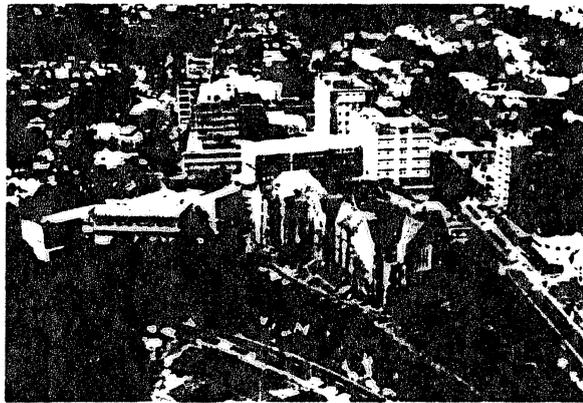


Australia and New Zealand Create New Network

[This network] will enable educators, researchers and administrators to share information....with colleagues throughout the world.



Victoria University in New Zealand is one of the primary users of SPEARNET.

Australian and New Zealand universities and other education and research bodies will have greatly improved access to information with the establishment of a new computer network named SPEARNET. This sophisticated, vendor-independent computer network, developed by Australian and New Zealand universities, will enhance access to research and educational information. It will therefore enable educators, researchers and administrators to share information and ideas within teaching staffs, between different institutions in the region and, ultimately, with colleagues throughout the world.

SPEARNET has three main objectives: to provide a service allowing individuals in the tertiary education and research community to exchange information and ideas with any other individual as easily as if they were in the same department; to create a common capability for functions and work towards removing the constraints of multivendor environments and geographic distance; and to enhance the quality of research and teaching through the use of an easily accessible communications medium that facilitates rapid exchange of information and ideas.

SPEARNET's primary users will be tertiary education institutions and research organizations in Australia and New Zealand. Early Australian participants include the University of Western Australia, the University of Adelaide, Flinders University, the University of Melbourne, La Trobe University, the University of Queensland, James Cook University of North Queensland and the Commonwealth Scientific & Industrial Research Organisation (CSIRO) Division of Information Technology. New Zealand users include Waikato University, Massey University and Victoria University. It is expected that within a few years, users will include several institutes of technology, colleges of advanced education, other government research laboratories, such as Telecom, and private research establishments.

Network Protocols

The point-to-point communications protocols will be X.25. Coloured Book protocols will be used at higher levels to support electronic mail, file transfer and remote terminal access. These were chosen because of successful applications in similar efforts in Europe and Great Britain, as well as for their ready availability.

Eventually, the International Standard Organizations Open Systems Interconnect (OSI) protocols will be adopted. A small OSI test network is expected to be established before the end of the year to allow members of the implementation team to gain experience on the technical issues associated with OSI.

Other services such as electronic bulletin boards and conferencing systems are expected to be made available to users at some time in the future. Initially, the network will support remote terminal access and file transfer capabilities.

At Victoria University of Wellington, N.Z., Dr. Colin Boswell, Director of the Computing Services Center, has been instrumental in the establishment of the New Zealand component of SPEARNET. All of the country's seven universities have installed MicroVAX II computers to act as communication hubs between their on-campus networks and the X.25 services provided by the New Zealand Post Office.

"The use of the Coloured Book Protocols from the University of Wales Institute of Science and Technology, along with the tools for developing networking software for the MicroVAX computers have given us the ability to build a reliable network in a very short space of time," says Dr. Boswell. "We are seeing rapid growth in file transfer and electronic mail. We even see a number of people performing remote log-ons to universities in the United Kingdom and the United States. And gateways have been established between ACSNET in Australia and USNET through to BITNET in the U.S.

Applications

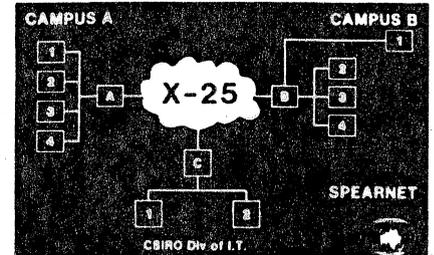
Professor Don Fitzgerald, of the Centre for Behavioural Studies in Education at the University of New England in Armidale, New South Wales, has research students at other universities in the state as well as at universities in two others, Western Australia and Tasmania. He will be able to keep in closer and more effective contact with them through electronic mail.

Should a student need to access a computer program to assist in the analysis of results from an experiment, the student can set host from the local system to the VAX computer at the Centre for Behavioural Studies. He or she can then run the program, or if more appropriate, the application can be transferred (licenses permitting) from the Centre to the local system, allowing the program to be run in the local environment. This will provide flexibility and save time.

As a Visiting Professor to several universities in Europe and North America, Professor Fitzgerald will soon be able to use the terminal on his office or home desk to keep in contact with all of his colleagues. This will be particularly useful when he is planning his many trips abroad. Professor Fitzgerald also acts as an Expert Consultant to the OECD project, "Education and the New Information Technologies," and is part of an international special interest group. This group will most likely make use of the various networks available and SPEARNET will ultimately be one of them.

At the Walter and Eliza Hall Institute for Medical Research, which is attached to the University of Melbourne, Tony Kyne manages a MicroVAX II installation. The Institute participates in an international collaborative effort to update and maintain nucleic acid and protein sequence databases. These databases are used by people involved in the research and development of vaccines for exotic diseases such as malaria and AIDS, and also for those working in cancer and leukemia research.

SPEARNET will make it easier for those in universities and hospitals to gain access to these databases for either query or update purposes. The MicroVAX II computer is registered as a node on the European



Nodes A, B and C, which will typically be MicroVAX II computers, each act as communications hubs and can perform gateway functions allowing users access other sites or networks such as CSIRONET in Australia or JANET in the United Kingdom.

Academic Research Network (EARN) and will use the EARN gateway on the University of Melbourne SPEARNET hub node.

The University of Melbourne's Professor Graeme Clark is continuing the development of his bionic ear project. Professor Clark has patients in many parts of the world who are now able to hear as a result of his work in speech processing and speech synthesis. The bionic ear is manufactured in Australia by Nucleus, a Sydney based medical products manufacturer.

In his work, Professor Clark needs to have regular mail contact with colleagues at the Australian National University in Canberra and at the University of Sydney. He also needs to have the ability to transfer binary files for speech processing and synthesis work with these universities. Additionally, because so much of his work involves microelectronics, Professor Clark must be in contact with manufacturers such as AWA Microelectronics in Sydney, Austek Microsystems in Adelaide, and Nucleus. He will soon be able to communicate with all of these from the one terminal on his desk, either through SPEARNET directly, or through gateways to other public mail systems.

SPEARNET is quite an ambitious concept. The investment in time, effort and money will be well justified, to the South Pacific and the rest of the world.

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