collections. The program's author isn't a startup. Dan Bricklin is the co-creator of VisiCalc, Tk!Solver and Dan Bricklin's Demo Program.

Bricklin is aiming for a sweet spot that he believes exists between word processors, which are great for single documents but terrible for managing clusters of linked documents, and Web development tools, which are almost all designed for technical people. Ironically, the Web-authoring tools that aren't technical have the same defect that Web-enabled word processors have: They don't include tools to manage linked documents.

Priced at $100, Trellix is designed for non-technical people. It is flexible, colorful and quick. Its display combines a map view of the current document collection alongside the page you are viewing or working on at the moment. You can move the map around and show or hide it at will.

Trellix has two modes: edit and play. In both modes, the map gets you from page to page quickly. In edit mode, the map makes it easy to reorganize the pages. Drag one page in front of another in the map and the affected docu-
ments' internal pointers (e.g., "next page" buttons) change accordingly. In play mode, holding your cursor over a page's icon shows a description of the page. Clicking on it takes you to that page in the other window.

Although Trellix doesn't offer any special facilities for managing URLs, it is easy to turn words into links. So is creating business presentations. The program comes with templates and designs for presentations as well as Websites. You can export Trellix files to the Web as self-contained sites; Trellix stores information in its own format. By putting relatively sophisticated tools at hand in an intuitive way, Trellix makes it possible for people who are technically unsophisticated to create documents with complex, multi-part structures.

### Alexa: Link CPR

Utilities abound that will check Websites for broken links, but what do you do when a link is broken? In many cases, you can rescue it by using Alexa Internet, which combs, analyzes and indexes much of the Web, graphics included, and helps you find the pages that were published behind now-dead links.

Alexa also offers context information by presenting facts about the current Website (e.g., its owner, freshness, connection speed and ratings) as well as links to other Websites that Alexa members have visited from the current site. Alexa uses simple but powerful algorithms to derive useful information from the links people follow.

To date, Alexa has collected over 8 terabytes of information from the Web. Once it has analyzed the information, Alexa donates its findings to the not-for-profit Internet Archive, which was also created by Brewster Kahle.
SHOW AND TELL

Cyberarchaeologists will report that some of the first artifacts found on personal Websites were hot lists: the URLs that the site owners thought were especially cool. A few of these sites gained limited fame early on, including Yanoff’s List (by Scott Yanoff) and the Cool Site of the Day site (by Glenn Davis). Inevitably, these and similar sites led to Yahoo!, the first link-referral site that took link organization seriously, found a truly memorable name and, a bit later, made some money.

A gift economy

All of these sites started out as labors of love. Yanoff, Davis and Yahoo!’s David Filo and Jerry Yang were contributing something they cared about to the online community, not launching startups. Although Filo and Yang struck oil and launched one of the more memorable IPOs in recent memory, they did not obsolete people’s need to create and share their own links. It’s a part of human nature.

Lists of links don’t have to attract millions of eyeballs to be useful. Take intranet applications, for example. Several commercial offerings are designed to help people share links with others in their workgroups. The most notable of these are Intraspect’s Knowledge Management system and Digital Knowledge Assets’ sceneServer. Intraspect was a 1997 PC Forum debutant (see Release 1.0, 3-97); dka is scheduled to present at the 1998 PC Forum.

Like Grasp, Intraspect and dka offer systems to help people collect and enhance items they care about and give them context. Grasp’s product is for individual users; the other two are for groups.

One of these systems’ key design principles is to make it relatively effortless for users to put information into the system and express it in a more useful form. That in fact is the challenge for all knowledge-management systems. This knowledge stuff is slippery and willful. It is hard to corral and coordinate.

A system that will manage and help share knowledge must strike delicate balances between being simple or flexible, intuitive or powerful. Too much external structure will overwhelm the structure that users add to arbitrary links, which is often where the embedded knowledge lies.

Intraspect’s interface makes heavy use of topic hierarchies. Any Intraspect user can publish a hierarchy that contains comments, headings, pointers to files, messages and so on. Participants can include one another’s topic hierarchies by reference and add their own comments and structure.

DKA: MAKING A SCENE

In mid-1996, Tim McDonald founded dka on the laudable premise that people are the best filters of information. In a remarkably short time, the dka team created a powerful, easy-to-use application with which participants can create and publish "scenes" to one another.

Scenes are collections of items and comments. The idea is for workgroup members to build scenes that describe things they care and know about.

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Through clever use of dynamically generated HTML and excellent interface design, sceneServer gives participants a lot of flexibility in the ways they can organize and present their scenes.

Any member can contribute to a scene or create a scene of her own. Do you like what someone posted in a Lotus Notes discussion thread? Highlight it in your own scene (include it by reference), and then weave more context and content around it. The result is not content created by some outside editor, but sharable content created by the community itself. That content can become the platform for and the result of the group’s most important conversations.

The system also offers several unique features designed to help people quickly get a sense of what’s happening in a scene and what may be relevant to them in the system. For example, discussion threads can have indicators that show how busy the discussions have been. Three dots next to a discussion topic means it’s heavily trafficked; one dot or none means there have been few postings.

By using collaborative filtering technology (from Net Perceptions; see Release 1.0, 11-96), dka recently added the ability to suggest resources in the system that may be of interest to you, as well as other users who may share your interests. You can rate and comment on items, as well as send them to others quickly over e-mail.

If you see something on the Web that you like, you can post its URL into sceneServer and add your own comments to it. But you don’t have to be logged into a scene to add something to it. You can submit things to the system over e-mail. Just send them to your server’s address with a descriptive title; sceneServer will post them automatically and notify you what categories it put them in.

Designers with designs

McDonald has built a diverse and powerful product-design team that includes design director Shelley Evenson, who holds a design chair at Carnegie-Mellon University and has helped many major corporations develop new products, and four men who worked together on interface and system design at Andersen Consulting’s advanced technologies group: cto Chris Frye, vp of product development Dick Costolo, chief architect Eric Lunt and vp of design Mark Rettig.

Ernst & Young and 3Com are among dka’s early customers. McDonald expects the sceneServer’s primary market channels to be consultancies, content services and community services. Given how hot the topic of knowledge management is in corporations these days, dka should find plenty of interest. Three things will help it close deals: its approach (humans as the best filters); its platform, especially the graceful way sceneServer combines stored knowledge with conversation tools; and its top-notch team.
VISUALIZATION

We have written often about tools that help people represent and navigate the relationships between chunks of information. Valdis Krebs' InFlow creates network diagrams that illustrate relationships between employees in a company or between companies in an industry (see Release 1.0, 2-96). Libertech's V-Search shows the relationships between court decisions, laws and other legal documents (see Release 1.0, 5-95).

In the Conceptual Space section of Metaphors and the Net, we described several search tools that present information visually, including Semio, Perspecta and Xerox spinout Inxight, which features a fisheye-lens hyperbolic view for getting around extremely large bodies of information (see Release 1.0, 4-97). All of these navigation tools derive their maps by analyzing word frequencies, proximities or meanings in large document spaces such as the Web. None of them allows the users to enter information; it's all derived.

Brainstorming and mind-mapping tools

A few tools let users organize and reorganize their thoughts and turn them into diagrams. The category's pioneer was Living Videotext's Apple II-based ThinkTank, later renamed More when it came out for the Mac and Windows (the program inspired the outlining capabilities in Aldus Persuasion and Microsoft's PowerPoint). Symantec now owns More but has stopped improving it. Dave Winer, who created ThinkTank and More, is now on his first cross-platform release of Frontier, a different outlining and scripting system oriented to programmers and near-programmers.

Applications from Cadre, Meta Software and others have long featured tools with which to create flow charts, business-process designs, workflow maps and state-transition diagrams. Visio and other technical drawing tools are excellent for drawing network diagrams or office floor plans, but they're too powerful and constraining for brainstorming and idea mapping. They're not malleable enough.

Two more flexible products are Inspiration Software's trusty Inspiration (now in version 5.0) and Visualizing Ideas' newer MindMan. Both of them encourage creative thinking.

Inspiration: Map your ideas quickly

Like More, Inspiration lets you create hierarchies of topics, which you can view two ways: as outlines and as two-dimensional diagrams. The diagram view is much like a vector drawing program. You can move items around, change object attributes such as color and shape, modify the text in items and so on. You can label the lines that link objects and have those links drawn in a variety of ways.

When you toggle back to the outline view, changes made to the drawing are reflected in the outline -- sort of. If you flip the relationships in your diagram around significantly, you may have to work on the outline to reflect the changes. For example, if you put a new node in as the top of the hierarchy, the outline will register it as a Miscellaneous Thought subordinate to the original main idea.
Nevertheless, Inspiration’s flexibility and keyboard shortcuts make it easy to think up ideas and rearrange them as you gain insights. When you’re done, you’ll most likely print your diagram on paper. You can export the diagram to the Web as an image file, but it won’t be interactive. There are no facilities to attach URLs, never mind make them clickable on a Web page.

**MINDMAN: VISUALIZE THIS!**

MindMan is also a drawing tool for brainstorming ideas and making associations, but it’s much savvier about the Web than Inspiration and similar applications. MindMan makes it easy to attach URLs to items in a diagram, though you still have to mind your own links: MindMan presents an empty dialog box into which you type a URL. You can also link any document on your computer to an item in a map.

The program also exports drawings elegantly to the Web in a standard image-map format that any browser can interpret, complete with clickable areas that lead to the URLs you entered in diagramming mode. In fact, you can head to [www.edventure.com/releasel/links.html](http://www.edventure.com/releasel/links.html) for a MindMan diagram of an early version of this issue that includes links to most of the products covered here. The clickable Web page makes a nifty table of contents and was easy to produce.

Unlike More and Inspiration, MindMan doesn’t have an outline view, but it makes up for this function that some users might miss by having drawing and navigation commands that make sense. In addition, you can export a map as a sequence of text Web pages that follow the document’s outline. MindMan is principally a drawing tool, and it offers the control over layout and design that one expects from such programs.

**Pleasing extras**

Two other features stand out. "Multi-Maps" lets you layer MindMan diagrams. A link in one map can lead to a different map, and so on, creating a more complex set of diagrams that each remain simple enough to be useful.

The Multi-Map links are more than just references: If you change the name of a linking node, the title of the map you link to will reflect the change. When a map grows too large, you can create sub-maps by exporting a node and all of its subordinate nodes.

MindMan also sports a nifty Internet conferencing feature that lets users propose online meetings and share documents. The feature uses MindMan’s own directory service to locate and connect participants and allows them to use text chat during the conference.

The program costs $100 for a single user, with multi-user discounts. Munich natives Michael and Bettina Jetter founded Visualizing Ideas in 1994; they currently live in San Francisco. They have been working with creativity consultant Tony Buzan to highlight the product’s uses in corporate brainstorming.
Communicator is poor
FirstFloor's SmartMaiks
101 Aladdin Systems' C berFinder
Blue Squirrel's GrabNet
CE Software's WebArranger
Frontierland's Clay Basket
Grasp Know It All
A digression
Microsoft Outlook
A dark horse

Management
Have asset management, link checking
Web development tools
Make it difficult
Easy in some ways
Tools for ordinary folks
Making it hard in others
Netscape
Trellix
Managing
A digression

Reciprocity
Weaving the Web
Netiquette
Link swapping
DoubleClick
LinkExchanger
Pointing to each other
Prohibitions
TicketMaster vs. Microsoft

Commerce
Advertising
DoubleClick
TicketMaster
By reference
By inclusion

Types
Variables
Rating, age
Backwards link
Difference between

Other links
Phone numbers
An AOL URL?

Hot lists
Two cool programs

Sharing

Authoring

Tools for ordinary tools
Web development tools
Make it difficult
Easy in some ways
Tools for ordinary folks
Making it hard in others
Netscape
Trellix

Hot lists
Two cool programs

Visualizing

The Web's local structure
Deep search
Hyperlink

Visual search tools
Visual search tools

Product and project names are highlighted

Items with bullets are Web links

MindMap
One stands out
The Brain
And another!

Not very Web aware
Other tools help a little
Not very Web aware
Trellix

Difficult with Imagemaps
VRML?

Hard to change
Need vector graphics
VRML?

Rhetoric and expression
Interactive media
Movies with branching

Hypertext
Interactive media
Movies with branching

Web authoring
Linear text with pointers

New forms of narrative
Concept mapping

Multi-party Interactions
Linear text with pointers

Clustering
Clustered

Hypertext
Interactive media
Movies with branching

New forms of narrative
Concept mapping

Multi-party Interactions

GET A BRAIN

Last week, while trying to finish this newsletter, we met with Natrificial (natural and artificial) Software Technologies, a small startup whose product, The Brain, is startlingly close to fulfilling our wish list for bookmark management and more. We describe it here in some depth because it addresses so many topics raised in this issue so well.

The Brain is a utility that helps you organize information. It also acts as a file and document manager for other applications, helping you collect and manage pointers to documents, Web pages, notes and so on. When you don't need it, it automatically slips off-screen and leaves a small button at hand but out of the way. When you call it up, it's best to have your Brain occupy a third to a half of your screen (see screen shot, page 15); you can run other applications behind it and exchange information with them. If a thought has a file attached, The Brain can launch it automatically.

The graphical part of the Brain's display is called the Plex. In the middle of the Plex is a slow-spinning, cam-like contraption called the active thought area. It's the only element of the interface that isn't directly functional; you can turn it off if you don't like it. When your Brain is running (no pun intended), one "thought," the active thought, is always in the central Plex.

Each thought has three handles on it, called gates. The top gate leads to parent thoughts, the bottom one to child (subordinate) thoughts and the left one to jump thoughts that don't have a hierarchical relationship to the current thought. All parent, child and jump thoughts are displayed next to your current thought; sibling thoughts (children of the same parent) are listed vertically to the right. Every thought has its own, consistent local structure, without forcing all the elements into a strict hierarchy.

Navigating thoughts is quick and intuitive. Just click on the one you want to go to, and the display responds with a crisp rotation that brings your new focus to the middle. Across the bottom is your list of recent thoughts (your history list). You can pin thoughts across the top of the display to act as your shortcuts.

To link a thought to any other thought, drag outward from the gate that represents the relationship you want to create, then type the name of a new or existing thought. The Brain locates existing thoughts as soon as you type their first few characters, one of many ways it makes searching its contents easy. You have to be careful how you name thoughts, or you'll have so many similar names that you get confused. But with a little discipline, you can quickly and easily see a satisfying web of ideas emerge.

Unlike Inspiration and MindMan, which are designed to create diagrams in two dimensions, The Brain is about conceptual space. Right now it doesn't even have a print function. Because of The Brain's associative nature, you can easily have thoughts with multiple parents or even self-referential loops.

Launch pad

Any thought can have a link, note, shortcut or file associated with it. Click on the thought when it's in the center and you launch whatever it's
linked to. You can attach a file after creating its thought, or, more intuitively, drag a link from the appropriate gate to the application or file you want to link to. If you drag the link to your Web browser, The Brain will pick up the current URL and page title. Instead of keeping bookmarks with your browser, you can capture the pages with The Brain, find them quickly, then send your browser back to those sites.

It gets better. The Brain stores files you create with it -- Word files, Excel spreadsheets, whatever -- in a folder in its own directory. Even though those files are in a single place (which makes them easier to back up), you can connect any two items with a single link to create whatever associations you want. Forget about digging through folder hierarchies. Stop using the file-system interface and use your Brain instead. If you’ve struggled to make and keep order in your file system, you’ll really appreciate this application.

Late-night TV?

How much would you pay for this wonder tool? $300? $200? All joking aside, Natrificial will start selling The Brain on January 19 for the reasonable price of $50 a copy, with a free trial version (that stops letting you enter new thoughts after the trial period) downloadable from its Website in late March. Natrificial will also be a company presenter at the PC Forum.

The privately owned company was founded in 1996 by Harlan Hugh, the application’s 23-year-old inventor and chief developer, and Donald Block and Catherine Lefebvre. It’s an unlikely team that seems to work well. Block and Lefebvre are veterans of the Los Angeles film-production business. Hugh started work on The Brain in 1993 in Edmonton, Canada, where he was raised. In 1994, a video director friend of his introduced them all. Block and
Lefebvre realized the scope of what Hugh had designed and helped him create a company to bring it to market.

Now the team is out to replace everyone’s desktop file manager. We do love our Brain, as we expect many others will, but there are quite a few people who just don’t cotton to interactive, visual interfaces.

Natrificial also has a Brain server capability that allows people to access Brain files over the Net efficiently. Instead of downloading potentially large Brain files, remote users get only as much of the file as they need to see at any one time. Each click results in a short network query that returns the next few thoughts. Hugh encourages users to keep only one Brain file for themselves, but the prospect of linking from one Brain to another across the Net is tantalizing.

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**COMING SOON**

- Links, economics and narrative.
- Identity management.
- Online governance.
- Market-based security.
- And much more... (If you know of any good examples of the categories listed above, please let us know.)

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RESOURCES & PHONE NUMBERS

Brewster Kahle, Alexa Internet, (415) 561-6793, fax, (415) 561-6795; brewster@alexa.com

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Bob Roda, Grasp Information, (617) 441-9900; fax, (617) 441-4042

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Michael Jetter, Visualizing Ideas, (415) 680-1677; mike@mindman.com

For further reading:


All Websites follow the form www.companyname.com, except for:

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February 4-7  
**Interactive Newspapers '98** - Seattle, WA. Sponsored by Editor & Publisher. Call Michael Troxler, (212) 675-4380 x285; michaelt@mediainfo.com; www.medainfo.com.

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May 10-13  

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**International Design Conference in Aspen (the 48th annual)** - Aspen, CO. Organized by IDCA. The annual design conference, cutting across all design disciplines. Call (970) 925-2257;
June 20-25  Ed-Media/Ed-Telecom '98 - Freiburg, Germany. Organized by Association for the Advancement of Computing in Education. Focus on educational multimedia, hypermedia and telecom. Call (804) 973-3987; fax, (804) 978-7449; aace@virginia.edu; curry.edschool.virginia.edu/aace/conf/edmedia/cal198.html.

July 20-24  *INET '98 - Geneva. Sponsored by the Internet Society. Every four years; over 3000 people expected. Call Mark Measday, 41 (22) 344-64-64; fax 41 (22) 345-92-58; measday@josmarian.ch; www.isocgva.ch.

Oct 11-13  **EDventure's High-Tech Forum - Copenhagen, Denmark. Sponsored by EDventure Holdings. Call Daphne Kis, (212) 924-8800; fax, (212) 924-0240; daphne@edventure.com; www.edventure.com.

* Events Esther plans to attend.
@ Events Jerry plans to attend.

Lack of a symbol is no indication of lack of merit.
The full, current calendar is available on our Website (www.edventure.com).
Please let us know about other events we should include. -- Robyn Sturm

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