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E-publishing and the Scientific Information Chain

by Prof. Sir Roger Elliott

Scientific information is increasingly being made available in electronic form on the World Wide Web. Several million articles are available - but how accessible are they to researchers across the developed and developing world? The possibilities offered by online publishing are offset by commercial and practical issues, and the concerns of the scientific community are leading to some radical changes to the information chain.

Scientists in general wish to make the results of their research widely and easily available to their colleagues because the whole edifice of scientific progress is built on the gradual accretion of information and ideas from the whole community. It also provides recognition and ultimately career enhancement for the working scientist.

(Continued on inside cover)
ICTs for health in the Amazon rainforest

by Andrés Martinez and Valentín Villarroel

The Technical University of Madrid and the non-governmental organization Engineering Without Frontiers are developing low-cost telecommunication systems and information services for rural primary health care personnel in isolated areas of developing countries. In September 2001 the ‘Hispano-American Health Link’ programme (EHAS) was introduced in Alto Amazonas, in the Peruvian rainforest.

Alto Amazonas is a province twice the size of Belgium - but with rivers as roads. It includes one provincial hospital (Yurimaguas), 11 health centres (HCs) and 81 health posts (HPs). EHAS has deployed telecommunication systems in 40 establishments in the southern part of the province (one e-mail server in the urban hospital, 6 more in HCs, and 33 client systems in HPs). All the systems are powered by solar panels and use VHF radio-based voice and data communication technologies, which are easy to use, robust and inexpensive to run.

Before the project, only the hospital and two HCs had a telephone. 71% of the establishments had no communication system. The other 29% had a VHF radio, or a public telephone in the town. Only one HP had a physician in charge; nurse technicians headed the rest. The average time to travel from an HP to its reference HC was 11 hours (9 hours for urgent cases).

Evaluation has shown that the programme has been effective to:

- provide voice and email communications (97% and 90%, respectively);
- enable tele-consultations with reference sites (over 700 diagnostic or treatment tele-consultations were carried out in 9 months, of which 97% were successfully resolved);
- improve efficiency of epidemiological data collection (75% reduction in number of journeys required to send reports, 50% reduction in report preparation time);
- improve efficiency of urgent patient referrals (3 hours reduction in average transfer time, and advance communication between HP and health centre/hospital).

The vast majority of users found it easy to use the computer and email, after two training courses of 5 days each.

The system was readily accepted by health managers and administrators as well as users. 100% were satisfied with the voice system, 71% with the email and 93% with the computer.

Taking into account only direct tangible benefits (e.g. savings on travel and patient referrals) the complete system can pay for itself within two and a half years.

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