

## Our silent partner

"My e-mail is down!" Readers who have experienced the loss of a computer connection to the outside world will know firsthand how utterly dependent we are on electronic communication. Those who have been unfortunate enough to lose their laptop while traveling or have had a computer disk crash without adequate backup will know how devastating the loss of a few million bits and bytes can be to their ability to work, let alone check their calendar for dinner arrangements!



I'm sitting at my desk composing this month's President's Page on the theme of electronic communication, Internet connectivity, and the global information explosion. Unfortunately my organization's Web connection is temporarily down, so I don't have access to the wealth of information I had assumed I could search for background material. I am reminded of a similar occurrence years ago when my employer's computer connections went down. No one in the building could work! We couldn't even phone because the telephone directories were stored on a computer. People walked aimlessly through the corridors, bumping into each other in coffee rooms, waiting until their primary work tool and silent partner—their computer—was usable again.

Experiences like these make us realize just how dependent we have become on the information revolution and electronic communication. In this President's Page, I'd like to explore some of the electronic initiatives affecting SEG and its services to members into the future.

The year 2004 marks the 10th birthday of the SEG Web site. Beginning with online services such as search facilities of membership and publications (which remain SEG's most-accessed Web services), SEG was the first applied geophysics society to place its publications online. By 2002 all SEG periodicals plus *Expanded Abstracts* were online and searchable. *TLE* and *GEOPHYSICS* are on the American Institute of Physics' Scitation platform, giving thousands of scientists awareness of SEG publications and greater ability to cross-fertilize our science. SEG is also negotiating an agreement with AAPG and SPE to enable online searches of all publication collections of all three organizations.

Three recent initiatives highlight further developments in information sharing. The first is GeoScienceWorld (GSW), an initiative of AAPG, American Geological Institute, Geological Society of America, Geological Society of London, Mineralogical Society of America, Society for Sedimentary Geology, and SEG. This online collection will feature full text searches across the aggregated journals and linking of references between journal articles and other online journals.

The second initiative is a software package that SEG purchased called "eCommunities" which will provide members with a powerful tool for Internet-based collaboration between groups with common interests around the globe. eCommunities will be initially trialed by the Executive Committee and progressively rolled out for use by other committees and special interest groups within SEG. This service will enable chat rooms and discussion forums to be set up as needed by the membership.

The third initiative is a proposal to nominate 2007 as the Electronic Geophysical Year (eGY) to mark the 50-year anniversary of the International Geophysical Year. IGY, spanning the years 1957/1958, was outstandingly successful in advancing

our knowledge of the Earth through a comprehensive series of global geophysical observations of the world's oceans and land masses. Since the IGY, we have experienced a vast increase in the quantity and quality of observational data, much of which are available in near real-time. The eGY will complement the IGY by focusing on the unprecedented capability of modern electronic communication and information management methodologies using the Internet to provide seamless access to geoscientific data and processing capability. A key output of eGY will be the establishment of a set of virtual observatories that will complement in cyberspace the contribution from physical observatories. SEG has thrown its support behind the International Union of Geodesy and Geophysics and other organizations to adopt 2007 as the Electronic Geophysical Year. This proposal is being developed by geoscience institutes around the world prior to formal adoption by United Nations Educational, Scientific, and Cultural Organization.

What does a virtual observatory look like? The concept was coined by astronomers who used to wait months for physical access to a telescope but now routinely "dial up" a part of the sky from their PC, accessing terabytes of existing images and data catalogs. Similar concepts are being developed for earth sciences. For example, the GEON (GEOscience Network) project supported by the National Science Foundation seeks to develop the modern information technology framework (or cyberinfrastructure) required to allow geoscientists to access, synthesize, and model geoscience data from a wide variety of sources in order to seek the answers to major geoscientific questions much more efficiently than at present. As described by Tom Owens of the University of South Carolina, "Note the 'big picture' questions that GEON seeks to address ... note their experimental approach: Don't collect any more data! Shocking, isn't it? Some would cry: Sacrilege! But, Fox Mulder would be pleased. The Truth is Out There. In our field books, on our disks, everywhere. And, therein lies the challenge. The GEON group isn't really saying don't ever collect more data; they are just advocating the optimal use of the data that has already been collected."

National geoscience agencies are custodians of thousand of terabytes of seismic, well log, and other exploration data. Many governments are now making these data freely available to encourage oil, gas, and mineral exploration in their respective countries—examples include Australia, Canada, China, Malaysia, Angola, and Thailand. The next generation of cyberinfrastructure will assist in making searching and accessing this information easier. And SEG will play a key role in keeping its members informed of these developments—via its publications, conferences, workshops, and in particular its online communications.

As T. S. Eliot wrote in *The Rock* in 1934,

*Where is the wisdom we have lost in knowledge?  
Where is the knowledge we have lost in information?*

We could add

*Where is the information we lose in terabytes of data?*

Did I get my computer connection back? You be the judge. **TJE**

—BRIAN R. SPIES  
First vice president