

WIRED TO THE WORLD

HAVING HITCHED HIMSELF TO THE INTERNET, ONE CA SAYS "ADIOS" TO THE TRADITIONAL OFFICE

By J. A. Carroll

It's the year 2000 and Elizabeth Webler gets in her car to head to work. She checks for messages on her personal communicator, quickly reviewing the ACME proposal on the vid-screen transparently displayed on the windshield. "Move the third paragraph down two," she instructs, and the system...

NOT!

It seems a day can't go by without another article telling you how wonderful the 21st century is going to be, or another seminar discussing a vision of some high-tech nirvana, or chatter at the tennis club of the virtue of massively parallel processors and the Pentium.

Trendy words and phrases fill our vocabulary — personal digital assistants, re-engineering, virtual workplaces, knowledge networks — so many, in fact, that most of us tune out the moment we hear such words in conversation.

Yet, computer technology continues to invade our offices and homes relentlessly. At the same time, economic restructuring is changing the way corporations do business. The result is that we are at a significant watershed, where state-of-the-art technology is fusing with new economic realities to cause a massive reshaping of our personal and working lives.

Russ Willms

Nowhere is that more apparent than in the growing numbers of home-based workers. The recent recession has been devastating to professionals and office workers, as large-scale organizations shed layers of middle management. Consequently, loyalty to the organization is disappearing. With the availability of cheaper, more powerful and portable computers, however, many of these displaced workers have been able to make corporate change the catalyst for personal change as well. Right Associates, a Toronto-based management consulting firm, estimates that 20% of middle or senior managers who leave large corporations decide to go it alone in a variety of careers and businesses.

Certainly, computer technology was instrumental in my own decision in October, 1990, to leave the security of the major accounting firm where I had spent the previous 12 years and strike out on my own as a consultant in telecommunications and on-line research. Not only did I perceive a market opening up, but I also believed computer and telecommunications technology had matured to the point where it would provide a strong technical foundation for my firm.

At first it was a shock to lose the ability to tap the minds of experts and staff throughout my former firm, but today I'm wired into the world. While large corporations struggle with the organizational changes required to implement the new "virtual corporation," I regularly "dip my keyboard" into the Internet, a global knowledge network that's weaving together the computer networks of the industrialized world. Sitting here in my home office, surrounded by computers, a fax machine, four modems and more wires than I care to count, I realize that I'm already part of tomorrow's workplace. I'm in direct electronic contact with my clients and, through the use of a global network, I am able to tap a source of information and knowledge that is truly astounding.

Telecommunications is the lifeblood of my business. Each morning my main PC polls up to 20 different electronic mailboxes, retrieving electronic mail (E-mail) from clients, associates and friends. In all of my activities, I make sure that I have an electronic mail hook-up with my client, permitting me a closer strategic link to the "customer." I send research reports directly to the internal E-mail systems of several major clients. Not only do they get the information more quickly, but there is also no need for them to retype sections of the report from a hard-to-read fax. And by listing my E-mail address in their internal E-mail system, they can send research requests directly to me. Efficient communciations with all parties involved in a client project have become critical to success. For

Internet: Global telecommunications backbone

THE INTERNET IS NOT SO MUCH A SINgle computer network as a series of interconnected networks around the world that connects millions of scientists and academic researchers. There are more than 40 countries, with national research, academic and commercial networks, actively participating in the Internet, including not only Canada and the United States, but also Chile, Korea and New Zealand. As well, simple Internet electronic mail access is available in more than 110 other countries, including the Soviet Union and China.

Internet networks in Canada include CA*net, a research oriented network funded by several government bodies, including the National Research Council. CA*net connects 10 provincial research networks and has links to the major American research networks. CANARIE (Canadian Network for the Advancement of Research, Industry and Education), funded by industry and government, is the planned high-speed successor to CA*net.

In the US, Vice-President Al Gore is the primary sponsor of the proposed National Research and Education Network (NREN), an extremely high-speed (up to 3 gigabits/second) national network. NREN will operate at speeds up to 1,000 times faster than the NSFNet (National Science Foundation network), the research-oriented backbone of the Internet in the United States, which NREN is scheduled to replace.

These national networks, established to support research and the exchange of academic information, are subject to "acceptable use policies," put in place by the original network sponsors, to ensure that they were used only for the intended purpose. However, the massive growth of Internet-linked networks has resulted in a realization that use cannot be completely restricted to research purposes. With the growth of the network in the last three years came recognition that profit-oriented companies were making increased use of the Internet, and that these commercial interests required Internet networking capabilities as well.

This led to the arrival of a number of commercial Internet service providers, such as UUNET, Performance Systems International (PSI) and Advanced Networks and Services (ANS), companies that sell Internet access to any corporate organization. These for-profit organizations route Internet traffic down their own networks, bypassing the restricted academic and research networks, while maintaining the appearance of a common, global network. They can be reached at:

UUNET Canada Inc.
1 Yonge Street, Suite 1801
Toronto, Ontario
M5E 1W7
(416) 368-6621
support@uunet.ca

UUNET Technologies
Suite 570
3110 Fairview Park Drive
Falls Church, VA
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(703) 204-8000
(800) 4UU-NET3
info@uunet.uu.net

Advanced Networks and Services
2901 Hubbard Road
Ann Arbor, MI
48105
(313) 663-7610
maloff@nis.ans.net

Performance Systems International
1180 Sunrise Valley Drive
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Reston, VA
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(703) 620-6651
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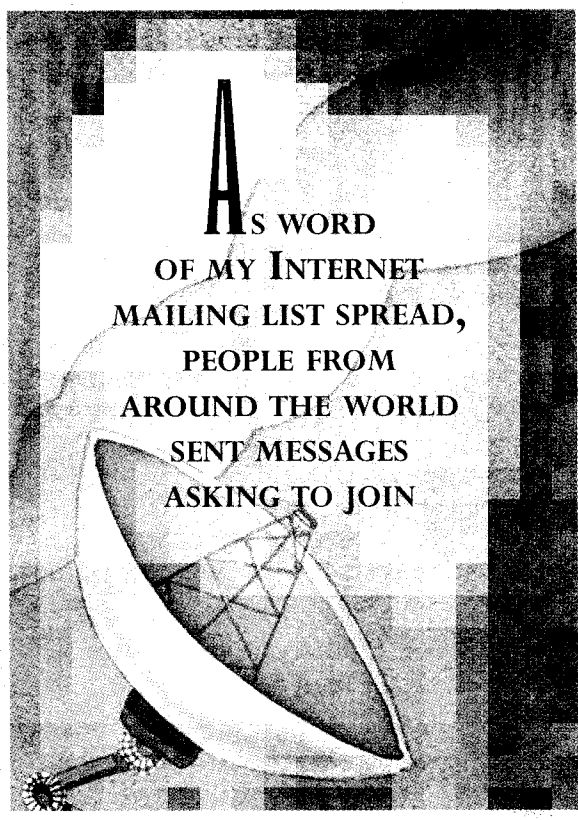
Such extensive growth means the collection of networks that now make up the Internet has become a worldwide telecommunications backbone, supporting commercial, research, academic and personal communications needs.

The Internet also has facilities like telnet (the ability to access an Internet linked computer anywhere in the world to run an application or access a database), and ftp (file transfer protocol), permitting easy retrieval of computer files from around the globe. As well, emerging services like WAIS (wide area information services), Gopher (as in "go for") and the World Wide Web, promise facilities to help make it easier for subscribers to navigate throughout the thousands of computers and services connected to the network.

For the average user, the Internet provides straightforward global electronic mail using an E-mail ID that is easy to use, easy to remember, and universally recognized — in my own case, jcarroll@jacc.com.

instance, when working on projects involving products from Lotus Corporation, I send communications directly to the desktop E-mail system of Lotus staff members, thus ensuring faster response to client issues.

In addition to E-mail, global networking using the Internet has become essential to my home office. It is no longer unusual, for instance, for me to put out an inquiry to thousands of people around the globe, and to receive numerous answers within hours. I can exchange E-mail messages with individuals in Moscow or New Zealand or Sweden via the Internet one moment, and send electronic reports to a client through the Internet the next. I might participate in a global discussion group concerning methods of building electronic mail gateways, while receiving Keplarian elements on the latest shuttle launch, so that I can track when the shuttle might appear over Toronto. (Shuttle tracking has absolutely nothing to do with my business, of course, but it can be a heck of a lot of fun!)



Corporations, too, are discovering that the Internet is an increasingly useful tool for establishing communication channels with their business associates. "Companies are registering on the Internet at outrageously exponential rates, with about 120 requests per day by commercial entities, ranging from Fortune 500 companies on down," says Anthony Rutkowski, vice-president of the Internet Society and the director of technology assessment for Sprint International. "It is doubling in size every nine months." With a single Internet E-mail ID, it is estimated that you can reach close to 50 million people.

In fact, some people say the Internet is the most significant development in human communications since the printing press, telephone or television. As of March 1993, more than 35,000 corporate, research, academic and government networks were linked to the system, with each network representing hundreds or thousands of individual computer users. During the Russian revolution in 1990, Internet-connected networks were used to rapidly distribute information coming from President Boris Yeltsin's office in the Russian White House, and Chinese students used it to distribute information globally during the Tiananmen Square crisis. In these ways, the Internet is starting to affect global events much like CNN does.

In my own work, I recently needed to determine for a client if there were any on-line databases containing market research reports for the dietetic foods industry, in addition to the services I already use. I sent a message to an electronic mailing list I maintain of more than 200 on-line research experts around the globe. Within several hours, I had received messages back from several people highlighting a couple of services I had never heard of.

Creating my own expert network for the on-line research field was simple. After deciding that I needed to draw upon global expertise in the field of on-line research, I established a publicly accessible Internet-based mailing list called online@uunet.ca. I then began to publicize it around the globe via messages to various people and computer conferences. As word of the list began to spread, people from around the world sent messages asking to join. Any individual belonging to the list can send a question to all other members; there is a spirit of co-operation that drives our global information sharing. If I help someone out today, they are likely to help me out tomorrow.

I also make extensive use of Usenet, a global conference affiliated with the Internet, to track issues of importance to my consulting practice. With thousands of topics ranging from environmental issues, computer groupware and oceanography to popular culture, Usenet has proven to be a font of expert knowledge. Recently, to keep up to date on electronic mail privacy issues, I tracked a worldwide discussion on the reaction to a controversial initiative by the US government concerning the encryption of data. Within days of the release of policy papers in the United States, hundreds of people around the world were debating the complicated issues raised by the proposal. I gained greater insight into the issue in days than if I had studied the matter directly.

My access to this powerful global network costs me about $6 an hour, and, given the high speeds at which I access it, a message to Moscow will cost me less than a penny. In all, I seldom spend more than $40 to $50 a month for my time on the Internet. All I use is one of my PCs, a modem, public domain software known as UUPC (available on many computer bulletin boards), and an account through a commercial Internet provider.

The Internet is a precursor to a world in which companies are routinely wired together. Given the current rate of growth, the 'wired' world might be here sooner than we think. For myself, the effective use of telecommunications and membership in a global knowledge network has already caused a profound change in the way I work — a change that has enhanced the capabilities of my consulting practice immeasurably. Today, I can't help but smile when I hear all the overheated talk about the imminent arrival of the information age. While we were all busy reading about how wonderful the future was going to be, it arrived in a quiet fashion on the computer screen in front of me.

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