

Broadband and the 'Creative Internet': Australians as consumers and producers of cultural content online

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Abstract

This paper analyses and builds on sample survey data collected as part of the Australian component of the World Internet Project. The focus of this paper is on what we can call the 'creative Internet' — in brief, those 'creative uses' of the net ranging from relatively straightforward user-generated content such as sharing photographs to the distribution of more complex amateur-produced material. We present a brief overview of the 'creative Internet' in Australia, and its relationship to the take-up of broadband access. We examine the roles that age, gender and broadband access play in user's propensity to engage in creative uses of the technology, as well as respondents' attitudes to these endeavours.

Keywords: broadband internet; creative innovation; social production; Australia.

Introduction

This paper analyses and builds on sample survey data collected as part of the Australian component of the World Internet Project.¹ The focus of this paper is on what we can call the 'creative Internet' — in brief, those 'creative uses' of the net ranging from relatively straightforward user-generated content such as sharing photographs to the distribution of more complex amateur-produced material.

The Australian component of the WIP fills a major gap in our understanding of the basic dynamics of the Internet in Australia. While there are widely available data on the numbers of Australians who access the internet, where they access the net and whether they have broadband or dial-up access (for example see ABS, *Household Use of Information Technology 2004-05* Cat No 8146.0), there is almost no detailed, publicly available data on what people are doing online in Australia and how this varies across different sub-populations. Of particular interest is the difference in internet use between those people relying on dial-up access and those with broadband access (the *Household Broadband Adoption Report* undertaken for DCITA in January 2004 does provide some basic information on this topic.)

Our first survey of Australian households was undertaken in August 2007. We talked to a random sample of 1000 people across Australia. In this analysis we will concentrate primarily on differences between the

¹ The World Internet Project (WIP) is a collaborative survey-based project looking at the social, political and economic impact of the Internet and other new technologies. Founded by the UCLA Center for the Digital Future in the United States in 1999 (now based at the USC Annenberg Center), the WIP now has more than 20 partners in countries and regions all over the world, including Singapore, Italy, China, Japan, Hong Kong, Macao, Korea, Philippines, Sweden, Germany, Great Britain, Spain, Hungary, Canada, Chile and Argentina.

The Australian partner for the WIP is the Institute for Social Research (ISR) at Swinburne University, as part of its role in the ARC Centre of Excellence for Creative Industries and Innovation (CCI). CCI was established in July 2005 and is the first Centre of Excellence funded outside the science, engineering and technology sectors. The Centre has an ambitious research agenda organised around three key themes: creative innovation; innovation policy, and creative human capital. For a further discussion of the Australian component of the WIP, see Ewing and Thomas (2006).

online activities of those people with broadband home connections and those with dial-up access at home. For the purposes of this discussion, we are particularly interested in people's creative uses of the net, both as consumers and producers of content. What role do consumers play as producers of content? What are the characteristics of those people who are producing online content? Is it related to age, gender, experience and skills or speed of access? There are also a series of further issues we are keen to pursue: the diffusion of broadband in Australia and reasons hindering take-up; the effects of internet usage on the consumption of other media; the uptake of social web technology; video usage; news consumption online and how it is changing; and the impact of the 'always on' element of broadband as people move from gaining news online to entertainment.

People's creative uses of the net are of interest as indicators of an information society for two broad and related reasons:

- Creative uses tend to require more skills on the user's part and are an important marker of increasing digital literacy;
- Increasing user-generated content implies that users are gaining more from their online experience and that the resultant increase in online content will enrich others' online experience.

They also raise broader issues. The Australian government's interest in the internet and its role in the creative economy was signalled as far back as the early 1990s with two major reports: that of the Broadband Services Expert Group in 1993, and the Cutler and Company report *Commerce in Content: Building Australia's International Future in Interactive Multi-media Markets*. In a highly influential statement of national cultural policy, *Creative Nation* (1994), the section on information technology concentrated largely on developments in 'off-line' multi-media applications, but nevertheless recognised that '... ultimately it is the broadband services that are likely to have the most pervasive effect on our lives and culture...' (Cutler and Co, 1994).

Almost fifteen years later, the question of the 'creative Internet' has now fully emerged as a focus for debate. Recent critical studies of the economics of the Internet emphasise the development of what Yochai Benkler calls the 'networked information economy' (Benkler, 2007, p.3), where non-market activity acquires a new significance in cultural, political and social innovation. Benkler's starting point is the observation that declining costs of computing, communicating and storing information have 'placed the means of information and cultural production in the hands of a significant fraction of the world's population — on the order of a billion people around the globe' (ibid). In this analysis, human creativity and the economics of information are 'the core structuring facts of the new networked information economy' (ibid).

Benkler provides a wide-ranging study of the law, economics and politics of 'social production' — the non-market, voluntary or amateur activity enabled by networks. The World Internet Project has the potential to

provide a fine-grained account of the development of this substantial new sector of media and cultural production, namely the amateur domain, and to help inform the information laws and policies that regulate and shape it.

The emergence of amateur content has attracted some attention in Australian debates over our media futures (including Simons, 2007), but has not so far received systematic analysis. We know little about its scale and scope, or the motivations, incentives and authorial practices which sustain it. It is not surprising that at this stage of internet development, arguments remain somewhat polarised between those who have rightly pointed to the continuing power of mainstream commercial media companies (for example, Given, 2003), and those advocates of amateur media who have relied more on arguments about the potential of new online applications and the speed of their adoption than studies of demonstrated influence (for example Lessig, 2004).

The scholarship of the “new internet” pulls in opposing directions across a range of issues. In one direction lies the democratic promise of an expanding field of creative opportunity, and the social benefits attributed to increased individual involvement in cultural, economic and political life (Benkler, 2004). The individual who is able to express herself within society, who can contribute meaningfully to the public sphere, and who has agency over her own expressive life, is one of the key aspirations of liberal democratic theory.

In the other direction lies all manner of damaging activity: including copyright infringement, privacy violations, content that is defamatory or degrading, spam, and email scams. These aspects of the new communication environment will never be neatly reconciled. However, current Australian legal and policy responses to the new environment are framed largely as negative reactions. The harms produced by copyright infringers, spammers and pornographers readily attract the attention of governments; the more subtle benefits need to be better understood.

We do not yet have a framework for a grounded account of both the opportunities and threats that this new communications environment offers; but the results of our work so far aim to contribute to that objective. This paper begins by considering the relationship between the development of what we are calling the ‘creative Internet’ and broadband access. It then turns to some of the social dynamics of this creative activity, considering first gender, and then age in relation to broadband.

1. Creative uses and broadband

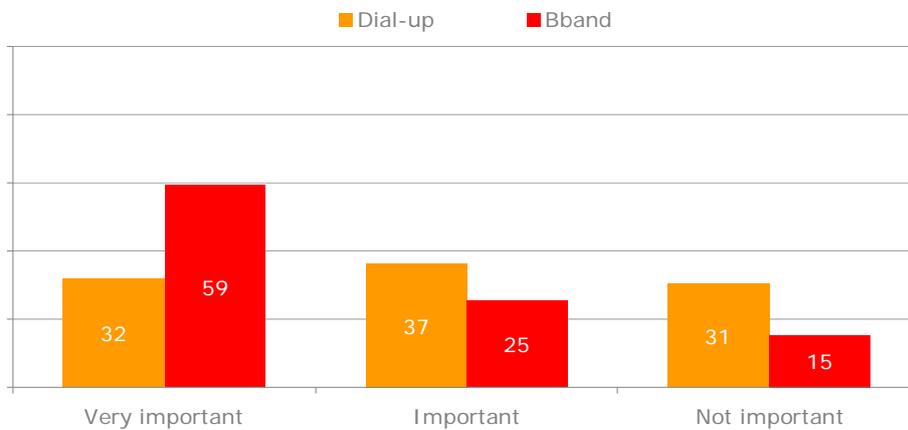
In order to make the most of the opportunities of the ‘creative Internet’, users need access to services of the kind that are generally marketed as ‘broadband’. Of course, ‘broadband’ means different things to different people, and the ‘speed’ (or more accurately the bandwidth) of some Australian broadband services

has often been criticised as inferior to that available elsewhere. The term's folk Australian connotations are not only substantially higher 'speeds' than dial-up, but also three equally important additional features: detachment from the plain old telephone service, so that conventional voice services are not interrupted by Internet access; 'always on' service, or at least fast and simple log-ins; and the capacity to share network access across several computers. These factors, taken together, appear to substantially change the way the Internet is used in domestic environments, opening up new possibilities not only for what may be done online, but also for who may be doing it.

At the outset, we can review the differences between those with home dial-up access and those with broadband at home in relation to uses that are broadly creative. How does broadband change the pattern of media creation and consumption in Australian homes?

Figure 1 shows that over a half of broadband users felt that the internet was 'very important' to their way of life compared a third of those with dial-up connections. Just under a third of those with dial-up connections felt the internet was 'not important' or 'not at all important' compared to around half this proportion for those with broadband access.

Figure 1 Importance of internet to current way of life, by access type

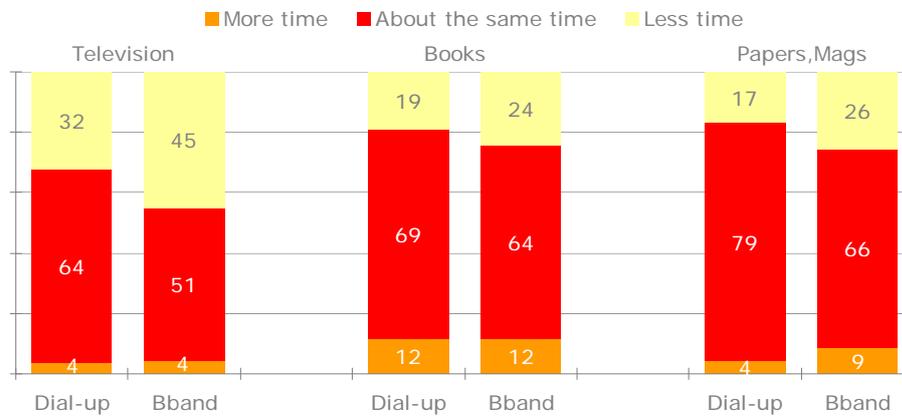


Broadband connectivity is associated with spending less time watching television (44.3% of broadband users say they now watch less television compared to 31.5% of dial-up) and to a lesser extent reading books and newspapers and magazines less frequently (see Figure 2). One interesting pattern here is that while the relationship between television watching and home internet connection is almost exclusively

negative this is not the case for time spent reading books and to a lesser extent, reading newspapers and magazines.

Looking just at the figures for broadband, for every person who said that their television watching had increased since gaining home access, eleven said that it had decreased. For books the ratio was around one increased to two decreased and for newspapers and magazines it was around one to three.

Figure 2 Impact of the internet on related activities, by access type



As Figure 3 illustrates, just over a third of broadband users rate the internet as an 'important' or 'very important' entertainment source compared to a quarter of dial-up users. There was little difference between the two groups in their rating of television, magazines or radio as sources of entertainment.

Figure 3 Importance of various media for entertainment, by access type

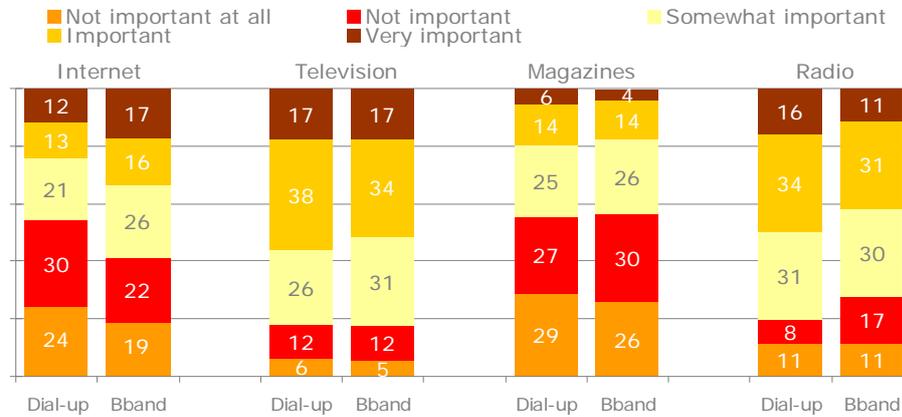


Figure 4 shows results for various forms of posting content. Quite small proportions of our sample maintain a blog of their own (7.9%). Those with broadband were more likely to have a blog. Numbers of respondents who kept a personal website were higher and here broadband access was a major factor. Fourteen percent of those with broadband access worked on a personal website compared to 5.6% with dial-up access. No one with dial-up access said they worked on their website daily (3% of those with broadband) while 6.5% of those with broadband said they updated their website weekly compared to 2.1% of those with dial up access.

Broadband users were slightly more likely to have a blog (8.5% to 4.9%) and those that did were slightly more likely to update them more frequently. More than twice the proportion of broadband users had a personal website (14.3% to 5.6%) and again were more likely to update them regularly.

Having broadband did not make our respondents a lot more likely to post pictures or photos (21.0% of dial-up and 26.9% of broadband) and had no real impact on frequency. It did affect posting videos however with only 1.3% of dial-up users undertaking this activity compared to 6.1% of broadband users.

Figure 4 Posting content, by access type

| | Own blog | | Own website | | Post messages | |
|-----------|-------------|-----------------|-------------|-----------------|---------------|-----------------|
| | Participate | At least weekly | Participate | At least weekly | Participate | At least weekly |
| Dial-up | 4.9 | 2.1 | 5.6 | 2.8 | 14.9 | 8.5 |
| Broadband | 8.5 | 3.9 | 14.3 | 9.9 | 26.2 | 16.1 |
| | Post photos | | Post video | | | |
| | Participate | At least weekly | Participate | At least weekly | | |
| Dial-up | 21.0 | 9.9 | 1.4 | 0.0 | | |
| Broadband | 26.9 | 12.6 | 6.1 | 2.4 | | |

Downloading activity is reported in Figure 5. Those with broadband were much more likely to download video (35.7% to 11.2%) and to do so frequently with 23.6% of broadband users downloading at least once a week compared to just 5.6% dial-up. Broadband connection made users more likely to download music (55.7% to 30.8%) and twice as likely to do so at least weekly.

Broadband users are around twice as likely to listen to radio online and almost four times more likely to do so frequently. Listening to podcasts is also related to broadband access with more than double the proportion of those people downloading or listening to podcasts. They were also much more likely to do so frequently.

Connection type was not related to respondents' likelihood of surfing or browsing the web with no specific purpose, nor how often people did this.

Figure 5 Downloading activities, by access type

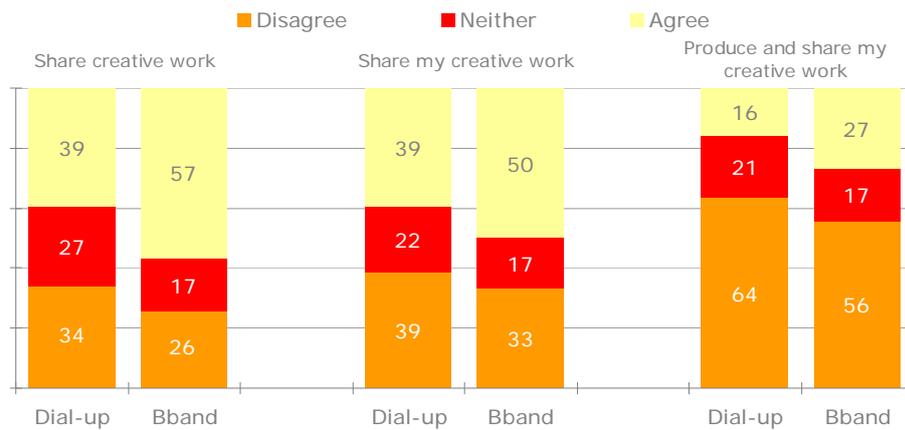
| | Download video | | Download music | | Listen to radio | |
|-----------|----------------|-----------------|----------------|-----------------|-----------------|-----------------|
| | Participate | At least weekly | Participate | At least weekly | Participate | At least weekly |
| Dial-up | 11.2 | 5.6 | 30.8 | 14.7 | 15.4 | 3.5 |
| Broadband | 35.7 | 23.6 | 55.7 | 30.5 | 30.4 | 11.0 |
| | Podcasts | | Surf | | | |
| | Participate | At least weekly | Participate | At least weekly | | |
| Dial-up | 8.4 | 2.1 | | | | |
| Broadband | 20.2 | 7.2 | | | | |

Figure 6 sets out respondents attitudes to sharing and creating content online. A clear majority of those with broadband connections at home agreed that the internet enables them to share content that they liked with others (55.2%) with 38.5% of those with dial-up access agreeing.

When we asked people about sharing their own creative work a surprisingly high proportion of respondents agreed that the internet had enabled this. Almost forty percent of broadband users and 38.5% of dial-up users agreed, with a fifth of broadband users agreeing strongly.

We then asked people whether internet access had encouraged them to produce their own creative work and share it with others. Over a quarter of broadband users and 15.4% of dial-up users agreed that it had.

Figure 6 Impact of internet access on creative endeavours, by access type



2. Women, Creativity and Broadband

The preceding analysis reveals a close positive relationship between the diffusion of broadband services and what we are describing as creative uses of the technology; as we would expect, there is also a concomitant decline in the consumption of traditional media. But how does the ‘creative Internet’ map onto the uneven social landscape of Internet access? It is only possible in this paper to highlight some aspects of the issue. This section examines how gender combined with access type influences creative uses of the net. It is notable that while broadband access is related to how important both men and women consider the internet to be to their way of life, it does seem to have a greater impact for women (Figure 7). Women with dial-up access are less likely to consider the internet to be very important to their current way of life (31.7% to 36.1%) this pattern is reversed when looking at broadband access, women are more likely to answer ‘very important’ (59.4% to 52.1%).

Figure 7 Importance of the internet for current way of life, by gender and access type

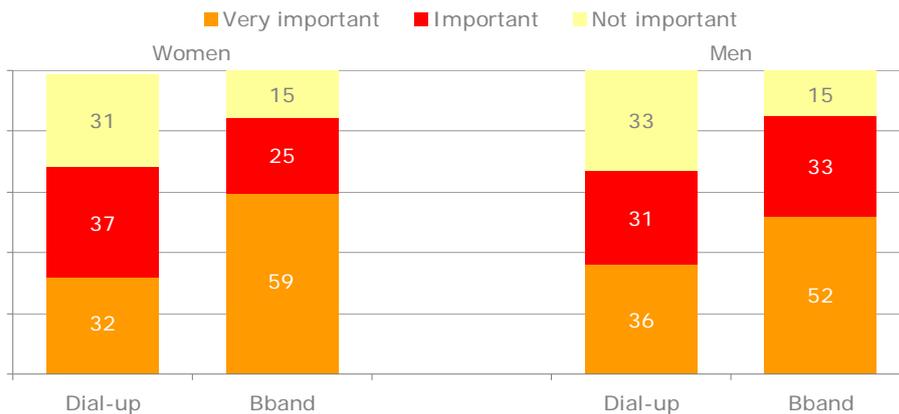


Figure 8 presents data on people’s perceptions of the impact of home internet access on ‘offline’ media consumption. Internet access decreases the amount of television people watch and broadband increases this impact. The effect is greater for men than women. Over a third of men with dial-up access (36.1%) claim they watch less television since gaining access compared to 28.0% of women while almost half of men with broadband access (48.3%) say they watch less television compared to 39.8% of women. The interaction of internet access (and type) and gender with book reading is complex. Men are slightly less likely than women to say they read less since gaining access and more likely to say they read more.

Access type has little impact on men's reading while it makes women more likely to read less (17.1% up to 24.4%) and less likely to read more (9.8% to 7.5%).

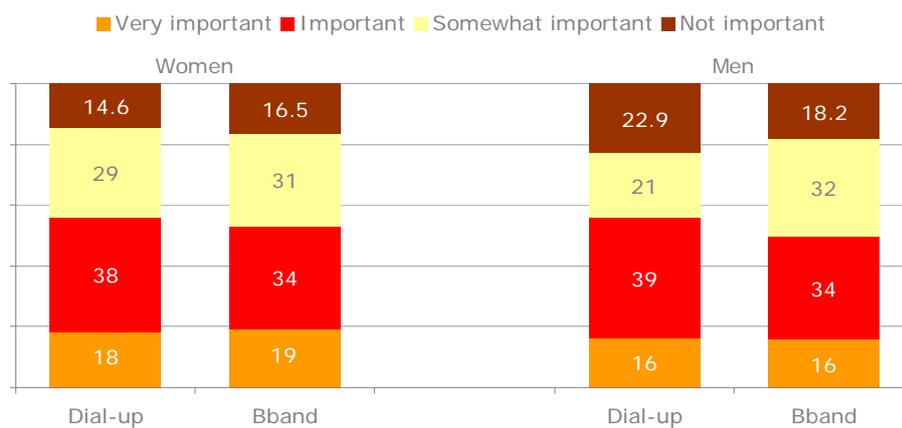
Men are more likely than women to say that they read newspapers more following connection (6.6% to 2.4% for dial-up and 11.2% to 5.5% for broadband). Similar proportions of men and women say they read newspapers less since they gained home-access with around a quarter of both men and women with broadband connections spending less time reading newspapers off-line.

Figure 8 Impact of the internet on related activities, by gender and access type

| | Television | | Reading books | | Reading papers/mags | |
|----------------|------------|------|---------------|------|---------------------|------|
| | More | Less | More | Less | More | Less |
| Female dial-up | 2.4 | 28.0 | 9.8 | 17.1 | 2.4 | 17.1 |
| Female Bband | 4.7 | 39.8 | 7.5 | 24.4 | 5.5 | 24 |
| Male dial-up | 4.9 | 36.1 | 13.1 | 19.7 | 6.6 | 14.8 |
| Male Bband | 3.8 | 48.3 | 14.3 | 21.7 | 11.2 | 25.5 |

Figure 9 shows that broadband access has a bigger impact on women's rating of the importance of the internet as a source of entertainment than it does for men. The proportion of men who describe the internet as either an important or very important source of entertainment is 31.1% for those with dial-up, which increases to 37.4% (increase of around 20%) while for women the corresponding figures are 19.5% and 29.1% (an almost 50% increase).

Figure 9 Importance of the internet for entertainment, by gender and access type



People's access to broadband does make them less likely to consider television and radio as important sources of entertainment but there is little difference for men and women.

In terms of activities involving posting content, such as maintaining blogs and websites or posting photographs, participation by women appears to be much more influenced by access type than men's (Figure 10). Very few women on a dial-up connection kept a blog (2.4% compared to 8.2% for men) whereas 11.0% of women with a dial-up connection had a blog (for the men the figure actually decreased slightly to 6.3%). This pattern is repeated for personal websites: only 1.2% of women with a dial-up connection had a website (11.5% of men) but this figure increased to 12.2% for women with broadband (16.1% for men). While only 1.2% of female dial-up users updated their website daily, 9.1% of broadband users did so.

Posting pictures and photos provides a good example of this pattern. Only 13.4% of women with dial-up connection report posting pictures at all compared to 28.0% of women with broadband. The proportion of men posting photos actually decreases slightly in the broadband group (31.1% compared to 25.9%). Looking at regular posting of photos, 4.9% of women with dial-up post weekly or more often compared to 12.2% broadband users. The results to this question present an anomalous finding that more than one in five male dial-up users post photos weekly compared to slightly less than one in ten broadband users.

Figure 10 Posting activity, by gender and access type

| | Own blog | | Own website | | Post photos | |
|----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|
| | Participate | At least weekly | Participate | At least weekly | Participate | At least weekly |
| Female dial-up | 2.4 | 0.0 | 1.2 | 1.2 | 13.4 | 4.9 |
| Female Bband | 11.0 | 5.9 | 12.2 | 9.1 | 28.0 | 12.2 |
| Male dial-up | 8.2 | 4.9 | 11.5 | 4.9 | 31.1 | 22.9 |
| Male Bband | 6.3 | 2.0 | 16.1 | 10.7 | 25.9 | 11.8 |

Downloading videos exhibits the same pattern (Figure 11). Five times the proportion of women with broadband relative to dial-up downloaded videos while for men the proportion doubled in the move from dial-up to broadband. Only 2.4% of women on dial-up connections downloaded weekly (men 9.8%) while 18.5% of women with broadband did so (men 27.9%).

Downloading or listening to music again shows a bigger difference in behaviour between women with dial-up or broadband compared to men. While 7.3% of women with dial-up download or listen to music at least

weekly (men 24.6%) the figure jumps to 27.2% for women with broadband, well over double the proportion (the figure for males increases by around 40% to 34.5%).

Surfing or browsing the web without a definite purpose does not change greatly for either men or women, by access type and there is not a great deal of difference between men and women for this activity.

Figure 11 Downloading activities, by gender and access type

| | Download video | | Download music | | Surf the web | |
|----------------|----------------|-----------------|----------------|-----------------|--------------|-----------------|
| | Participate | At least weekly | Participate | At least weekly | Participate | At least weekly |
| Female dial-up | 4.9 | 2.4 | 23.2 | 7.3 | 54.9 | 31.8 |
| Female Bband | 29.5 | 18.5 | 48.4 | 27.2 | 53.1 | 34.7 |
| Male dial-up | 19.7 | 9.8 | 41.0 | 24.6 | 59.0 | 39.3 |
| Male Bband | 41.3 | 27.9 | 62.2 | 33.5 | 63.6 | 46.5 |

Figure 12 shows that in terms of attitudes to the internet and creative activities, men are overall slightly more positive than women and those with broadband slightly more optimistic than those with dial-up connections.

Just under four in ten men (39.4%) with dial-up connection felt that the internet enabled them to share creative work they liked while 37.8 % of women did. For those with broadband connections the figure rises, for men to 59.1% and women 50.8%.

Figure 12 The internet enables me to share creative work I like with others, by gender and access type

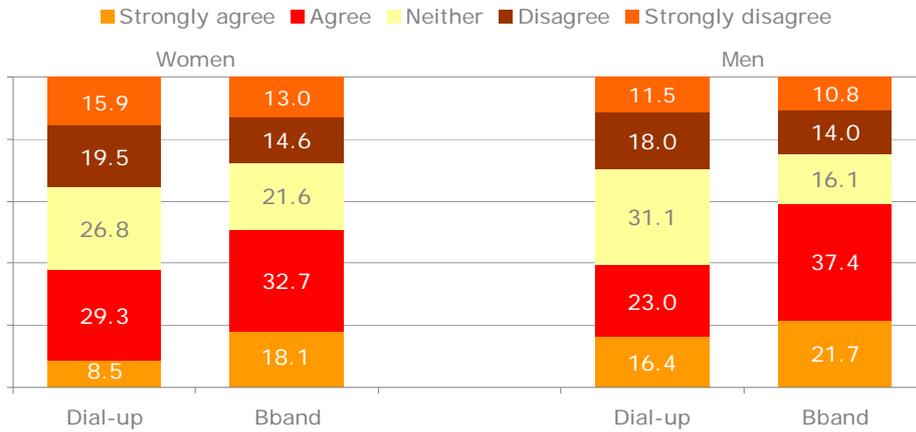
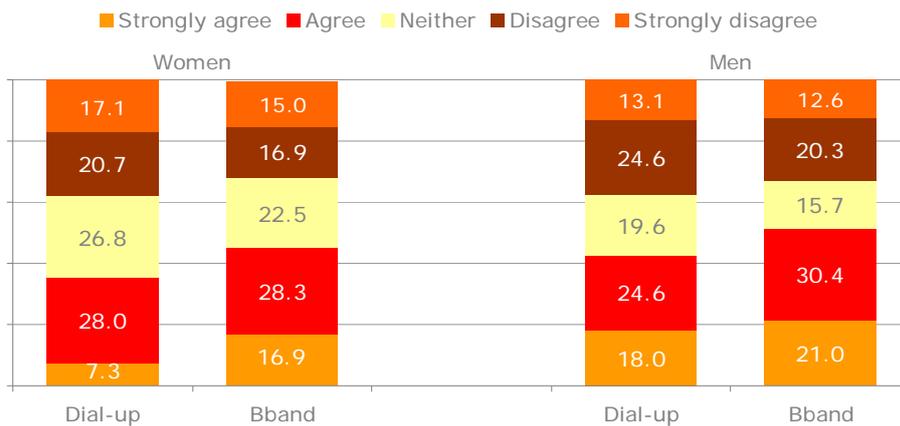


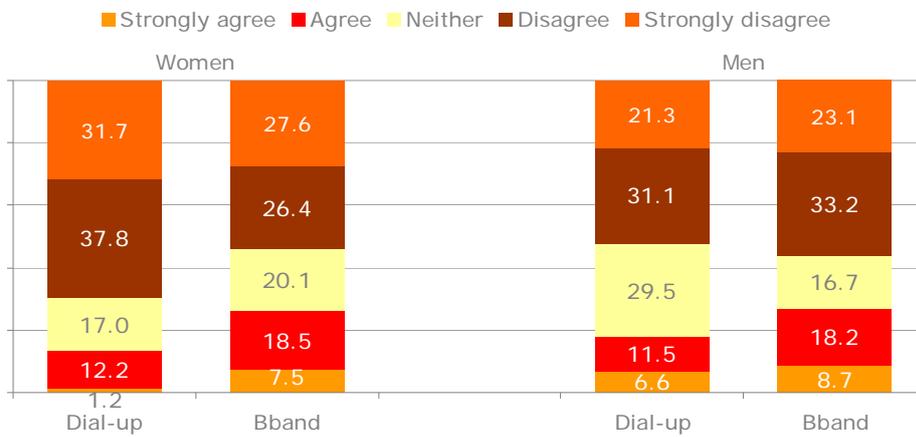
Figure 13 demonstrates that connection type did not have such a big influence on whether people thought that the internet enabled them to share their *own* creative work with others (as opposed to creative work they *liked*). More than four in ten males (42.6%) with dial-up agreed with this statement compared to 35.3% of women. Just over a half of men with broadband (51.4%) agreed while 45.2% of women did.

Figure 13 The internet enables me to share my creative work with others, by gender and access type



Interestingly the pattern of response to the statement ‘the internet has encouraged me to produce my own creative work and share it with others’ was similar to that for activity based questions — there was a bigger difference between women on dial-up and broadband than there was between men (Figure 14). The proportion of women with broadband connections agreeing with this statement was double that of those with dial-up connections (26.0% and 13.4%) while the corresponding increase for men was around half of this (18.1% to 26.9%)

Figure 14 The internet has encouraged me to produce my own creative work and share it with others, by gender and access type



3. Age, Creativity and Broadband

Here we consider the impact of the interaction of age and type of home access on people’s online activities. To do this we have split our sample into three broad age groups: those aged 18 to 29 years (the younger group); those aged 30 to 49 years (the mid-aged group); and, those aged over fifty (the older group). Age does not seem to make a big difference in whether people feel that the internet is important to their way of life. Having broadband makes you more likely to describe the internet as ‘very important’, although the impact is less for older age groups. Figure 15 sets out people’s perceptions of the impact of home internet access on off-line media consumption. More than six in ten of the younger group with broadband connection say that they watch less television since being connected to the internet (34.5% of those with dial-up). The pattern is similar for those in the mid-age range although off a lower base (43.3% with

broadband, 25.4% with dial-up). In the oldest age group the proportion claiming to watch less television is higher for those with dial-up connections (37.8% relative to 31.1% for those with broadband).

Internet access has more impact on younger people's reading habits than older groups but shifting to broadband was only important for those aged 30-49 (10.4% of dial-up users spent less time reading compared to 23.7% of those with broadband). Just under a third of persons aged 18-29 said they read less since being connected to the internet at home (31% of those with dial-up connections and 32.6% with broadband).

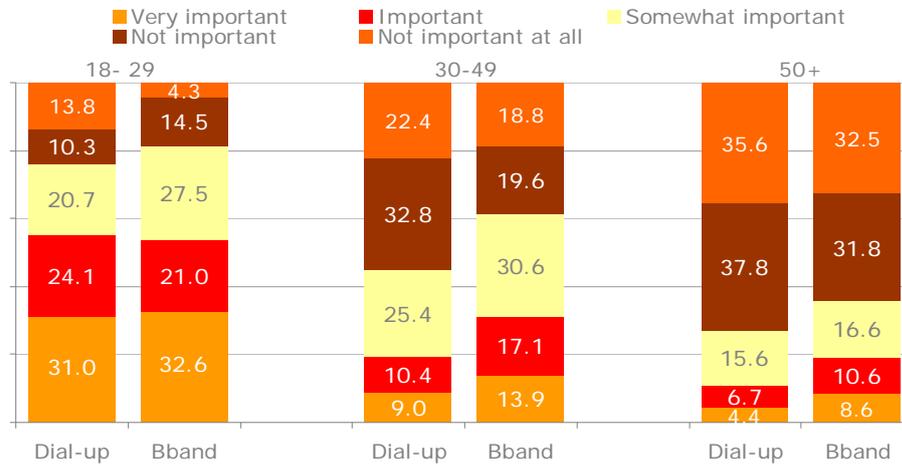
Broadband connectivity is related to less reading of newspapers and magazines for the first two age groups. For the youngest age group 13.8% of those on dial-up said they spend less time reading newspapers and magazines since gaining home connection (the same proportion that said they read more) compared to 30.4% of those with broadband. For the 30-49 age group the figures were 13.4% and 27.3% respectively. For older people the proportion fell between dial-up (20.0%) and broadband (15.2%).

Figure 15 Impact of the internet on related activities, by age and access type

| | Television | | Reading books | | Reading papers/mags | |
|---------------|------------|------|---------------|------|---------------------|------|
| | More | Less | More | Less | More | Less |
| 18-29 dial-up | 13.8 | 34.5 | 13.8 | 31.0 | 13.8 | 13.8 |
| 18-29 Bband | 2.9 | 60.9 | 12.3 | 32.6 | 9.4 | 30.4 |
| 30-49 dial-up | 0.0 | 25.4 | 10.4 | 10.4 | 1.5 | 13.4 |
| 30-49 Bband | 4.9 | 43.3 | 11.4 | 23.7 | 9.8 | 27.3 |
| 50+ dial-up | 2.2 | 37.8 | 11.1 | 20.0 | 2.2 | 20.0 |
| 50+ Bband | 4.6 | 31.1 | 9.9 | 12.6 | 6.0 | 15.2 |

For young people the internet is an important source of entertainment despite access type (Figure 16). Over a half of young persons say that the internet is at least important for entertainment with a slightly higher proportion of those on dial-up connections reporting this (35.1% for dial-up and 53.6% for broadband). On the other hand only 19.4% of 30-49 year olds and 12.1% of those aged fifty or over with dial-up connections considered the internet an important source of entertainment. These proportions increase with broadband connectivity, to 31.0% and 20.2% respectively.

Figure 16 Importance of the internet for entertainment, by age and access type



Young people with broadband connections are no more likely to keep a blog than those on dial-up but they are more likely to update their blog regularly (Figure 17). While 6.9% of dial-up users in this age group updated a blog at least weekly, 11.5% of those with broadband at home did. No-one aged 30-49 on dial-up kept a blog while just under five percent with broadband while access type had little impact on whether older people kept a blog (2.2% and 4.0% respectively).

A similar pattern was found in relation to working on personal websites although higher proportions of people kept a personal website. Young people with dial-up were much more likely to have personal websites (13.8%) than those aged 30-49 (1.5%) or fifty plus (6.7%). Almost a quarter of young people with broadband keep a personal website (24.6%) and compared to young people on dial-up a greater proportion update weekly (19.5% compared to 10.35 for dial-up).

Figure 17 Maintaining blog or website, by age and access type

| | Own blog | | Own website | |
|---------------|-------------|-----------------|-------------|-----------------|
| | Participate | At least weekly | Participate | At least weekly |
| 18-29 dial-up | 20.7 | 6.9 | 13.8 | 10.3 |
| 18-29 Bband | 20.3 | 11.5 | 24.6 | 19.5 |
| 30-49 dial-up | 0.0 | 0.0 | 1.5 | 0.0 |
| 30-49 Bband | 4.9 | 1.6 | 13.5 | 7.7 |
| 50+ dial-up | 2.2 | 2.2 | 6.7 | 2.2 |
| 50+ Bband | 4.0 | 0.7 | 6.6 | 5.2 |

Figure 18 sets out respondents' posting activity broken down by age and home access type. In relation to posting messages, the impact of broadband seems most pronounced on those in the middle age bracket with 11.9% of dial-up users ever posting compared to over a quarter of those on broadband connections (25.7%). There's little difference between older dial-up users and broadband users while young people on dial-up connections are more likely to post than those aged 30-49 with broadband connections (27.6% to 25.7%) with usage increasing to 40.6% for those on broadband connections. Frequency of use increases for both the young and mid-aged group in the move from dial-up to broadband.

Figure 18 Posting activity, by age and access type

| | Post messages on messageboard | | Post photos | | Post video | |
|---------------|-------------------------------|-----------------|-------------|-----------------|-------------|-----------------|
| | Participate | At least weekly | Participate | At least weekly | Participate | At least weekly |
| 18-29 dial-up | 27.6 | 17.2 | 27.6 | 20.7 | 0.0 | 0.0 |
| 18-29 Bband | 40.6 | 29.7 | 45.7 | 26.1 | 11.6 | 5.8 |
| 30-49 dial-up | 11.9 | 4.5 | 17.9 | 9.0 | 0.0 | 0.0 |
| 30-49 Bband | 25.7 | 14.5 | 19.6 | 6.5 | 6.1 | 2.0 |
| 50+ dial-up | 11.1 | 8.9 | 22.2 | 13.3 | 4.4 | 0.0 |
| 50+ Bband | 13.9 | 7.9 | 21.9 | 8.6 | 1.3 | 0.0 |

Connection type is not related to whether the mid-aged group or older people post photos. Young peoples' participation increases from 27.6% for dial-up to 47.7% for broadband and frequency increases (no young person posted photos daily on dial-up while 5.1% did with broadband).

No young or mid-aged person with a dial-up connection posted video footage whereas 11.6% of the young and 6.1% of the mid-aged did. Only very small proportions of those aged fifty and over posted video on either form of connectivity.

Broadband connectivity makes people more likely to download video content across all age groups and much more likely to do so frequently (Figure 19). For the youngest age group 31.0% of dial-up users download video footage compared to 57.2% of broadband. The impact on the older aged groups is even more dramatic- the corresponding figures for the mid-aged group are 9.0% and 36.7% and for the older group 2.2% and 15.9%. Just under one in five broadband users aged between 18 and 29 are downloading video footage daily (18.8%).

Downloading and listening to music is related both to age and access type. While just under a half of the younger age bracket with dial-up connections (48.3%) download and listen, 83.3% of those with broadband do. A similar pattern is seen over the other two age groups but with lower overall rates of participation. Frequency also increases with broadband access with over one in five young persons listening or downloading daily (22.5%).

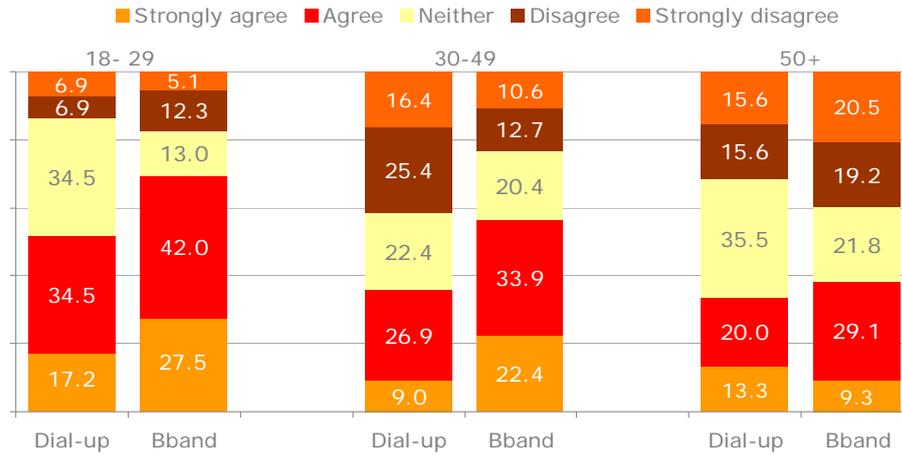
Figure 19 Downloading activities, by gender and access type

| | Download video | | Download music | | Surf the web | |
|---------------|----------------|-----------------|----------------|-----------------|--------------|-----------------|
| | Participate | At least weekly | Participate | At least weekly | Participate | At least weekly |
| 18-29 dial-up | 31.0 | 20.7 | 48.3 | 34.5 | 72.4 | 51.7 |
| 18-29 Bband | 57.2 | 44.9 | 83.3 | 56.6 | 74.6 | 62.3 |
| 30-49 dial-up | 9.0 | 3.0 | 35.8 | 13.5 | 58.2 | 29.9 |
| 30-49 Bband | 36.7 | 22.8 | 54.3 | 29.0 | 58.0 | 40.8 |
| 50+ dial-up | 2.2 | 0.0 | 11.1 | 4.4 | 44.4 | 15.5 |
| 50+ Bband | 15.9 | 6.0 | 35.1 | 10.5 | 45.7 | 21.9 |

The proportions of people in each age group who 'surf the web with out any definite purpose' is remarkably consistent across the two access types with younger groups more likely to engage in this activity. However people with broadband access are more likely to do this frequently. Looking just at the younger age group, 72.4% of those with dial-up surfed compared to 74.6% of those on broadband. However only 17.2% of dial-up users did so daily compared to 31.9% of those with broadband. The mid-range group had a similar pattern while those over fifty with dial-up were more likely to surf daily than those of this age with broadband (15.5% to 6.0%).

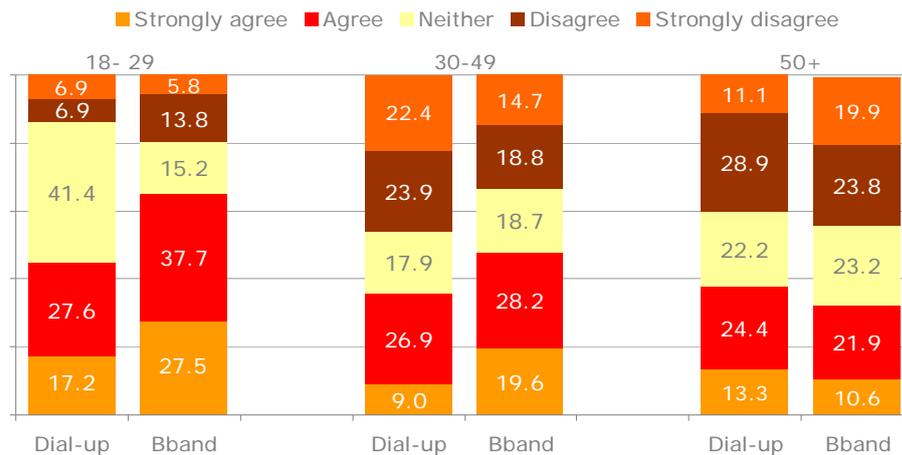
Figure 20 shows that young people with broadband access are the most likely of these groups to agree that the internet enables them to share creative work with others (68.5%). For young people with dial-up this figure was 51.7%. For the mid-range group the difference was even greater with 35.9% of dial-up users and 56.3% of broadband users agreeing. There was not such a marked difference for the older aged group with 33.3% of dial-up users agreeing and 38.4% of broadband.

Figure 20 The internet enables me to share creative work I like with others, by age and access type



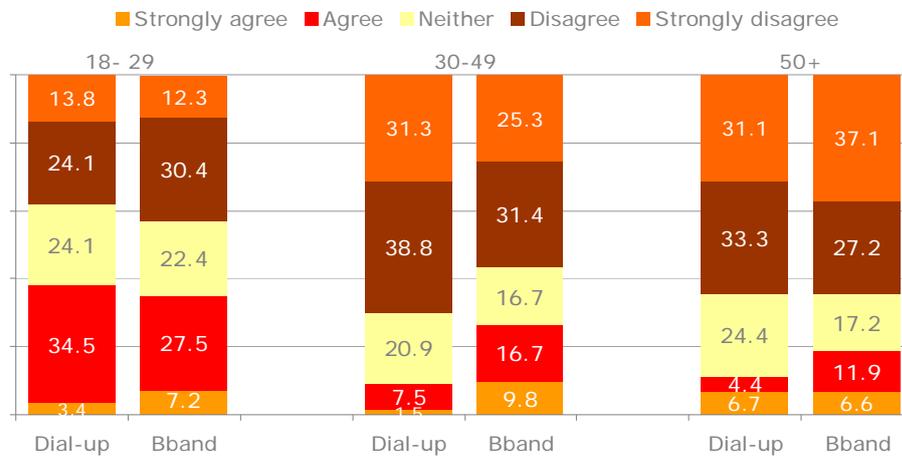
In relation to whether the internet enabled people to share their own creative work the pattern of response was similar (Figure 21). Young broadband users were the most likely to agree (65.2% compared to 45.8% of young dial-up users). The mid-range group had the same 'broadband impact' but with lower figures overall (35.9% of dial-up and 47.8% of broadband). Those aged fifty and over with a dial-up connection were more likely than those on broadband to agree (37.7% to 32.5%).

Figure 21 The internet enables me to share my creative work with others, by age and access type



Finally Figure 22 shows that the pattern of response for the whether the internet has encouraged people to produce their own creative work is very different. Young people with dial-up access are more likely than those with broadband to agree (37.9% to 34.7%) while for the other two groups broadband access was associated with a higher proportion of agreement. For dial-up users aged 30-49, only 9.0% agreed compared to 26.5% of broadband users and for the oldest age group the figures were 11.1% and 18.5%.

Figure 22 The internet has encouraged me to produce my own creative work and share it with others, by gender and access type



Conclusion

We can briefly summarise some key findings: Australians with a broadband connection at home are almost twice as likely to consider the internet as ‘very important to their current way of life’ and more likely to rate the internet as a ‘very important source of entertainment’. In terms of activities, there is a stronger relationship between downloading activities than uploading activities. The additional time spent by broadband users online seems to come mainly from television.

We found evidence that broadband access has a bigger impact on women’s online activities than men. While this is not a conclusive finding given our sample size and other intervening variables, there are some interesting possible explanations that are worth exploring. It may be that dial-up is a more ‘technical’, even ‘fiddly’ technology that fewer women in general might be willing to engage with. If so, that may reinforce the conventional picture of the geek hobbyists who characterised the early Internet. More significant may

be the shared access associated with broadband technologies, which makes it easier for every member of a household to connect more.

Our results in relation to age and access type indicate that the internet's role as an entertainment source is much stronger for those in the younger group and that this group was much more likely to be watching less television as a result of access. Younger people are more likely to be uploading and developing online content. In terms of blogging, this is clearly a young person's game with one in five of young people with dial-up and broadband maintaining a blog. For the next biggest blogging group, those aged 30 to 49 the corresponding figure was one in twenty. Younger people are also greater downloaders and dial-up connections are not as big an inhibitor as for the older age groups.

Our understanding of the creative Internet and its users requires a broader context. A striking feature of the Internet's brief history in Australia is the comparatively rapid uptake of dial-up services in the 1990s, followed by the comparatively slow uptake of broadband services in the new century. The reasons for this history are not the issue here; we are more concerned with understanding its consequences. At the level of policy analysis, many authors have seen the slow diffusion of broadband as a major bottleneck in the country's national innovation system (see, for example Barr (2000)), preventing Australians from participating fully in the cultural, economic and political benefits of what Benkler calls the 'networked public sphere'. While both the uptake and quality of Australian broadband services have not yet caught up with those in some other advanced liberal economies, we can now see that broadband is very closely linked to the emergence of the creative Internet. But how far will the benefits of that network and its extraordinary new economy extend? This paper suggests that the creative Internet bears some distinctive social features: an expanding user base, notably including more women, but nevertheless still slanted towards younger users.

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