

dandolopartners

Use of broadband by regional Australians

A qualitative research project

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dandolopartners

dandolopartners Pty Ltd

ABN 75 100 910 610

Melbourne

2nd Floor, 50 Market Street

Melbourne VIC 3000

Telephone: (61-3) 9211 0015

Facsimile: (61-3) 9211 0014

Web: www.dandolo.com.au

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Contents

Executive summary	4
Scope of and context for the study.....	4
Departures from prevailing views	4
Confirmations and elaborations of prevailing views	4
What was disputed.....	5
Notable exceptions by gender, age or location	6
Implications of the findings for the government and service providers.....	6
Introduction.....	7
Research methodology and profile of respondents	7
Reading this report.....	10
Chapter 1	11
How participants came to use broadband	11
People's experience with the Internet prior to broadband.....	11
History of technology adoption prior to broadband.....	11
Technological skill level prior to broadband	11
Motivations for switching to broadband	12
Desire to gain access to particular content.....	13
The falling price of broadband.....	15
Attraction to the added convenience of broadband.....	16
Decision-making process in moving to broadband	17
How people became aware of broadband	17
Knowledge of broadband prior to adoption	18
Evaluation of broadband versus dial-up and of specific offers	18
Chapter 2	22
How broadband is being used.....	22
Levels of use have increased	23
Types of usage	24
Sophistication of use.....	26
Regulating and monitoring personal and household use.....	27
Overall importance of broadband to regional Australians	28
Satisfaction with broadband	30
Levels of satisfaction	30
Chapter 3	35
Expected role of government and implications	35
Perceptions of the role of government in increasing use and satisfaction.....	35
Potential implications for government.....	37
The Australian Government's focus on regional Australia is important.....	37
Interest in the government's role as a market regulator will intensify	37
Government will remain an important source of information about what infrastructure is currently available	37
The community sees little role for the government as a content regulator	38
Implications for service providers.....	38

Overall service quality is of a high standard, but expectations will rise with experience38

There is a risk that information about commercial deals will confuse, rather than assist, customers to make broadband decisions 39

Services that target the low end of the market may hurt broadband uptake..... 39

Executive summary

Scope of and context for the study

The Department of Communications, Information Technology and the Arts provided financial assistance for dandolopartners, under the Telecommunications Research Grants program provided under s.593 of the Telecommunications Act 1997, to investigate how regional Australians were using broadband, and what they were using it for. Information was collected from almost 70 broadband users living in regional Australia using qualitative research techniques. Six focus groups and nine in-depth interviews were conducted in four Australian states.

Departures from prevailing views

How people became aware of and evaluated offers

Focus group and interview subjects said they:

- Rely heavily on service providers rather than independent bodies and government for information about broadband

Types and amount of usage

Focus group and interview subjects said they:

- Are generally using broadband to access sophisticated, rich content
- Are mainly switching to broadband for entertainment related content
- Rapidly gain proficiency with the Internet, with inexperienced users quickly becoming discerning
- Are spending considerably longer on the Internet - 50–500% longer - after switching from dial-up to broadband
- Occasionally worry that they are spending too much time on the Internet
- Are generally using it for less sophisticated applications, but more often for communication, if using broadband for business purposes
- Are much more likely to reduce the number of hours they spend on the Internet towards the end of the month when they on shaping and limited download plans
- Tend to use informal filters to restrict access to particular types of content
- Are generally aware of the need to regularly upgrade anti-virus software – even inexperienced users

Levels of Satisfaction

Focus group and interview subjects said:

- Their satisfaction with broadband performance correlated with the price of their plan, and those on low-priced plans reported speeds similar to dial-up
- They were highly satisfied by the level of technical support offered by providers
- The greatest unanticipated benefit of switching to broadband was that the cost of Internet service has generally dropped, or stayed the same
- Those new to broadband recommended it to as many to 50 people, including family, friends and work colleagues

Confirmations and elaborations of prevailing views

People's experience level prior to adoption

Focus group and interview subjects said they:

- Are migrating to broadband from dial-up, with broadband being adopted by very few new users
- Evaluate broadband options against two measures: price and download capacity
- Are switching to broadband to access richer and more sophisticated content, rather than for basic functions

Types and amount of usage

Focus group and interview subjects said they:

- Believe broadband is potentially more important to regional Australians than those living in metropolitan areas
- Are using the Internet for extended periods of time and are watching less television
- Are experiencing intense competition to use the Internet from others in the household, which increased when the household is connected to broadband
- Are partly motivated to switch to broadband to enable children to get a better quality service for educational use

Levels of satisfaction

Focus group and interview subjects said they:

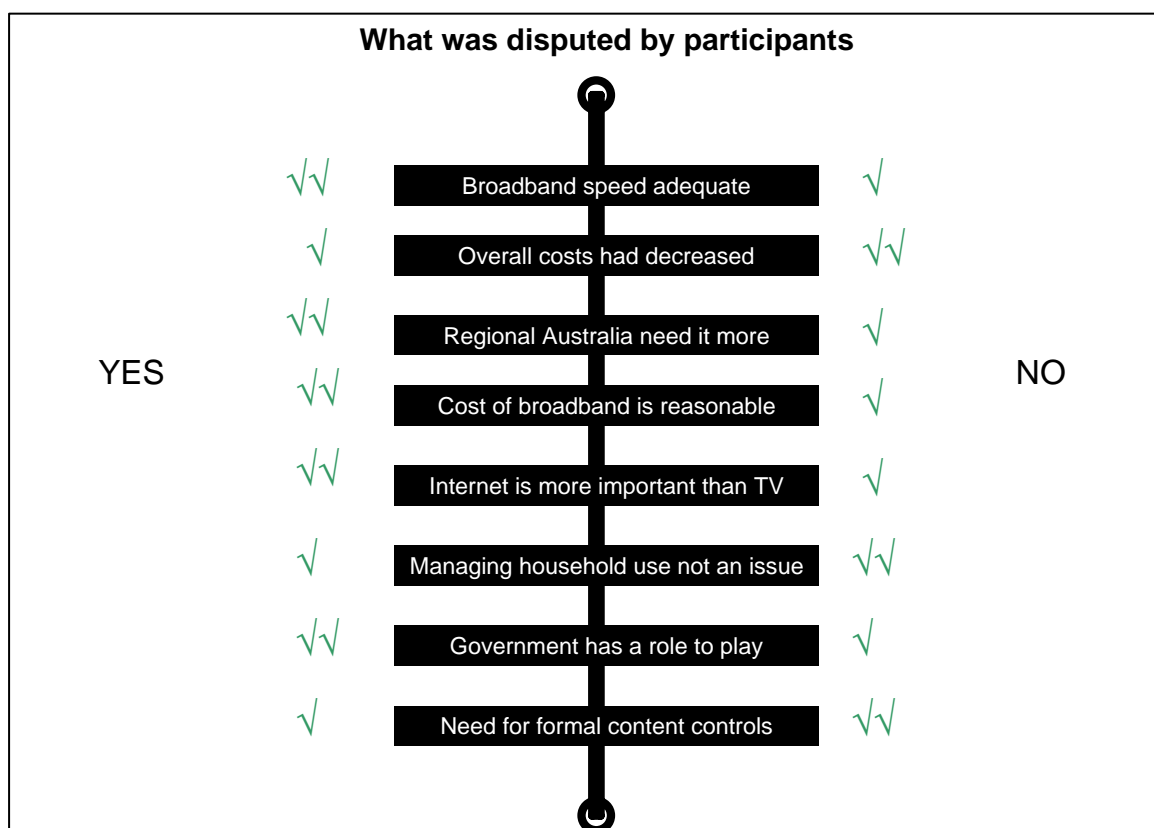
- Were highly satisfied by most elements of broadband service, including the diversity and quality of content available
- They would be extremely reluctant to return to dial-up
- Are extremely concerned about spyware and viruses
- Are confused by the complexity of broadband plans, particularly bundled options
- Had a reasonable level of awareness of the HiBIS Scheme, but assumed they did not qualify

Role of government

Focus group and interview subjects said they:

- Saw a significant role for government in ensuring the provision of basic broadband infrastructure, particularly in light of the Telstra sale

What was disputed



Notable exceptions by gender, age or location

People over 40 interviewed as part of the study were:

- Significantly less likely to use the Internet for audio downloads and networked games than younger people
- More likely to express their motivation for switching to broadband as a positive statement such as wanting to get access to faster speeds rather than a negative statement such as being frustrated with the slow speed of dial-up
- More likely to have had technical difficulties requiring support
- More likely to be using the Internet for business purposes
- More likely to be aware of the HiBIS scheme

Females interviewed as part of the study were:

- Less likely to be the decision-maker when it came to switching to broadband
- Less likely to be motivated to switch to broadband by sports related content than males
- Slightly more likely to be the heaviest user of the Internet in the household
- Significantly less likely to describe themselves as being technologically minded

The following geographic differences were noted:

- Mackay interviewees were less likely to express a lack of retail choice as being a reason that broadband is more important for regional Australia
- Mackay interviewees cited a higher degree of dissatisfaction with low-cost plans than those in other locations
- Wangaratta interviewees were more likely to cite difficulties managing household usage than those in other locations
- Victor Harbor interviewees felt less isolated than those in other locations, and therefore felt that broadband was not significantly more important than it was for people in metropolitan areas

Implications of the findings for the government and service providers

For government:

Focus group and interview subjects suggested:

- That the focus of policy should be on infrastructure, ensuring provision of market information and supporting sophistication of use rather than simply raising awareness
- Interest in the government's role as a market regulator will intensify
- Government will remain an important source of information about what infrastructure is currently available
- The community sees little role for the government as a content regulator
- Greater awareness of HiBIS and its qualification criteria is required

For service providers:

Focus group and interview subjects suggested:

- Overall service quality is of a high standard, but expectations will rise with experience
- There is a risk that information about commercial deals will confuse, rather than assist, customers to make broadband decisions
- Confusion about what is available in the market place aids incumbents
- Services that target the low end of the market may hurt broadband uptake in the long-term
- Maintaining current high levels of technical support will be important
- Demand for bandwidth is higher than supply, but not at current pricing levels for high-end plans

Introduction

There is a growing recognition by governments, corporations and communities that telecommunications services play an important role in economic sustainability and social well being¹. The rise of the Internet has created new demands on existing telecommunications infrastructure, and has prompted significant public and private sector investment in broadband infrastructure. Broadband, in this context, is used to describe “a high-bandwidth connection to the Internet, one that allows information to be sent and received at a rapid rate.”² While no universally agreed minimum speed clearly defines broadband, speeds above 256kbps are generally referred to as broadband.

The demand for broadband services in regional Australia has been well documented. As noted by DCITA:

Internet access through broadband technology allows users to access high bandwidth interactive services (e.g. e-learning, interactive games) and download rich and larger amounts of online content at greater speed in an operating environment that is ‘always on’. An increasing number of Internet users are adopting broadband technology as a means to enjoy more sophisticated and dynamic electronic service delivery solutions.³

Despite the acknowledged importance of broadband in regional Australia, little is known about people’s actual attitudes towards and experiences of broadband. This is due to the fact that most research to date has focused on macro level quantitative data such as broadband coverage, adoption rates, connection types and user demographics. The research provides a high level understanding of broadband’s impact on the community, but is less useful in providing an understanding at the household level. For example, there is little understanding of how households regulate usage and the specific content that people are using. There is also limited understanding of people’s satisfaction levels with various elements of broadband delivery.

dandolopartners, in conjunction with the Australian Telecommunications User Group, the Australian E-Commerce Centre and Community Information Strategies Australia, was provided with a Telecommunications Research Grant to conduct research into the community’s experiences with broadband. The project was designed to investigate people’s motivations for using broadband, how they became aware of options, how they evaluated offers and how the levels and types of use had changed since switching to broadband. The project also investigated the frustrations, concerns and benefits associated with broadband use, and was intended to provide an additional layer of information to inform government decision-making on the subject.

Research methodology and profile of respondents

The process for undertaking the Telecommunications Research Grant project was divided into four phases:

1. Project development and set-up workshop
2. Conduct qualitative research
3. Analyse and synthesis findings
4. Develop and present final report

¹ Demand Aggregation Manual, DCITA, pg 1

² Demand Aggregation Manual, DCITA, pg 14

³ *Information Economy Index, 2004*, DCITA, pg 17

A steering committee from the Department of Communications Information Technology and the Arts provided comments to dandolopartners on various aspects of the research.

Two qualitative research instruments were used: focus groups and in-depth interviews. The focus groups provided a means of testing people's attitudes amongst their peers, enabling people to talk about issues in a conversational setting. The focus group participants were recruited to reflect, to the extent practical, a cross-section of regional Australia. Participants were screened prior to attendance to ensure that they had broadband connected at home, and did not commute to a major metropolitan centre for work.

Two focus groups were conducted in three locations. Group members were segregated by age to ensure that the discussion was among peers, and to increase the chances of free-flowing discussion. One group in each location involved people up to the age of 40 years old, while the other group contained participants over 40. Though not strictly enforced as age was, efforts were made to ensure that focus groups achieved a mix of:

- Gender
- Education levels
- Occupations
- Broadband experience
- Knowledge of broadband

In-depth interviews allowed for a more detailed individual discussion, and took place in the participants' homes. The in-depth interviews were designed to explore individual attitudes and behaviours in detail and to further explore focus group findings. Interview participants represented a mix of household types, including families, single person households, couples and those in shared accommodation. Most interviews took place with more than one household member present to develop a more accurate picture of the interplay between users, including how household use was managed.

Four Australian States were included in the sample: South Australia, New South Wales, Queensland and Victoria. Locations for focus groups and interviews were selected on the basis that they represented a mix of:

- Population sizes
- Distances from major cities
- Inland and coastal centres
- Community and industry types, for example tourism, agricultural, mining and retirees

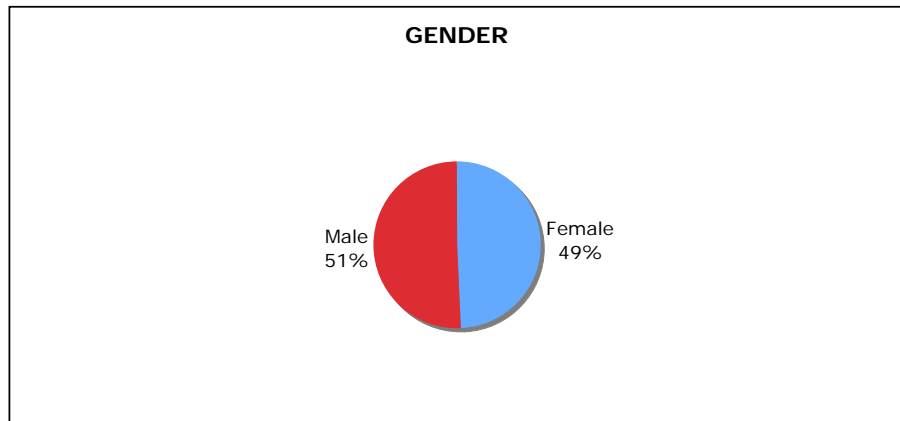
Within these states a number of specific locations were selected, on the basis that they provided an appropriate cross section of regional centres. The regional centres chosen were Victor Harbor (SA), Wangaratta, Myrtleford and Benalla (Vic), Albury (NSW), and Mackay and Proserpine (Qld).

Respondent profile for focus group and interview participants

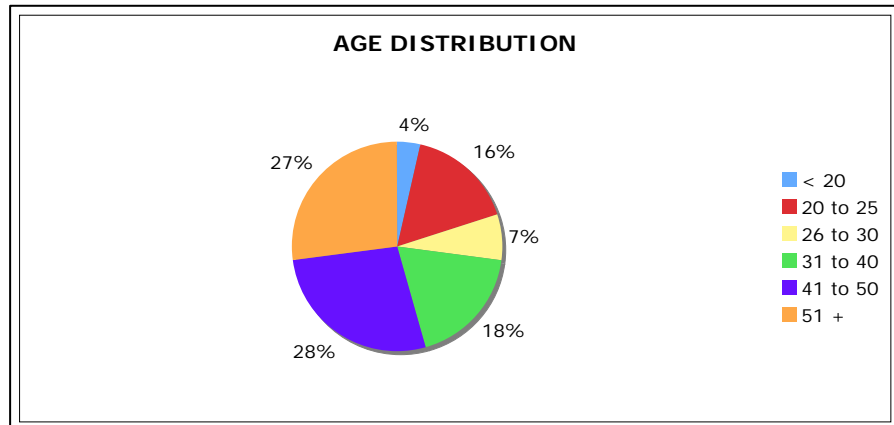
Six focus groups were conducted in Wangaratta (2), Victor Harbor (2) and Mackay (2). The focus groups ran for approximately 90 minutes, and included around 8 respondents. Nine household interviews were completed in Wangaratta (1), Myrtleford (1), Albury (2), Victor Harbor (2), Proserpine (2), and Benalla (1). The following figures provide a snapshot of participant demographic profiles.

A total of 56 people were interviewed as part of the study.

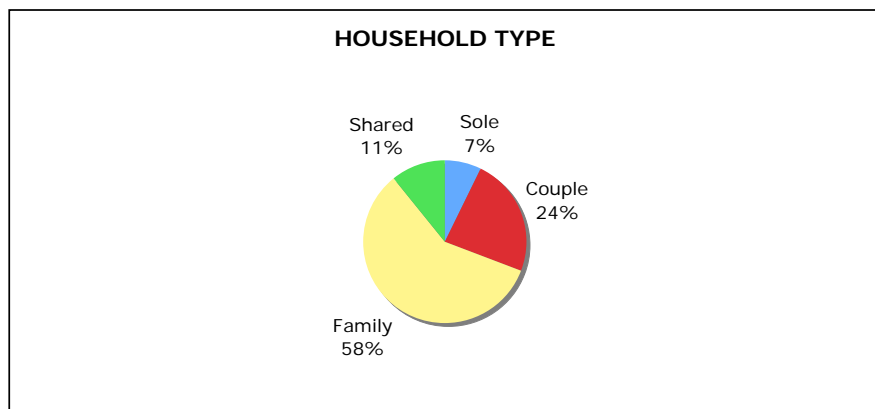
Gender breakdown of participants



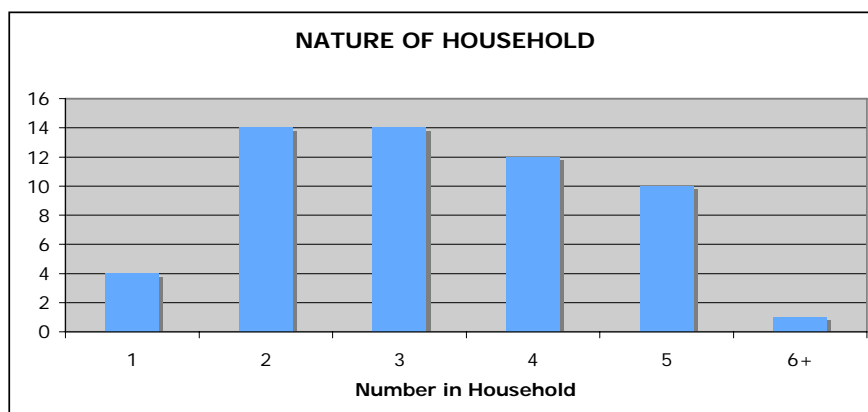
Age breakdown of participants



Household type profile of participants



Number of individuals in households

**Advisory committee**

An advisory committee convened by dandolopartners provided input into the design and implementation of the project. Representatives from the Australian Telecommunications User Group (ATUG), Australian Electronic Commerce Centre (AECC) and Community Information Strategies Australia (CISA) reviewed and contributed to draft questions and key findings.

Reading this report

This report is divided into three chapters:

- 1) How regional Australians came to use broadband
- 2) How they actually use it
- 3) The implications of the findings

The first chapter profiles people's experience prior to adopting broadband, and their motivation for adoption. It also examines the process through which they became aware of broadband and the evaluation process for assessing various plans.

The second chapter identifies the type, level and sophistication of Internet use before and after adopting broadband. It also examines levels of satisfaction with broadband, including benefits achieved and frustrations and concerns.

The final chapter identifies people's views about the appropriate role of government. It also identifies the broader implications of the findings for government and service providers, and is intended to inform rather than recommend policy directions.

NOTE: "The 'Identifying and exploring the issues regional Australians face with their use of broadband and broadband applications' project is supported by the Australian Government through the Telecommunications Research Grants Program of the Department of Communications, Information Technology and the Arts".

Chapter 1

How participants came to use broadband

This chapter outlines people's attitudes and behaviours prior to adopting broadband. It provides a detailed understanding of people's history of Internet use prior to broadband, levels of technical proficiency, motivations for exploring broadband services and the process people undertook in evaluating available options.

People's experience with the Internet prior to broadband

History of technology adoption prior to broadband

The vast majority of interviewees had been connected to dial-up services prior to adopting broadband. In most cases, dial-up had been connected to the household for two years or more. People suggested that connecting to dial-up had been a much more involved decision than the connection to broadband. This was primarily because issues such as where to store the computer, and whether the cost of connection was justified, had already been answered. For most people the reason they did not connect to broadband earlier was that it was previously considered too expensive, or not available in their area.

The shortest time between connecting to dial-up and switching to broadband was three months. At the other end of the spectrum, some people had been connected to dial-up for nearly a decade before switching. There appeared to be few patterns with regard to the length of time that people had been connected to dial-up. For example, people operating home-based businesses had been connected to dial-up for about the same length of time as those using it for entertainment purposes. People using the Internet primarily for work purposes appeared to adopt broadband as soon as it became available in a particular area, compared to later adoption by those using it for entertainment, household functions and educational purposes.

Several participants in the study had not been connected to dial-up prior to adopting broadband. Where a person's first home Internet experience was via broadband, the reason they had not connected to dial-up in the past was that they did not want to lease a new phone line or occupy their existing phone line for extended periods.

Most interviewees that had used the Internet at work prior to adopting broadband had used a dial-up rather than a broadband connection. A significant proportion had used public access terminals to gain access to the Internet prior to adopting broadband at home. As far as participants were aware, these public access terminals were exclusively dial-up services. There were only a few cases where interviewees had used broadband at work in the past, and less than 10 per cent of participants had used broadband at a family member or friend's house prior to adopting broadband.

Technological skill level prior to broadband

People's technological skills prior to adopting broadband varied widely, as would be expected of a cross-section of regional Australia. People described themselves as one of four types:

1. Complete novice, requiring assistance with the most basic functions such as understanding how to navigate
2. Basically familiar with the Internet,
3. Able to trouble-shoot most technical issues unassisted and install complex applications

4. Capable of solving all but the most complex technical issues, and in some cases able to develop their own programs and build and repair computer hardware

People's skill level prior to adopting broadband was a key determinant of the speed of broadband adoption. Those of higher skill levels tended to be more interested in technological developments, more aware of available options and more likely to be using sophisticated content. It follows, then, that they were also the first group to feel the need for broadband. This group was over-represented by people aged 40 and under, based on the study.

Those that possessed greater technological skills also tended to be more demanding of their Internet performance, both before and after adopting broadband. The demands on networks created by large file transfers, software downloads, video-conferencing and networked games – in many cases made possible by people's skill level and experience – created dissatisfaction with dial-up services more quickly.

Motivations for switching to broadband

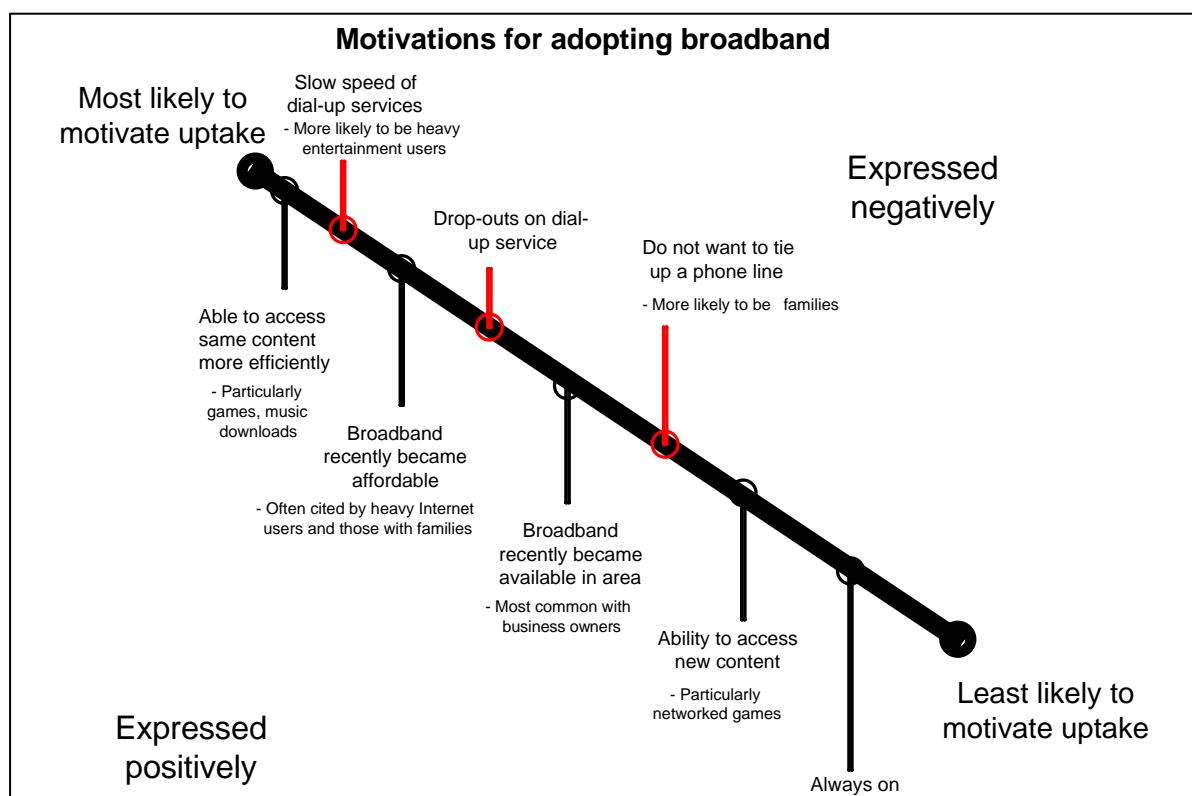
People's decision to move to broadband was generally driven by one of two inter-related factors:

1. Frustration with the current performance of dial-up services, or
2. The lure of faster, and in some cases cheaper, broadband services

Interviewees most often expressed their motivation for switching to broadband in a negative context. That is, they were more likely to describe their motivation as dissatisfaction with slow dial-up speeds than the attraction of fast broadband speeds. Younger participants in the study were more likely to express frustrations with dial-up services, rather than the positive aspects of broadband, when talking about their primary motivations for shifting.

Below is a characterisation of the reasons given by people for moving to broadband, although it was difficult for people to isolate any one factor. In most cases, the motivation to adopt broadband was a corollary of a number of factors. For example, those that said their primary motivation was to gain access to the faster speeds of broadband also took into account the cost of the service. The following figure provides a description of responses relating to people's primary motivations for switching to broadband. Those motivations that appear further to the left of the spectrum were raised most often by participants.

Figure 1.1 Motivations for adopting broadband



Desire to gain access to particular content

Content, rather than communication, was the main feature that attracted people to the Internet. The content took many forms, including information, games, music, services and transactions. Overwhelmingly, people suggested that the main reason for switching to broadband was to gain access to previously used content more efficiently, rather than new content.

The ability to download previously used content more efficiently

The type of content that most use on the Internet has not changed significantly since moving to broadband. Business users, for example, generally used the Internet to gain access to or display product information, and for tasks such as completing taxation requirements and banking. This was also broadly true of people using it for entertainment purposes, as this group had generally used games and music prior to switching to broadband. Young people were significantly more likely to use the Internet for games and music.

What has changed is the speed with which content is processed, and the amount of content that is downloaded and uploaded. Participants in the study said that the key reason for moving to broadband was to save time and avoid the frustration that they had experienced with dial-up. People described the efficiency of broadband in two ways:

1. Enabling rich content to be uploaded and downloaded more quickly and content to be manipulated real-time
2. Preventing interruptions to services, particularly during large file downloads including audio files

An example of the first type of efficiency was described by a business owner from Victor Harbor, who suggested that the ability to download building regulations had been a major consideration in the switch to broadband. People using the Internet primarily for games, particularly those that are networked, generally switched to broadband to take advantage of seamless game play and the ability to manipulate content in real-time.

For people using the Internet for household functions, such as Web browsing, banking and government services, speed was thought to have become more critical as applications had become more advanced. The importance of speed was such that many felt they could not go back to the slower performance of dial up, once they had made the switch.

I had to actually go to someone's house to see what speed they were running at and then went ok- now I have to change. Its like flying first class, you can never go back to coach again.

Focus group participant, Mackay

A number of people suggested that they were more attracted to broadband's reliability than its sheer speed. This was particularly true of more technologically advanced users, who frequently downloaded software and large files from the Internet. People that considered themselves to be advanced users tended to be under 40 and male. People indicated that household functions took several hours at a time – longer if the connection failed at any point – on dial-up services.

We used to have to get a software update once a month, and you go home for lunch for an hour, you go back to the office and it (the download) would just be finishing. But on broadband it takes 2 or 3 minutes to do the same thing.

Focus Group participant, Wangaratta

People using broadband primarily for communication, rather than content, also characterised their primary motivation for switching to broadband as efficiency rather than the ability to gain access to previously inaccessible Internet communication channels. For businesses, the need for broadband for communication purposes was first felt when they transferred large files via email. In some cases business owners suggested they had to make specific arrangements to make such transfers, such as sending large files overnight or at times when the connection was unlikely to be interrupted by an incoming fax.

In family households the primary users of the Internet for communication purposes were children. In this case, broadband offered a more efficient means of using chat forums via the Internet. Services such as MSN Messenger were said to be much more difficult to use via dial-up, with lags in information transfer making the experience frustrating. Messaging services were also more likely to be used by those aged under 40 than those over 40.

Downloading new content

A limited number of participants indicated their primary reason for switching to broadband was to gain access to content that was previously unavailable to them on dial-up. People in this bracket were significantly more likely to be using the Internet for entertainment purposes, rather than business, educational or household functions. Networked games with rich graphics were judged to be virtually inaccessible on dial-up connections, and for many of these users the opportunity to play games with friends and strangers was the only motivation for adoption of broadband. In one case, new content (horse racing) was made available as part of a broadband offer, and was the main reason for the switch to broadband.

A bloke was showing me some of the things that were available on Bigpond and one of them was horseracing...so that was the clincher I suppose.

Household interviewee, Victor Harbor

The falling price of broadband

A high number of participants indicated that their primary motivation for adopting broadband was the fact that broadband had recently become affordable. When assessing the price at which broadband had become attractive, a number of measures were used:

- The price had dropped to a level that was within 20 or 30 percent of the price paid for dial-up services; or
- The price had dropped to a level that was seen to justify the anticipated benefits of a switch to broadband. That is, the price was at a point they felt was fair for the enhanced features it was providing.

I'd been watching it for a while, the plan prices, and then when I'd seen one come in at \$29.95, unlimited, no extra dial-ups....that will do.

Focus Group participant Victor Harbor

People that had taken out low-cost plans were considerably more likely to have been motivated by the falling cost of broadband. Few people that had taken out low-cost plans had ever contemplated a move to broadband, but found the offer of “\$10 a month, all you can eat deal” too good to pass up. In most cases, people took up offers of 24 months, which have become standard in the broadband market. Whilst some people expressed some concern about the length of time they needed to commit to, most wanted to take advantages of special discounts that were generally offered as part of two-year deals. Take up of and dissatisfaction with low-cost broadband plans was more commonly reported among Mackay focus group participants, and by those aged over 40.

Unless the Internet was used primarily for work purposes, the cost of broadband was generally treated as an entertainment expense. In weighing up the cost of broadband, several participants suggested they considered it an item in the same category as taking out a pay TV subscription. That is, it was a discretionary purchase. A number of participants indicated that this attitude had since changed, and that after adopting broadband it was treated in the household budget as an essential service.

Broadband had recently become available in a given area

The fact that broadband services had recently become available in a given town was a major motivation. In some cases, people had a strong desire to adopt broadband several years before they made the switch but had been prevented from doing so because the relevant infrastructure had not been in place. This was particularly true of business owners, and those that had been using the Internet for an extended period of time.

More common, however, was that people's interest in broadband was sparked when they became aware that broadband was available in their area. One couple in Myrtleford, for example, said they had never considered broadband until they received a brochure from a service provider announcing that the service was now available. Isolating geographic differences in the length of time people had been connected to broadband was difficult, as broadband had only been available for a few months in some areas.

Attraction to the added convenience of broadband

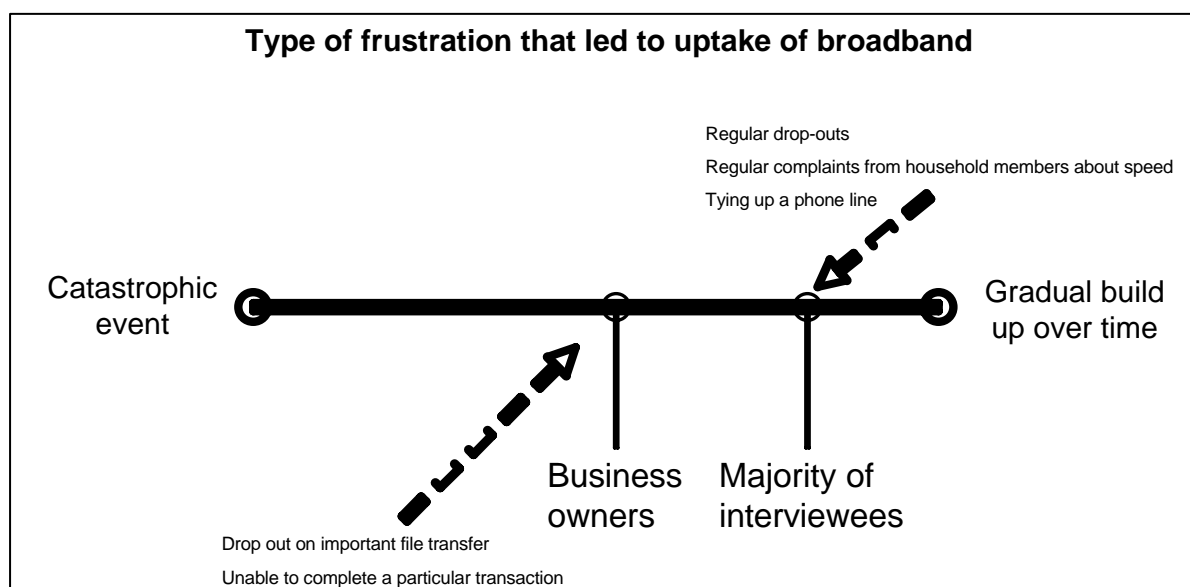
The convenience of broadband, in this context, relates to the factors that make the process of getting online easier, and being online less of an inconvenience for other members of the household. Two key features of broadband were considered to add convenience in this context: the increased reliability of connections and the fact that broadband was always on.

Reliability of connection

Poor reliability of dial-up services was a major reason for participants' interest in broadband. Some people suggested that the connection to their Internet Service Provider (ISP) had been lost more than five times in a single session, and in some cases more. This not only generated significant frustration, but also added considerable expense in local calls. Exacerbating the frustration was the fact that service dropouts occurred at awkward times when people were in the process of downloading or transferring large files. The frequency of dropouts had left some participants with no alternative but to switch to broadband.

Interviewees with home businesses reported dropouts or system crashes more frequently. The owner of a pest control business, as an example, encountered frequent system crashes when trying to transfer a log of orders to a sister company in the US. The situation had become so dire that a switch to broadband was seen as essential, and was made as soon as the service became available in their area. Owners of home businesses, in this way, more often pointed to a single, 'catastrophic' failure that motivated them to explore broadband, rather than a gradual build-up over time.

Figure 1.2 Types of frustration leading to switch



The 'always on' feature and not having to tie up a phone line

The 'always on' feature of broadband was rarely seen as the primary motivator for switching to broadband. Some interviewees indicated that they were not aware of the feature before switching to broadband.

More important to people was the fact that broadband freed up the phone line while people used the Internet. An interviewee from Proserpine refused to connect to the Internet until it could be done via broadband, as she was adamant that the phone line should be available at all times. For a couple in Myrtleford, who were both

volunteers at the Country Fire Authority and needed to be on call, using the Internet for long periods on dial-up was out of the question. Concerns about tying up a phone line were most frequently expressed by parents of teenage children. The attractiveness of the 'always on' feature of broadband was reported more often by females than males, and by those aged over 40.

Decision-making process in moving to broadband

As part of the study, the actual process for making a switch to broadband was investigated. The study sought to determine how much people knew about broadband before making the change, how they came to be aware of it and how they evaluated various offers.

How people became aware of broadband

Three key sources of information prompted people's awareness of broadband: service providers, friends/peers and independent investigation via the Web.

Marketing material from carriers and service providers was the primary information source for people becoming aware of broadband. These ranged from mass media advertisements, through to direct mail and brochure material. The effectiveness of the marketing material of service providers was particularly effective when it drew people's attention to a service they didn't realise was available. Marketing material was also effective in making people aware of the falling cost of broadband. People aged over 40 tended to rely more heavily on service providers for information about services. This is due in part to the fact that those aged over 40 generally described themselves as being less technically minded than younger participants, and therefore less discerning.

Friends, families and peers were often critical channels for information about broadband and its benefits. In some cases, families and friends that recommended broadband were also able to show the benefits via demonstration. An interviewee from Proserpine said she had been previously unconvinced by broadband's benefits until her sister encouraged her to use it for a few hours: *"I was connected within a week"*. The power of friends, families and peers as an information channel is significant: of the people interviewed for this study, most had told between 10 and 50 people of the benefits of broadband since adoption. In many cases, people suggested that others had switched to broadband on the strength and nature of the recommendation.

Another information source for parents considering Internet options was children. Several examples were raised where children had made their parents aware of the availability and affordability of broadband, and in some cases took a lead role in collecting information about various offers and evaluating them. Children's role as advocates was considered an important one, particularly among those that were recent Internet users.

In general, the final decision on whether to adopt broadband was made by a parent, and generally the eldest male in the household. More than two thirds of all people interviewed suggested that the key decision-maker for a switch to broadband was the oldest male in the house. There were some exceptions to this pattern, including one Mackay participant who returned from work one day to find broadband had been ordered and installed by his wife.

A third major source of information about broadband options was independent research. Long-term Internet users and those with greater technical proficiency

favoured this method. For this group, Internet-based technical forums were used to gather information and inform evaluations. People sometimes asked friends and family members, particularly those acknowledged as having some technological competence, for advice on where to find quality, up-to-date information about broadband on the Internet.

Knowledge of broadband prior to adoption

Knowledge about specific broadband features and technologies prior to adoption varied widely. At one end of the spectrum, some participants had no or little knowledge of what broadband was or how it worked. This group generally had no understanding that different types of broadband technologies existed, and were more likely to be aged over 40. This group was generally less experienced in using the Internet, and much more likely to adopt a low-cost plan based on marketing material from a provider.

I do rely on the children to remind me of what is new in the market.

Focus group participant, Victor Harbor

At the other end of the spectrum was a group of highly sophisticated, well-informed purchasers. Most of these participants generally understood in detail how much bandwidth they were using on dial-up, the different broadband technologies that existed and the performance improvements they could achieve by switching to broadband. This group tended to be early adopters of broadband, often switching as soon as it became available in their area, and was more likely to undertake independent research to evaluate their options. People aged under 40 were more likely to be early adopters of broadband.

The reality for regional Australians, however, is that no matter how detailed a person's knowledge of broadband, there are few choices in the types of services available. All participants in the study were connected to ADSL broadband services, which reflects current available infrastructure. Even though it was not generally available and therefore not a real option, people felt that cable services were superior but expensive and that satellite services offered a level of performance that was only slightly better than dial-up, if at all. Younger participants expressed a greater interest in and knowledge of cable services, with several suggesting that they would make the switch to cable when it became available in their area.

Evaluation of broadband versus dial-up and of specific offers

The process used by participants to evaluate the merits of connecting to broadband was a value assessment. People generally asked themselves whether the perceived higher cost of broadband was justified by the added efficiency and convenience it offered. Most people considered the decision to be a straightforward one, and the real decision was not whether to get broadband or not but which package to choose. As discussed in the previous section, the added efficiency of broadband was generally seen to justify additional expenditure in the range of 20-30% over and above dial-up costs.

The key trade-off that people managed in switching to broadband was one between price and download limit. Though most people said they wanted a good deal when they investigated broadband, what represented a good deal varied considerably depending on people's needs. The following responses summarise the key positions people took on this trade off.

Scenario 1: Higher price, best possible performance

For this group, no amount of download capacity or degree of speed was sufficient. The group was using the Internet for graphic-rich networked games or music downloads, and often had a number of networked computers in the one household. This group typically paid up to \$100 per month for a connection, and would be potential purchasers of cable broadband if it were available. For this group, the Internet was often their primary form of entertainment.

A number of home-based businesses also fell into this bracket, as the cost was both tax-deductible and generated significant productivity improvements.

Scenario 2: Moderate price, moderate performance

For this group, a good deal related more to price than it did to performance. People in this category were prepared to pay a moderate premium for the improved performance. This group generally found it most difficult to discern between plans, as they are in the focus of greatest competition between providers. People in this group often settled on a plan that had no download limit but variable download speed. Shaping plans, which reduce the speed of download and upload over the course of a month, were attractive because they provided certainty of cost but the comfort of not having download limits.

It's impossible because you can never compare apples with apples. No deal gives you the same set of information so that you can make comparisons with (another deal).

Focus group participant, Victor Harbor

Interestingly, a number of people using the Internet for home-based businesses adopted this type of plan, as they needed to use the Internet often but not for particularly sophisticated applications that required large download limits.

Scenario 3: Lower cost, lower performance plans

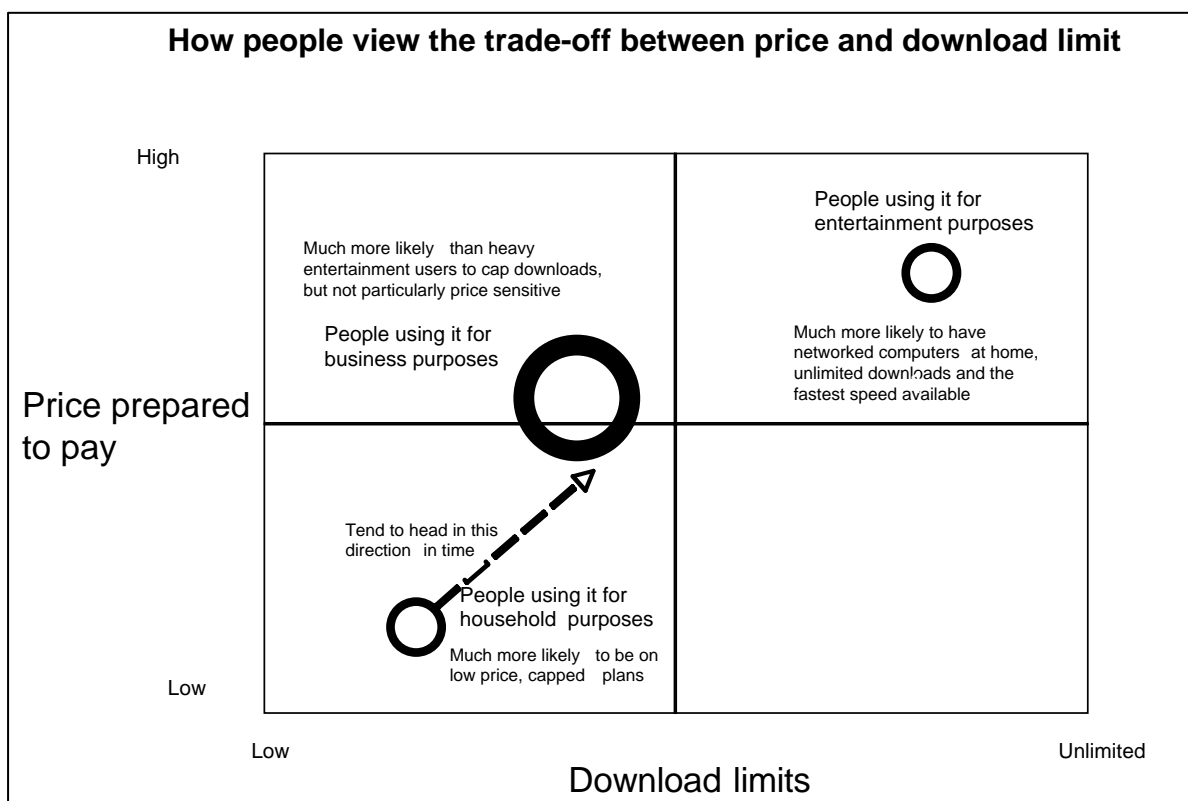
This group was the most price sensitive, and generally used the Internet for fewer hours and more basic tasks, though not always. In general, this group was attracted to the notion of being connected to broadband but had little understanding of what the various speeds of download and usage limits actually meant. They were often motivated to switch by the combination of low price, which in some cases was lower than their dial-up costs, and the ability to free up a phone line at the same time. This group tended to rely more heavily on carriers for information than peers or independent research.

This group, as will be discussed in a subsequent chapter, was also more likely to be dissatisfied with the performance of their broadband service. Most suggested that the speed of download and upload was similar to that of their previous dial-up service, and that they could not understand why broadband was so often lauded. People on low cost plans were significantly more likely to be over 40.

We always wanted to get broadband, but we were just waiting until the best deal came along.

Focus group participant Mackay

Figure 1.3 The trade-off between price and downloads limits



The importance of security in making decisions about broadband

Though it did not play a major role in the decision making process, people disagreed on whether broadband services were more or less prone to security breaches and viruses. A number of people suggested that because the service was always connected, there was greater opportunity for viruses to find a host. Alternatively, people suggested that broadband services came with more sophisticated firewalls and virus protection features, and were therefore less susceptible. The more typical response was that virus issues were not a consideration in the deciding whether to adopt broadband, particularly among younger users.

The HIBIS Scheme

The Higher Bandwidth Incentive Scheme (HiBIS) was established to provide regional, rural and remote Australians with additional financial incentive to adopt broadband. It provides incentive payments to reduce the price of existing broadband services, or to roll out new broadband infrastructure.⁴ Most participants in the study indicated that they had not heard of the scheme, and those that had heard of it indicated that they had not undertaken any formal investigations. The reason for this was that most believed they would not qualify for the scheme, and assumed the scheme was aimed at people living in remote rather than regional areas. This view was expressed particularly among older participants in Victor Harbor, South Australia.

Most people that had heard of the scheme also assumed that it was established primarily for people wanting to gain access to satellite services, rather than for ADSL or cable, and not a single participant in the study said they had received a HiBIS grant. Participants over 40 were more likely to indicate an awareness of the HiBIS

⁴ http://www.dcita.gov.au/tel/higher_bandwidth_incentive_scheme_hibis

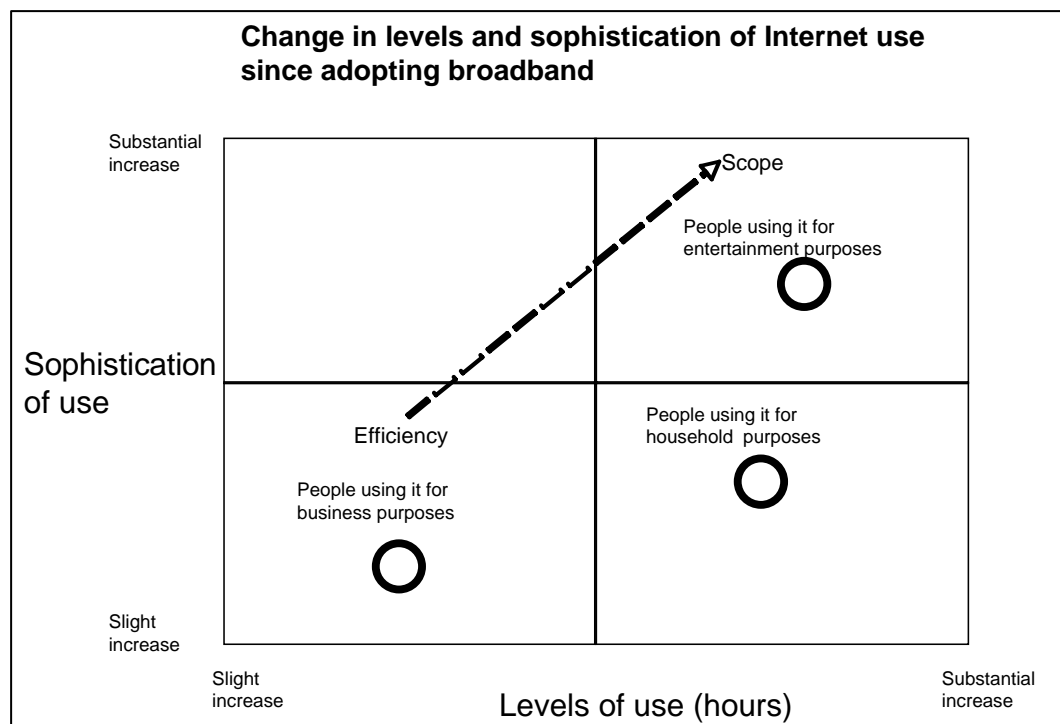
scheme that younger focus group participants. This may in part be due to the fact that older participants were almost always the key decision-maker in the household's decision to go with broadband, and would therefore be more attuned to the existence of schemes that needed to be considered as part of the decision.

Chapter 2

How broadband is being used

People indicated that the number of hours they used broadband had increased significantly since switching to broadband. This tended to be more often true of people using it for entertainment and household purposes than for business. People using the Internet for work purposes also tended to use it for less sophisticated, content-rich applications. This contrasted with those using it for entertainment, who had taken advantage of increased download speeds and download limits to gain access to bandwidth-hungry applications such as networked games, movie files, audio files and, to a lesser extent, chat forums.

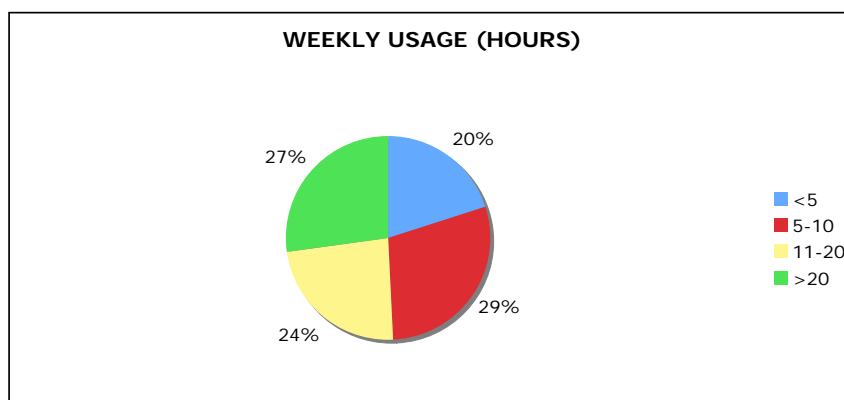
Figure 2.4 Change in levels and sophistication of Internet use since adopting broadband



Levels of use have increased

Participants indicated they used the Internet for 15 hours per week on average. Removing the top four users, who accounted for a disproportionately high number of hours, the average weekly usage was 12 hours.

Figure 2.5 Weekly usage by participant



Overwhelmingly, participants indicated that use of the Internet had increased substantially since connecting to broadband. The increase in usage varied from 20% to 500%, but most often it was in the range of 100%. People using it for entertainment purposes reported the greatest increases in hours of Internet use, based on the fact that the higher quality experience encouraged them to spend more time online. This was also true of reasonably new Internet users, who said they had only become interested in using the Internet regularly once they had been able to achieve a reasonable level of download performance. People using the Internet for online purchases – including eBay, which has become a ubiquitous application in most broadband users' homes – said their usage had increased because they did not have to dial up each time they wanted to check on the status of an auction item. Participants in Wangaratta were more likely to use the Internet for online purchases, including eBay, than those in other locations.

The only group that did not report significant increases in total use of the Internet were those that were using it for business purposes. In this case, people suggested that they were using it for about the same amount of time per week, if not less, since moving to broadband. However, what they were able to achieve per week had increased significantly. Business owners referred to the Internet in almost purely utilitarian terms, and though they also used the Internet for social and entertainment purposes, it was considered a tool.

As well as using the Internet for more hours per week, the majority of participants suggested that they used the Internet for shorter periods at a time. This applied to all but the heaviest users, particularly those using it for online games. The fact that broadband is always on enabled people to use the Internet for more trivial and spur of the moment tasks, such as checking recipes, finding out information about the weather and sourcing telephone numbers.

Regular, short sittings on the Internet also applied to people who tended to use messaging services via the Internet, such as Skype. In these cases people would post messages and then leave the computer from a couple of minutes to a couple of hours, returning periodically to check whether responses had been lodged. This pattern of behaviour was more often reported by younger participants in the study.

Consistency of usage from week to week

Participants reported a high degree of consistency in their Internet usage from week to week, and suggested this was also true when they were connected to dial-up services. Life events and special occasions, including children travelling overseas, deadlines for school and university assignments and planning for holidays provided spikes in usage.

Apart from these types of events, the only factor that appeared to change people's usage levels from week to week was the structure of the plan that people had agreed to. Those on shaping plans, where the provider adjusted speed based on usage, tended to use broadband less as the speed slowed towards the end of each month. In some cases, people reported that download speeds slowed to the pace of dial-up, creating a significant disincentive to go online at particular times. Children were said to be particularly prone to avoiding use of the Internet at these times. A similar situation existed with people on plans that had capped downloads. As a rule, these people monitored their download status closely, and often this situation encouraged people to move to shaping plans where cost certainty could be achieved.

Types of usage

The types of use for broadband ranged from business and entertainment to education and household use. The following section describes the specific uses of broadband as they apply to each segment. Where possible, specific applications have been noted.

Business use

Business use of the Internet tended to be for communication, rather than content purposes. While not true in all cases, the primary attraction of broadband was greater efficiency of communication, including the ability to transfer large files between suppliers and customers and the ability to remain connected to email. In terms of content, services that were regularly used included the Australian Tax Office website, government departments responsible for administering wage and employee entitlements and services that deal with business-related licences. Other content used by people for business purposes depended entirely on the nature of the business. Examples included building regulations for a draftsman, botanical information for a couple running a nursery and the use of the Centrelink site for hiring seasonal workers for a family operating a vineyard.

Household use

Household use refers to utilitarian tasks performed via the Internet. Household use included banking, bookings and using government services. For people using the Internet for household use, the Internet was used primarily to gain access to content rather than for communication. The use of the Internet for household functions was rarely sufficient to motivate a switch to broadband in its own right. This was because people could usually use banking and government sites efficiently using dial-up, which was not the case with rich graphic images and games. An exception to this was the Bureau of Meteorology site, which was heavily subscribed but considered to be more user-friendly when accessed via broadband.

I had to line up at the post office the other day to cash a money order and that just re-confirmed why I do my banking on the net.

Focus group participant Victor Harbor

The degree to which people are using the Internet for online purchases and transactions is high. Demonstrating this, in one focus group all participants had used banking services via the Internet, and all but one had purchased online from Australian and overseas sites.

Entertainment use

People using the Internet for entertainment purposes tended to use the Web for a combination of communication and content. With regard to content, networked games and audio downloads were considered applications that had been most improved by broadband. Mentioned less often were movie files and live streaming of animated content, as opposed to games.

Audio downloads were, behind games, potentially the largest single entertainment use of the Internet for younger people. In some cases younger participants reported downloading audio files daily. In many cases downloads were from sites into Kazaar, and saved files were subsequently transferred to portable listening devices. Audio downloads were said to be incredibly bandwidth hungry, even more so than networked games in many cases. One of the attractions of broadband for this group was being able to download audio files while completing other tasks on the Internet. This was previously impossible on dial-up services, which essentially froze the computer for the duration of a download that may take up to several hours to complete.

The types of entertainment-based applications used by participant varied by age group. Young people were significantly more likely to be accessing networked games and audio downloads. Older participants, though still using the Internet for games, tended not to use games that were networked but rather single user games such as online puzzles. Older people, including those using the Internet primarily for entertainment purposes, did not report using the Internet for audio downloads.

A number of people suggested that broadband was important to use entertainment applications that were formally or informally restricted at their workplace. Though few people indicated that strict Internet policies prevented them using the Internet for entertainment purposes, most felt ethically obliged to refrain from entertainment use at work. In some cases, people were concerned that by visiting entertainment sites via their work computer they may inadvertently attract a virus, and thus scrutiny.

Few people reported the use of broadband to download movies, or expressed a desire to do so. Far more common was the downloading of audio files, and a number of participants admitted they used sites that were technically illegal. Few participants were concerned about the ramifications of doing so as they believed there was little chance that they would be detected for breach of copyright.

Many people reported using broadband to pursue hobbies. Broadband enabled them to take advantage of real-time communication with likeminded people from Australia and overseas, and to track down content on specialised areas of interest. Several participants mentioned the advantages of broadband in organising community and recreational club activities.

I take the minutes of the meetings I attend in Melbourne off to the country committee. It's easy just to come home and type them up, and they've all got them (via e-mail).

Household interviewee, Myrtleford

The most common form of Internet-based communication was email, and the opportunity to communicate with family members in other regional centres, metropolitan areas and overseas. Email was used to transfer both text and images, and occasionally moving image.

My parents live in Adelaide and when there's new photos of the grandkids I just send them through to them.

Household interviewee, Victor Harbor

Younger people tended to use instant messaging and chat forums more than traditional email for communication. In one focus group (Wangaratta), approximately half the participants had used chat forums and in a range of interest areas including technology, gaming and vehicles.

Profile of a family using broadband almost exclusively for gaming

Based in Victor Harbor, South Australia, the five members of the family estimated they used the Internet collectively for more than 150 hours per week. The two grandchildren in the house, aged between eight and 12, were the lightest users in the household at 14 hours each per week. The household has a \$99 monthly plan and four computers in the house – all networked. Only the grandchildren shared a computer. All members of the household participated in gaming, specifically:

- WarCraft (son-in-law and daughter)
- Neopets (daughter)
- Battle games (grandchildren)
- Puzzle sites (grandmother)

Educational use

Undertaking research for formal education purposes was mentioned as a significant use of the Internet by a number of participants. This applied most often to teenage children attending secondary school, but also to post-secondary students. Parents felt that the use of the Internet had become a necessity for students in 2005, and that the switch to broadband was in part prompted by a desire to give their children every chance of success.

Overall, approximately half of all participants in the study reported using the Internet for some formal educational functions. The vast majority of people that reported formal educational use in their households referred to the use of the Internet by school-aged children. Use for educational purposes was reported for children as young as five, and was an important tool for most children/young adults for the duration of their schooling and university lives. Less than five people interviewed as part of the study reported using the Internet for mature-age study, though one participant from Mackay was currently completing a post-graduate course by correspondence. The courseware was delivered entirely via the Internet.

Specific examples of people using the Internet for educational purposes included:

- A computer science student from Wangaratta studying in Reading, UK, who was able to complete a reasonable proportion of their coursework remotely
- A Victor Harbor resident studying in Adelaide had returned home for weekends more often by taking advantage of the faster download speeds to use educational content at home

Submitting school assignments in typed form is a requirement, and doing it on dialup would be extremely difficult

Int 3 M Albury

Sophistication of use

People are using the Internet for more sophisticated functions on broadband than they were on dial-up. Apart from those using it for business purposes, who tended to gain access to the same content as they had with dial-up but more efficiently, the majority of people had sought content that required faster download speed since moving to broadband. This finding appears counter-intuitive, and it was expected that the more sophisticated users of broadband would be businesses.

In many cases, people using the Internet for entertainment purposes initially said they were using the Internet for exactly the same things as they had used it for on dial-up. However, on probing it was revealed that the nature of content people gained access to was heavily influenced by the improved speed of broadband. Examples included use of applications such as radio streaming, video streaming of sport and music content and audio downloads.

(We are definitely) using it for more complex activities, particularly video streaming for car racing, radio streaming for football.

Household interviewee, Myrtleford

Regulating and monitoring personal and household use

Personal use of the Internet

A number of people indicated that they consciously regulated their own Internet use. Approximately half to two thirds of people interviewed said that at some point they believed they were spending too much time on the Internet. This tended to be particularly true of people who were using the Internet for entertainment purposes. One explanation for this issue was that dial-up services generally timed out after several hours, providing a natural end to a session. In general, people believed that the reason they spent more time on the Internet was due to the quality of the experience. One participant had considered disconnecting their broadband service because they felt they were not spending sufficient time outdoors. Other family members, including young children, were the most likely to bring excessive use to their Internet user's attention. Females were more likely than males to indicate that other family members had drawn attention to their 'over-use' of the Internet.

No single age group was more likely to report being concerned about the amount of time they spent on the Internet. There were examples of participants in their twenties being concerned about the amount of time they were spending online, through to those aged over 50. Though difficult to quantify, female participants were more likely than males to report concerns about their levels of Internet use, though it wasn't clear whether they were spending more time on the Internet than males or simply were more conscious of that time.

Managing household use

An area of considerable discussion in interviews and focus groups was how households regulated use of the Internet. While most people suggested that managing use among family members did not generally raise significant issues or conflict, there were some notable exceptions. Issues tended to arise over the length of time that people were using the Internet, rather than being related to the nature of sites they were visiting. In some cases, conflicts over levels of use were ultimately managed by upgrading the household's infrastructure to allow networked computing.

The strategies for managing individual householders' use of the Internet varied from formal software shields through to informal checks. In most cases, informal checks were adopted, and formal controls were generally only put in place for young children. Informal controls on usage levels included:

- Set times for individuals to use the Internet. In one case, the two children in the house alternated between who was able to use the Internet first after arriving home from school
- Time limits on specific Internet users, including a case where children in the household were not allowed to use the Internet for more than an hour at a time

In some households, the purpose of the Internet use was used to determine how long that person could spend on the Internet. For instance, one family in Wangaratta allowed children to use the Internet for an unlimited time if it was for education-

related tasks, but capped the time spent for entertainment. In general, parental use for work purposes took precedence over entertainment functions.

Formal content monitoring policies and software tended to be used only by parents with young children. Parents of teenagers said they had little idea what their children were using the Internet for, but assumed a degree of trust. This trust had backfired in the case of one Proserpine interviewee, after a teenage son had accumulated a several hundred dollar phone bill after visiting a site with “inappropriate material”. The managers of the site had charged an access fee to the content via his ISP, and the charge appeared on the family’s next telephone bill. For the most part, parents used a combination of looking over their child’s shoulder, and checking a user’s download history to ascertain the type of content being downloaded.

Few parents said they were concerned about whom their children were talking to on messaging services. Those that had such concerns generally discussed the subject openly and explicitly with children. Aside from this concern, most parents thought that broadband and the Internet had been a positive addition to children’s lives. Some parents found it interesting that their children spoke to some classmates online via chat forums and messaging services, but not necessarily at school. They believed that the opportunity for people to interact over a different medium therefore had potentially important social benefits, as well as the more obvious educational ones.

My son’s kids are always on it but (my son) keeps it in the same room so he can see what they are doing with it.

Focus group participant, Victor Harbor

A Victor Harbor interviewee had installed a system that required users to enter a private password to visit sites that had not been visited previously.

An isolated case where managing household use had become an issue

An interviewee from Victoria suggested that arguments between teenage siblings over levels of Internet use had caused significant tension within the household. At the time, the interview subject was unemployed and severely restricted by her parents in use of the Internet. A younger sister, studying Year 11, was allowed unrestricted use of the Internet after school. Arguments about who could use the Internet at particular time had degenerated to a point where the interviewee’s parents suggested it would be better for all parties if she found alternative accommodation. She now lives alone in Wangaratta.

Overall importance of broadband to regional Australians

All but a few of the 59 participants in the study believed that broadband was at least as important to regional Australians as it was to those living in metropolitan areas. Parents, in particular, believed that the Internet’s increasing importance in education had the potential to create a divide between those that had access to broadband and those that did not. Similar sentiment was expressed by people operating home-based businesses, who felt that they would be severely disadvantaged if unable to secure reliable and high-speed Internet service.

It is a great education tool that should be available to all no matter where they live.

Interviewee Victor Harbor

More than half of all participants in the study believed that broadband was more important to regional Australians, or that those living in regional Australia had

specific uses for the Internet. A number of specific examples were raised to support this point, including the scarcity of government shopfronts and banks in smaller regional towns. Another example was public library infrastructure, with people suggesting that access to online resources was absolutely essential for people studying in regional areas because the quality of local resources was generally not quite as high. People in Victor Harbor felt less isolated than those in other locations used as part of the study, and therefore were more inclined to say that broadband was not necessarily more important to those living in regional Australia. This is likely due to Victor Harbor's proximity to Adelaide, which is only 100 kilometres away.

The importance to regional Australians was most strongly felt by people living in smaller locations. As an example, those in Proserpine, Benalla and Myrtleford felt that their distance from major population centres increased their reliance on the Internet for basic services. One interviewee in Proserpine reported using the Internet for every possible service that was available, including donations to her local church via a web-based service. Those in larger population centres such as Mackay felt that they were less reliant on the Internet for retail choice than they would be in more remote areas.

In a work context, reliable and fast access to weather information was seen as essential to people working in agriculture, whereas it was usually only of passing interest to people living in metropolitan areas. This example was used in the context of people needing to determine an appropriate time to spray pesticides, or begin harvesting. People also indicated that weather information was critical for tasks such as back burning, including for those in the Country Fire Authority.

Instantaneous knowledge of what's happening with the weather is essential in the fire season for me as a (CFA Volunteer).

Household interviewee, Myrtleford

Another area where people in regional areas felt disadvantaged was in regard to retail choice. There was a strong feeling that people in regional areas relied much more heavily on the Internet for purchases than those in metropolitan areas. Most people acknowledged that the majority of their purchases from eBay or other similar sites were not necessarily available in a capital city. However, a number of others suggested that they regularly used the Internet to gain access to products from Melbourne, Sydney, Brisbane or Adelaide to take advantage of increased stock selection and lower prices.

Sometimes I'll go to a retailer and say I can source it online for this much and give them an opportunity to match it.

Focus group participant, Wangaratta

For an interstate bank the fees were cheaper. There are no branches in Victoria or not within seven kilometres, so the Internet is the only way I can get in touch with my financial institution.

Focus group participant Wangaratta

Related to the issue of retail choice was the lack of entertainment options in regional Australia reported by participants. Young people in particular suggested that the Internet was more important for entertainment purposes in regional areas because other viable options did not exist. For example, while people their age in metropolitan areas had a choice of shopping, cinemas and video game arcades they had to rely on the Internet for such content. Older participants were much less likely to cite a lack of entertainment options as a major disadvantage for regional Australians.

There appeared to be no significant gender differences in opinion on the subject of whether broadband was more or less important to regional Australians.

Satisfaction with broadband

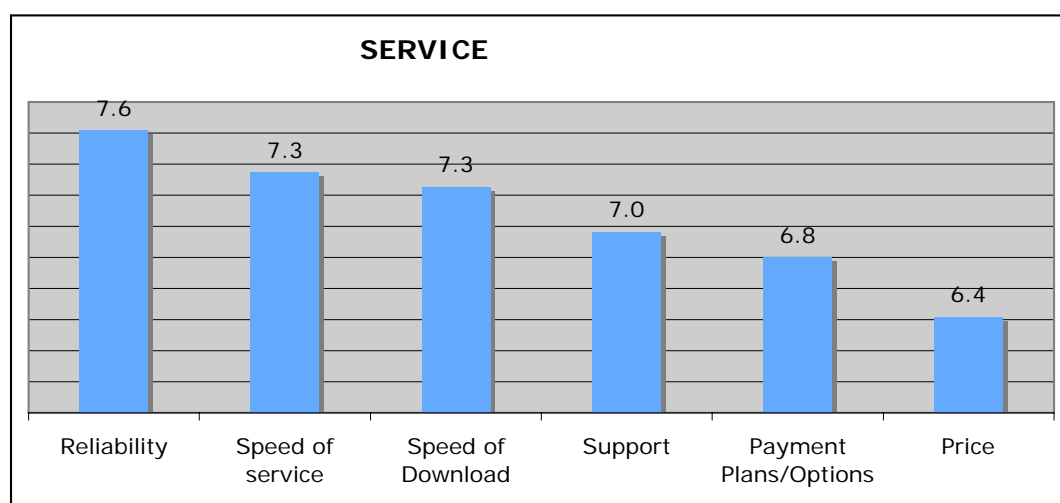
Levels of satisfaction

Satisfaction with key elements of broadband service delivery was generally high. In most cases people indicated that their expectations of broadband had been largely fulfilled, and in some cases exceeded.

Focus group participants and interviewees were asked to fill out a self-completion form that captured demographic information. The information collected on this form is reported in the respondent profile section of the introduction. The self-completion form also asked respondents to indicate their level of satisfaction with six key elements of broadband service delivery. The scale used was a scale of one to 10, with 1 being dissatisfied and 10 being highly satisfied.

Figure 2.3 captures participants' satisfaction with various elements of the broadband service. Participants appeared most satisfied with service reliability, and least satisfied with the structure of payment plans and the overall price paid for broadband services. It should be noted that this study was qualitative in nature, and therefore no guarantees can be provided for statistical significance of quantitative findings.

Figure 2.6 Satisfaction levels with elements of broadband service



The quality of technical support was widely praised. Those with little technical literacy were more likely to compliment technical support, and felt service providers made a genuine effort to provide support in 'layman's terms'. Those with greater technical proficiency tended to be slightly more critical of the service, but used technical support for more complex queries. In general, those with technical proficiency undertook basic trouble-shooting themselves. A number of participants suggested that they used online technical forums to solve most problems, while others called on technically minded friends and family members to help with basic issues.

Though there were isolated examples of difficulties encountered at the time of installation, most people found the self-install modems reasonably straightforward to set up. Those that encountered problems had usually been given faulty modems.

Anticipated benefits received by those that were satisfied

Enhanced productivity and efficiency was the single biggest benefit reported by respondents. This was especially true for those operating home businesses, and among people who used the Internet primarily for household functions such as booking travel, banking and using government services online.

(My husband) will use the Internet to look at towns (he is visiting for work), find out where hotels are, get street maps and then book his accommodation online. That's really changed the way he does business.

Household interviewee, Albury

People using the Internet primarily for entertainment purposes also believed that broadband had lived up to its promise, but its key benefit was increased performance rather than increased efficiency. Those using networked games were most impressed by broadband's speed, and felt that broadband had increased the scope of online activities they were able to participate in.

Another major anticipated benefit was the ability to free up a phone line. This benefit was generally spoken of in two ways. Firstly, it made people in households less conscious of the time spent on the Internet. Secondly, it simplified the process of getting technical support as people were able to get telephone advice while connected to the Internet.

Unanticipated benefits achieved on broadband

The primary unanticipated benefit associated with broadband was a reduction in the total cost of Internet services since switching to broadband. Though a number of participants expected to save money by switching to broadband, most did not. A high number of participants said their total expenditure on Internet services was about the same or lower than it had been on dial-up. In most cases, the cost of the actual plan was higher than the dial-up plan, but savings had been achieved in other areas, including a reduction in mobile phone bills, local call charges and rental costs on second phone lines.

We were using our dial-up so much that we needed an extra phone line. So that's a whole other cost that has just disappeared (once extra phone line removed post broadband).

Focus group participant, Wangaratta

Cost saving was a benefit people drew particular attention to when recommending broadband to friends, family and colleagues. A Benalla home business operator indicated that he had referred several fellow tradespeople to broadband, and specifically mentioned the cost savings they would likely achieve.

Another generally unanticipated benefit was the higher degree of convenience associated with the 'always on' feature of broadband. As people did not have to dial up each time they used the Internet, people reported using the Internet for tasks that they would not have bothered to undertake if this had been necessary. These included using the Web to obtain recipes, sports results, newspaper articles and telephone directories. The always-on function also enabled people to track items over an extended period of time. Examples included weather information and auction sites such as eBay that required people to monitor the status of items. The member of a family that operated a vineyard in Victoria highlighted their dependence on up-to-date weather information, and said that unreliable dial-up connections had previously forced the household to pay for Bureau of Meteorology fax streams. Broadband now offered them reliable and constant weather updates.

Because it is quick there will be some English cooking program on...quick, let's go and get the recipe off the internet while the program is on- you can do that now.

Household interviewee, Albury

The big thing for me is the fact that it's not the amount of time it's the amount of data, so it's always there, you can have it up all day and it doesn't matter.

Focus group participant, Victor Harbor

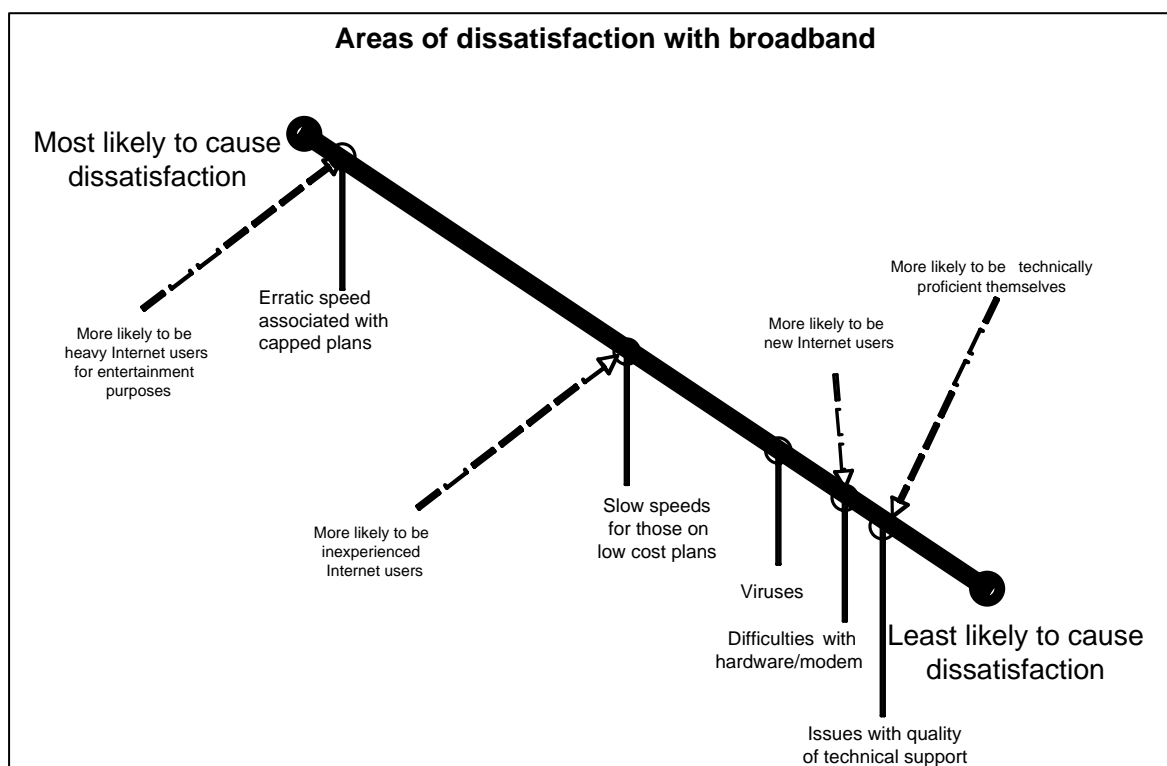
Heavy users of email said the always-on function allowed them to send and receive email more often as there were no costs associated with doing so. This was particularly true for a Benalla based electrician, who said that he now checked emails four or five times a day rather than the one or two times a day that he previously checked them on dial-up.

Areas of dissatisfaction and frustration

Focus group discussions revealed that the type of plan people had selected had a significant bearing on their overall satisfaction. The two types of plans that caused greatest frustration were:

- Shaping plans, of which people complained about erratic speeds and the relatively few days each month that they enjoyed high speed access
- Low cost plans, of which people complained about the consistently slow speeds and regular service issues such as drop-outs

Figure 2.7 Main areas of dissatisfaction with broadband



Provider Issues

Participants' concerns and frustrations can be divided into two categories: those arising as a result of service providers, and those based on the limitations of the actual user.

The main frustration with providers was irregular or insufficient download speed. Most people acknowledged that paying more for their service would improve the quality of service. However, even participants on expensive plans complained about a lack of transparency regarding the actual speeds of download and upload being

achieved. As noted by one participant, “*if you pay for 256K speed, I want 256 – not 170.*” People with higher levels of technical knowledge tended to be the most critical of extreme variations in service quality and speed.

If we went to a service station and paid \$1.20 a litre for fuel and they said they couldn't guarantee that you weren't getting three quarters of a litre, we wouldn't put up with it.

Focus group participant, Wangaratta

Some people felt they had been misled about the nature and effect of download limits. People that had adopted inexpensive plans tended to be most dissatisfied, and in some cases felt they had purchased broadband but had received a glorified dial-up service.

The ones they advertise on TV are the ones with the catch (in terms of download limits)

Focus Group Participant, Victor Harbor

Specific provider issues that were mentioned by a single, or very few participants included:

- Service disconnections, including one example where the service was suspended on and off for five months due to a ‘network fault’
- Difficulties in changing the automatically generated email address issued with the service. The participant estimated he had spent 8-10 hours working with the provider to create a new and more meaningful email address
- Issues with faulty modems, which often required a replacement to be ordered and delivered
- Difficulties determining whether broadband could be connected to particular households, including a case where the information was being sought prior to bidding on the sale of a new property
- Complexity associated with evaluating broadband plans offered by providers, particularly those that bundled services such as mobile phones, fixed voice services and pay television

Security and virus protection

Security issues were rarely a problem, and most felt security risks were reasonably straightforward to manage. Most saw installation of anti-virus software as a responsibility of the user, rather than the provider, and understood the need to update virus protection software regularly. Those that indicated that they did not understand virus protection tended to be more extreme in how they dealt with the issue. In one case, a participant refused to enter websites that were not operated by well-known entities for fear of their computers being hacked into or attacked by a virus.

The perceived safety of credit cards for online purchases and Internet banking divided participants. Approximately half of all participants had provided their credit card details over the Internet, but suggested they were reasonably selective about the organisations they provided details to. In general, people provided credit card details to organisations and companies that were well known to them, including government. Other participants reported high levels of concern about Internet transactions in general, regardless of whether they involved credit card or electronic funds transfer. Some participants mitigated the risks by using a dedicated credit card for Internet purchases that had a low withdrawal limit. Most people concerned about Internet security simply refused to purchase via the Internet.

Limitations of the User

As discussed in chapter one, participants interviewed as part of the study had variable knowledge and skill levels prior to adopting broadband. Aside from new

Internet users, few people believed that new skills and knowledge were required to connect to broadband. The only element that required new skills was the installation process, which most people considered reasonably straightforward. Those that did encounter issues at installation resolved the issue by using help desk support, or through trial and error.

I have learnt a lot more from just getting on and finding my way eventually.

Focus group participant, Wangaratta

Few people believed that their own knowledge of the Internet, or broadband specifically, was having a negative impact on their experience. However, most people assumed that entertaining or useful content was available, but hidden from them due to the enormity of the Web. To find new content, including government services, most used one of the mainstream search engines including Google or MSN. In some cases, people asked family members or friends about particular websites.

A number of people took notes on different sites and applications mentioned during discussions with other focus group participants. These included educational and entertainment sites, and sites specialising in music downloads. A number of people were interested in the types of virus protection software being used by other participants.

Chapter 3

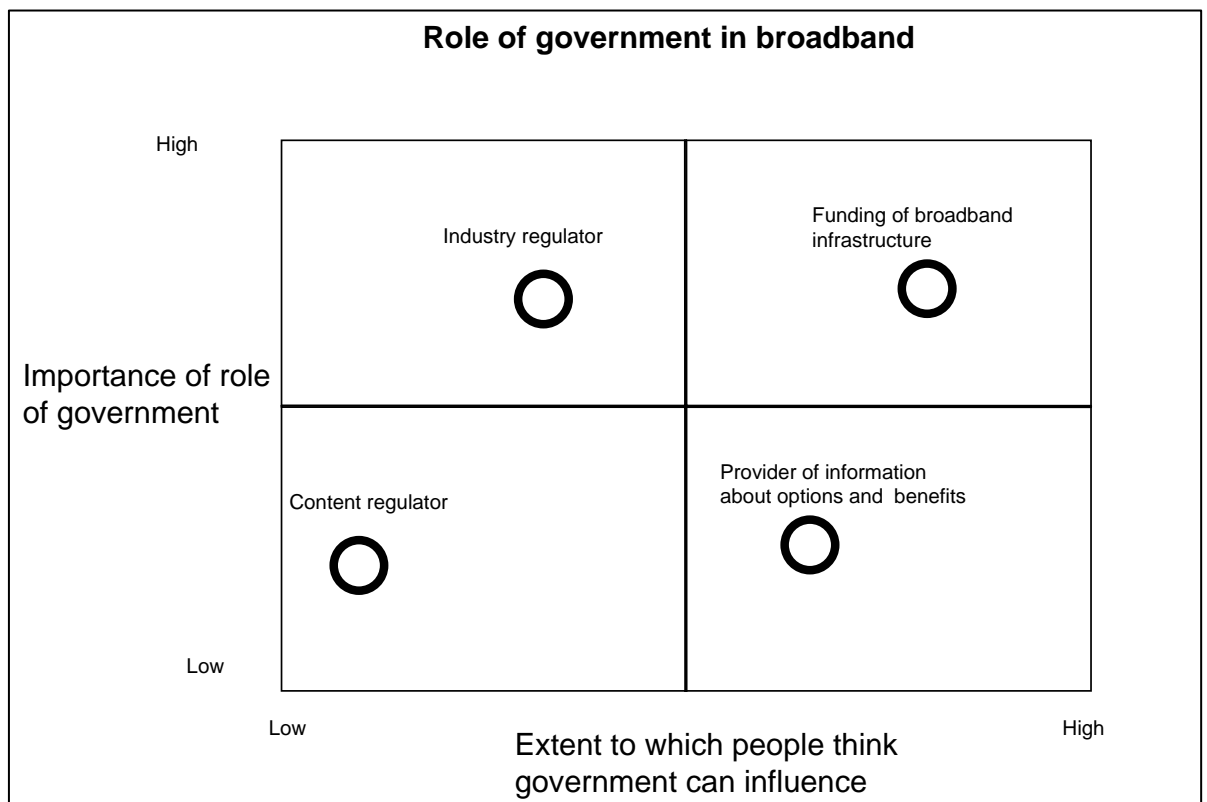
Expected role of government and implications

Perceptions of the role of government in increasing use and satisfaction

Participants strongly agreed that government had some responsibility to ensure that broadband infrastructure was available to regional centres. Many saw access to broadband as a 'right' of all Australians, and saw the Australian Government as needing to play a crucial role in helping to secure that investment. People saw telecommunication as a basic service, and of similar importance to road and rail infrastructure. Participants from Victor Harbor were particularly vocal about the government's responsibilities as an infrastructure provider.

The role of government outside of infrastructure development was less clear to participants. Roles that people generally felt government had a responsibility to perform included that of industry regulator, content watchdog and information provider.

Figure 3.8 Perceived role of government



Funding of broadband infrastructure

Regional Australians strongly agreed that equitable access to broadband services was a basic right in modern Australia, but acknowledged that it was difficult to achieve. People believed that if left to market forces alone, small communities had little chance of attracting the infrastructure required to gain access to broadband in the short-term.

The potential sale of Telstra was the subject of considerable debate. It should be noted that the public profile of the Telstra sale was particularly heated at the time when focus groups and interviews were being conducted. People's response to the sale varied considerably: from resignation to extreme concern. Those that were resigned to the sale suggested that it was an economic reality and sensible. Others believed that should the sale go ahead, government should take responsibility for the funding of broadband infrastructure. The majority of participants expressed a position somewhere between these two viewpoints. The majority believed that the Australian Government was the only entity with the incentive and ability to influence Telstra to continue making significant investments in broadband infrastructure.

Regulating service providers and government's role as industry regulator

People strongly agreed that players in an unregulated market would not always behave responsibly. Participants considered the government's role as an industry regulator as an important one, and essential to ensuring service providers behaved ethically and responsibly.

Government's role as a regulator was particularly important in ensuring that contracts between service providers and customers were fair and transparent. There was a feeling that hidden costs embedded in contracts, and variable service levels, could be largely managed by enforcement of existing regulation. A number of participants believed that shaping plans, in particular, were wrongly advertised as 'unlimited download' plans. People believed that government had a strong role to play in ensuring that offending providers were prosecuted, a sentiment expressed most strongly by participants in Victor Harbor.

People also believed there was a role for government in ensuring that service providers make good on their commitments, particularly with regard to speed of download and upload. This was particular concern among those with high levels of technical literacy who monitored the speed of download and upload while online. These people suggested it was a serious trade measurement issue, and needed to be enforced in the same way as it was in other retail settings. The example given was service stations, where pumps were randomly checked to ensure that when someone paid for a litre of petrol they also received a litre.

Enabling access to information

The role of government as an information provider was mentioned by a number of participants, and in several contexts.

Most important was the government's role in ensuring that people could quickly ascertain whether broadband could be connected to their home. While most people indicated that they were able to easily gain this information from a local service provider, others had difficulties. In some cases separate providers gave people different answers. One participant waited more than a month after buying a new house to determine whether broadband was available at those premises, which it was not. Rather than having to rely on carriers for this information, those that had experienced difficulties believed the government should be equipped to provide it.

A small number of participants believed there was a role for government in helping to educate people about the use of the Internet. This was particularly true of inexperienced users, and retirees, who said publicly available training courses would be helpful in the early stages of Internet adoption. Other participants acknowledged they knew comparatively little about virus protection, and that some education about this issue was warranted.

Regulating content

Concerns about security, privacy and the prevalence of inappropriate content on the Internet were expressed by a high number of participants. However, most people

recognised that Internet content was extremely difficult to regulate, and that no government could prevent the spread of inappropriate or unwanted material.

Despite this, people suggested that government had a role to play in helping to protect the community's privacy. Some participants thought that existing privacy legislation could be more actively enforced, particularly in cases where people's contact details were distributed to generate spam.

Potential implications for government

Based on the views of focus group participants and interview subjects consulted as part of this study, the following potential implications for government emerged:

The Australian Government's focus on regional Australia is important

The study has provided an indication that regional Australians are using broadband more, and for increasingly sophisticated activities. Focus group participants and interview subjects suggested that the government's strong interest in ensuring that regional Australians are informed about broadband developments appears justified; with participants in the study highlighting that broadband will play an increasingly important role in the business, education and social lives in the future.

Governments may need to continue ensuring that disadvantages arising from a lack of affordable access to broadband are minimised. The HiBIS scheme is likely to be important in ensuring wider uptake of broadband in areas where affordable infrastructure is not available. Raising awareness of the scheme's existence and qualification criteria will be an important first step. Less than half of all participants had heard of HiBIS, and none had received a grant as part of the scheme. Those that had heard of the scheme assumed they would not qualify, believing the scheme was geared towards remote rather than regional Australia. Government may also need to determine whether those people that assumed they did not qualify were correct in that assumption, and if so whether the qualification criteria remained appropriate.

Interest in the government's role as a market regulator will intensify

The government's role as a market regulator is likely to become of increased interest after the full privatisation of Telstra. A number of participants suggested that the government would need to be increasingly vigilant in its role as regulator to ensure that service providers acted responsibly. There is a feeling that a privatised Telstra will face increasing pressure from shareholders to minimise costs and maximise revenues, which may affect current service levels and levels of infrastructure investment. The Australian Government has already put measures in place to future proof the telecommunications industry following the privatisation of Telstra, which should be promoted to the broader community.

Government will remain an important source of information about what infrastructure is currently available

One of the most important roles of government for any industry is that of an information broker. The participants interviewed as part of this study suggested that they relied heavily on government to provide accurate, up-to-date information about telecommunications industry developments. Findings from this study have several implications for information around broadband, including:

- The need to help people determine whether they are able to gain access to broadband services. While service providers currently offer this service, a number of people were dissatisfied with the quality of information that was available and time spent collecting it.
- The need to provide information to consumers about means through which they can settle disputes or lodge complaints against service providers, particularly those that are considered to be under-delivering on promised service levels.
- The need to promote the benefits of broadband generally, and potentially provide information required by people to make informed decisions about specific packages and options.

The community sees little role for the government as a content regulator

There was general acknowledgment that the government had only a small role to play in content regulation. The area where participants thought government was best positioned to make a difference was in the management and delivery of its own content. Online government services were highly praised by participants for their clarity and trustworthiness. One focus group participant suggested that he had become so concerned about 'spy ware' and viruses that the only sites he visited were that of his university and government.

High levels of trust in government imposes significant responsibilities, and government will need to be careful not to compromise trust in trying to achieve higher levels of customer centricity.

Implications for service providers

Findings from the study also have implications for service providers, particularly in the areas of service quality and transparency of specific offers.

Overall service quality is of a high standard, but expectations will rise with experience

While satisfaction with broadband service delivery was high, expectations of service providers are likely to rise. A number of people discussed the use of online technical forums to trouble-shoot and exchange technical information. In some cases, this has drawn people's attention to the significant disparity in the quality of service offered in:

- Metropolitan areas in Australia, particularly cable broadband
- Other countries, particularly the US and Singapore

There is evidence to suggest that people's knowledge about broadband technology has increased quickly and that service providers may come under increased public pressure to provide best of breed technologies in regional areas. People that visit, work or study in cities or countries with higher-speed Internet access may become a powerful pressure group. People in this category spoke passionately in focus groups about the relative weaknesses of services available in regional Australia, and the fact that Australians were paying too much for too little when it came to broadband.

There is a risk that information about commercial deals will confuse, rather than assist, customers to make broadband decisions

As the broadband retail market matures, and new competitors emerge, it is likely that offers will need to be more competitive to attract interest. As has occurred in the mobile phone market, and is already being seen in the broadband market, retailers will use the bundling of offers to attract customers. A number of interviewees suggested that it was already extremely difficult for people to evaluate competing offers, and that bundling made it virtually impossible to evaluate 'apples and apples'. A number of participants suggested that the way they dealt with this ambiguity was to default to Telstra or another well-known provider, which they believed they could trust.

Services that target the low end of the market may hurt broadband uptake

Service providers will also need to be aware of the speed at which information travels, particularly that transmitted by dissatisfied customers. A number of focus group participants criticised service providers offering low-price plans by name. When participants mentioned they had signed a contract with such a company, and that their levels of service had been unsatisfactory, few others in the group were surprised.

While there is undoubtedly a market for low speed, low priced broadband, that market is likely to be less tolerant in the future. One of the potential issues that the industry will need to address is the fact that people adopting low-cost plans are often locking in for two years, and may resent the quality of service for an extended period and as their Internet use becomes more sophisticated.