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ABSTRACT

In the last decade, a technological revolution has touched all aspects of business and society in Australia, the Western world, and to a lesser extent, the developing world. This revolution has occurred against a backdrop of long-term fundamental changes in rural Australian communities. The decline in traditional agriculture's terms of trade and resultant employment numbers has seen many communities that were previously reliant on agriculture looking for means to survive. The Internet has been seized on by many as the potential savior for rural Australia. The Internet also poses a significant threat, further opening up communities to global forces outside their control, with potentially damaging effects. This study explores both sides of the equation for rural Australia through chapters on the demand side of Internet access, the digital divide, the Australian business sector and the Internet, the supply side of Internet access in regional Australia, the Internet and the Bush, the Australian information technology and telecommunications sector, e-commerce and regional Australia, regional business and community partnerships, key factors for harnessing the benefits of the Internet, and a final chapter on what the future holds. Seven case studies showcase how many rural communities and businesses are dealing successfully with the Internet. Two appendices describe community-development information technology programs supported by the U.S. and Australian governments. (Contains 23 references.) (TD)

RURAL INDUSTRIES RESEARCH
& DEVELOPMENT CORPORATION

The Internet & Regional Australia

How rural communities can address the impact of the Internet

A report for the Rural Industries Research and Development Corporation

by Rosie Simpson
with case studies prepared by Andrew Hunter

June 2001

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Foreword

The last decade has seen a technological revolution, which has touched all aspects of business and society in Australia, the western world and to a lesser extent, the developing world.

This revolution has occurred against a backdrop of a longer period of fundamental changes in the Australian rural economy and communities. The decline in traditional agriculture's terms of trade and resultant employment numbers has seen many communities that were previously reliant on agriculture looking for means to keep their communities alive.

The Internet has been seized on by many as the potential savior for rural Australia and this study looks at some of the reasons and examples of where this may be becoming a reality. The Internet however also poses a significant threat, further opening communities up to global forces outside their control with potentially damaging effects.

This study explores both sides of this equation for rural Australia and showcases how many communities and businesses, here and overseas, is dealing with it.

This project was funded from RIRDC Core Funds which are provided by the Federal Government.

This report, a new addition to RIRDC's diverse range of over 700 research publications, forms part of our Human Capital, Communications and Information Systems R&D program, which aims to enhance human capital and facilitate innovation in rural industries and communities.

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Peter Core
Managing Director
Rural Industries Research and Development Corporation

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Executive Summary

Today, a third of all Australians living outside our capital cities access the Internet at home. Globally, a third of consumers will purchase over the Internet this year. The power of the global online economy is increasingly evident. What is not clear is whether rural and regional Australia is sharing in that power, or is suffering as a result.

The study looks at where regional Australia is placed in the global online world from both a demand and supply side. Issues on the supply side, such as affordable access and bandwidth availability are assessed as the ISP market begins to mature and competition begins to take hold.

Demand for access and e-commerce, and the reasons behind lagging demand in some areas of business and the community, are highlighted in this study. It is apparent that many regional small to medium enterprises have only just begun to take advantage of this new market of online consumers, which is generating local, regional and international demand for Australian goods, services and information.

While larger businesses in Australia have almost reached saturation in terms of Internet access and home pages, they are proving slow to take-up the regional tele-working opportunities that have resulted in the sort of employment seen in the Scottish case study outlined in this report. The relatively dispersed nature of Australia's regional population may mean that only the highly populated regional areas where unemployment is very high, such as the north coast of Tasmania, benefit from this trend.

There is little doubt that the Internet has arrived in regional Australia at a time when the effects of globalisation are the greatest in our history. Many are feeling the negative effects of globalisation and structural change with dramatic changes to the types of jobs and markets available and the skills required to keep those jobs and customers. Nothing brings this home to us more vividly than the Internet, being able to interact and trade with people from anywhere in the world, from your home or living room no matter how 'remote' you may be.

What this study has found is that while this change is largely outside our control, the benefits that can be extracted from this change are not. The communities showcased in this report were already feeling the downside of structural change in the economy, like so many rural communities in Australia and around the world. They have already lost many people to city jobs, families to larger regional centres and businesses folding as a result.

Their ability to turn the Internet and the opportunities that e-commerce presents are the upside of the pain of structural change. The communities and business showcased in this report have confronted the change in their communities and have harnessed the Internet to help re-structure their communities and businesses to provide growth in their futures.

There will probably be even greater change as a result of their actions, with the dislocation index referred to in Chapter 6 confirming the old adage – no pain, no gain. These communities and businesses utilising e-commerce may well be speeding up the change and the associated pain, however they will also be the first to see the gains from those efforts.

Studies highlighted in this report demonstrate that those communities which rely heavily on a narrow economic base of largely bulk exportable commodities, such as the mining and broadacre agricultural industries, are disadvantaged by the structural change brought about by adoption of e-commerce. Job losses outweigh any real GDP growth from e-commerce adoption where the economic base is heavily reliant on these industries. All other regions in Australia make net gains over the next decade from the adoption of the Internet and e-commerce.

On the positive side, it is clear from the case studies that there is a path to maturity for a business and communities in the process of making the information economy pay. Like many e-commerce early adopters, the early forays into the setting up of telecentres and ISP's by communities such as Tumby Bay and Coolah, and of websites by businesses such as Windsong Records and Kangaroo Pacific Trading, may not have been initially profitable. However, the knowledge and infrastructure that has resulted has provided a very sound platform for sustainable economic growth for these businesses and communities.

Initial capital funding has been fundamental to communities and businesses alike in their efforts to secure part of the global online market place, with some utilising their funding more adeptly than others. It is also very clear from all the case studies in this report that technology very quickly moves from being the need, to being simply the platform for sound, sustainable online businesses and communities.

Leadership and vision are essential ingredients that came up in every community interviewed for this report. "Leadership burnout" is a key issue for regional communities and the speed at which communities can move from initial ideas to sound, sustainable IT businesses is very important to limiting this burnout.

The real winners from the uptake of the Internet in regional Australia will be those that maximise the opportunities that e-commerce and the Internet can deliver. The losers will be those communities who passively adopt the technology without harnessing it to assist their communities to grow.

Case Studies contained in this report

Coolah, NSW – a strong vision and community commitment, external and local funding in partnership to provide employment, affordable Internet access and skills to a small NSW community, traditionally reliant on agriculture.
Tumby Bay, SA – another community historically with a narrow economic base, the local businesses have developed websites and attracted greater tourism, affordable Internet access and a telecentre has been set-up.
Maffra, Vic – significant effort and funds have been directed towards access and local business uptake of web services. Despite this, many sectors of the local region still lack the skills to effectively utilise online services.
Windsong Records, NSW - an Internet based marketing and distribution avenue for Australian artists run from Brunswick Heads in NSW.
Kangaroo Pacific Trading - The small Tasmanian town of Westbury, 25km west of Launceston, is home to one of Australia's most successful e-commerce businesses, Kangaroo Pacific Trading. The business specialises in the sale of Australian Football League t-shirts. While this might sound like a fairly limited market, nothing could be further from the truth. KanagarooTrading.com sells 95 per cent of its products into the U.S.A.
Outer Hebrides, Scotland - work opportunities in the Western Isles are few and far between but Morrison has been able to create over 100 new jobs. What's more these are jobs in the IT and customer service areas rather than the traditional labour intensive industries. An outstanding advocate for teleworking, Morrison now has a skills register of over 600 highly qualified people living in the Western Isles.
Newfoundland, Canada – an example of a region whose approach to sustainable Internet take-up has gone through many stages. The town is now in the third generation of a regional IT strategy to foster local economic and business development. As a result Clarenville has the highest annual population growth rate in the province.

1. Introduction

1.1 The Online World – Facts and Bold Predictions

During most of 2000, the Australian dollar languished at record lows. The fundamentals behind the weakness in the $A were the subject of much debate, and this debate makes it clear that this is a time where the Australian economy is at a crossroads. Many analysts believe that Australia's slowness to embrace the new economy relative to the US and other major economies has diverted considerable investment that the IT sector is attracting around the world away from our own economy.

The low $A has been a boon for our commodities sector, making us more competitive on international markets. Our on-going reliance at a macro-economic level on these traditional economic growth drivers continues as regional communities count the cost of the structural change that staying competitive in an anti-competitive commodities export market is requiring.

The Australian economy is changing however and so too are our regional economies as we look to take part in the new economy. While in recent months significant value has been written off the Nasdaq and IT stocks have suffered from a loss of confidence, Australian consumers are taking to the Internet at rates equal to the largest developed nations. Our country consumers are also very close behind, creating a wonderful marketplace for online businesses to deal with us. Unfortunately Australian businesses have been slow to take advantage of this new local and international marketplace, creating an expenditure flow which is mirroring the investment flows, away from Australia.

The situation is even graver in regional Australia. Businesses are not yet a driving force in the demand for the Internet in regional Australia and as we are seeing at an internationally. This may be having the same dampening effect on the levels of investment and employment in IT related or e-commerce ventures outside our capital cities.

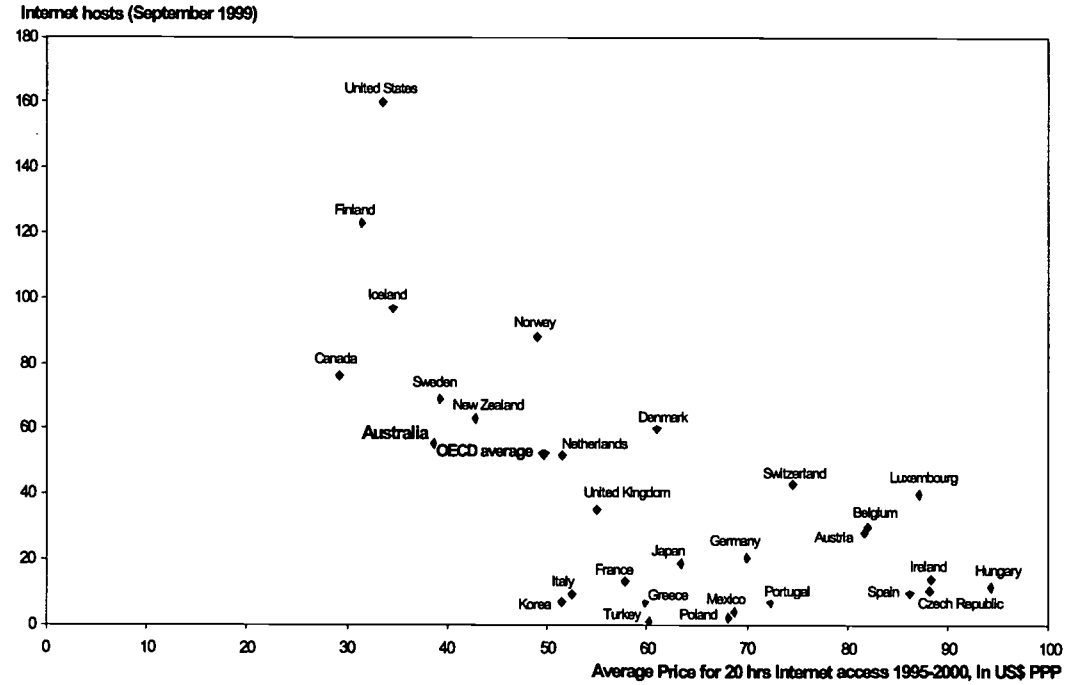
The Gartner Group estimates that globally there were 119.2m people online at the end of last century, growing at a rate of 3 per cent a month[1]. The majority of these users are in developed countries, with the USA, UK, France, Canada and Australia being the top five Internet using nations, per head of population.

However, Internet use is not entirely confined to the Western world, with China estimated to have close to 10 million Internet users. Nor is Internet access uniform across highly developed nations, with Japan, for example having very low per user Internet use.

As you would expect, there is also a strong correlation between the cost of accessing the Internet and the number of Internet web sites hosted in a country. Australia ranks below the OECD average of access costs by 10 per cent and above the average for Internet hosts per 1,000 inhabitants by 30 per cent (see Figure 1).

[1] www.gartnergroup.com

Figure 1: Average price of 20 hours of Internet access (1995-2000) and Internet host penetration, OECD Countries



Note: Data on hosts for Luxembourg is from mid-1999. Internet access costs include VAT.
Source: OECD (www.oecd.org/dsti/sti/it/cm) and Telcordia Technologies (www.netsizer.com)

Of the global Internet population, over 33 per cent are expected to buy online this year. The Gartner Group predicts that by the year 2005, 25 per cent of all consumer spending will be in some way Internet involved.

Australians are currently more comfortable with transactions via alternative means such as EFTPOS, Automatic Teller Machines (ATM) and the telephone (see Figure 2). And interestingly, regional use of EFTPOS at 64 per cent is higher than the metropolitan average at 60 per cent, perhaps reflecting the use of EFTPOS as a substitute for ATM's in many rural and remote areas.

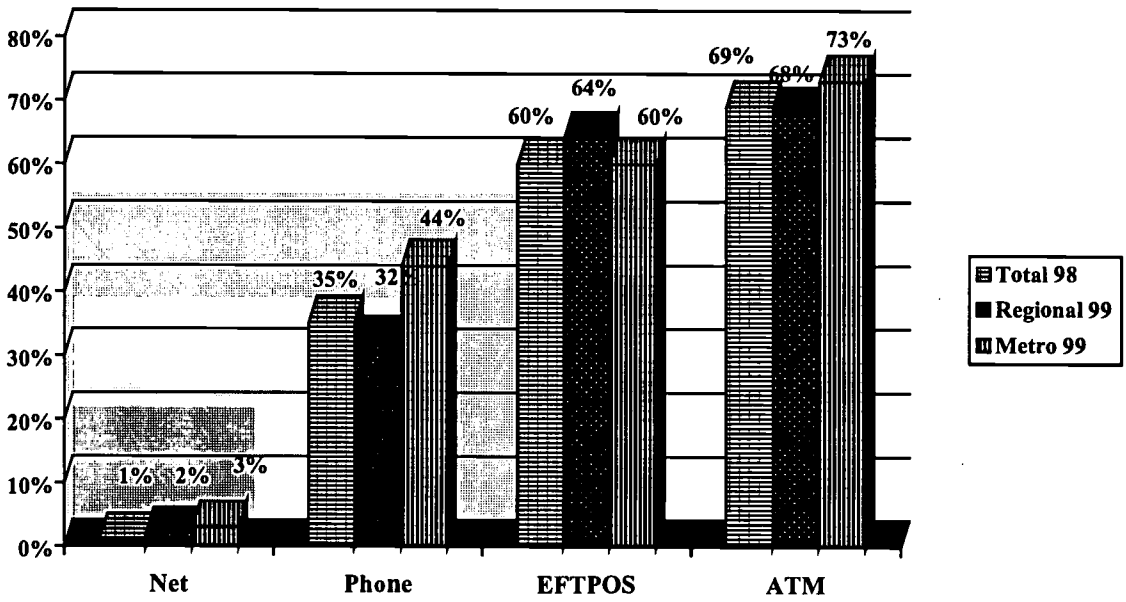
E-commerce still has a long way to go for Australian consumers. More than 1.3 million Australian adults purchased or ordered goods and services for their own private use over the Internet in the 12 months to November 2000. This was a substantial increase from the 803,000 adults that did likewise in the 12-month period to November 1999.

Books, magazines and computer software were the most common (35 per cent and 28 per cent respectively) types of goods or services purchased or ordered for private use in the 12 months to February 2000[2].

[2] ABS (2000) Use of the Internet by Householders, August 2000.

The good news for Australian-based businesses is that close to 50 per cent of on-line purchases in the past twelve months were made from Australian based businesses.

Figure 2: Electronic transactions: Metropolitan vs Non-metropolitan Australia



Based on figures from Booz, Allen & Hamilton (1999), there is a clear savings to the consumer as a result of doing banking on-line. Alongside other factors of growing numbers of people online and convenience, this would be expected to drive a significant increase in the percentage of people using the Internet for transactions.

Average cost per transaction	
Bank branch	$1.07
Telephone	$0.54
ATM	$.027
Internet	$0.01

Francis Cairncross's 1997 book titled The Death of Distance" begins its assault on the rigidities of the global marketplace as we now know it with a section titled "The Trendspotters Guide to New Communications". Points 1,2 and 12 from this guide have particular relevance here. They are:

> "1. The Death of Distance. Distance will no longer determine the cost of communicating electronically. Companies will organize certain types of work in three shifts according to the world's three main time zones: the America's, East Asia/Australia, and Europe.

2. The Fate of Location. No longer will location be the key to most business decisions. Companies will locate any screen-based activity anywhere on earth, wherever they can find the best bargain of skills and productivity. Developing countries will increasingly perform on-line services-monitoring security screens, running help lines and call centres, writing software and so forth-and sell them to the rich industrial countries that generally produce such services domestically.

12. More Global Reach, More Local Provision. While small companies find it easier to reach markets around the world, big companies will more readily offer high-quality local services, such as putting customers in one part of the world directly in touch with expertise in other places, and monitoring precisely the quality of local provision."[3]

The key points in these predictions demonstrate both the positives and negatives facing rural Australia as its communities and businesses grapple with the new information economy and it's phenomenal growth. The ability to reach new and larger markets, the increasing affordability and speed of connectivity to the outside world, the ability to work in fast-growing enterprises from rural areas, all herald new opportunities. The pressure on traditional middle men, the ability of other businesses to reach local consumers and increased competition forcing margins lower are all issues that rural Australia will also have to ensure they can adapt to and manage.

[3] Cairncross, F (1999), The Death of Distance, Harvard Business School Press.

2. The Internet and regional Australia – The demand side

Over half the Australian population has a computer at home, with 56 per cent of metropolitan and 51 per cent of non-metropolitan[4] based households with computers (see Table 1 and Figure 3).

Regional households lag metropolitan households by a year in both computer ownership and Internet access, with the gap between metro and non-metro PC and Internet access being the lowest in May 2000 since statistics in this area were first recorded in May 1996.

Table 1: Household with computers and the Internet (a)

	Households with access to a computer at home			Households with access to the Internet at home		
	May 1998 %	May 1999 %	May 2000 %	May 1998 %	May 1999 %	May 2000 %
Household income						
$0-$49,999	27	30	37	6	10	18
$50,000 or more	68	70	75	28	39	51
Households						
With children under 18 years	61	66	75	19	30	46
Without children under18 years	31	36	42	11	17	25
Region						
Metropolitan	45	52	56	18	25	37
Other areas	37	39	51	8	17	26
Total	**42**	**47**	**54**	**14**	**22**	**33**

(a) Proportions are of all households in each category.
Source: Use of the Internet by Householders, Australia, May 2000 (Cat. no. 8147.0).

Figure 3 shows that while computer ownership has leveled off in metropolitan households in the past 12 months with only a 4 percentage point increase, regional PC ownership has shown continued strong growth, with a 10 percentage point increase on 1999. In regional areas, this is clearly being driven by Internet access growth which after only a 4 percentage point increase from 1998 to 1999, grew a massive 11 percentage points in the year ending May 2000.

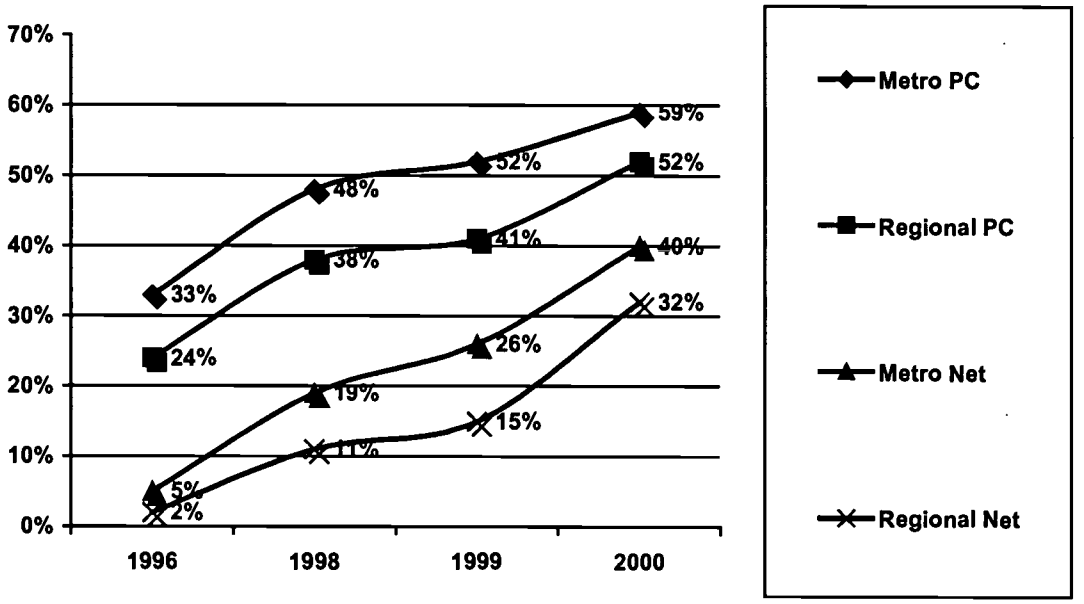
In May 2000, close to 70 per cent of metropolitan households who had a PC had Internet access, compared with 50 per cent 12 months earlier. The equivalent figure is half of all regional households compared with 30 per cent as at May 1999.

[4] The ABS defines Metropolitan as all capital cities. Non-metropolitan is the population living outside these areas.

Families with incomes of $50,000 or more are twice as likely to have a PC and close to 3 times as likely to have Internet access. The income-effect is diminishing over time however with the PC ownership and internet access gap being five times more likely for the over $50k households in 1998.

This effect may also be reflected in the regional figures, as regional household incomes are on average 15 per cent lower than metropolitan households[5]. This income effect would therefore explain all the difference between metro and non-metro PC ownership and half the effect on Internet access in May 2000.

Figure 3: Australian Metropolitan and Regional Household Computer and Internet usage, May 2000



There are a number of theories as to why the rate of IT uptake outside the capital cities is lower amongst both the business sector and the household sector.

In the household sector, the Australian Bureau of Statistics (ABS) suggests that the:

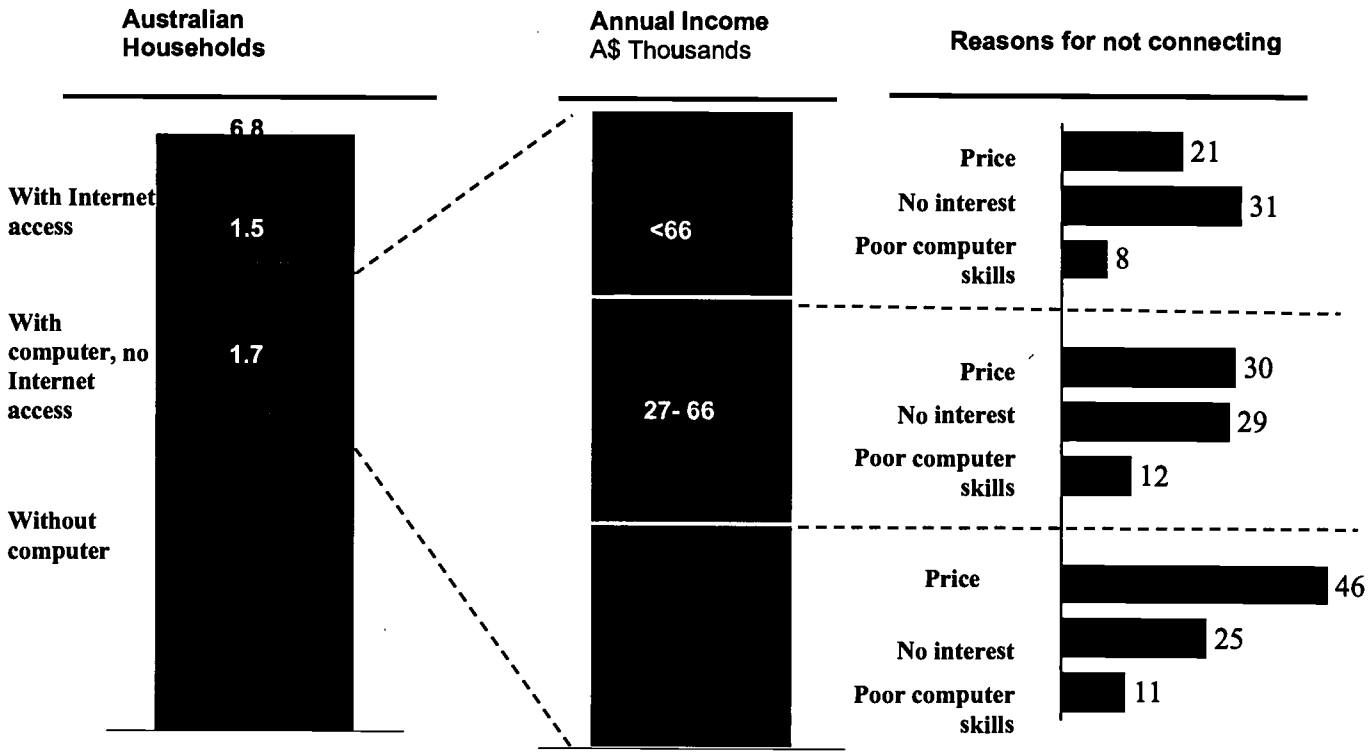
> "differences in the socio-economic profile of people living in different States and Territories (age, sex, income, households with children and education levels of household members) may be among the reasons why the proportion of households online was not uniform throughout Australia. For example, in 1998, the ACT, which has a relatively young and well educated population, had the highest proportion of households who owned or were buying a computer (66%) and the highest proportion of households with Internet access (28%). Tasmania, on the other hand, with a

[5] Bureau of Rural Sciences (1999), Country Matters: Social Atlas of Rural and Regional Australia, p.62.

relatively older population, recorded the lowest levels of computer ownership (26%) and Internet access (10%)."[6]

The principal reasons for householders who have a computer but no Internet access for not taking up online services in Australia are largely price and lack of interest, with price playing an increasingly important role at lower income levels. 'Poor computer skills' was also cited as a significant reason.

Figure 4: Australian Consumers and why they are not online



Source: Australian Bureau of Statistics

[6] ABS (1999) Australian Social Trends, Cat No. 4102.0

3. The Digital Divide

The Gartner Group recently reported to US Congress on the "Digital Divide" in the US. The CEO of Gartner, Michael Fleisher describes this divide:

> "There has always existed an unfair distribution of access to the tools of social mobility, but for the first time in history a technology exists that, to a large extent, can level the playing field. When someone logs onto the Internet, the wealth of information at that person's fingertips does not care if he or she is rich or poor, in the majority or a minority. It simply sits there and waits to be used by whoever can get to it. But there is a problem. To date there has been an unfair access to the Internet that mirrors the socioeconomic divisions in society. This unfair access is called the Digital Divide and it has implications that reach to the very social and economic core of our nation."

As of June 2000, 50 percent of U.S. households have Internet access, and by 2005, the Gartner Group (www.gartner.com) projects that 75 percent of U.S. households will be connected.

> "Despite a booming economy, lower cost PCs and phenomenal growth in the Internet, there is still a strong Digital Divide in the United States.

To narrow the divide, the government will need to play a more active role.

> "Governments need to encourage business strategies that help to narrow the Digital Divide," Fleisher said. "Government policies such as tax credits for providing Internet access to employees and telecommuting can encourage businesses to provide low-cost Internet access for workers in their homes." across the United States.

According to Gartner, there are three major factors that prolong the Digital Divide in the United States: across the United States.

1. **Access to the Internet in the home** - While half of U.S. households have Internet access, the penetration rate differs drastically based on socioeconomic status, which is a combination of household income and education level. Currently, Gartner research shows that 35 percent of lowest socioeconomic status Americans have Internet access, compared to 53 percent in the lower-middle socioeconomic bracket, 79 percent in the upper-middle bracket and 83 percent in the highest socioeconomic bracket.

2. **The Broadband Divide** - While Internet penetration is expected to surpass 75 percent of U.S. households by 2005, another Digital Divide emerges based on high-speed access via bandwidth. "We may finally master Internet access in every home, but a new digital divide will gape before us if broadband access costs an additional $40 per month per household," Fleisher said. "This will be the equivalent of having the moderate and upper classes in IMAX theatres while the underprivileged are still watching silent movies."

3. **The Experience Divide** - Once online, users have a ramp-up period of several months to several years, according to Gartner, until they are fully realizing the benefits of the Internet. "If a 45-year-old person is learning how to read, he will not begin by reading Shakespeare," said Gartner analyst Mark Smolenski, author of the report. "Similarly, becoming wired and becoming Internet-proficient is a skill acquired over time with frequent use."

A study conducted by the National Centre for Social and Economic Modelling at the University of Canberra has come to a very similar conclusion about the Australian Economy. In their press release for the study[7] the findings were:

> The study found that Internet take-up rates in Australia have relatively little to do with where you live, and much more to do with income and education. This provides a key insight into identifying why take-up rates vary within metropolitan areas and throughout Australia.
>
> "When you take income levels, education, age and number of children at home into account, there is surprisingly little difference in internet use between metropolitan and rural Australia," according to Jock Given, Director of the Communication Law Centre (CLC).

The NATSEM component of the study analysed ABS and KPMG data on the factors that drive the take-up of the Internet. It found that education, income and age were the principal factors for take-up, not geography. Statistical modelling undertaken for the study found that the key drivers for differences between areas were differences in education, income, age and the number of children at home:

- Those earning $84,000 or more a year were 3.2 times more likely to have internet access than those earning less than $22,000.
- Those with a Bachelors degree were 2.3 times more likely to have Internet access than those with only primary education.
- Those under 55 were two times more likely to have access. The take-up rates for those between 25 and 55 were remarkably similar.
- Households with children over ten were two times more likely to access than households with children under ten.

On average non-metropolitan areas have much lower connection rates than metropolitan areas. This is largely caused by lower education and incomes in non-metropolitan areas and not the geographic location of the area.

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[7] Sociodemographic Barriers to Utilisation and Participation in Telecommunications Services and Their Regional Distribution: A Quantitative Analysis . A report commissioned by Telstra - Hellwig, O. and Lloyd, R. -- 21 August 2000

The study suggested that even between neighbouring suburbs a wide disparity in Internet use may be found. There were also significant differences in take-up in neighbouring outback communities.

Speaking at the launch of the report in Canberra, CLC Director Jock Given said the study had important implications for government policy.

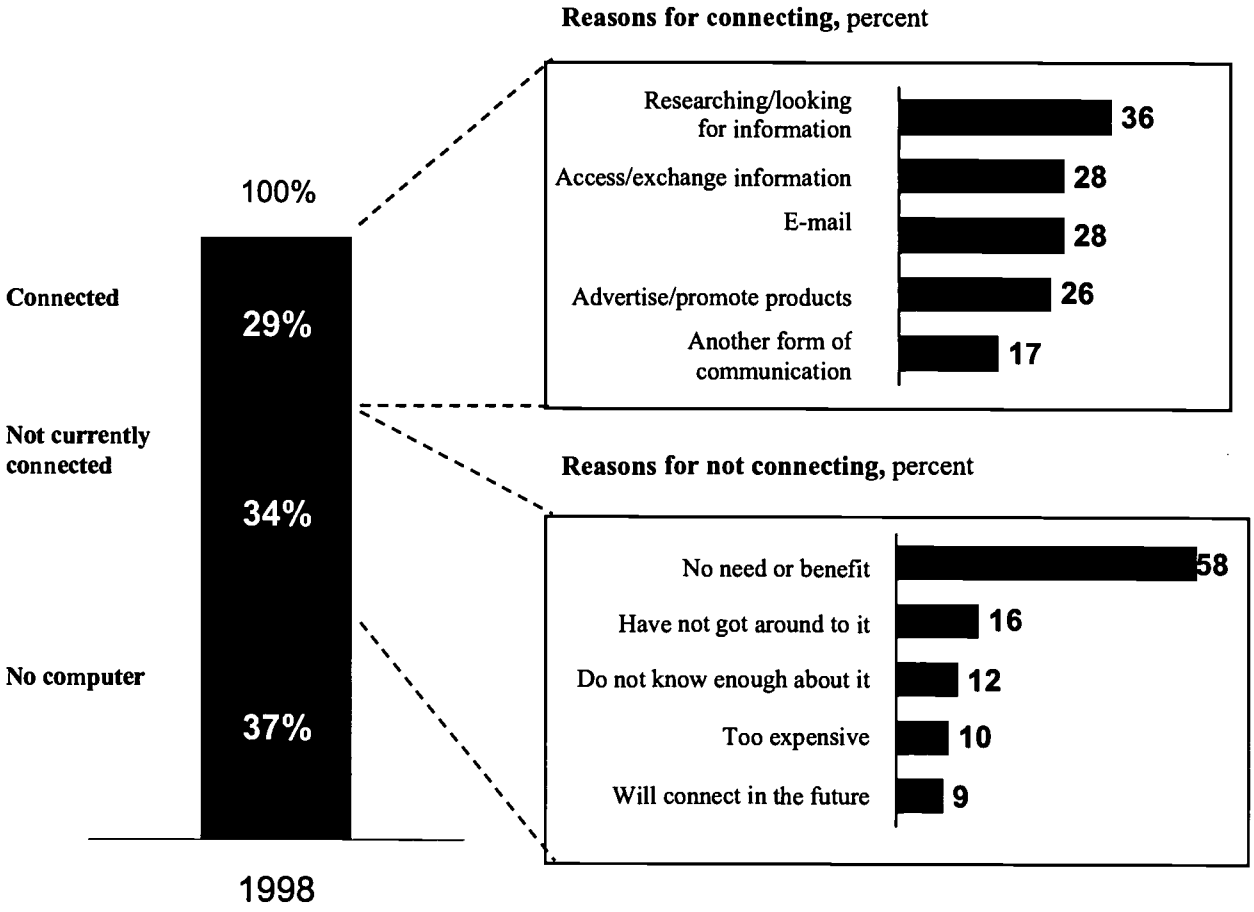
> "The primary social objective of key policy measures in Australia in recent years has been to address regional inequities in the availability and affordability of telecommunications services. A major focus has been the 'supply-side' - ensuring that infrastructure is available to deliver new services at increasing data speeds. These kinds of measures will not be enough to bridge the digital divide. A broader and more complex social policy agenda is going to be necessary if Australia is to seriously address the root causes of its digital divide. This might include targeting more directly communities and families on the wrong side of the digital divide, Mr Given said."

4. The Australian Business Sector and the Internet

As of May 1999, the ABS predicts that only 37 per cent of Australian businesses (defined as employing more than 1 person) were online. Property and Business Services, which is comprised of computer services, legal and accounting services, and marketing and business management services, is the leading online industrial sector with 63 per cent of businesses connected to the Internet. With less than 20 per cent of businesses online, the accommodation, cafes and restaurants, transport and storage and construction industry sectors are significantly lagging behind the leading sectors.

Almost 60 per cent of small and medium enterprises in Australia that have not connected to the Internet, see any need or benefit in being online (see Figure 5). Of the 63 per cent of SMEs that have a computer, over half were not connected to the Internet due to factors such as not seeing any benefit (58%) not yet got around to it (16%) or not sure how to go about it (12%). Of those SME's who were online, the reasons cited were primarily for research (36%), information gathering and email (both 28%) and promoting products (26%).

Figure 5: Internet Penetration of Australian SMEs[1] 1998



Source: ABS Business Use of Information Technology 8129.0 5, October, 1999; Yellow Pages Small Business Index - February 1999.

1 Percentage with Internet access

Community Case Study 1: Coolah the "Can Do" Community

Coolah is the principal town of the Coolah Shire, situated 89km north east of Mudgee and 352km from Sydney. Coolah functions as a service centre to the surrounding district which is primarily involved in the production of wheat, cattle, mixed farming, timber, fat lambs and wool. The town has a population of 900 with a total shire population of 3,817 people.

In 1993 the State Government's decision to gazette the Coolah Tops National Park caused the closure of the local timber processing industry with the loss of many jobs. This move threatened to significantly undermine the viability of Coolah, which like many other small rural communities was already suffering the effects of population and economic decline.

The Coolah District Development Group was formed as a broadly representative body with the clear objectives to reverse the economic and social downturn of their community. From the very beginning, the group decided to take a business approach to planning their future. They targeted a number of areas including tourism, their main street, youth and communications.

The Development Group set about raising substantial funds through own efforts rather than immediately seeking Government assistance. This included an amount of $25,000 from three consecutive open garden festivals. The Development Group were eventually able to raise a total of $75,000 and with this base they appointed a Development Coordinator whose role was to further develop the community plan and to seek out further funding sources.

Coolah put in place a $500,000 main street beautification program. The Development group contributed $75,000 and other funds were sourced from State and Local Government with further assistance from Telstra and North Power.

In a recent interview on the ABC's Lateline program, Peter Kenyon, Founding Director of the Centre for Small Town Development, stated that Coolah "has had something like $1.6m in Federal and State Government Grants.....Coolah has been what I'd call a very smart consumer of outside resources, but I think there's the other side to the picture about Coolah, in that there's been a real degree of investment by local people."

Communications and particularly local call Internet access were identified as critical issues. The Development Coordinator applied for and received over $400,000 from Networking the Nation and the DPIE Rural Communities Program to establish a telecentre which would also operate as an Internet Service Provider (ISP) and internet café with outreach café services in the surrounding towns of Dunedoo, Cassilis and Mendooran.

The Coolah District Telecentre commenced operating in 1997 and as the project included the establishment of an ISP, the recruitment of a technically competent coordinator was crucial to the project's outcomes. The telecentre management committee appointed a local person who commutes on a daily basis although he does telework from his home office when possible.

The initial focus of the telecentre was in two primary areas. The establishment of the ISP to provide affordable local call internet access and the delivery of training to the community. The training was seen as vital to the uptake on the Internet in the local community through not only increasing the computer and Internet skills of the local people but also to generate a sufficient number of subscribers to ensure the viability of the ISP.

The telecentre was established in the rear of the centrally located town hall. A full computer lab comprising 8 networked computers, printers and overhead projector was setup and training commenced immediately. The courses offered are free or highly subsidised and are eagerly subscribed.

Offering Internet access at less than $1 per hour, the ISP reached the number of subscribers to breakeven within two months of commencement of services. The ISP was also able to offer web site and domain hosting services that further contribute to the viability of the service.

In 1999 it was decided that Coolah could offer it's accumulated ISP expertise to other communities on a fee for service basis. By assisting grant aspirants from other communities Coolah has now successfully installed locally owned POP/ISP's into the nearby town of Merriwa. As part of this service Coolah provides installation, training and ongoing support to these communities. This has in turn generated employment in Coolah in the provision of dial up help desk facilities.

Don Cameron, the Coolah Telecentre's Technical Manager, states that "as of June 2000, the ISP has 300 subscribers and hosts a number of domains for both local and national clients. The ISP also provides sophisticated chat, database and list server services to a number of its clients. It supports four additional community POPs and expects this number to grow as more communities are successful gaining NTN and other grants.

In addition to the coordinator, the telecentre now employs one full time and one part time assistant in Coolah plus part time coordinators at each of the three outlying café's. The telecentre also provides a range of secretarial and web design services that are contracted out to local people.

Chairman of the Telecentre Committee, Michael White believes that the level of IT literacy in the community is not only high, but with the exception of town business operators is widespread throughout the community. There is a high awareness and high value placed on the available online service. Groups including local youth, farmers and rural women are using the available online services to enhance their skills, their networks and their leisure activities.

Michael White estimates that of those people utilising online services offered in Coolah:

- *traditional family farmers* *50%*
- *people who have relocated from major centres* *25%*
- *households in town* *25%*
- *business operators with non-farming background* *0%*

He attributes the failure of business operators to take up the technology is attributed to their consuming focus on survival leaving no capacity to receive the foundation training which would lead to the understanding of how online services will impact on their business. Furthermore, it is felt that the business operators do not recognise the threat that regional, interregional and international e-commerce poses.

When considering the future of the operation, Don Cameron is concerned that they have no choice but to purchase their bandwidth and backbone access from larger potential competitors. Naturally the cost of bandwidth is a major issue. Coolah operates on a 128kbit ISDN link that currently provides adequate browsing and download performance. At an annual cost of $35,780 the communication links represents the largest single non-salary expense for the business.

As technologies such as xDSL and satellite, which are capable of offering end users significantly higher Internet access speeds, become available in Coolah, the bandwidth required by the ISP will dramatically increase. This is essential if local ISPs such as those in Coolah are to compete on service quality.

An important issue for Michael White is burnout. This poses a threat in two areas, staff and leadership. Coolah is very reliant on the technical competence of its existing staff. They have to be multi-trained, motivated and capable of independent operation. The very nature of ISP operation involves after hour's support for subscribers and server maintenance.

The small population means there is a very small pool of talent to recruit from. Furthermore individuals with these technical skills are highly sought after and highly paid in metropolitan areas. Suitable replacement staff not only has to be attracted to the region but to the lifestyle and the significantly lower earning potential.

Leadership burnout manifests itself most obviously in the decline in ability or performance of voluntary committee members. White suggests that "this is not a unique Coolah phenomenon, it is apparent in sporting clubs and community groups throughout regional Australia". He goes on to say "the situation is a by-product of the relatively small pool of willing and capable leaders in a given community".

Left unresolved, leadership burnout results in a committee which struggles to grasp the major issues, bickers over trivial matters and intrudes on the daily management of the project. Thus compounding the staff burnout factor.

Despite these concerns Coolah exudes a confidence that is infectious. The following is brief extract from the introductory paragraph of a presentation made by Michael White to the Beef 2000 Conference.

"Coolah is a little town which, has mobilised its community, and with the help of State and Federal grant funds and programs has turned its fortunes around from very bleak to a great optimism about its future". Michael concludes his presentation with "Community development really works. You can take charge of your future and not just take what comes, but plan and implement a better future for yourself, your family and community".

5. Internet access in regional Australia – The supply side

Of the 954 Internet Access Providers in Australia in May 2000, 41 per cent have access points outside the capital cities, with a significant percentage servicing satellite cities such as Newcastle and Wollongong and the larger regional centres.

All Australians do have local call access to the Internet, without needing a local call Point of Presence (POP) through Telstra's Rural Connect Plan, currently priced at $4.20 per hour. Many rural Internet users who do not have a local POP also take advantage of low, capped STD rates after 6 or 7pm and dial into ISPs in nearby regional centres at lower per hourly rates than may be available otherwise.

The Federal Government has set aside $36m for the provision of local call access to the Internet for all Australians, $20m of which has already been allocated through the March funding round of Networking the Nation. The original intention of this funding, announced as part of the Federal Governments' 1998 election campaign, was to build Internet points of presence to cover all local call zones in Australia.

Not all Australians have access to a local call however, and $150m of Federal Government funding is currently up for tender to provide local calls in the Outer Extended Zones where there are currently no local calls. Telstra is also conducting a review of all local call zones in Australia. These initiatives should enable cheaper, local call Internet access to these remotest of telecommunications users.

The Next stage - High Speed Internet Access

While voice traffic over the public switched telephone network (PSTN) is growing at 5 per cent per annum in Australia, data traffic is growing at around 35 per cent per annum[8] and the majority of this growth is occurring in metropolitan areas. This demand is being met by significant investment being undertaken around the world in cable, satellite and xDSL technologies (see box on Chello).

The speed of access to the Internet in rural Australia has also been an issue for some time. As the Universal Service Provider, Telstra is required to ensure that standard telephone services and payphones are reasonably accessible to all people in Australia on an equitable basis, wherever they reside or carry on business. The Federal Government, who legislate the Universal Service Obligation (USO), determined in 1998 under the Digital Data Service component of the USO that while the minimum requirement for all carriers for dial up access remain at 2,400bps, all Australians should have access to 64,000bps on demand, provided at commercial rates.

[8] Paul Budde (1999) Telecommunications Networks Markets 1999, p.112

This means that customers who request ISDN, Telstra's 64kbps data service, for example, which is available up to 5km from an exchange, would be able to have it connected within a specified period, currently 60 days. For those people who live more than 5km from an exchange, which equates to 3.6 per cent of the population, carriers could designate an alternative service.

***Chello** is a leading European high-speed access ISP and is commercially active in six countries. In March 2000 the company released the results of an online survey of 1 500 high speed and 2 000 dial-up users.[i] The results indicated that Chello subscribers to high-speed access networks spend twice as much time on line as dial-up users. Chello's 'high speed' users in Europe reported an average of 72 hours per month online. As the survey relied on an online questionnaire, instead of network based measurements the reported online time may be higher than actually exists for both sets of users. That being said the differences are significant.*

In addition, Chello reported that its 'high speed' users access the Internet, on average, four times per day, compared to two times per day for dial-up users. The company attributed the different usage to its high-speed service pricing being unmetered and the faster connection speeds available from cable modem connections. The company noted that families were taking advantage of these capabilities and that the average number of users in households connected to Chello's high speed networks was 2.2 compared with 1.8 users in dial-up households. Significantly, from an electronic commerce perspective, the survey found that Chello 'high speed' Internet subscribers spend 67% more money online than their dial-up counterparts. Chello's 'high speed' users reported spending USD 457 in the previous six months compared to USD 275 for dial-up users over the same period. Chello attributed this difference to 'high speed' users being able to browse more and for longer, and when enhanced content – like expanded views or such as samples of video or audio are offered, they get a better feel for the product than they might even in a shop.

Source: OECD

Telstra introduced its BigPond Advance[9] satellite Internet access product to meet this requirement which, until recently was the only carrier to have a service declared under the Digital Data Service. This means that regional Australians now have high speed access to the Internet, with speeds of up to 400kbps, (download speed) at costs equivalent to that of metro areas (costs are detailed in Table 3).

[9] for more details, see http://www.bigpond.com.au/advance

Table 3: Regional Fast Internet Comparisons (as available September 2000, assuming 80 hours average use/month)

		Metro			Non-Metro	
	Telstra Cable	Optus Cable	Telstra ADSL	Telstra Satellite	Austar/ Chello	Ihug/ Satnet
Hardware and installation	$399[a]	$398	$399[a]	$327[e]		
Monthly access	$54.95	$63.95[b]	$73	$60.50 plus $0.85c/hr[f]		
MB threshold	250, 17.5c after 5Gb					
Second line required	No, new cable installed	No, new cable installed	No, runs on existing line	Yes		
Speed	256/54 Mb	Not stated	256/54 Mb	400Mb		

a-based on a 3 month minimum connection plan
b-warp speed plan
c-if pre-selected to Telstra
d-$328.90 for hardware plus $324.50 for minor rural location (within 10km of population centre of 1,000-3,000)
e for regional connections
f for dial-up charges to BigPond Professional Plan (www.bigpond.com)

Community Case Study: Maffra, VIC

Situated in Central Gippsland, Maffra, in the Wellington Shire, is 220km east of Melbourne. Maffra has a population of 4,500 people and is the service centre for the surrounding rich dairying, agricultural, pastoral and irrigation land. Industries include the Murray-Goulburn Milk Factory, which is major national milk producer and Southern Rural Water, which manages seven major dams, licenses ground water users and river diverters across southern Victoria from its headquarters in Maffra.

One of the early IT initiatives in Gippsland was the Maffra Community Resource Centre. This group commenced operations through the DPIE Telecentres Program in 1994 as part of the Gippsland Community Network (GCN). This was established as a pilot program to address the issue of isolation for remote and rural communities, through the use of information technology. The funding provided hardware, supporting software and basic training.

According to Ron Ipsen, Project Manager for the GCN, the early outcomes were disappointing. Over their initial four-year period the group had successfully accessed 3 IT grants and yet didn't even have a web page up. Ron was given the job to "get the Maffra mob up and running".

This was about 2 years ago and Ipsen now considers that they have responded well. He claims "they now lead the way in many areas (especially community publishing) and are designing and implementing their own strategies", see http://www.maffra.net . The Maffra Community Resource Centre is now the administration hub and provides the core personnel in the GCN project.

Bill Jackson, Coordinator of the Community Resource Centre describes their role as striving to provide a wide range of service and as a partner in the Skillsnet (the statewide Multi Media Victoria initiative) project to provide Internet training and access. He says "the Centre is also working with local tourism industry to develop Internet based applications for local operators". In addition to these activities the Centre is also facilitating a program for remote communities to develop job creation strategies through travel and tourism. Jackson is confident that tourism operators are becoming aware of the need to have a web presence and some are gaining business from online enquiries.

Maffra itself, is well serviced with at least 4 Internet POPs, one of which is locally owned. Internet access costs are below $2 per hour and there are approximately 20 organisations with web sites.

Due to the large of number of Federal and State funding programs, it is difficult to assess the total amount of IT development funding that has gone into this area. However the RTIF alone has injected over $2.06[10] million over the last three years. There have been a number of initiatives aimed at the development of access to online services. These include the following.[11]

10 Department of Communications and Arts RTIF http://www.dcita.gov.au/rtif.html

11 Rural and Regional Strategy-Gippsland Action Group http://www.maffra.net.au/RRSGippsland.html

- *Gippsland Telecentre Network*
- *AC&FE New Learning Technology Project*
- *Maffra Area International Telecommunications Village*
- *E-Comm-AWARE - Centre for Electronic Commerce at Monash University*
- *GippsComm - Gippsland Development Ltd*
- *Farmwide POPs and Satellite trials*
- *Uniting Our Rural Communities - Technology and Community Leadership Project*
- *Access Through Outreach – TAFE*

Despite the substantial amount of training and mentoring that has gone into this region, Bill Jackson rates IT literacy as good only within select groups. He feels "further training is necessary and that access to training which is specific to the needs of the different interest groups is a critical factor to the success of these programs".

While Ron Ipsen agrees on that point he is also very aware of the leadership issue. He suggests that "too often important leadership roles are hijacked by well meaning people who lack the required vision and drive". He believes "the technical issues are much more easily solved".

6. The Internet and the Bush – Great opportunity or accelerating decline?

Amidst a backdrop of declining terms of trade for agricultural commodities and shrinking populations, the communities showcased in this report demonstrate the differing effects that the information revolution of the late 20th century is having on rural communities built on the back of the industrial and agrarian revolutions of the early 20th century.

As of June 1999, 72 per cent of Australians lived in the State and territory capital cities. Migration to large regional centres and the eastern seaboard capital cities is an ongoing phenomenon, evidenced by the fact that the largest declines in population from 1992 to 1996 occurred outside the metropolitan areas and eastern seaboard.

Asa Wahlquist, a journalist who writes regularly in *The Australian* speaking at the Regional Summit in Canberra last year stated that:

> "Rural and regional Australians are, by every significant measure, disadvantaged. Country people die younger, and receive less medical attention. They find it harder to access medical specialists, dentists, physiotherapists, psychologists' even pharmacists. They have lower levels of education and higher unemployment. They have more accidents, suffer worse health, and rural youth has a shockingly high suicide rate. Country people are also likely to be poorer. To put it in a political context, of the 40 poorest federal electorates, 36 are rural or provincial, while only two of the 40 wealthiest electorates, Kalgoorlie and Bowral, are in the country. In 1996, at the time of the last census, a substantially greater proportion of non-metropolitan residents relied on government benefits and pension, more country children lived in families receiving government benefits, and in low income families.

Recently, a publication produced for the Local Government Association of Australia (ALGA) titled *The State of the Regions* [12] stated that:

> "the economic benefits of [Australia's] sustained economic recovery over the nineties were unevenly distributed", the "losers" being "rural regions based on traditional agriculture."[13]

Dr Forth in his paper, *Following the Yellow Brick Road and the Future of Australia's Declining Country Towns*[14], predicted that 60 per cent of Australia's small towns are in decline. He expands on the reasons behind the decline in agricultural populations over the latter half of the last century in particular,

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[12] Check

[13] National Economics, State of the Regions: A Report prepared by National Economics for the Australian Local Government Association, Sydney, 2000 p.4

[14] Dr Gordon Forth (2000) Centre for Regional Studies, Deakin University

"Following both World Wars, the Australian Government developed Soldier Settlement schemes to provide thousands of returned veterans with an opportunity to become farmers[15]. As with the Free Selection Acts the productive capacity of land allotted to many soldier settlers was insufficient for viable farming enterprise. The subsequent restructuring of Australian agriculture has involved the ongoing consolidation of many of these farms into larger holdings.

These changes are due to a diverse range of economic, technological, political and social factors. "Throughout most of rural & regional Australia, with the exception of rural towns and cities and the rangelands in the Northern Territory and Western Australia, agriculture provides employment to between 30 and 50 per cent of its workforce."[16] Dramatically fewer people are producing more and there are few signs of a reversal of this trend.

"Within certain Australian rural communities it has been assumed that if significantly higher average commodity prices could be obtained for agricultural exports such as wool and wheat this would somehow assist small country towns to remain viable. In reality, in order to access even quite basic services, in health, banking, finance and retailing, both residents and local farming families are increasingly bypassing their local small towns to travel to major regional centres.

While this is partly due to a loss of services in smaller towns involving the closure of banks, shops and schools it also reflects individual's desire to access better quality, more sophisticated services. It is generally only larger centres, with a minimum population of around 10,000, that can provide the range of services required by regional communities including those involved in agriculture.

It is also suggested that the demise of small-towns and their regional communities would result in a movement of population to already overcrowded cities causing additional social and environmental problems. In both Australia and the United States the main movement of population from small towns has been and will continue to be to larger, "sponge" regional centres."[17]

Amidst this gloomy picture however, there have emerged shining beacons of hope. Recognition of this decline and an acceptance of the lack of "saviors on white horses coming to rescue them" has seen many rural communities across Australia and indeed across the globe as this trend is not unique to Australia, drive their own economic development.

[15] check
[16] Bureau of Rural Sciences (1999) Country Matters: Social Atlas of Rural and Regional Australia.
[17] Dr Gordon Forth (2000)

Community Case Study: Tumby Bay, SA

Situated on the western side of Spencer Gulf on the southern Eyre Peninsula, Tumby Bay is approximately 40 minutes drive north of Port Lincoln, South Australia. The town has a population of 1,145 with a district population of 2,662.

The area currently relies largely on wheat as the principal agricultural enterprise. As the price of sheep has fallen, most farmers have gone out of sheep enterprises which has had an impact on those involved in the sheep industry, such as shearers and casual workers as there is no alternative work.

The hardest hit by the decline in the once mighty wool industry in this part of the world have been those with specialist skills and limited opportunity to diversify into other employment. The locals talk of a growing subculture of low income families now into their second generation of no work and children of these families are definitely "at risk". More than 50 per cent of families with students at Tumby Bay Area School are in receipt of Government support. Some of these children are from farming families.

The traditional income economic growth generation for the district, farming has not been quarantined from these socio-economic problems. At the end of the 1999 season, around 10 farms were sold up as they were no longer viable. Many more are on a knife-edge, struggling with large loans and an average rainfall of only 325mm.

Tumby Bay is however quickly gaining popularity as a retirement centre and is the third fastest growing town in South Australia. There are two real estate agents and property sales are booming. Retirees are flocking to Tumby Bay to settle in a peaceful crime-free town, next to the sea with access to two, soon to be three doctors and relatively good facilities.

A 1991 report in the Adelaide Advertiser, stated that Tumby Bay was "A town waiting to die". This prompted 400 people from the community to hold a meeting that resulted in a ten-year vision and plan for the future and led to the formation of the Tumby Bay & Districts Community Support & Action Group.

The group successfully applied for a telecentre grant from the DPIE Rural Communities Program in 1996 of $70,000. Working with the Council, the group raised a further $40,000 to employ a full-time co-ordinator.

Over the last five years more than $600,000 of funding has been sourced for community projects including the establishment of an NTN funded Ozemail POP. Although the POP was only established in 1999, it now has 200 local subscribers, over 15 per cent of the local population.

The Tumby Bay Community Development Board operates the telecentre in a joint venture with the Council and the local school. Starting with only two computers they now have a facility with twenty computers, a colour laser printer, 2 black and white laser printers and a full compliment of business support equipment.

Ms. Janene Piip, the Telecentre co-ordinator stated that:

"We are run off our feet with over 400 customers that we do work for. The telecentre earns approximately $25,000pa from the provision of IT training. It also earns significant income from services such as printing books, brochures, business cards and web pages.

Literacy levels are rated as good and widespread throughout the community. There continues to be an enormous and ongoing demand for training. The sessions are designed to be short and as pertinent as possible eg $20 for a two hour session on how to send email.

The telecentre operates on the principle that we make our own money and any grants are a bonus".

In 1997, the Tumby Bay Telecentre won the 10th Innovation Award in Local Government and a prize of $20,000. To quote the co-ordinator "We were so proud of ourselves and this gave us lots of credibility in the local and wider community".

The NTN funded Ozemail POP was established in 1999. It now has 200 subscribers on line in the district,. As with the other studies in this report, Tumby Bay business houses have demonstrated a reluctance to take on the technology. However, as a result of the efforts of Piip and her colleagues, there are over twenty businesses with web sites and this does appear to be having a positive impact, particularly on tourism operators.

None the less with Port Lincoln being a much larger service and retail centre only 40 minutes drive south. There is a substantial amount of business leakage from Tumby Bay to Port Lincoln. Council Chief Executive Officer Ned Robert also reports that in some cases farmers are ordering machinery parts over the Internet and bypassing local businesses. As a result of these factors most businesses in Tumby Bay do not see significant opportunities to grow or expand their range of services.

Mr. Ned Roberts, the Chief Executive Officer of Tumby Bay District Council, believes that the Council's positive attitude has much to do with the town's growth over the last three years. The streetscape and foreshore development has recently been complimented by a Council and private developer joint venture, which has seen the recently completed marina with 64 housing blocks. The council has donated a block valued at $95,000 to the Hospital Board to enable a house to be built to attract a new doctor.

Mr. Roberts believes that the telecentre has made an important contribution to the community. There are other small towns close by such as Cummins, Cleve, Cowell, Lock, Streaky Bay and Elliston. According to Piip "they all have great opportunities that are not being exploited and the very reason is that no one is driving the changes". Piip believes "It is crucial that a Development Officer be employed to focus on these issues otherwise it is no one's problem. This is the very reason we have had a few things happen in Tumby Bay or this community would still be the same as it was 5 years ago".

A 1996 report titled Tumby Bay - An Integrated Community Development Approach for Managing Change for the CSU Rural Society Journal concluded, "the most important factor in this community's survival is the integrity and persistence of its people. They have a rural

heritage, a battler's instinct, and a sense of community that gives them hope in the face of despair".

This report also mentions concerns over the loss of two of the prime leaders in the development committee and a degree of burnout in the remaining members. It appears that for the time being, the community of Tumby Bay has been able to overcome this loss of leadership, continue to survive and even grow.

7. The Australian IT&T Sector

The structure of the Australian, and the world economy, has changed rapidly in the last 25 years, fuelled in no small way in the past decade by the significant growth in information technology.

Revenue from the domestic production of IT&T goods and services in 1998-99 was $59 billion, 27 per cent higher than in 1995-96 and double that of revenue generated from agriculture. Telecommunication and computer services recorded increases of 40 per cent and 31 per cent respectively, however, production of manufactured IT&T goods decreased by 27 per cent over the three-year period[18].

The industries contributing to this outcome were telecommunication services with an increase in income of 40 per cent since 1995-96, computer services with a rise of 32 per cent, wholesale trade with a rise of 12 per cent while manufacturing fell 33 per cent.

Communications services in Australia today comprise 1.7 per cent of our workforce, compared with 0.86 per cent at the start of the decade. As at 30 June 1999, Australia's IT&T sector consisted of 18,469 IT&T businesses, an increase of 36 per cent since the last survey in 1995-96[19].

Contribution to GDP has averaged 9.2 per cent per annum gross value added for communication services, compared with 3.6 per cent across Australian industries generally and is the only sector to have consistently positive growth throughout the 1990s.

The picture is the same for the majority of the industrialised countries. For example, today, a mere 2 per cent of exports from the US account for 80 per cent of the value of their exports, with the majority of these exports being related to high value computer components and pharmaceuticals. This is a long way from the days when commodities dominated the US economic landscape. The richest man in the world today, Bill Gates, is a software developer and one in six Microsoft employees, by virtue of their stock options, are said to be millionaires.

[18] Australian Bureau of Statistics, Information Technology, Australia, Preliminary, 1998-99
[19] Australian Bureau of Statistics, Business Use of IT, 2000

Regional Business Case Study: Windsong Records, NSW

Greg Gardner is a musician who lives on the far north coast of NSW at Brunswick Heads. Like most musicians he has struggled to earn a reasonable living from his craft. Five years ago, after privately producing an album of his own works, he realised that the production was only part of the job. He still had to find a method of marketing and distributing his product.

Gardner also recognised that all unsigned artists are struggling to a make a living. "They play in pubs for a few dollars and are lucky if they get as much as a free beer". WindSong Records was created to provide an Internet based avenue for Australian artists.

The windsongrecords.com.au site is a visually delightful experience and currently offers music CD's featuring 35 artists from a number of genres including Blues, Folk and Meditation. The site displays beautiful, fast loading graphics of the CD covers and also offers good quality fast downloading sample tracks. The shopping cart facility is fast and easy to negotiate.

Although it has only been running since October 99, it is now attracting over 4,000 genuine page hits per month. It's important for all ecommerce sites to know where their traffic is coming from and what their hit to sales ratio is doing. In WindSong's case they found that most of their sales were coming from France and The Netherlands. It is one thing to know this, but what do you about it then. Gardner feels that "promotion is the big issue and it has to be done on and off the Internet".

As a result, Gardner's business partner is in Europe right now following up on possible marketing ideas. They believe that they cannot rely on the Internet alone and although their budget is very finite they are looking into advertising in the street press of Europe.

Links through site such as MP3.com were vitally important in getting an early response and they have also had good results from Banner Swap arrangements.

Design isn't an issue, as Gardner is self taught, he does all of his own graphic and site development work. The domain is hosted locally, in Byron Bay, complete with shopping cart and secure server facility.

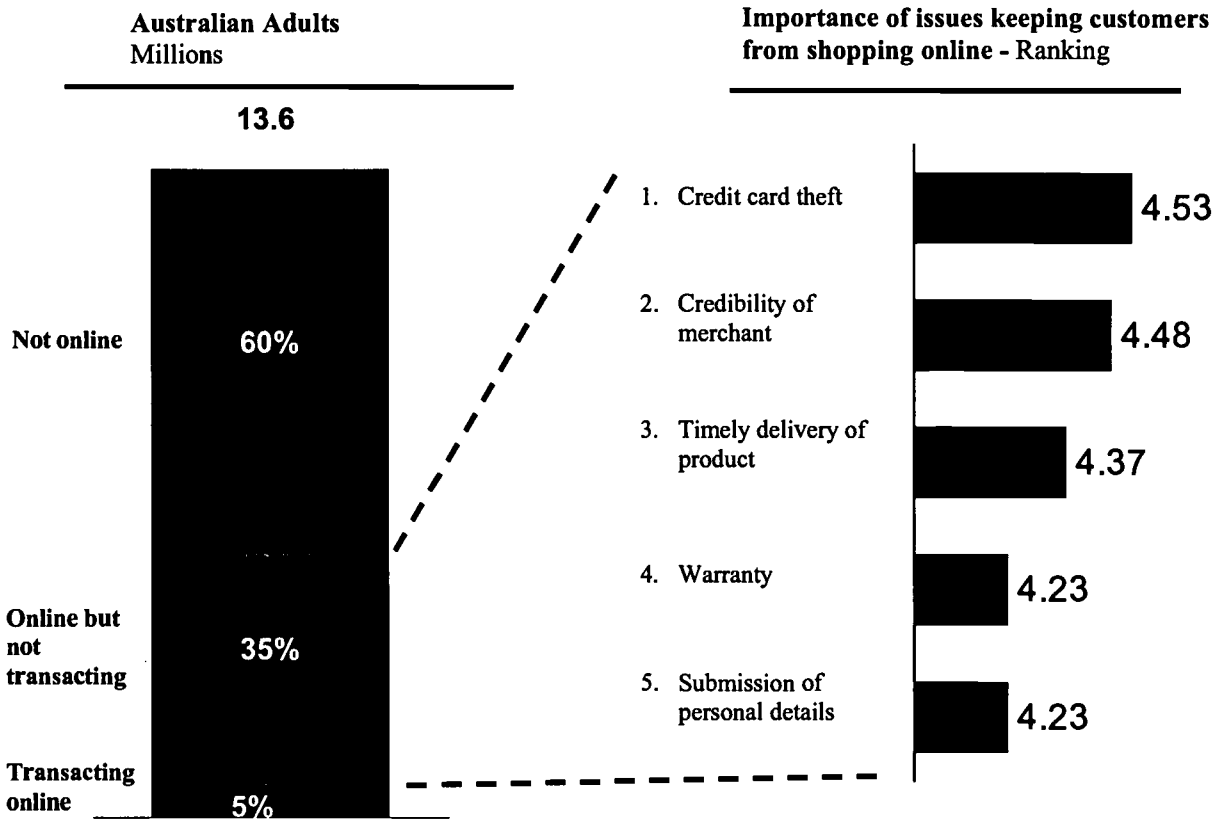
The future is looking very promising for WindSong Records. In August this year they will be releasing their first dedicated WindSong labelled release of a new album from Wendy Morrison. Wendy is famous for her title track for the popular ABC television series Sea Change. The album will include four other Sea Change tracks.

Is WindSong making money? Well not yet, but Gardner expects that this should be happening by the end of this year.

8. E-Commerce and regional Australia

"There is no doubt that telecommunication 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" [20]

Figure 4: Australians are shopping online in growing numbers



Security and credibility are the main barriers to online shopping

Source: ABS

20 Telecommunications Journal of Australia Vol 49 No. 2, 1999. Article by Peter Morris, Telesis Communications, p.50

As consumers' concerns are allayed in relation to security and privacy and the number of businesses with strong retail or offline reputations go online, we may see the predictions made by entities such as the Gartner Group (that 25 per cent of all consumer spending by the year 2005 will be conducted online) realised.

Early studies of what Australians are purchasing online show that books/magazines, computer software/equipment and music were the most popular purchases (that the respondents were admitting to anyway!).

So what impact would we expect these trends and issues to be having on regional businesses and communities?

Take for example a bookstore in a country town. Books are generally a low margin, high volume business, making small operators in particular vulnerable to erosion of their market. With the advent of the Internet, "etailers", retail outlets whose sales channels exist entirely in cyberspace have sprung up, with one of the strongest brand names being the US online bookstore (and now an extensive range of other goods), Amazon.com.

Amazon currently stocks 4 million titles and ship to anywhere in the world. Their high volume turnover allows them to offer prices to customers that, even after freight costs, are lower than are available locally. The "bricks and mortar" suppliers of books are coming from behind at a rapid pace to attempt to counteract the erosion of their market share as a result of Amazon's significant growth.

Prior to the Internet and e-tailers such as Amazon.com, local shoppers after a book would use their local bookstore. If a book were not available, the shop owner would offer to order it in, often at many weeks' delay. Customers may purchase books when they were in larger regional centres on other business but would be unlikely to travel for the specific purpose of purchasing a book.

With their Internet access, the same customer can purchase the book they are after from Amazon, who with 4 million titles available is far more likely to have the book. The customer can research if the book has had good reviews, its cost, and other titles that might be equally useful or interesting.

The customer can purchase the book from Amazon, using their credit card and wait for it to arrive in the post, with a range of options as to how fast you would like it to arrive and the associated cost. This transaction may be cheaper than the local supplier of books.

If the bookstore's profits are largely based on volume, erosion of any of their customer base will have an impact on their bottom line. Their ability to continue to employ staff, pay for the lease on the shop and support their family may be put in jeopardy. The knock-on effect of the bookstore closing and the family potentially leaving town can be significant. There may be two or three less children in school, five fewer people utilising the towns' medical facilities and hospital and spending their income in local businesses.

If the positive effect of the communities' Internet access does not counteract this very immediate impact of "globalisation", the Internet access could in fact be detrimental to the community.

Currently, the overwhelming majority of data flowing between Australia and the rest of the world is from Australia to the US. Australia, and indeed the rest of the world, has a trade deficit with the US in the world's fastest growing economy, the Internet.

As a result, "from a regional planning or economic development point of view it could be argued that to build Internet points of presence.....alone runs absolutely counter to the goals of economic development. Without some strategic vision bringing these communities into the global village unprepared could be seriously detrimental."

"The vast majority of our small businesses have a primary "catchment" area of a few kilometres in urban areas to hundreds in some more remote regions. Unless they have aspirations to build a global market...the Internet as it now stands has little to offer them" [21].

[21] Ibid p. 50-51.

Regional Business Case Study: Kangaroo Pacific Trading

The small Tasmanian town of Westbury, 25km west of Launceston, is home to one of Australia's most successful e-commerce businesses, Kangaroo Pacific Trading. The business specialises in the sale of Australian Football League t-shirts. While this might sound like a fairly limited market, nothing could be further from the truth. KangarooTrading.com sells 95 per cent of its products into the USA.

Company owner Ken Bridge claims "We have the largest stock of officially approved, licensed, Australian Football League t-shirts on earth". He goes on to claim, "Our shirts have some of the finest screen-printing available in the world and all are printed on 100 per cent cotton t-shirts". The T-shirts are manufactured in NSW and all of the graphic design is done in Australia.

Bridge started the business over three years ago when he recognised that AFL was an "obsessive disease" in Victoria and he decided to focus on that market. The Kangaroo Pacific Trading web site was originally hosted in Victoria however demand and therefore Internet traffic boomed. The site was slow loading and did not offer any secure transaction facility.

Sadly he felt compelled to take the site and its development work to the U.S.A where they "understand the commerciality of what the net is about". Bridge feels that Australian web developers are too carried away with the technical aspects of their designs. Simply not giving the customers what they want. Bridge now has a small team of half a dozen people based in the west coast of U.S.A.

While Bridge admits that he knows nothing about the technology, he does know how to sell a product. He realised that to achieve what he wanted from his site he had to apply the 20:2 rule. This rule states, the page has to load in 20 seconds and the customer has to be able to get to an order form in 2 clicks. In other words "people who spend money are not sophisticated, they want it simple and if you make it simple they will use it". He describes some high profile shopping sites as "designed for use by rocket scientists only".

It would appear that Ken Bridge knows quite a bit about building popular sites. He also operates a number of other dot.coms including Ausi.com and UK111.com. These portal sites generate enormous traffic with Ausi.com achieving in excess of 200,000 hits per day.

According to Bridge, the problem with other Australian merchandising sites is that they don't realise that they should be selling to the world, not just Australia. He also feels that the Internet is a visual media and too many sites waste opportunities with long winded "nothing statements" or tricky graphics that are too slow in down loading. While KangarooTrading.com looks basic, it boasts a hit/sales conversion rate of a staggering 4.5% with repeat orders now representing 75% of the business.

The KangarooTrading.com site is simple is to use, with shopping cart and fully secure transaction handling. All sales are made in US dollars at a flat price freight included. You pay the same price delivered to Launceston as you would to Little Rock Arkansas.
What are the secrets to success: keep it simple, keep it visual, keep it fast and look for niche markets.

9. Regional business and community partnerships

It is interesting to note that while Australians are amongst the highest per capita users of information technology (computers, mobile phones and the Internet), the same activity cannot be said of our business sector.

> "Australia's problem is that none of its companies have emerged as important participants in these sectors (except mobile phones) and the country has a trade deficit equal to 1.6% of GDP in high-technology equipment, compared with 1.2% five years ago. As a result, telecommunications and technology represent less than 15% of Australia's stockmarket capitalisation, compared with 33% for the world." BRW Rich 200 List, Article by David James, p. 40-42 May 26, 2000.

As the majority of Internet activity is currently based in North America, and in particular the United States, it is interesting to note that this activity is concentrated in relatively small areas, most famously Silicon Valley and Seattle (Microsoft's and Amazon.com's headquarters). This centralisation of the economic growth and resultant benefits has been of equal concern to the US Government as it has been to our own. Many regions in North America are struggling to capture the benefits of the Internet in the same ways as we are in Australia.

On February 2, 2000, President Clinton announced new budget proposals that, if adopted in full by Congress, would feature $2 billion in tax incentives to encourage private sector activities creating digital opportunities and $380 million in new and expanded initiatives to serve as a catalyst for public-private partnerships. These are outlined in more detail in Appendix 1.

International Case Study: The Western Isles of Scotland (The Outer Hebrides)

The Outer Hebrides comprises six main islands in a chain running parallel approximately 50 kilometres off the Scottish west coast. The northernmost island of the Hebridean chain, Lewis is both the largest and most populous. Tourist information always describes the main activities of the island as crofting (grazing on public land), weaving, fishing and of course it is the centre of the traditional Harris Tweed industry. While the people of Lewis may enjoy an idyllic lifestyle the major area of employment on the islands, fish-farming, pays an average salary of only £8,000 ($20,400AU) per annum.

This may explain the considerable interest that has been generated in the activities of Lewis based Donnie Morrison and his organisation Work-Global. Although born and educated on Lewis, Morrison took up a successful sales career in IT on the mainland. Until one day, in the early 1990s he attended a promotional conference on a range of portable computers. The conference speaker mentioned a future of working from home and he, the presenter, considered the best place for such "teleworkers" to live would have to be either the fringes of the golf course at St Andrews, or the Western Isles. At that time Morrison was already living near St Andrews and since he was born in Western Isles, the seeds of an idea were sown. Then following a conversation with an official from Western Isles Enterprise (WIE) on the subject of creating employment through teleworking, Morrison's thoughts were galvanised into action and Western Isles Information & Communications Technology Advisory Service (WI-ICTAS) and Work-Global was formed.

Today Morrison is something of a celebrity. He says "People whose names I don't know come up to me in the street and say hello." The reason being, work opportunities in the Western Isles are few and far between but Morrison has been able to create over 100 new jobs. What's more these are jobs in the IT and customer service areas rather than the traditional labour intensive industries. An outstanding advocate for teleworking, Morrison now has a skills register of over 600 highly qualified people living in the Western Isles.

His success story began when he won a contract for a year's project research. He travelled around the islands, recruiting and assessing a potential work force. The Western Isles had the highest number of graduates per capita in the United Kingdom, but Morrison was astonished by what he found. Highly skilled people said they were going mad because they had no access to stimulating work. Many were prepared to work for nothing if Morrison could just find them something to do. Initially he managed to compile a database of 160 individuals and although they mainly had an IT focus, Morrison found that all of their work contracts have involved retraining and any computer skills that people have had have proved incidental. Morrison says, "The key abilities required are intelligence, flexibility and motivation".

Having found the work force, he then set out to identify clients. He found initial attempts to attract interest in teleworking frequently met with a poor reception. Within six months, he was able to find an American company, who required a searchable database of current business stories. Ever the salesman, Morrison said "Yes my people can do it" and to his surprise, the company believed him. The rest is history. This contract created work for 18 teleworkers who were trained and equipped specifically for the purpose. The project was a success and the ball was now rolling.

Morrison's project has attracted an enormous amount of interest and over 150 real jobs have been created.

These jobs include an Internet based call centre for a mainland company, employing 60 to 90 people, 2 specialist industrial chemists working for a German company, an Internet-based emergency call-out service targeted at industries involved in the production or transport of hazardous materials employing up to 18 people. Plus many individuals working on contracts for European, US and UK clients.

Making all of this happen has not been cheap. The projects has received a total of 905,000 Euros ($1,400,000AU). None the less, the Work Global web site states:

"The direct efforts of WI-ICTAS and www.work-global.com have created over 150 jobs and ensured that in excess of 50 people have been employed in either home - or office-based teleworking at any one time since the service began. Significant recent inward investment has created a further 28 jobs with an additional 35 expected in the near future.

Whilst initial attempts to attract interest in teleworking frequently met with a poor reception, an increasing number of corporate UK and overseas organisations now recognise the business benefits of teleworking, particularly in an area like the Western Isles with a well established reputation.

The prospects for creating more jobs is undoubtedly increasing and over the next two years plans include the development of a network of rurally based Teleservice centres. A new marketing program is focussing on outsource opportunities both in the public and private sectors. Projected growth in e-commerce would suggest that these smaller centres could find a ready market especially with the additional benefit of low staff turnover experienced in other larger centres in the Highlands & Islands of Scotland. These new developments will also allow homebased teleworkers to make a choice if they would prefer to work in an office.

There are many new opportunities developing with the virtual call centre model, (including) the implementation of an advanced Java based system allows homebased workers to interact seamlessly with colleagues in a Call Centre allowing very flexible and scaleable cost effective solutions for small to medium enterprises (SME's) and larger corporate clients.

Hopefully the " live local - work global " model should go from strength to strength and continue to be a leader in teleworking as an aid to rural development in peripheral areas.

International Case Study - Clarenville – Newfoundland IT Evolution in Progress

Newfoundland is something of an enigma, it just doesn't fit the mould for the rest of Canada. When you meet a Canadian from one of the other nine provinces you may ill advisedly mistake them for an American or maybe French. But when you meet a Newfoundlander you are more likely to mistake him/her for being Irish or English with a west coast, Dorset accent. Although Canada became a dominion in 1867, Newfoundland did not join the Canadian Confederation until in 1949.

[22]The old English West Country fishermen of the seventeenth century had a rhyme; "If it were not for wood, water and fish, Newfoundland were not worth a rush." And for a large part of Newfoundland's history, it was considered a nice place to fish from, but nobody wanted to live there.

Newfoundland's history is richly interwoven with that of Spain, Portugal, Italy, France, England, Ireland and America. The development of Newfoundland was entirely based on the exploitation of the rich cod fishery and permanent settlement was very slow to develop. For example in 1750, only 2,676 people were permanently resident in Newfoundland while Quebec had over 55,000 non-indigenous residents. Today Newfoundland/Labrador has a population of 541,000[23] in a land area of 405,212 square kilometres.

The town of Clarenville is located at the bottom of the Northwest Arm in Trinity Bay at the base of the Bonavista Peninsula. Clarenville has developed a diversified service economy based on transportation and industrial activity. The economy was developed in the 1930's and 40's on the back of industries such as timber, asphalt, shipbuilding and the vital railway link to St John's.

Unlike most of the communities of Newfoundland, Clarenville was not dependent on the cod fishing industry and as such, did not suffer the enormous upheaval of the 1980's when the fishery collapsed due to a decline in catch of 90 percent over five years. Apart from Clarenville and a few larger centres, this collapse significantly impacted all of Newfoundland. The History of the Northern Cod Fishery comments on the collapse:

In Newfoundland, the dependence is staggering.... Almost all of the 700 communities in the province depend directly upon the fishery. Indirectly, even the administrative and business centres depend on the fishery, as they exist in large measure to provide services to the fishery-dependent communities. The loss of the groundfish fishery, for a period of years, can trigger the collapse of whole coastal areas in Atlantic Canada. For Newfoundlands, this could threaten the whole economic and social structure of the province.

It is estimated that the fishery generated between 30 and 70 jobs per thousand tonnes. Therefore as many as 10 per cent of the population were forced into a period of massive readjustment.

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[22] The history of the northern cod fishery (http://collections.ic.gc.ca/cod/contents.htm)
[23] Statistics Canada 1999

It appears that Newfoundland has now turned this significant downturn around. Growth in 1998 was a robust 4 percent, which was largely driven by increased production and investment in the offshore oil industry[24].

In 1989 Clarenville opened North America's first telecentre as the vanguard of what was to be the Newfoundland and Labrador Enterprise Network of telecentres. Their mission was always focused on economic development and on helping to create the conditions for rural small business and institutional entry into the Information Economy[25]. *The aim of the telecentres was to assist small business start-ups to occur within the information sector or as their mission statement clearly puts it, "to transform the rural economy through leadership in information technology applications for economic development."*

The Clarenville centre was located on the campus of a community college. One of the early champions of the telecentre was Steve Quinton who is now Chair of the School of Information Technology and Distributed Learning for the College of the North Atlantic. At that time Quinton was an avid computer user himself, and he saw how the traditional curricula which his College was offering was declining in relevance to the economy and labour market around him.

Today, Quinton reports that "the Clarenville Telecentre was a busy place with 400-600 clients per month". Note the use of the past tense. Clarenville no longer has a telecentre. Quinton does not believe that this indicates a failure of the project. On the contrary the Clarenville experience clearly demonstrates the evolutionary process that many community access centres will go through.

Sustainability has always been a major issue for community owned telecentre/access centres. Quinton admits that, "the cost recovery aspect was never fully implemented". He believes it was an evolutionary process "that as the technology became ubiquitous within the community, the telecentre evolved to a value-added, related activity...web-based learning". The college has now absorbed the telecentre, which was notably the first in Canada to offer diploma programs in Informatics and Telework.

Quinton continues "I was always of the view that telecentres would eventually be the victims of their own success; and, I still feel that telecentres can be quite successful without being self-sustaining". He qualifies this comment with "Telecentres that have a socio-economic development role should be subsidised. Whereas telecentres that provide access services equivalent to a telco should be revenue generating and competitive".

Quinton is justifiably proud of the project outcomes. He states, "The Clarenville Telecentre was community-based with multiple partners each contributing according to their means. It was a great success and fundamentally caused early change in the way business and education is conducted in this province".

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[24] The Newfoundland and Labrador Economy: Finding a New Direction- Jim Stanford 1998
[25] North American Telecentres The *"Trigger"* Model Richard P. Fuchs

He continues, "It became the springboard for all the other technology developments that occurred here. Particularly for the community in:

- *technology diffusion*
- *new economy skills diffusion*
- *application awareness*
- *adoption support*
- *low cost access to infrastructure*
- *general education related to new economy applications".*

The town of Clarenville has a sign at its entrance welcoming visitors to the Information Highway. The town is now in the third generation of a regional IT strategy to foster local economic and business development. As a result Clarenville has the highest annual population growth rate in the province.

In his report -North American Telecentres The "Trigger" Model, Richard Fuchs concludes:

"The Enterprise Network telecentres had dramatic impacts on most of the regions where they were located. It is important to bear in mind that services such as email, file transfer, online searching of library resources and electronic access to experts were all taking place in very rural areas, among groups with the least likely certification for such activity, almost five (5) years before they came to the more urban regions of North America. The skills of using computers, networks and information resources in business and organizational life were actually diffused in these rural regions many years before they came to be adopted in the cities. This was an unusual case where technology deployment in rural areas was more progressive than in the urban centres, almost completely reversing the traditional notion of "extension" from metropolitan institutions to "back of the market" segments.

The Enterprise Network telecentres and online service "triggered" the entry of an entire generation of rural Newfoundlanders and Labradorians into the Information Economy. This happened in business, in education, in government and in community institutions. It originated as an economic development project and accomplished exactly that outcome throughout the society in which it operated. The telecentres were never intended to evolve into commercial operations but rather to build ICT capacity among small business, community organizations and rural institutions.

Along with building the knowledge and skill base among core users in a diverse group of rural institutions, the telecentres helped to "make" the market for the introduction of rural ICT services by established industry. It also conditioned and built the market for online services 7 years before the telecommunications providers offered commercial Internet services. The communities, institutions and businesses that it enabled have all become "sustainable" within the Information Economy.

10. Key factors for a community in harnessing the benefits of the Internet

> "The key to revival lies within that community. It's to do with some of those intangibles, like the presence of local leadership, the ability of that community to come together, to start looking at what (it) is they've got as a community, what it is they want and how they get it.
>
> It's very much about starting to mobilise that community, it's about starting to generate a sense of participation and involvement by that whole community in planning a new future."[26]

a) Community Leadership and Solidarity

Anyone who has worked and lived in any sort of community knows how important, and how rare, this first factor is. The energy and drive required to harness any group of people is substantial. However in all the case studies outlined here, there was one or a number of people who took the lead in identifying that the community needed a plan and that "the knights on white horses" may not arrive to save them otherwise.

These people, in almost 100 per cent of cases volunteered their time voluntarily, a key issue which is discussed in the last point in this section.

While not everyone can devote a significant time to leading their community in this exercise, it is vital that as many members of the community that want to participate, can. Their ideas and opinions need to be sought, ongoing steps are articulated to the community and further debate held and that the result is a broad base of ownership of the chosen path.

b) Identifying strengths and weaknesses

Communities are well aware of what their region has to offer. What is sometimes hard to see when you live in a community, is what potential you might not be exploiting in terms of your region. Identifying the complex range of factors that go to making a successful business case for the path the community takes time and investigation of the possibilities.

Many of the projects funded by Networking the Nation have undertaken what is termed a "Stage 2" process, whereby analysis of the communities communications needs are undertaken. This process needs to be carefully managed by the community, and completed in a much broader context than communications.

That is, some of the outstanding business success stories in the use of the Internet revolve around utilising the Internet to:

- Reduce transaction and input costs

- Speed up and improve information transfer
- Aggregate supply of a good or commodity

The Internet needs to be seen in the context of being a tool, a building block for economic growth and social & regional development. It is not a means unto itself, as opposed to a means to an end. The statistics in Figure 3 demonstrate that a significant part of the battle lies within the business community.

A community needs to ensure that it clearly knows why it needs, and how it will utilise online services to create employment, skill its workforce and improve the lives of its members, before examining what telecommunications services are needed to support these plans.

c) Mapping out the Future

Like any good business plan, a community needs to look at what its realistic goals are and what is required to reach them. The momentum generated in Stage 1 will be significant and it is important that the path chosen by the community can be met, sustained and expanded upon. Loss of momentum through reaching the first step with no further plans or supporting capital and resources can prove a serious setback to the goodwill and hard work of community members.

Some ideas may also fail and it is important to ensure that a contingency plan or alternative strategies have been canvassed to ensure the momentum is not lost.

d) Engaging key stakeholders

A community will need support for a new path, in both capital and human resources. However commitments from key government instrumentatilities, business and those people key to the success of your strategy are essential and can often take years of work.

It cannot be expected that a company or small business will become e-nabled unless they see a commercial return. Similarly, finding a fit with government policies and procedures in the pursuit of grant monies is essential. Work within the parameters that your key stakeholders have in the short term while pushing for significant change, if required, in the longer term.

e) Raising capital

There is no shortage of funds for communities who wish to develop their economic capacity under the current federal Government and, as outlined in Appendix 2, there are significant sources of funding for the development of improved telecommunications access in regional areas.

These funds do recognise that these programs take significant human resources and communities should not be forced to rely on volunteer labour past the early stages. In fact, making community development someone's paid job has been found to pay off handsomely for many communities as this person can devote their whole time and attention to that purpose, something volunteers are seldom able to do.

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[26] Peter Kenyon on ABC's Lateline Program, 18 July 2000.

Attracting the right skills, or developing them locally, also takes time and money and must be factored into capital raising initiatives.

Capital is also fundamental to developing sustainable partnerships in rural areas with businesses, such as businesses in the Scottish example. Close partnerships with Government were also essential in New Brunswick's case to attracting the significant call centre business. In the current political climate, communities with well-thought out local or regional development proposals can receive significant support.

f) Sustainability

All communities go through stages of growth and stages of decline. A 5 per cent increase in commodity prices that are a large part of the regional economy can have a significant flow-on effect to that community. Similarly, the closure of a business or a hospital can have a dramatic negative effect.

If the figure of 25 per cent of all consumers spending will be conducted online by the year 2005, as predicted by the Gartner Group is correct, what is this going to do to a business' "offline" or traditional revenues?

If a business and collectively a community do not have a plan to capture some of those revenues in the community, their market is not only under threat from the other local competition or larger regional centres. It is also under threat from the global market place, by anyone like Ken Bridge of Kangaroo Pacific Trading who has the sort of single-minded focus and attractive product set on the Internet.

11. What the future holds

The debate in Australia as to access to telecommunications is shifting. It is shifting from supply-side factors such as local call access and cost per hour to demand-side factors such as education and income and the influence these factors have on what side of the digital divide that a person finds themselves. Similarly amongst the online economy, focus has shifted from the Internet being purely a supplier of information and communication to one of commerce and trade.

Rob Ferguson, Chairman of Vodafone speaking at an Australian Rural Leadership Program lunch in Canberra as part of the 2000 ABARE Outlook Conference spoke about the lack of Australian leadership as we move through the IT revolution. He spoke of his experience at DAVOS 99, the global economic leaders forum, where he was struck by the lack of mention of taxation reform or industrial relations reform, two issues foremost on Australia's political agenda at the time. The entire proceedings were dominated by opportunities surrounding e-commerce. The predictions of the impact on global GDP, from reduced transaction and other costs, to employment stimulation, Rob Ferguson stated, were staggering.

As we see many of our brightest business minds in this arena, as in many others, head to Silicon Valley to attract the investment and skills required to be successful in this new market, so too does metropolitan Australia drain the skills and investment from regional areas.

This is not to say that there is not a myriad of opportunities in regional areas that communities and businesses are currently exploiting very successful, a fraction of which are mentioned in this report. Business and Government support, as well as that of the local community and region will be fundamental to this process and to rural and regional Australia capturing their own slice of the revolution of our times.

12. Appendices

Appendix 1: US Government Community Development IT Programs

Funding	Objective
$2 billion in tax incentives over 10 years	to encourage private sector donation of computers, sponsorship of community technology centers, and technology training for workers.
$150 million	to help train all new teachers entering the workforce to use technology effectively.
$100 million	to create 1,000 Community Technology Centers in low-income urban and rural neighborhoods.
$50 million	for a public/private partnership to expand home access to computers and the Internet for low-income families.
$45 million	to promote innovative applications of information and communications technology for under-served communities.
$25 million	to accelerate private sector deployment of broadband networks in under-served urban and rural communities*.
$2 million	in grants for Rural USA to target towards the provision of broadband and Internet service in rural areas.
$10 million	to prepare Native Americans for careers in information technology and other technical fields[27].

*Proposal number six explicitly would provide monies for broadband deployment in areas where such networks might otherwise not occur for many years; portions of the funding for most, if not all of the other seven proposals, could also include broadband applications.

State and Local Initiatives in the US

In addition, state and local governments around the US are experimenting with new models and new forms of public-private partnerships to promote private sector investment in advanced telecommunications services. The State of Washington, for example, has passed legislation to promote broadband backbone in rural areas by encouraging local public utilities to sell Internet access on a non-discriminatory, wholesale basis over their fibre optic systems.[28] The State hopes that, by opening these networks, competing ISPs can more easily provide broadband service to remote homes and businesses.

[27] Id. at 1-2.

[28] John Borland, State Looks To Power Companies for Rural Broadband, Yahoo! News (March 28, 2000).

Appendix 2: Australian government community IT programs

The equivalent Federal and State Funding arrangements in Australia for local IT development are:

Funding	Objective
$250m – Networking the Nation First Stage	To address non-metro telecommunications needs
$20 million – Remote & Isolated Island Communities	to address the particular telecommunications needs of remote and isolated island communities.
$45 million Local Government Fund	to assist local government authorities in regional Australia provide online access to information and services including the Internet;
$36 million – Internet access	to stimulate Internet service delivery in regional and rural Australia
$25 million – Rural highway mobile coverage	to provide continuous mobile phone coverage along designated highways
$3 million – SA, WA and Tas mobile coverage	to expand mobile phone coverage in regional centres in South Australia, Western Australia and Tasmania, with $1 million to be allocated to each state. This initiative builds on the funding of $25 million for mobile phones referred to above
$15 million – Tasmania only	establishing local area and wide area networks, linking Tasmanian schools. The program will also provide additional computers and support equipment for the state's government and non-government schools.
$70m - BARN	to promote ongoing, sustainable improvements in regional telecommunications services;

Source: www.dcita.gov.au

Networking the Nation General Fund

Commonwealth grants program funding not-for-profit organisations to support activities and projects designed to address a range of telecommunications needs in regional, rural and remote Australia. $250 million was allocated over a five-year period, commencing in 1997. Funding was allocated to the States and Territories on the following basis:

- New South Wales - $37.4 million
- Victoria - $28.5 million
- Queensland - $53.1 million
- Western Australia - $26.5 million

- South Australia - $26.5 million
- Tasmania - $58 million
- Australian Capital Territory - $4 million
- Northern Territory - $16 million

The objective of Networking the Nation is to assist the economic and social development of regional, rural and remote Australia by funding projects which:

- enhance telecommunications infrastructure and services in regional, rural and remote areas;
- increase access to, and promote use of, services available through telecommunications networks in regional, rural and remote areas; or
- reduce disparities in access to such services and facilities between Australians in regional, rural or remote areas and those in urban areas.

'Regional, rural and remote areas' are any areas located outside the capital city of each State or Territory. Potential applicants should contact the Networking the Nation Secretariat as to the availability of remaining funds for a particular state/territory. Examples of funded activities include:

- providing new telecommunications infrastructure and services, including in relation to both the Internet and mobile telephony;
- providing training, skills development, and awareness-raising programs and services; and
- supporting survey, planning, and strategy development processes.

Remote and Isolated Island Communities

This part of the Fund is providing $20 million to address the particular telecommunications needs of remote and isolated island communities. This element of the program will specifically allow access to Networking the Nation funding for those external territories previously ineligible for funding under the program, as well as providing significant support for other remote island communities particularly disadvantaged by their isolation.

Projects funded under this part of the Fund are similar in nature to those funded under the General Fund. Specific Board funding priorities for this element of the program, and more detailed eligibility criteria, are identified in the Remote Islands fact sheet at www.dcita.gov.au.

Improved Internet Access

This part of the program is providing $36 million to ensure that all Australians have untimed local call Internet access, or at least the equivalent where traditional dial-up access is not feasible. Specific Board funding priorities for this element of the program, and more detailed eligibility criteria, are identified in the Internet Access fact sheet.

Building Additional Rural Networks (BARN)

This part of the program is providing $70 million to support the development of new networks and new network services and products, using innovation and leading edge technologies. $10 million is being provided to each State, with a further $10 million to be divided between the Territories.

Specific Board funding priorities for this element of the program, and more detailed eligibility criteria, are identified in the BARN fact sheet.

Local Government Fund

This part of the program is providing $45 million to assist regional and rural local government authorities in using telecommunications to deliver improved services and benefits to their communities. Each State will receive funding of $6 million, $6 million will be divided among the Territories, and the remaining $3 million will be maintained in a national pool.

Specific Board funding priorities for this element of the program, and more detailed eligibility criteria, are identified in the Local Government Fund fact sheet.

The $158m Building IT Strengths (BITS) program

BITS is aimed at fostering stronger commercialisation linkages with R&D organisations and creating clusters of innovative IT&T businesses. It has three core elements:

- **$78m Incubator Centres** - to assist IT&T small to medium enterprises. This program has been launched and is designed to fund at least one incubator in each State and Territory (with the exception of Tasmania, which will be funded through a separate "Intelligent Island" program).

- **$40m Australian Advanced Communications Infrastructure Development (AACID) fund**. A consultant has been appointed by the Department of Communications and the Arts to provide advice on likely demand for advanced network services, the range of likely users, current and future needs for international research bandwidth, and current and planned advanced networks in operation in Australia. The consultants are due to complete their report in early January.

- **$40m Tasmanian 'Intelligent Island' program** - this program is aimed at further developing the IT&T sector in Tasmania. The program will be overseen by a Council comprised of representatives from the Commonwealth and Tasmanian Governments, and the Tasmanian IT industry and tertiary education sectors. Negotiations around the composition and work program of the Council are continuing.

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