

* Managers
* Automation

Engineering Firms Use the 'Web' to Catch More Business

Just as everyone in the firm became comfortable with CADD, the fax machine, and voice mail, along came the Internet—a direct computer link from their desks to the rest of the world. Now, as with other new technologies that have invaded design firms, engineers are asking the inevitable question: What do we do with it? The smartest firms are now looking for answers.

The World Wide Web—a multimedia link to other Internet users—has been described as a hybrid Yellow Pages/newspaper/library, in which information can be retrieved as well as discovered.

Some engineering firms believe it's that, and more. They expect the Web to redefine how they market their services, gather information and resources, exchange data, and communicate with clients and potential customers.

"We believe this is the way most business will be conducted in the future," says Karin Clark, marketing manager at Anderson & Associates in Blacksburg, Virginia. A&A launched its home page, a virtual business brochure, in April, and Clark says the firm is already seeing results, in terms of developing business contacts and receiving resumes and inquiries from job applicants. (The Internet address for Anderson & Associates' home page is <http://www.bnt.com/anderson>.)

"Our World Wide Web site is on-line information about our firm that is ever evolving. Clients interested in our services can instantly have information on our company—24 hours a day, seven days a week without any additional cost to us. A four-color brochure is costly to produce and is outdated by the time it is printed. On-line information is much more efficient and effective," Clark says.

Millions served. Although the Internet is about 30 years old—for years it was a computer network used almost exclusively by federal agency and university researchers—it has only recently been discovered by the

masses. Various surveys in 1995 determined that about 37 million people in the United States and Canada now have access to the Internet; about 8% of them used the World Wide Web; and 57% of government workers' electronic mail systems are linked to the Internet.

Those numbers will only grow in the future, particularly as users grasp the potential of the Web and capitalize on it.

Until then, some firms are content with gaining a foothold on the Web. "Right now, we're just building contacts by having a home page," says Michael Ayers, project manager at Alley & Associates outside of Nashville. "We're telling our clients that we're [on the Web] and we're taking [advantage] of some of the resources that are available for free on the Internet." (The Internet address for Alley & Associates' home page is <http://www.edge.net/alley/>.)

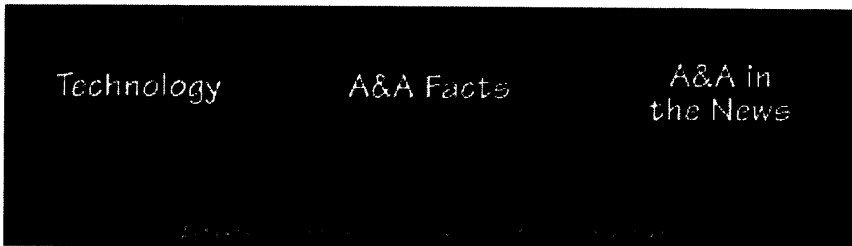
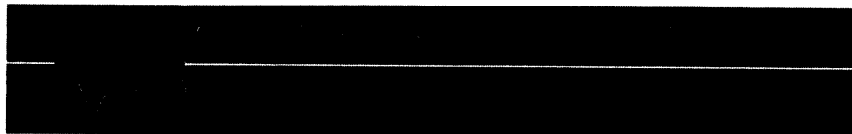
Alley & Associates' home page enables users to call up (using the computer's mouse, point the arrow to a desired topic on the page and "click") information about the firm and its environmental engineering services. Its home page also lists references that might be useful to

environmental clients, including an ISO 14000 listing and one for Environmental Protection Agency documents from the *Federal Register*. Another heading on its Web page allows users to browse Alley's links to other consulting firms connected to the Internet. In the future, Ayers wants to add a multimedia library of environmental and chemical resources.

Engineering firms shouldn't have long to wait before the Web affects the way they do business, particularly with the federal and state governments. A Louis Harris poll taken last spring found that while only 6% of business conducted with government is now done electronically, 71% of business executives said they expect to be working with the government electronically in the next two years.

Construction ahead. That shift will undoubtedly push the development of home pages by many firms interested in improving business. As firms develop their home pages, they must heed two guidelines: use captivating yet simple graphics to attract Internet surfers and serious browsers and update home pages on a regular basis.

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Technology / A&A Facts / A&A In The News

World Wide Web users who dial <http://www.bnt.com/anderson> will find one of the first home pages developed by an engineering firm.

Looking for Business? Catch it with the 'Web'

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"It can be time consuming, but offering new information is how you get people to come back to your page," Ayers says.

Clark agrees. "We designed our pages so readers will want to come back to see what's new," she says. A&A, for instance, posts its monthly newsletter *Ampersand* on its home page.

The major expense in launching a home page is programming the "hypertext markup language" (HTML)—the part of the Web program that enables users to click on highlighted text, transporting the user to other documents or Web sites linked to that home page.

"If you have somebody who can do it, then [developing a home page] is fairly cheap," Ayers says. "Our only cost is the dial-up service [like America Online] ...and that's less than \$100 a month. When you put it in terms of marketing, it's very cheap." If firms don't have in-house programming capability, a niche industry is sprouting up around the country to help. Ballpark costs for developing home page language are \$1000 a page, or \$60 an hour.

But be warned. Don't expect miracles once you're connected to the Web. Many users say "potential" is the key word when assessing the information superhighway.

The biggest shortcoming of the Web: reaching your audience, since it's up to the user to decide whether to access a home page. There are several potential hazards to consider when launching a home page. Because no one actually runs the Internet, there's no customer support; security and privacy are not guaranteed, so users should be wary of posting and exchanging sensitive information like confidential documents and credit card numbers; viruses reportedly may be transmitted through Web file attachments; and, a home page's ability to generate business and interest is only as good as the home page itself.

Despite any growing pains, many users expect that the limitations of

the Internet and World Wide Web will be dictated by users' imaginations. Already, engineers are discovering—if not inventing—new ways of using the technology to save time and money, while improving their efficiency and that of others who access their home page.

The Indiana Department of Transportation, for instance, now uses the Web to instantly transfer CAD drawings that previously were stored on dozens of computer discs that had to be delivered in person.

For engineers whose Internet imagination needs a kick start, Purdue University's Network for Continuing Engineering Education now offers a Web-based graduate course called "Internet Design Resources and Development." NSPE will also offer beginning and advanced Internet courses next month. (For more information see page 15.)

Anderson & Associates sees a world of possibilities for its home page. The

firm is about to establish a hypertext selection for an upcoming transportation-design project. "We will be creating a page as a holding place for review of plots and other material on this project," Clark says. "And we are planning a bulletin board for citizens to get more information on the project or to present comments."

The firm also plans to add online geographic information systems to its home page, as well as more information about A&A for its business partners and useful maps of the states it serves.

Finally, "We will also be taking the HTML language to the next level to develop a corporate web," Clark says. "This internal web will help us better organize our documents, assure that our employees have the most recent documents and information, save precious [file] server space, and conserve paper. It will be the front-end launching pad to many of our internal resources."

NSPE Prepares Home Page for Information Superhighway Travelers

The most innovative companies are offering information and services through the Internet, and NSPE is there with them. The Society is working to provide more information and faster service with the help of its own World Wide Web home page on the Internet.

Recognizing the need to communicate with NSPE members, prospective members, students, the public, and other interested parties, the Headquarters Automation Committee created the Internet Task Force to build the Society's stop on the information superhighway. "It's information when the members want it—in the middle of the night, or on Christmas day," says NSPE Information Systems Director Leslie Zupan.

NSPE hopes to use the Internet to communicate with state and chapter organizations, sell NSPE products, and provide other NSPE services that are already available in print materials such as FAX-On-Demand documents, scholarships, and membership applications.

The task force is also considering other member services such as receiving orders for products and services and accepting member renewals. However, the group is sensitive to the security issues that have surfaced when Internet users have released credit card numbers or other personal information. The task force is deciding how to best serve the members' needs without compromising their privacy.

NSPE is creating a home page that is easy to down-load, readable, and has user-friendly menus. Zupan predicts that NSPE's home page will be up and running in early 1996.