CANADA

Computer Conferencing: A tool for Third World Scientists?

by Bob Stanley

In Toronto recently a man was fined $50 for damaging a pay phone at the airport. Pleading guilty, he told the magistrates he had ripped the handpiece from the booth and thrown it on the ground in "a moment of frustration" because he had been unable to place an important call.

North Americans are accustomed to good communications. They expect their phones to work — and usually they do. But as anyone who travels regularly outside of North America will affirm, communications are not as good everywhere. In Cairo it can take hours, even days, to place a phone call. In New Delhi urgent cables are delivered by bicycle. In West Africa a publisher complains that three-quarters of the magazines mailed never reach the subscribers.

If good communications are the grease that keeps government and industry running smoothly, then it is no wonder that many developing nations appear to be in urgent need of lubrication. For the real cost of lack of communications is a great deal higher than a $50 fine.

Imagine a small group of plant breeders working at an agricultural research station somewhere in India. Encountering a problem, they wish to compare notes with some colleagues engaged in similar research at another station a few hundred kilometres distant. The need is urgent because the seasons are changing, but the only way is an exchange of letters. It takes several months, and as a result a whole year is lost before the experiment can continue.

An exaggerated case? Not according to Dr. S. Ramani, of the Tata Institute for Fundamental Research, in Bombay. In a large country like India, he says, long-distance phone is costly and "impractical" — in other words it is often simply not possible to place a call even if you can afford it. "Travel is uncommon", adds Dr. Ramani, and regional research seminars, where scientists can meet and swap experiences face-to-face, are "often non-existent".

Ironically, international communications are sometimes better, but not always. Cost is an even bigger factor, however, and travel usually out of the question unless some benefactor is willing to pick up the bill. Even the international scientific journals, the traditional means of keeping abreast of new developments, come by surface mail, and so are usually at least a year out of date, says Dr. Ramani.

What is true for India holds good for most developing countries. In fact India is better off than most in that it has a highly developed and internationally respected scientific community. There is no question that inadequate communications systems in the Third World result in considerable waste of time, money, and opportunity.

Frustration, in fact, may well be a major contributing factor leading to the "brain drain" that one authority estimates costs the developing nations $4 billion per year. Countries with scarce scientific resources cannot afford that kind of waste.

At a first glance the solution seems obvious: improve the telephone system; then not only the scientists, but everyone will be able to communicate better. A more efficient system means more users, which means lower cost per user. While this may be true to some extent, there are several problems, not the least of which is the fact that designing and installing a modern phone system is an enormously expensive undertaking. Another is that the development of a large user base, particularly in rural areas, where costs are highest, is not going to happen overnight. A home phone costs money and implies a degree of affluence that is unlikely to be felt in the Third World perhaps for generations.

Then, too, there is the fact that the telephone, while it would overcome many of the problems encountered by our hypothetical group of plant breeders, is basically a one-to-one communications medium. Telephone conference calls are possible, but they present difficulties for large groups, require precise coordination, and are very costly.

In short, the idea of transplanting a North American-style communications network to a developing country that already has an inadequate, and probably antiquated system in place, is simply not applicable in the short to medium term. What is needed is a new means of communication.

A very real possibility is something called the computer-based conference system (CBCS), also known as electronic mail or computer messaging, both of which phrases are inadequate to describe the full potential of the system.

The heart of a CBCS, naturally, is a computer. The computer acts like an intelligent telephone exchange. It receives messages, and sends them. But it can also categorize and file them, store them indefinitely, hold them until the recipient is ready to read them, and remind the recipient