

Submission by Curtin University of Technology, Perth, Western Australia

to the

Standing Committee on Primary Industries and Regional Services

INQUIRY INTO INFRASTRUCTURE AND THE DEVELOPMENT OF AUSTRALIA'S REGIONAL AREAS

Executive Summary

Regional areas in Western Australia have long suffered impediments to sustained economic development created by factors such as isolation and limited communication services. People living and working in remote areas cannot access the same type and quality of telecommunications services that are normally available to large metropolitan towns. Through their three regional campuses, Curtin University of Technology has endeavoured to raise the participation of people from rural and remote areas in tertiary and vocational education and training courses. The high costs of establishing the appropriate infrastructure and ongoing service fees and charges to support regional initiatives in Western Australia has acted as a significant constraint to the achievement of this aim. Expectations of access to a high standard of communications have not been realised at either Kalgoorlie or Muresk campuses, whilst the Telecommunications Act (1997) has the potential to impose severe restrictions on the delivery of services to the multi-sectoral campus currently being constructed at Esperance.

This submission concerns the identification of the growing demand for adequate, reliable and cost effective services in rural and remote Western Australia

Introduction

As early as 1990, the Commonwealth Government released a policy framework to address equity issues in higher education. Entitled "A Fair Chance for All: Higher Education That's Within Everyone's Reach", this framework attempted to make additional provisions for people from disadvantaged groups including those from regional areas. Other evidence can be cited to indicate the degree of isolation and disadvantage experienced by regional areas (e.g. The 1990 Report published by the Department of Employment, Education and Training: Higher Education Series, Report No.8, September 1990). For a number of years, Curtin University in Perth, Western Australia has been

particularly concerned with the participation in higher education among people living in remote and isolated areas.

An integral factor associated with the continued economic growth of rural areas is the availability of education and training. Limited opportunities are frequently cited as a major contributor to the increasing gap in economic and social welfare between the regions in Western Australia and the metropolitan area. In fact few people in country areas have post school qualifications (15%) in comparison to the Western Australian state average of 30%.

The reality for rural dwellers is that access to education and training opportunities has been for many years significantly diminished. Recent research by Ian Fairnie and Gary Hepworth (1997) from Curtin University in which over 2500 high school students from rural and isolated areas identified as either studying for the TEE or with the potential to progress to the TEE, revealed their significant interest in gaining tertiary qualifications. Deciding factors included cost, availability of local employment, and having to leave home. Most students cited increased employment prospects and better remuneration as the main reasons for wanting to attend a university, although over half anticipated some degree of homesickness due to dislocation. To add to this claim, there is also an apparent high rate of attrition from students entering Curtin University directly from rural high schools - assessed at 31.6% for first year students in 1995 in courses enrolling more than 15 students on the Bentley Campus in Perth.

Curtin University, through its Strategic Plan, is committed to its stated values and in particular the provision of access to higher education through:

“ the cultivation of responsive and responsible links with the wider community, emphasising service, practical relevance, social justice and ethical behaviour”.

Telecommunications in Country Areas

During the 1980s, the growing level of interest in all Australian states in network technology has served to open up new avenues of learning. It is only in recent years that the emergence of computer mediated interactive learning (such as Internet) has evolved even further in response to the need to provide greater access to the curriculum and in a more interactive and collaborative manner. Access to information and advanced communications can expand the range of available choices and create opportunities for students. Alas this is not the reality for many rural communities.

High costs and spectrum scarcity has always been a problem. Many of the communications systems and services (electronic mail, interactive television, audiographic and radio communications etc) are already in place, but the infrastructure to support them is not. This is particularly the case in Western Australia and other states where many outback homesteads do not even have access to a basic telephone service. Carriers such as Telstra and Optus have in the past been responsible for infrastructure

developments, but have always based their decision on the size of the consumer market, which in regional areas has always traditionally been small.

Once installed, high access charges can also act as a deterrent to the use of telecommunications services, both to the consumer and the service provider. Charges for long distance calls have been a major constraint for the use and expansion of communications in country areas.

In terms of the overall financing of the telecommunications costs, governments have been instrumental in establishing funds for specific projects on a non-economic basis to support broader social goals such as equity. This is in direct contrast with other countries such as America, where industry has been quick to realise the potential of installing the necessary infrastructure to support telecommunications initiatives.

New and emerging communications services, now loosely being called broadband services, can offer even greater potential for education, business, entertainment and community services to be offered directly to homes, schools and businesses. Australians could enjoy a much greater competitive advantage through increased educational opportunities, information access and the adoption of information technologies. Access by the community just to public information held by governments, has a great educational, social and economic benefit.

Broadband Services in Rural Areas

In July 1994, the Broadband Services Expert Group released an interim report entitled "Networking Australia's Future". The implications contained in this national report stimulated debate on the widespread use of broadband services in Australia and more importantly, upon the future delivery of education and training services especially in regional areas.

This Group examined the technical, economic and commercial pre-conditions for the future widespread delivery of broadband services to homes, businesses and educational institutions in Australia. Critical issues such as current and future broadband services, their relative costs and benefits, industry development and take-up of services, export opportunities and potential gains for the Australian community were all identified.

A **broadband network** as defined in their report was " the addition of vision to sound, text and data, to create an information package which needs a broadband (i.e. a band capable of transmitting 2 million bits of information per second), of electromagnetic frequencies to carry them." In essence this means the simultaneous communication of visual, aural, text and numerical data.

Education services have in recent years been revamped with many now being linked to online services, with data retrieval, business and recreational information being delivered inter-actively from any where in Australia or overseas. Open learning developments on a national basis are being facilitated through a broadband network, which rarely exists but offers great potential to rural dwellers.

Curtin University's Regional Campuses

Kalgoorlie

Curtin's Campus at Kalgoorlie and Esperance provides education and training to the Goldfields /Esperance region, which in 1998 had an estimated regional population of 58,000 with approximately 30,000 in Kalgoorlie and 13,000 in Esperance. This population is spread over a quarter of Western Australia. About 5000 students each year study more than 100 different VET courses ranging from basic literacy to post trades studies while the WA School of Mines offers 35 courses from undergraduate to postgraduate study to 387 students at Kalgoorlie and Bentley.

Regional vocational education and training (VET) participation is lower than the state average. Taken across the broader Goldfields-Esperance region's population aged 15 years and older, total publicly funded training delivery equated to an average of 12.5 hours per capita compared with 14.8 hours across all non-metropolitan regions and the state average of 15.7 hours per capita. (WADT 1998a)

Esperance

Esperance Community College is currently being built based on the proposal to establish a rural educational enterprise based on the sharing of resources and greater articulation between all of the educational sectors. The development of the College will provide an opportunity to address the far-reaching effects of dislocation that are experienced in many parts of rural Australia.

The overall aim of the project is to create a Community College which serves the School, Vocational Education & Training (VET) and higher education students and also supports the district in life-long learning. Establishing an information hub for local industry and commerce will also assist the community through the exploitation of modern communication technologies which will enable course delivery from anywhere in the world. Interest is already being generated in developing the College as a pilot to show how rural communities can by collaboration, overcome the economic and perceived tyrannies of size and distance to have access to vibrant educational and information services. It is anticipated that the ultimate outcome will be to enhance the growth, quality of life and employment opportunities for the region.

This region is characterised by its homogeneity, its physical remoteness and its perceived sense of isolation. Local government appears to be giving community infrastructure projects a high priority which will lead to an increase in the demand for skilled employees in the retail sector, hospitality, community and human services fields. These trends have important implications for the Esperance region as it has an annual growth rate of 2% and is increasingly being seen as an attractive recreational and residential area.

Muresk Institute of Agriculture

Curtin's Muresk Institute of Agriculture is situated 90 kms from the main Bentley Campus and provides tertiary courses to students from all parts of the state. Students are accommodated at the site and a few courses are offered on the main campus and via a distance learning link to other remote regional area. They are supported through telephone and data services and also through videoconferencing. Tutorial support to students located throughout the state who undertake external studies is also complimented by computer-aided courses and others that are web-based and available to those with internet access facilities.

Telecommunications to the Regional Campuses

Delivery of courses and general information exchange is restricted due to the infrastructure at both the Kalgoorlie and Muresk campuses. The situation is exacerbated at Muresk which is connected by copper cable to the Northam Telephone Exchange. Due to environmental conditions (this area being prone to lightning and other environmental forces) the quality of the services either received or delivered is less than desirable for an educational institution. Connections to the main Bentley Campus for financial management, student management and human resource management is continually disrupted due to the quality of the infrastructure. The only solution proposed by the carrier (Telstra) is to purchase more bandwidth and pay the premium rates charged by a distant dependent service provider. Ideally the Institute would be well served by the installation of optic fibre cabling, but due to the distance from the exchange both the capital and recurrent costs are prohibitive.

Kalgoorlie has similar problems, but is closer to the exchange. However the recurrent charges for using basic telephony, data and videoconferencing are also very expensive and have to be used judiciously. Such costs within the metropolitan area and at the Bentley Campus are not significant.

It is however at Esperance with the development of their multi-sectoral precinct, that the potential for expensive and intermittent services to impede the delivery of programs and information is greatest. Despite the stated intentions from the Commonwealth Government to promote collaborative ventures between the various education sectors, the one issue that as yet remains unresolved is the shared use of telecommunications networks. For example, the Australian Academic and Research Network (AARNet) is an internetwork connecting campuses and tertiary institutions to national and international gateways to provide internet access. Prior to the bringing down of the telecommunications legislation (Telecommunications Act, 1997), AARNet provided access for some TAFE institutions, colleges and schools in those areas where there was no alternative network infrastructure. Since the introduction of this Act, AARNet has been unable to offer this service.

This is due to the exemptions for both carrier and service provider obligations under the Act which permit "exempt eligible tertiary institutions" (i.e. members of the AVCC) to limit their operations to the carriage of material or services for research, education and administrative functions of Australian universities and their related purposes. This now precludes TAFE institutions, and previous appeals for exemptions under this Act have

not been well received. This is due to the claim that such exemptions would create precedents for other organisations such as Health who would then seek a similar dispensation. While there is capacity for AARNet to cover TAFE, schools and other linkages, it cannot connect them to the existing Curtin (or any other university) network as this lies outside the exemption provided to them. From time to time AARNet has been asked to assist regional education and training institutions by connecting them through microwave and other linkages. Whilst being very cost effective in avoiding duplication of the infrastructure and its associated recurrent costs, this has not been possible except for those institutions such as the Kalgoorlie Campus which has a TAFE presence and is considered part of the Curtin University. Clearly there would be a great benefit to the Esperance Community, the local, state and national economy if regional infrastructure, with full inter- connectivity and with standardised, inexpensive recurrent charging policies were to be implemented.

Conclusion

For many years, educational institutions have sought to redress the imbalances between rural and metropolitan provision. The provision of courses based on students interests and needs, and the trialling of 'country contracting' programs have been offered in the past, and it can be stated that at Curtin University alone, over two thousand rural and isolated students are enrolled annually. Many of these students leave their rural locations and reside in Perth in order to access the range and quality of programs that are available only to those in the metropolitan areas.

As part of their equity and social justice initiatives, Curtin will continue to seek new and innovative ways to address the needs of rural and isolated communities. Improved access and educational opportunities for students in locations close to their place of residence is the goal. The expanded use of educational resources and modern technologies will also enhance the effectiveness of higher education and other programs designed to meet the needs of rural dwellers. Improved access, participation, retention and success with minimal dislocation and undue hardship is seen as a cornerstone to enhancing regional economic growth.

In addition, export opportunities cannot be overlooked as the concept of life long learning can be facilitated with improved communications between communities.

The introduction of regional infrastructure has important implications for education and training. Economies of scale are possible if different services are carried over the same infrastructure, and therefore share much of the operational costs. The widely held view is that it is the role of governments to develop and nurture the educational (and other) state service provisions through an ubiquitous broadband services network. This should be a long-term goal for Western Australia and can only serve to enhance rural communities and promote future sustainable economic growth.