6

Information Technology - developing regional competitive advantage

6.1 Telecommunications is about people - communicating with each other, exchanging information, learning, creating jobs or doing business. Throughout the inquiry, the most widely held view was that, of all sectors, telecommunications infrastructure is the most critical in terms of the future development of regional areas on two grounds – (i) economic viability and development, and (ii) social cohesion. **The committee considers that the key issue is the application of telecommunications infrastructure in regional areas and the opportunities it provides for regional growth.**

6.2 An integrated global market in which information and intellectual capital provide strategic advantage means that equitable and adequate access to telecommunications infrastructure is essential for the growth of metropolitan and non-metropolitan Australia alike.

> The power of the internet involves business transactions of every type, going far beyond mere buying and selling. It is also transforming the way educators teach students, physicians treat patients and governments deliver services to citizens. For industry, it is a critical business tool that is challenging the traditional methods of the commercial world.[1]

6.3 However, regional Australia does not want to be the recipient of a 'trickle down' effect – rather it desires world's best practice opportunities, along with metropolitan Australia. As the Hon John Anderson, Minister for Transport and Regional Services, told the Sydney Institute on 17 November 1999, 'the future is wired, and the sooner we're wired up, and

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1 R Savage, 'Innovation and legislation in the networked world', *Business Council of Australia*, vol 1, no. 1, p. 59, 1999.

the better our hardware, the better-placed we are to succeed in that future'. [2]

6.4 **Regional communities are starting from a position of disadvantage relative to metropolitan Australia.** Very wide gaps still exist between the level of communications services available to regional Australia and the rest of the nation, ranging from a lower standard of services, fewer services from which to choose, excessively high costs, or no service at all. In the opinion of many commentators and in much evidence put to the committee, the deregulation of the industry has done little to ease this gap.

> Regional Australia is not seeing the benefits of the deregulation of the telecommunications industry in Australia. Telstra continues to be the " carrier of last resort" and holds a virtual monopoly as the service to much of regional Australia.[3]

And:

> The standard telephone service currently provided and guaranteed under the Universal Service Obligation has not proven to be particularly effective to date in ensuring that rural and regional customers have access to modern telecommunications services. Many rural and remote areas still do not have adequate access to proper telephony services.
>
> While there has been some improvement in access to telecommunications infrastructure and services through *Networking the Nation*, a significant amount of work and funding is still required to ensure that access to services by rural and remote customers comes close to that enjoyed by their city counterparts.[4]

Information technology and information - keys to the future

6.5 Geography and a highly urbanised demography underlie the imbalance of telecommunications services between metropolitan and non-metropolitan Australia. In terms of competitive advantage, the committee notes that access to telecommunications is even more important for regions than for

2 The Hon John Anderson MP, Speech to the Sydney Institute, Wednesday, 17 November 1999, p. 10.

3 South Australian government, Submission no. 275, p. 1.

4 Australian Local Government Association, Submission no. 131, p. 7.

metropolitan areas, to allow regions to compete for niche markets and specialised products and services. As James Cook University stated:

> Businesses wanting to participate in enterprise-wide knowledge management and electronic commerce (eg. sending images and data around the world to support their products; teleconferencing; data transfer; and product research access) cannot do this presently in northern Queensland. Unless the region can get access to high-speed data transfer, national and international businesses will increasingly avoid the region. Any competitive advantages this region may have in terms of other features will be compromised without an effective modern communications system. Regional economic development in globally competitive markets is going to be severely restricted, or indeed made impossible without an improvement in high speed telecommunications access.[5]

6.6 The committee is aware of expectations that the social and economic base of regional areas can be reinvigorated as a result of modern communications technology.

> The basis for rejuvenation of regional and remote areas must be seen in the revolutionary changes in communications, technology and in the new ability to provide learning opportunities to dispersed communities.[6]

And:

> The evidence from elsewhere in the world is very clear. Advanced telecommunications and information technologies can transform a regional economy like Tasmania.[7]

6.7 Research from both the public and private sector indicates that successful economies in the 21st century will be 'learning' or 'innovation intensive' economies that must adapt well to competitive challenges, especially in light of trade liberalisation.

> The OECD has observed positive correlations between knowledge intensity, on the one hand, and employment and wage growth, on the other. It appears that the prognosis for economies based around the production and export of knowledge intensive products will, on some criteria at least, be brighter than that for

5 James Cook University Townsville, Submission no. 96, p. 3.

6 University of Southern Queensland, Submission no. 118, p. 2.

7 Tasmanian government, Submission no. 284, p. 7.

> producers and exporters of standardised products in fragmented markets.[8]

6.8 The committee met with Tasmanian district education superintendents Peter Hutchinson and Carey McIver, who put this view in his submission:

> The competitive advantage of the future will be defined in terms of knowledge and learning capacity rather than any endowment of natural resources.
>
> The infrastructure needed is that which will support a knowledge-based economy that undertakes an increasing degree of its commerce via electronic means[9].

6.9 Several submissions and information provided to the committee during regional visits echoed the reference in the South Australian Regional Development Taskforce Report to predictions 'that, in the future, information technology and related industries, such as electronic commerce, will be the key drivers of future economic growth'.[10]

Electronic commerce (e-commerce)

6.10 Electronic Commerce – e-commerce – is transacting business in an electronic form. It is a new way of advertising, buying, selling and, in some cases, delivering goods and services. It increasingly involves transactions over the internet, but also includes things such as electronic funds transfers and EDI (Electronic Data Interchange).[11] E-commerce is fast emerging as a key lever for business growth, being an 'enabling' technology that allows organisations to operate seven days a week, 24 hours a day. Business-to-business e-commerce will produce the most significant impacts on the economy in terms of structural change for whole industry sectors. E-commerce will allow Australian businesses to raise global awareness about their products and services. This will be particularly so for manufactured products; some services, for example, tourism; and for industries such as banking and finance, transport and communications that will benefit from the more widespread adoption of e-commerce.

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8 *The High Road or the Low Road? Alternatives for Australia's Future*, A report on Australia's industrial structure for the Australian Business Foundation Limited, August 1997, ES. 6.

9 Carey McIver, Submission no 61, p. 1.

10 *South Australian Regional Development Taskforce Report*, State Government of South Australia, April 1999, p. 106.

11 http://www.noie.gov.au/ecom/Home/home.html, accessed 15 November 1999.

6.11 The links between competitive advantage and the absolute necessity for regions to keep pace with new technical developments to avoid becoming 'information poor' was a common theme.

> New technologies, less restricted international capital movements and the growth of the services sector have reduced the importance of national and state borders as boundaries of economic activity. The provision of telecommunication infrastructure is imperative to building and maintaining competitive regions. It is essential that regional communities gain equitable access to online services to ensure that they cannot be classified by the richness (or lack) of information.[12]

6.12 The size of the service sector has dramatically increased over the last 40 years so that the bulk of Australian jobs are now provided by this sector. The continuing increasing importance of the sector is a characteristic of developed economies. Although the electronic services component of the sector and the information technology industry itself is at an early stage of development, it is crucial that its importance for Australia's employment base is clearly understood:

> Information is the new commodity of value in the world economy. Information technology and telecommunications is now at least 15 per cent of the total economic activity on the planet and the growth is only just starting.[13]

And:

> This employment base is now threatened. … Everything from legal and business advice to secretarial support, book keeping, in fact virtually all administrative services will be available on a global e-commerce basis.[14]

6.13 The Australian Coalition of Service Industries, a network of chief executives of Australia's leading service companies, has stated that 'Australia's telecommunications debate is driven by the assumption that it is enough to push technology into markets (particularly regional markets) in order to ensure access to services'[15]. The committee considers, however, that access on its own is not the solution for regional Australia.

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12 Australian Local Government Association, Submission no. 131, p. 6.

13 Tasmanian government, Submission no. 284, p. 7.

14 A Hunter, *Opportunities Through Communications Technology for Regional Australia*, paper given at the Regional Australia Summit, October 1999, p. 3.

15 Australian Coalition of Service Industries, *A National Strategy Proposal for the Service Sector in the Online Economy*, January 1999, p. 13.

6.14 The committee considers that vision and a strategy focussing on developing Australia's content and online service industries are urgently needed.

> The rapid deployment of information technology for electronic commerce is a key driver of service sector change. … The electronic service sector is global, uncertain and fast-changing. These factors are not unprecedented, but are particularly strong in this sector.[16]

6.15 The committee believes that, in regional areas, the dangers of providing access without strategic vision appear to be less well understood.

> There is no doubt that telecommunications can provide people in rural areas with access to information, education, entertainment and other services in an accessible and economical way. But the reverse of these positive opportunities is that they will also expose thousands of small, unprepared local businesses to the harsh and aggressive global competition allowed by the internet.[17]

6.16 The committee met with Andrew Hunter, Director of Teletask Pty Ltd, NSW – a national broker for teleworkers – in Armidale and was informed of the high percentage of Australian internet purchases made from overseas - 69 per cent in December 1998. By September 1999, this had reduced to 43 per cent with just over 41 per cent of internet shoppers making purchases only from Australia, and 16 per cent from both Australia and overseas[18]. However, at the Regional Australia Summit, Mr Hunter reiterated his concerns:

> In summary, well over 60 per cent of U.S. manufacturers and distributers will be e-commerce enabled by the end of this year. All indications are that Australian businesses are lagging well behind, while regional businesses probably lag even further. Meanwhile a rapidly increasing number of Australian consumers are buying online and well over half of these are buying from offshore.[19]

6.17 E-commerce was identified as an action area in the January 1999 policy statement, *A Strategic Framework for the Information Economy*, and the

16 Australian Coalition of Service Industries, *op cit*, pp. 4, 6.

17 P Morris, 'Telecommunications and the 3Rs: Competition and Enterprise in Regional, Rural and Remote Australia', *Telecommunication Journal of Australia*, vol 49, no. 2, 1999, p. 49.

18 *3 Million Purchases and 1.5 Million Households Online*, Australian Bureau of Statistics, September 6 1999.

19 A Hunter, *Opportunities Through Communications Technology for Regional Australia*, paper given at the Regional Australia Summit, October 1999, p. 2.

government is actively engaged with industry to ensure the benefits of e-commerce are spread throughout the economy. The second e-commerce report card for Australia, released at the Regional Australia Summit, claimed that 'Australia is at the leading edge in development of e-commerce solutions and is well placed to grasp international market opportunities'. It includes case studies demonstrating how Australian businesses have used e-commerce:

- to introduce new business models (the healthcare, automotive and food and beverage procurement industries); and
- as a key business tool to improve efficiencies, open up new markets and increase revenue (online travel, road transport, and pharmaceutical products).

6.18 Passage of the *Electronic Transactions Act 1999* was a major step toward enabling the environment for e-commerce. The committee notes that all states and territories agreed to implement uniform state legislation and urges them to keep this commitment.

> The [Electronic Transactions] bill is the blueprint for a uniform national legislative scheme that will remove legal uncertainties for electronic commerce in Australia. The States and Territories are now preparing complementary legislation based upon the Commonwealth's draft Bill.[20]

6.19 The committee is aware of further government initiatives including development of 'light touch' regulation for privacy, policy development relating to electronic authentication and related standards, updated copyright legislation, consumer protection initiatives and protection for national information infrastructure. Authentication and privacy issues were given high priority at the Public Forum on Regional Communications Issues held by the Department of Communications, Information Technology and the Arts in November 1999. The committee urges the government to act quickly to develop policy reforms in these areas.

6.20 OnLine Australia and the Information Technology Online (ITOL) Programs aim to provide information about, and build business cases for using, online technologies, in particular, to accelerate the national adoption of e-commerce business solutions, especially by SMEs.[21] ITOL is a relatively small program and the committee considers that initiatives

20 Department of Foreign Affairs and Trade, Submission no. 249, p. 6.

21 Department of Communications, Information Technology and the Arts, Submission no. 240, p. 2.

undertaken under this program, including development and implementation of common standards across industry sectors to facilitate web-based trading environments, need to continue. ITOL also supports increased publicity for web-based training material developed for SMEs by the Australian Electronic Business Network. This is an independent, not for profit organisation established by the Commonwealth, state and territory governments in partnership with industry to encourage the use of e-commerce among SMEs.

6.21 The committee is strongly of the view that there is still a great need for community awareness-raising in regional Australia, in relation to the opportunities and potential benefits offered by e-commerce and the mechanisms and assistance available to regional businesses and communities to allow them to take advantage of these new technologies. As Andrew Hunter stated:

> The ultimate secret of e-commerce success is volume. Regional businesses will not only be competing on the global market, inter-regional competition and particularly regional competition from large centres against smaller rural towns may have some serious ramifications.[22]

6.22 The focus must be on strong, informed community leadership to galvanise the business and wider community to request whatever assistance is appropriate for that community, whether it be education in the latest industry developments, training in use of the technology, marketing strategies or supply chain issues.

6.23 There is a need to provide a threshold level of expertise, skills and knowledge concerning e-commerce as a continuing presence in regional Australia, to assist communities in building e-commerce business cases and ensuring continuing regional development.

22 A Hunter, *Opportunities Through Communications Technology for Regional Australia*, paper given at the Regional Australia Summit, October 1999, p. 3.

Recommendation 40

6.24 **The committee recommends that the Commonwealth government increase its efforts to raise community awareness about the opportunities and potential benefits offered by e-commerce to regional Australia by ensuring that:**

- **the Online Australia program publicises targeted information to specific industries and/or regional communities; and**
- **the Information Technology OnLine program receives sufficient funding.**

Recommendation 41

6.25 **The committee recommends that the Commonwealth government ensure that the Australian Electronic Business Network is publicised more widely in regional Australia and receives increased funding to enable wider delivery of its products, workshops and services across regional Australia.**

Recommendation 42

6.26 **The committee recommends that the Commonwealth government act swiftly to further enhance the environment for e-commerce in Australia by ensuring that:**

- **the National Electronic Authentication Council develops policy on authentication, encryption and related matters; and**
- **legislation on privacy protection is introduced as a matter of urgency.**

Regional portals

6.27 Portals are internet websites that offer guidance to information, usually about specific geographic areas, services or markets. They are alternatives to finding information through search engines on an ever expanding internet. Portals offer advantages only able to be achieved by aggregating

demand and capacity across the whole region and provide opportunities for businesses to become part of an e-commerce community through customised e-commerce solutions embedded in the portal. Potential benefits are:

- greater market exposure;
- lower transaction costs and / or higher transaction security; and
- lower running costs.

6.28 Portals are being developed in southern inland Queensland and western Victoria. A feature of the former is the ability for local ISPs existing or intending to set up in the region, to connect to the network infrastructure at wholesale internet access costs, allowing them to offer cheaper internet access to consumers.

6.29 An important benefit of portals for regional areas is the opportunities they present for communities to negotiate with ISPs for storage, bandwidth and access charges and with financial institutions for improved transaction rates, credit card verification and security procedures.

6.30 A major concern associated with internet trade is security of information and transactions performed online. The scheme used by the Trade Point Development, that was formerly located at the Royal Melbourne Institute of Technology to allow online buying and selling through the United Nations' Global Trade Point Network, provides a useful model. To eliminate security concerns, the Trade Point Centre required traders to use a Secure Electronic Authenticated Link (SEAL). To be eligible to use a SEAL, traders were submitted to an accreditation process. This included an audit to establish the company's identification, nature of product, and capacity to trade (its financial limitations). Once accreditation was gained, traders could use the Global Trade Point Network to conduct transactions.

Recommendation 43

6.31 **The committee recommends that the Commonwealth government work with regional communities in every state and territory to develop projects to establish regional portals with in built e-commerce solutions, including security procedures such as the Secure Electronic Authenticated Link model.**

New classes of employment and self-employment

Call centres

6.32 There is increasing recognition of the large potential for development of the call centre industry in regional areas for the following reasons:

- geography poses no barrier to satisfying customers over the phone;
- land and rent is cheaper;
- office space is usually available;
- the workforce is stable and committed; and
- other services are available, for example, car parking.

6.33 The committee met with the Central Western Regional Development Board in Parkes and was advised of estimates of 20 per cent growth per annum in the call centre industry over the next three years. The industry is expected to expand to 8 700 jobs (estimated value $1.3 million) and, provided cost efficient ISDN access is available, the present 18 per cent of call centre business handled regionally could increase to a possible 30 per cent.

6.34 Australia is well placed to service the Asia Pacific region, provided an educated, skilled, motivated, preferably multilingual workforce with good customer service skills is available.

6.35 The committee is aware that, increasingly, call centres are becoming proactive in attracting and retaining customers, in addition to reacting to requests for information and services. It was advised that the most critical need was for training, and that a seamless training package covering both operator and management training was needed to ensure an appropriately skilled workforce was available for call centres.

6.36 The committee also met with the Hunter Economic Development Corporation in Raymond Terrace, which advised that a major impediment to attracting the industry to the region was lack of suitable office accommodation.

Recommendation 44

6.37 **The committee recommends that the Commonwealth government encourages state planning departments and departments of regional development to work cooperatively with local government to streamline planning approvals to ensure office space and other facilities are available for proposed regional call centres.**

Recommendation 45

6.38 **The committee recommends that the Department of Education, Training and Youth Affairs encourage TAFE colleges located in regions with call centre potential to work in partnership with the call centre industry to develop training programs in human resources and management appropriate to the industry.**

Self-employment

6.39 The committee understands that there is an increasing trend internationally and nationally towards self-employment through contracting out of services. Access to the internet provides opportunities for individuals or communities to gain employment as teleworkers, that is, people who work remotely using the internet, email, tele / video conferences, phone and fax.

6.40 The committee recognises the importance of information technology in offering an opportunity to redress outward migration from regional areas, particularly by young people, by providing access to training and employment possibilities.

6.41 For women in regional areas, modern communications technologies bring benefits and opportunities to reduce isolation, acquire skills, upgrade previous qualifications and contribute to regional and personal development. As Janet Campbell, a working partner in a farm and consultancy firm manager, said:

> I am a woman sitting alone on a farm but I can be a consultant. I wonder how many women with precious skills are sitting on

> farms across Australia who could utilise those skills through the Internet?[23]

6.42 There is considerable untapped potential in regional areas for employment in teleworking.

> The knowledge based economy is creating more opportunities to create home based employment, assisting the change from the older industrial economy, but threatening to leave even further behind those areas which are already disadvantaged.[24]

6.43 At a private meeting in Armidale, Andrew Hunter advised the committee that TeleTask was initially set up to expand work for telecentres - small community owned multi purpose centres that provide access to and training in the use of computers and technology. However, it now also worked on behalf of the increasing number of skilled individuals living in regional Australia with private access to the appropriate technology.

6.44 The committee was advised that the GrowZone OnLine network, described below, has established a network of teleworkers to provide advice and support to users. Initially it had been envisaged that assistance would be provided from a centrally located office. The network is providing employment and skills development for a range of individuals, mostly rural women, throughout the region.

Virtual call centres

6.45 At the Regional Australia Summit, Andrew Hunter suggested that 'virtual call centres' offered existing telecentres 'a viable core around which all of their other services can revolve'. He advanced a concept based around:

- a community centre such as a telecentre which provides a training and support facility;
- customer service agents based in and around a township; and
- the existing telephone network with appropriate voice response and call distribution systems.

6.46 Benefits include minimal infrastructure and few recurrent costs, minimal travel costs or time loss for agents, dynamic staffing and high scalability (peak period staffing; new agents or telecentre groups can be brought on-line cheaply) and the ability to build up a network of communities

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23 S Mitchell, 'Location, location, location', *Australian Personal Computer*, May 1999, vol 30, no. 5.

24 West and North West Tasmania's Regional Councils, Submission no. 229, p. 10.

involved in the call centre. Long distance call costs would be an issue unless a linked call zone arrangement was agreed.[25]

Recommendation 46

6.47 **The committee recommends that, through the Regional Telecommunications Infrastructure Fund, the Commonwealth government provides funding for trials of 'virtual call centres' in regional areas.**

The way forward – regional leadership, skills development and networking

6.48 The problem of improving telecommunications service delivery to regional Australia is essentially one of overcoming market failure, where 'thin' markets and high investment costs have contributed to highly marginal or non-existent business cases for potential new carriers and service providers.

6.49 The central challenge is how best to promote competition and sustainable service for regional Australia. Principal actions taken to date are:

- regulatory intervention including
  - ⇒ the promotion of competition through the *Telecommunications Act 1997* and the *Telecommunications (Consumer Protection and Service Standards) Act 1999*;
  - ⇒ the provision of a telecommunications 'safety net', principally through the USO, and other related measures such as price caps; and
- targeted funding support NTN under RTIF.

6.50 The committee agrees that telecommunications and information technology bring unprecedented opportunity to those with the creativity to develop their potential. Targeted funding has been successful in improving access for regional communities to a range of services, either through improving the business case for commercial service provision

25 A Hunter, *Opportunities Through Communications Technology for Regional Australia*, paper given at the Regional Australia Summit, October 1999, p. 2.

through capital subsidies, or through funding regional communities to establish community owned facilities.

6.51 However, provision of adequate and equitable access to telecommunications is only a means to an end.

> The installation of new or additional infrastructure, as a sole development tool, will not provide sustainable solutions to the issues relating to education, unemployment, skill deficiencies in regional labour markets, entrepreneurial and business skills, health care and community confidence and capacity.[26]

6.52 As Professor David James, Vice Chancellor of the University of Ballarat, succinctly stated:

> There can be no question that information and communication technology will underpin community development in the future. This has led to an overemphasis on technology and infrastructure as the answer to all problems. While the provision of adequate, affordable infrastructure is essential, it is the way in which this infrastructure is utilised that will determine the path of regional development. There is a need for a significant focus on the people aspect to ensure that the technology becomes a facilitator of regional development and not the driver.[27]

6.53 **The committee considers that the challenge for regional Australia is to develop holistic regional strategies to support and develop existing and new local business and regional economic development through the strategic use of online technologies.** It considers that communities must work together in partnership with government to develop business cases for telecommunications infrastructure according to their specific needs, and then put these cases to carriers and services providers. Implicit in this is cross-subsidisation within regions based on aggregated demand across the region, and development of an attractive package to provide incentives to investment by carriers and service providers.

6.54 **The fact that each region and community is unique in terms of its strengths, needs and potential opportunities has been highlighted throughout the committee's visits to regional Australia.** The committee is strongly of the view that there must be the capacity for communities to be self-defining in terms of the solutions developed for telecommunications

26 GrowZone Development Network, Submission no. 71, p. 2.

27 Western Region Enterprise Network (WREN), University of Ballarat, Office of the Vice-Chancellor, paper provided to the committee at a private meeting, Ballarat, 4 November 1999, p. 1.

and other infrastructure to avoid, for example, large scale infrastructure rollout where this is not needed. It considers that competition is not an end in itself, but rather a means to achieving infrastructure provision at the lowest cost. For communities to be able to explore the range of solutions with potential suppliers they must know what their telecommunications needs are and they must have an understanding of the technologies that will satisfy their needs.

6.55 'Community' can refer not only to geographically based communities but also to 'communities of interest'. Such a community may comprise, for example, a network of Aboriginal communities in the Northern Territory, or an industry-based network, for example, of solicitors, or car dealers. The committee considers such networks to be entirely legitimate and worthy of infrastructure support in the same way as geographically based networks. In some instances, this may be more likely to be provided by new technologies such as satellites than terrestrial technologies. However, the committee believes that the same fundamental issues apply to these networks, in terms of the need for the community to work in partnership with government to determine its needs, obtain information about the range of solutions that may satisfy these, and then put a business case to carriers.

6.56 **In the committee's view, the key to achieving holistic regional development strategies is through strong and active leadership that is inclusive of all regional interests.** McKinsey & Company found that leadership skills at business and regional level were vital to economic development and that, while government could set the framework for development, implementation was dependent on strong regional leadership. They argued for encouragement and a higher profile for regional leadership, sharing of experience and learning between regions, and the creation of a learning environment to improve leadership.[28]

6.57 Porter held that competitive advantage was achieved through innovation, regional specialisation, and identifying and supplying niche markets. In this process, innovation and change were inextricably linked and strong leadership was essential to creating a dynamic and challenging environment for continuous improvement. **The best leaders were those that understood change, energised their organisations to improve continuously and initiated explicit action to enhance innovative capacity, for example, education and training, or increased human**

28 McKinsey & Company, *Lead Local Compete Global: Unlocking the Growth Potential of Australia's Regions*, Report for the Department of Industry, Transport and Regional Development, Canberra, 1994, pp. 25-34.

resources, scientific knowledge or infrastructure. Porter emphasised that innovation always involved investment in skills and knowledge, stating that 'a nation does not inherit, but instead creates the most important factors of production, for example, skilled human resources or a scientific base'. [29]

6.58 **The Regional Australia Summit found that 'effective leadership in all sectors and at all levels throughout regional Australia is the key to building the future'. It emphasised that regional Australians wanted to shape their own future through a journey of partnership, based on renewed respect for regional Australia, forged among governments, business and communities.** An equally critical and urgent requirement was skills development. The summit urged governments, industries and communities to invest significant ongoing resources in skilling, learning, education and training to develop regional Australia's human capacity.[30]

6.59 The committee considers that ongoing skills development, education and training, and a culture of 'lifelong learning' are critical to developing a sustainable future for regional Australia. McKinsey & Company concluded that government had two main roles:

- to provide a stable, world competitive investment environment; and
- to act as a change leader through facilitating and encouraging changes in attitudes and behaviours necessary for economic growth, including development of a culture of learning.[31]

6.60 Chapter 9 considers education and training in general. However, the attainment of skills, expertise and knowledge in information technology and telecommunications use are particularly vital for regional Australia, since the advances in the industry are so rapid and the relative level of understanding in regional communities is much less than that in metropolitan Australia.

6.61 The committee was advised throughout the inquiry that, along with infrastructure provision itself, continual upgrading of skills and education is the second most critical requirement for sustainable regional development. Professor James advised the committee that 'lifelong learning is not just desirable but essential to redress increasing rates of

29 M E Porter, 'The Competitive Advantage of Nations', *Harvard Business Review*, no. 2, March / April 1990, pp. 73-93.

30 Regional Australia Summit Communique, 20 October 1999.

31 McKinsey & Company, , *Lead Local Compete Global: Unlocking the Growth Potential of Australia's Regions*, Report for the Department of Industry, Transport and Regional Development, Canberra, 1994, p. 9.

personal knowledge degradation (presently about 10 per cent per annum), due to an exponential increase in knowledge'.[32]

6.62 With regard to information technology and telecommunications, the committee considers that government has a key role in promoting education and training, particularly for SMEs but also for individuals, in:

- the advantages and use of new technologies;
- the potential for expansion of business globally, especially through e-commerce; and
- the development of business and marketing skills to assist regions and communities to develop business cases to attract investment by telecommunications carriers and service providers.

6.63 The committee is concerned to ensure that skills, expertise and knowledge regarding information technology remain in regions and communities. It considers that there should be a greater emphasis in the NTN program on education and training and that specific projects should be developed to deliver this.

Recommendation 47

6.64 **The committee recommends that more funding be made available through the Telstra Social Bonus to provide more opportunities for education and training in information technology for regional Australia in order that regional Australians can shape their own future.**

Leadership in action - geographically based community networks

6.65 The committee met with representatives of two communities (the GrowZone region of southern inland Queensland, and Ballarat in Victoria), that demonstrate how communities, industries, the private and university sectors and government can work collaboratively to reverse the trend of rural decline. Through outstanding regional leadership, community driven initiatives are promoting regional economic development based on information technology.

32 Western Region Enterprise Network (WREN), University of Ballarat, Office of the Vice-Chancellor, paper provided to the committee at a private meeting, Ballarat, 4 November 1999, p. 3.

6.66 In each region, geographically specific community telecommunications networks are being developed that will:

- **attract local online traffic** on the basis of a strong, vibrant mix of local commercial and community interaction; and
- **link to local and regional information** through community internet access terminals.

6.67 The networks enhance prospects for significant local economic development through providing opportunities for business to business transactions and encouraging easy local purchasing of supplies through e-commerce. In addition, they are redressing the impacts of face-to-face service withdrawal by providing accessible links to:

- online banking and other services, for example, rural transaction centres; and
- online government service delivery including a multiple entry approach to online services of all tiers of government, for example Centrelink 'one stop shops'**.**

6.68 In each case, a regional approach has allowed:

- demand aggregation to attract investment to the whole region, thus avoiding 'cherry picking' by potential carriers and service providers of individual parts of a region that may be commercially attractive;
- equitable provision of infrastructure with significantly reduced capital investment; and
- the opportunity for communities lacking skills and resources on their own to support each other and develop responses to change.

6.69 Each region has been the recipient of targeted funding from both the Commonwealth government (through NTN grants) and the state, in addition to financial and operational involvement of the business and education sectors. Funding applications have, however, been purpose-driven, developed from the 'bottom up' and with sustainable solutions in mind.

6.70 Critical elements common to each region are:

- **leadership** and development of **strong partnerships** between business, government, educational institutions and the community;
- **local ownership**, **inclusive consultative processes** and **regional impetus** to drive regional development;

- **commitment** and **mutual support** from communities working together across jurisdictional boundaries;
- realistic identification and focus on the **competitive strengths and distinctiveness** of regions;
- **demand aggregation** or development of **critical mass**;
- support for **SMEs**, prime drivers of wealth generation in regions; and
- **education and training**, including enabling people to make decisions about the direction and content of their own learning.

6.71 In the GrowZone region, leadership was provided by the Southern Inland Queensland REDO, resulting in the establishment of the GrowZone Regional Development Network (GDN). Extensive community consultation resulted in development of a regional strategy founded on communities regaining control of their future and commitment to coordinated, sustainable local development of all sectors, through regional support and partnerships.[33]

6.72 The committee was advised that the GrowZone strategy is based on the Nebraska Development Network model that, since 1991, has achieved 13 per cent employment growth, 50 per cent reduction in unemployment, establishment of 158 000 new businesses and a reversal of outward migration of young people from Nebraska.

6.73 A key component of the strategy was the establishment of a regional communications and information network to promote the increased provision and uptake of communications technology. GrowZone OnLine (see Box 6.1) is a community owned telecommunications platform valued at $1.9million that will provide high speed internet access at the cost of a local call at affordable rates to everyone in the GrowZone region, regardless of location.

Recommendation 48

6.74 **The committee recommends that the Commonwealth government works with the states and industry, to expand online access programs for industries in regional areas with a view to making these available through community access centres.**

33 GrowZone Development Network, Submission no. 71, p. 2.

Box 6.1 – GrowZone OnLine, southern inland Queensland

Growzone comprises the Darling Downs and South West Queensland, covering an area of 412 000 sq kms with a population of 238 000. Abundant natural resources, a wealth of available land and a strategic location mean that the region has significant opportunities for sustainable growth. The GDN is a collaboration of nine sub-regional development organisations that link with the 29 local government areas of the GrowZone.

Because the commercial viability of installing infrastructure was absent due to weak demand and fragmented industry development, GDN applied to and was successful in receiving **funding** under the RTIF through the NTN program to establish a community owned enterprise. Within five years, the GrowZone OnLine infrastructure and associated products will return to the community not only the funds invested by the government ($2.63 million) but also dividends to fund new infrastructure to enable continued development.

Each community in the GrowZone will be linked into the telecommunications network through **public access terminals** and enjoy internet access at local call cost plus costs according to the choice of access plan. Information management committees in each community are responsible for the housing and security of network equipment, for running of the public access terminals and for the promotion of the service in the community.

The network will include links to **rural transaction centres** and rural focussed online sites (for example, SILO, Specific Information for Land Owners, a web site developed as a joint venture between CSIRO and governments to supply climate related information).

A **regional portal** will promote the whole region to the worldwide marketplace, through national and international marketing of the GrowZone name. A fully integrated e-commerce facility is being developed with assistance from IBM, the Queensland University of Technology and local media organisations.

GDN has developed strong **partnerships with the private sector** (Telstra, Australian Provincial Newspapers, South West Power) and the education sector (University of Southern Queensland) to support the network in both a financial and practical sense. Workshops on internet awareness and hands on **training programs** will be run in each community by the information management committees. Standard and tailored training will be provided by Southern Queensland Institute of TAFE in larger centres and through a mobile unit complete with networked computers.

Source: http://www.growzone.org.au

Regional university leadership – development of competitive advantage

6.75 The University of Ballarat, Australia's only regional multi-sectoral university, offers higher education, TAFE and university courses across five campuses and is the pivotal provider of post-secondary education for Central and Western Victoria. It has close links to industry and business, fostered by research with a strong regional focus, and the promotion of information technology is an inherent part of the mission and goals of the University of Ballarat. The emergence of the information technology industry in the region is largely credited to the university's partnership with IBM.

6.76 The submission from Australian Project Developments referred to the need for a much better understanding of the development capacity of regional economies and how to build competitive advantage. It stated that 'Get ahead regions tend to have a collaborative framework – where optimism is pervasive, where trust and cooperation influence feeds through into a can-do culture'.[34] The Regional Australia Summit also endorsed a 'can-do' culture as the alternative direction required in regional Australia. Development of the information technology industry in Ballarat under the university's leadership exemplifies this approach.

6.77 The university has been instrumental in developing two regional communications network, first, where it resides, in the western region of Victoria, and, more recently, in the 'Outback'.

- facilitation of development of the **Western Region Enterprise Network** consisting of a network of community centres including six aboriginal centres, connected by local call access and developed in partnership with local, state and federal governments, business, industry and communities. The centres will be a focus for lifelong learning with training programs linked to the virtual TAFE campus, links to business incubators and other services and development of an internet portal for the Western Region. This network is a federation of common interest subnetworks and is a **model partnership**.
- development of the '**Internet to the Outback**' project in partnership with educational deliverers, community organisations and individuals, to enhance the awareness and skills of isolated families and communities in using the internet for educational and community development purposes.

34 Australian Project Developments Pty Ltd, Submission no. 254, p. 7.

6.78 The Western Region Enterprise Network is supported and funded variously by the Ballarat City Council, the ACC, Western Region Forum, Victoria's Office of Technical and Further Education, the Commonwealth government (The Department of Education, Training and Youth Affairs (DETYA) and NTN) and the university.

6.79 The university's outstanding leadership has been recognised by its being invited to join a global partnership instigated by the University of Kent comprising eight partners, including some of the strongest developing global technical areas, with the aim of facilitating global trade amongst trading partners.

Links between industry and educational institutions – technology parks

6.80 In February 1995, the university, in joint venture with the City of Ballarat, established the Ballarat **Technology Park**, to identify and capitalise on opportunities for the development of a diverse information technology industry in Ballarat.

6.81 Professor Di Yerbury, at the Australian Universities' Alumni Council's annual conference in November 1999, said that the strategic linkage forged between the University of Ballarat and IBM Global Services was a perfect illustration of the possibilities for closer industry alliances with post-secondary educational institutions.[35]

6.82 As the university stated:

> The levels of expertise available in post-secondary educational institutions is many times greater than in the local communities and processes must be put in place by which these institutions can be effective development partners for the communities they service.[36]

6.83 This theme was echoed in a number of submissions to the inquiry from regional universities.

- Whyalla Campus, University of South Australia, hosts the Australian Bureau of Statistics regional database on campus and has developed a business centre to provide services to SME's in the region and on-going 'real world' experiences for campus students and staff.[37]

35 University of Ballarat, Campus Review, 27 October 1999.

36 Western Region Enterprise Network, Office of the Vice-Chancellor, University of Ballarat.

37 University of South Australia, Whyalla Campus, Submission no. 73, p. 3.

- Curtin University's Community College on the Esperance campus will establish 'an information hub for local industry and commerce'.[38]
- The University of New England (UNE) pointed to the role of regional universities in, amongst other things, stimulating the growth of regional industry and commerce and providing cultural and intellectual leadership for rural populations.[39]
- Southern Cross University referred to the successful establishment of the Centre for Plant Conservation Genetics in 1996, leading to the creation of approximately 50 new jobs. The University 'is looking to establish other similar research groups to provide further stimulus to the regional economy'.[40]

6.84 The committee acknowledges and recognises the success and continuing role of Australia's regional universities in supplying and enhancing valuable educational and social infrastructure throughout regional Australia.

6.85 Regional organisations are becoming increasingly aware of the potential of technology parks to provide opportunities for future growth and employment. Existing infrastructure, including transport, essential services, health, education and cost-effective housing, provides valuable incentives for attracting tenants. The Hawkesbury Chamber of Commerce argued for the development of 'Technology based Parks and Regional Economic Zones in each State and Territory, built and regulated by government and invested in by the private sector'.[41]

Cluster development

6.86 The development of technology parks can be seen as clustering, a process undertaken 'to achieve synergy, facilitate business transactions and utilise hard and soft infrastructure' that can be catalysed 'by an investment in a piece of infrastructure, a government decision, a new technology or a chance happening'.[42] Clusters exhibit some of the essential ingredients for competitive success, that is, availability of knowledge, skills and resources; information sharing in terms of opportunities and direction;

38 Curtin University of Technology, Submission no. 78, p. 4.

39 University of New England, Submission no. 100, p. 1.

40 Southern Cross University, Submission no. 190, p. 5.

41 Hawkesbury Chamber of Commerce Inc., Submission no. 58, p. 2.

42 Australian Project Developments Pty Ltd, Submission no. 254, p. 6.

common goals; mutual support; and incentives to innovate to maintain diversity and promote competitive upgrading and investment.[43]

6.87 Australian Project Developments was involved in examining regional investment proposals with institutional investors and the AusCID, to determine the scope for a greater role for institutional investment in developing Australia's regions. Their submission sets out seven constraints identified by institutional investors that work against investment in regional areas:

- lack of critical mass - robust revenue streams are required to attract investment and regional areas often lack a critical mass of users;
- preponderance of public interest in regional projects – investors are averse to bearing the risk for projects returning significant benefits to the community rather than the investor;
- political agendas – projects with political importance are subject to uncertainty and may be less justifiable;
- the 'orphan syndrome' – small projects (less than $20 million) are less attractive to investors;
- interdependence of projects – the synergy between projects needs to be made clear to investors, to encourage funding of the totality of projects so as to capture the full financial benefits offered;
- risk – regions need to understand the nature of risk and the various categories of risk that influence investors (including risk associated with construction, operations, revenue / demand and regulation (policy)) so as to overcome concerns and encourage investment; and
- lack of dynamic local leadership and expertise – initiative, energy and attitudes of regional leaders, including the ability to streamline project approvals and achieve broad industry and community support, were critical to attracting investment and generating regional employment.[44]

6.88 Australian Project Developments argued that clustering combined with the development of skills and expertise in regional areas can address each of the above constraints. It considered that encouragement and incentives for cluster development in regional Australia are critical to breaking the entrenched situation that sees firms locate around already successful larger firms. This mindset also ensures that locations with quality

43 M E Porter, 'The Competitive Advantage of Nations', *Harvard Business Review*, no. 2, March / April 1990, pp. 73-93.

44 Australian Project Developments Pty Ltd, Submission no. 254, pp. 2-4.

infrastructure (mostly metropolitan areas and larger provincial centres) benefit from reinforcing actions from consumers and investors.[45]

6.89 The committee notes the findings of OECD workshops concerning the importance of cluster development in enhancing competitiveness.

> In many countries, clusters of innovative firms are driving growth and employment. Innovative clusters of economic activity are becoming magnets for new technology, skilled personnel and research investment.
>
> Economic clusters emerge most often where there is a critical mass of firms allowing economies of scale and scope, a strong science and technology base, and a culture conducive to innovation and entrepreneurship.
>
> Cluster initiatives originate in a trend towards new forms of governance and incentive structures based on networks and partnerships. A main task for policy makers is to facilitate the networking process and to create institutional setting that favours market-induced cluster formation.
>
> Understanding technical change and innovation is crucial for understanding the dynamics of 'knowledge-based economies' and 'learning economies'. [46]

6.90 In Ballarat, the collaboration between government, industry and the University of Ballarat will allow enterprises to be informed by applied research, resulting in long term viable technology park tenants and continuing growth and investment in the region.

6.91 Notwithstanding this, the committee was advised by representatives of IBM that, despite the high profile of IBM, there still appeared to be a mindset on the part of many investors and skilled individuals against investing, or taking up employment, in a regional area.

6.92 The committee considers that governments at all levels should promote clusters and the pursuit of competitive advantage and specialisation. Chapter 3 elaborates on this and how it might be done.

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45 R Brown, *Strangers in the Night*, Australian Project Developments Pty Ltd, Third National Conference on Sustainable Economic Growth for Regional Australia (SEGRA), Sept 1999.

46 *Boosting Innovation: The Cluster Approach*, OECD, 1999, pp. 7-9.

Recommendation 49

6.93 **The committee recommends that the Commonwealth government continue to fund alliances between industry and regional post-secondary educational institutions through the Information Technology OnLine program.**

Business incubation

6.94 The purpose of a business incubator is to provide a workplace and a range of support services to assist new SMEs in their initial establishment period. The committee heard that international experience has shown that the survival rate of new SMEs beyond three years can be increased from 35 per cent to 85 per cent with business incubation.

6.95 The committee met with tenants at the Greenhill Enterprise Centre, the second stage of the Ballarat Technology Park, that was established as a support centre or 'business incubator' for small start up information technology businesses. It also acts as a resource centre for university research activities, including the Centre for Electronic Commerce and Communication and the Centre for Rural and Regional Information.

6.96 **The University of Ballarat points out that less than one per cent of Australia's SMEs (emerging exporters) have links with research institutions or universities.** By contrast, tenants at the Greenhill Enterprise Centre are expected to have a relationship with the university and there is considerable potential for ongoing synergies in research, consulting and educational programs. The most successful tenant at the Greenhill Enterprise Centre is Oztrak, a small research and development company specialising in global positioning systems technology, that developed out of the university's School of Engineering and, in three years, has secured national and international contracts and doubled in staff from 29 to 50.

6.97 In the committee's view, information about how business incubators can assist a range of industries needs to be more widely disseminated to regional areas. The committee also considers that further consideration should be given to the most appropriate way of funding business incubators.

6.98 During its visit to Tasmania, the committee had the opportunity to hear at first hand about the regional small business incubator being set up in Burnie. Burnie City Council has adopted a 'clever city' approach to a future based on information technology and communications, establishing a regional small business incubator and modern integrated communications infrastructure, including a community online access centre and a national e-commerce business centre.

Recommendation 50

6.99 **The committee recommends that the National Office for Information Economy program, *Building IT Strengths*, set up to establish private sector-run incubators in each state and territory, should include a specific program focussed on regional Australia.**

Other examples of leadership

6.100 The committee is aware of outstanding leadership regarding information technology and communications as a focus for regional development in a number of other regions. For example:

- regional development commissions in Western Australia - they have led the coordination of planning and development of telecommunications strategic plans for each region. Key focuses have been:
  - ⇒ raising agency, community, business and industry awareness of the benefits and opportunities to be gained from information technology;
  - ⇒ nurturing and facilitating user acceptance, participation and ownership;
  - ⇒ education and training; and
  - ⇒ coordinated marketing and promotional activity;[47] and
- The Eyre Regional Development Commission, South Australia – the Eyre Peninsula has been chosen by the South Australian government to trial the Regional Communications Initiative methodology developed

47 M Ashford, *Online WA: A trickle-up approach to using communications to enhance regional economic and social development*, paper given at the Regional Australia Summit, October 1999, p. 3.

by the Centre for International Research on Communications and Information Technologies. A community driven process is underway to raise awareness of telecommunications issues and to identify regional communications needs.

6.101 Other examples of leadership leading to regional development based on information technology and communications include:

- Hunter Medical Research (HNR) – see chapter 11 for details; and
- The Balkanu Development Association – funded under NTN to develop a digital telecommunications network for the Cape York region (CYDN) and to provide electronic services including telemedicine, high quality videoconferencing, electronic funds transfer (EFT) access, e-commerce, informatics, telephony and training. CYDN is a pilot program being considered for implementation in four other regions in northern Australia by Aboriginal organisations interested in developing joint venture arrangements, including carrier purchase of intellectual property.

6.102 In addition to the University of Ballarat, the committee has considered a number of submissions and had the opportunity to meet with representatives from several regional universities concerning leadership by regional universities in information technology initiatives in regional areas. This is discussed further in chapter 9.

Recommendation 51

6.103 **The committee recommends that the Commonwealth government showcase examples of successful development of community regional telecommunications networks to encourage development of community networks throughout regional Australia.**