A ‘Mobile’ Technology and Waiting for the Broadband ‘Horse Trade’

An Examination of Webcasting in Australia

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Abstract: Webcasting in Australia is currently the domain of national broadcasters, independent and community radio stations and the two leading football codes. This paper reports on the findings of a content analysis of 20 leading webcasters as to the content and genres they provide. In examining the factors affecting the ‘slow’ adoption of webcasting in Australia such as the absence of a high speed broadband infrastructure, the paper analyses and how its various discourses were framed by the parties concerned, and how the clash of conflicting agendas shaped the negotiations between the main stakeholders, taking on the characteristics of a ‘horse trade’. Thereafter, the paper critically examines how other technologies such as mobile phones and Pay TV has begun to take on webcasting, instead of waiting for the major commercial broadcasters to do so or a new broadband network and a national broadband strategy to be implemented.

Keywords: Webcasting, Australia, Internet TV, Broadband Connections, Content Analysis, Diffusion of Technologies, Adoption of Technologies, Mobile phones, Echo boomers

Introduction

TECHNOLOGICAL CONVERGENCE BETWEEN computers and other media have seen the ‘coming together’ of many previously separated communication technologies and functions in the same equipment. Multimedia functions of the computer which carry text, still and moving pictures, video, audio, telephony, the internet, and data are a good example of this phenomenon. This convergence can also bridge time and space and provide users of a technology with the capability for interactivity or the opportunity to choose the time and place of sending and receiving messages as well as choosing and creating the content the technologies carry, on the users’ own terms at a much greater level than ever before. A mobile phone is another example of this convergence and interactivity where the small screen of the mobile phone with a built-in camera allows the user to create as well as receive still and moving pictures, record and receive audio and video content from service providers, surf the internet, send or receive emails, telephone calls and faxes from almost anywhere in the world.

Webcasting

Webcasting is defined as websites with video and/or audio content (Ha & Ganahl, 2007) and is sometimes labelled the ‘last frontier’ or ‘the next stage of evolution’ of the internet era (Morrissey, 2003). Therefore, it is important to examine the factors that affect the adoption and diffusion of this new communication medium in any nation to identify its strengths and weaknesses. At the same time, it is useful to explore what measures can be taken to optimise the benefits of the technology and highlight the various and often conflicting agendas and interests of the different stakeholders that shape and influence the accompanying arguments, debates, policies, regulations, and discourses.

One of the main factors shaping the adoption, diffusion and success of webcasting is the availability both to web casters and consumers or end users, of suitable internet transmission speeds and high bandwidth, as part of the telecommunications infrastructure of a nation, region or the locale of the targeted end-users. High bandwidth such as broadband internet and high transmission speeds allow users to access web cast content that is either streamed ‘live’ or downloaded as archived material from a web cast, without too much delay (Lin, 2004).

Webcasting provides an opportunity to both large and small organisations and individuals to establish a Web cast presence. Many broadcasters, Internet service providers (such as Yahoo!), other organisations, individuals and groups worldwide have adopted webcasting via their websites for the purposes of promotion, supplementation of content across media and wider reach to a worldwide audience for their business or other activities. Individuals generally use webcasts for personal enjoyment or for disseminating their views and messages circumventing the traditional ‘gatekeepers’ of mainstream media and mediated communication (White, 1950), to reach a worldwide audience. Most organisations follow the various business models of webcasting such as content aggregation, pure plays (streaming of live broadcast content on the internet), ‘branded content’
and ‘clicks and bricks’ (existing media organisations providing content via their website) (Ha & Ganahl, 2007).

Webcasting in Australia

The adoption and diffusion (Rogers, 1995; Hawkins et al., 1994) of webcasting is considered to be ‘slow’ in Australia, in comparison to other contemporary new technologies such as DVD players or mobile phones. This was the view of Craig Preston – The Operations Coordinator for New Media and Digital Services at the Australian Broadcasting Corporation (ABC) - the national broadcaster for both radio and TV (C. Preston, personal communication, August 23, 2005), even though the ABC was found to be the leader of webcasting in Australia in a study carried out by the author in January 2005 (Weerakkody, 2007). This was explained as mainly due to commercial broadcasters’ lack of interest in a medium or technology that does not currently promise much revenue, as ratings are not taken for web casting in Australia as with TV or radio that could translate into advertising revenues for commercial web casters (Porter, 2006).

Internet, Broadband and Webcasting

Another factor limiting the success of the adoption and diffusion of webcasting in Australia is the low penetration rate of high speed broadband internet services necessary for end-users to be able to make optimal use of the medium. The official definition of broadband is ‘always on’ where the internet connection is continuous where dialling-up is not needed each time a connection is required and has more than 256 kbps speed (http://www.abs.gov.au). Due to Australia’s unique geographic characteristics and demographic distribution where the majority of the population live in the five state capitals (viz. Sydney, Melbourne, Adelaide, Brisbane and Perth) and being a continent with just over 20 million inhabitants (www.abs.gov.au), many challenges are faced when providing the required broadband or even the internet or voice telephony infrastructure to regional, rural and remote areas of the country- commonly referred to as the ‘bush’.

Currently, two thirds of Australian households enjoy access to a computer, which vary according age, geographic location and other demographic factors (James, 2005). According to the latest official figures available which were for March 2005, there were 5.8 million internet subscribers in Australia which translated into 50% of Australian households with internet access. However, these figures are much lower for the ‘bush’. In March 2005, 1.8 million Australian households had broadband connections, again mostly limited to those in metropolitan areas (Internet Activity Survey, 2005). At the same time, Australian academic Ross Monaghan considers Australian broadband speeds as much slower than those of other nations such as the United Kingdom (Ross Monaghan, personal communication, 20th July 2006).

Not many commercial telecommunications providers are keen to make the investment needed to offer broadband services to the sparsely populated ‘bush’ due to the low returns expected. After the submission of the report ‘Regional Telecommunications Inquiry’, the Australian government set aside AUS$142.8 million (US$102 million) over four years to help remedy the situation. However, the government also proposes to develop a ‘National Broadband Strategy’ in acknowledgement of its role and responsibility to promote market driven outcomes for broadband services (DCITA, 2004).

Even with sufficient broadband infrastructures, a web caster needs to meet the high bandwidth requirements by initially and continuously upgrading its servers, routers, network infrastructure, software and the provision and maintenance services. In addition, they also need to fund new content production, convert and maintain existing content and hire related staff and bear other costs. Bing (1997) and Rothman (2005) see these as the non-broadband related factors that affect the success of webcasting and their audience appeal. Audiences too need to upgrade their end user software such as Windows Media Player and Real Player, to be able to reap optimum benefits of webcasting services.

Theoretical Frameworks

One of the theoretical frameworks used in this study is the Justification Model of Technology (Hamelink, 1988) which argues that decision making about a new technology is a form of ‘social gambling’ as policy makers as well as adopters- the latter being both web casters and end-users, have limited knowledge of the technology, its capabilities, what people would do with it once adopted or if it would be adopted at all. The established base (Green, 2001) or the ‘old’ technology the new one may replace- that is newspapers, radio, TV, Pay TV etc. is an important factor affecting the adoption and diffusion of a new technology.

If the established base is satisfactory for the current adopters – they need additional incentives or an enhanced value or relative advantage (Rogers, 1995; Manross & Rice, 1986) in terms of costs and performance if they are to be persuaded to adopt the new technology (Hawkins, et al, 1994). Australia having a very healthy media sector could mean that webcasting or other such new medium may also be
seen as redundant (Weerakkody, 2007) or at least as not urgently required.

At the same time, any new technology once adopted, generally goes through a slow rate of diffusion in its early stages based on the Normal distribution or the Bell Curve, with only the innovators or 2.5% of the population taking it up. The early adopters or 13.5% of the population and the rest follow suit more slowly after a 'wait and see' period (Hawkins et al, 1994). As an emerging technology, webcasting in Australia could be going through this stage at present.

Another factor that plays in the policy making and regulation related to the adoption and diffusion of a new technology is the power relations involved and the sometimes conflicting agendas of various powerful stakeholders (such as web casting by broadcasters and other organisations) (Green, 2001) tied to establishing the necessary infrastructure such as fast broadband. These power relations shape the debates, discourses, arguments, policy making and regulation related to it and were clearly seen in recent times with the discussions on the establishment of a national broadband strategy and infrastructure in Australia (Kohler, 2006; Bartholumeusz, 2006 a and b; Hogan, 2006 a and b; Davidson, 2006; Maiden, 2006).

Method

This paper is based on some of the findings of a study conducted by the author in January 2005 about webcasting, which content analysed a sample of 20 Australian web casters as part of a 16-nation study. The 16 countries/markets included in the study were The Arab World, Australia, China, Denmark, Germany, Greece, Hong Kong (the Special Administrative Region of China), Italy, Japan, the Netherlands, Norway, South Korea, Spain, Taiwan, the UK, and the USA. The study was coordinated and the research design and coding instrument developed by Louisa Ha and Richard Ganahl- two academics based in the USA. The findings of this cross-cultural study are published in Ha & Ganahl (2007) with each nation making up a chapter in the book.

The major findings related to the Australian web casters' profiles (name and web address), their parent companies, types of content provided (original, re-purposed, simulcast or unknown), the webcasts' business models (Clicks and bricks, pure play, content aggregation, branded content), ownership patterns (government owned, public company, non-profit foundation, independent organisation, privately owned company etc), types of business revenue (advertising/ sponsorships, e-commerce, subscriptions, pay per use/view, content syndication) and funding sources (tip jar/voluntary contribution, government funded) of the Australian sample of 20 web casters were coded and the findings are reported in Weerakkody (2007). It includes a description of the current Australian media landscape to provide a context in which webcasting is being adopted and diffused in Australia.

Data Collection

The author referred to the Australian Media Guides for 2005 (Gee, 2005) and 2006 (Crown Content, 2006) to obtain details of the various web casters of Australia for inclusion in the sample, but was disappointed and surprised that these guides or the website of the Australian Department of Communication, Information Technology and the Arts (DCITA) (www.dcita.gov.au) made no references to webcasting or streaming, indicating the early stages of adoption of the medium in Australia. As suggested by the coordinators of the project, the author then interviewed Ross Monaghan- an Australian academic and former executive of the Australian telecommunications industry for suggestions as to the leading web casters in Australia, for inclusion in the sample of 20 web casters for the content analysis. He suggested the Australian Broadcasting Corporation (ABC), the commercial media organisations, Parliament of Australia and activist groups as the most likely and noteworthy web casters (Ross Monaghan, personal communication, April 13, 2005). Accordingly, the author examined the available websites of all major commercial, public and community broadcasters, major national and regional newspapers, and subscription TV providers in Australia, as well as websites of organisations such as Yahoo! Australia & New Zealand (now called Yahoo?) and those with an Australian URL (i.e. ‘.au’) for suitable Web casters to be included in the 20-strong sample for a content analysis.

Only websites that included audio and/or video content in addition to text and still images were included in the sample. Thus, some of the news media websites did not qualify as Web casters. The sample was a ‘purposive’ one, involving aspects of ‘snowballing’, as some Web casters and organisational websites provided ‘leads’ to other suitable ones. Given the current early stage in diffusion of Webcasting in Australia, this sample may well have been very close to a ‘census’ (Wimmer & Dominick, 2006) of leading Web casters in Australia in January 2005, when the content analysis was conducted.

The author also searched the ‘Mass Media Complete’ (formerly the Matlon Index) database for scholarly literature on the subject and the Factiva database (similar to LexisNexis) for newspaper articles on Webcasting in Australia, in addition to Google searchers, all carried out on several occasions
during 2004, 2005 and 2006. A good portion of the citations however, proved to be websites of and publicity material from vendors of Webcasting related products and services. They were mainly aimed at the corporate market to serve corporate and organisational communication functions and were not aligned with media or broadcasting industries. The scholarly literature on webcasting in Australia mainly addressed issues related to copyright and remuneration for copyright holders when consumers download materials such as recorded music and the related legal and regulatory measures taken to address it (Bruns, 2003). The databases of the Australian Bureau of Statistics (ABS) (http://www.abs.gov.au), the Department of Communication, Information Technology and the Arts (DCITA) (http://www.dcita.gov.au) and Australian Communications and Media Authority (ACMA) (http://www.acma.gov.au) were also searched for related information.

As the content analysis indicated the Australian Broadcasting Corporation (ABC) as the most involved in Webcasting in Australia, the author also interviewed Craig Preston, the Operations Coordinator of ABC's New Media and Digital Services for his insights about the state of Webcasting in Australia.

Findings

The 20 web casters that made up the sample for the content analysis and their details are listed in Table 1.
Table 1: The 20 Australian Web Casters in the Sample used for the Content Analysis along with their Respective Parent Companies and Web Addresses (URLs)

<table>
<thead>
<tr>
<th>Name of Web caster</th>
<th>Parent Company</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC dig</td>
<td>Australian Broadcasting Corporation (ABC)</td>
<td><a href="http://www.abc.net.au/dig">http://www.abc.net.au/dig</a></td>
</tr>
<tr>
<td>ABC Online</td>
<td>ABC</td>
<td><a href="http://www.abc.online.net.au">http://www.abc.online.net.au</a></td>
</tr>
<tr>
<td>ABC Radio 1222 Newcastle</td>
<td>ABC</td>
<td><a href="http://www.abc.net.au/newcastle">http://www.abc.net.au/newcastle</a></td>
</tr>
<tr>
<td>ABC Rural</td>
<td>ABC</td>
<td><a href="http://www.abc.net.au/rural">http://www.abc.net.au/rural</a></td>
</tr>
<tr>
<td>AFL</td>
<td>Australian (Rules) Football League</td>
<td><a href="http://afl.com.au">http://afl.com.au</a></td>
</tr>
<tr>
<td>FoxSports Audio</td>
<td>Foxtel (Pay TV)</td>
<td><a href="http://foxsports.news.com.au">http://foxsports.news.com.au</a></td>
</tr>
<tr>
<td>Melbourne Indymedia</td>
<td>Oceania Indymedia</td>
<td><a href="http://melbourne.indymedia.org">http://melbourne.indymedia.org</a></td>
</tr>
<tr>
<td>NRL</td>
<td>National Rugby League</td>
<td><a href="http://www.nrl.com">http://www.nrl.com</a></td>
</tr>
<tr>
<td>Ninemsn–Channel 9 TV</td>
<td>PBL &amp; Microsoft</td>
<td><a href="http://ninemsn.com.au">http://ninemsn.com.au</a></td>
</tr>
<tr>
<td>PBS106.7FM Melbourne</td>
<td>Progressive Broadcasting Service</td>
<td><a href="http://www.pbsfm.org.au">http://www.pbsfm.org.au</a></td>
</tr>
<tr>
<td>Radio Australia</td>
<td>ABC</td>
<td><a href="http://www.abc.net.au/ra">http://www.abc.net.au/ra</a></td>
</tr>
<tr>
<td>Radio National Saturday Night Country</td>
<td>ABC</td>
<td><a href="http://www.abc.net.au/sn">http://www.abc.net.au/sn</a></td>
</tr>
<tr>
<td>Real Radio 2Ser 107.3FM</td>
<td>Sydney Educational Radio (2SER)</td>
<td><a href="http://www.2ser.com">http://www.2ser.com</a></td>
</tr>
<tr>
<td>SBS Online</td>
<td>Special Broadcasting Service (SBS)</td>
<td><a href="http://www20.sbs.com.au">http://www20.sbs.com.au</a></td>
</tr>
<tr>
<td>Triple J Radio</td>
<td>ABC</td>
<td><a href="http://abc.net.au/triplej">http://abc.net.au/triplej</a></td>
</tr>
<tr>
<td>Yahoo! Aus. &amp; NZ (now Yahoo7)</td>
<td>Yahoo! &amp; Channel 7 TV</td>
<td><a href="http://www.yahoo.com">http://www.yahoo.com</a></td>
</tr>
</tbody>
</table>

Details of Web Casters

The following is a brief description of each of the web casts content analysed for the study.

The Govt-owned Organisations: ABC dig (radio), ABC online (home page for the ABC), ABC Radio 1222 Newcastle, ABC Rural, Radio Australia, Triple J Radio, Radio National Saturday Night Country (All seven are owned by the National Broadcaster ABC and are funded by the Australian Government).

SBS Online - the Govt owned National Multicultural Broadcaster or the Special Broadcasting Service (SBS) and the Parliament of Australia.

(Altogether 9 of 20 web casters in the sample are Australian government owned and funded organizations.)

Commercial Broadcasters with Webcasts

Ninemsn–Channel 9 TV (Owned by Publishing Broadcasting Ltd or PBL and Microsoft) and Yahoo! Australia and New Zealand (now called Yahoo7) (Owned by Yahoo! and Channel 7 TV) are webcasts linked to two of the three commercial TV networks in Australia.

Channel 10’s website offered the highly popular 24 hour webcasts of Big Brother 5. But it had ended
by the time of the study, making the website ineligible to be included in the sample.

Newspapers with Webcasts: *The Australian* (The national newspaper owned by Rupert Murdoch’s News Limited) had one video clip from NASA making it eligible for the sample. But it was not there in October 2005 when rechecked.

*Sydney Morning Herald* - Owned by Fairfax Ltd.

**Commercial Radio Stations:** *Triple M Radio* owned by Austereo Ltd., which is one of the largest radio companies in Australia.

**Community Radio Stations:** *PBS 106.7 FM* – Radio PBS Melbourne community radio station is owned by the Progressive Broadcasting Service.

**Independent Web casters:** *Melbourne Indymedia* - Owned by Oceania Indymedia and run by the Indymedia collective, is an alternative media outlet for an advocacy group.

**Pay or Subscription TV Companies:** *FoxSports Audio* is linked to Foxtel which is jointly owned by Telstra (50%), PBL (25%) and News Limited (25%).

**Sporting Organisations:** *AFL* - Australian (Rules) Football League owned by the league itself and *NRL* – National Rugby League (owned by the league itself)

**Educational Web casters:** *Real Radio 2SER 107.3 FM Sydney* - (Sydney Educational Radio) 2SER – owned by Macquarie University and the University of Technology-Sydney, receives government grants and voluntary annual subscriptions from audience members.

### Details of Web Cast Content offered by the Australian Sample

The details of the genres of content provided by the 20 Australian webcasts content analysed for the study are provided in Table 2. Please note that the content analysis was carried out during January 2005 and rechecked in December 2005, and that some of the details about the web casters and their content may have changed since then.

<table>
<thead>
<tr>
<th>Audio and Video</th>
<th>No. of Web casters</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blockbuster movies</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TV commercials</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>Drama</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Comedies</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Variety Shows (e.g. Oscars)</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Outtakes/Bloopers</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Classic movie/TV titles</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Education/Instruction</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Trailers/Highlights/Video clips of entertainment content</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>Business (news/speeches/conferences)</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>News clips/interviews (non-business)</td>
<td>9</td>
<td>45%</td>
</tr>
<tr>
<td>Talk shows</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>Music videos</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>Documentaries</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>Cartoons/Animations</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>Sports</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>25%</td>
</tr>
</tbody>
</table>

(‘Other’ genres included polling for a favourite movie, creating own video clips interactively, Public Service announcements (PSAs), a NASA promotional video clip, live Parliamentary proceedings, travel shows, shopping and a Tsunami Appeal.)
<table>
<thead>
<tr>
<th>Audio Only Genres</th>
<th>No. of Web casters</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variety</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Music</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>News Clips</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>Talk Shows</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Documentaries</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Interviews</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Weather Forecasts</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Market Reports</td>
<td>1</td>
<td>5%</td>
</tr>
</tbody>
</table>

Note: The percentage of each type of content offered by a web caster could not be gauged for the analysis, due to insufficient information available on the webcasts’ content.

Program Genres offered by the Australian Sample of Web Casters

The content analysis found that the most often used genres in the webcasts using audio and/or video were news (45% or nine (9) web casters) and sports (40% or eight (8) web casters). If webcasts ratings figures for Australia were available, it would have been possible to examine if these genres and / or web casters were more popular than others among audiences. Australian experiences with subscription or Pay TV is that it is most successful in the areas of sports programming content and movies.

Trailers/ highlights and music videos were provided by 25% (or five (5)) of the web casters, giving them third place in terms of the genres included in the webcasts. Business, talk shows, documentaries, and cartoons/animation all tied for 8th place with 20% each (or four (4) of the web casters). The ‘other’ category was represented by 25% (or five (5) web casters) of the sample and included live streams of Parliamentary proceedings, travel shows, public service announcements (PSAs), a NASA video clip, and the interactive functions of polling for a favourite movie and creating one’s own video clip.

The genres of blockbuster movies, classic movie/TV titles and outtakes/bloopers, were not represented in the Australian sample. This is understandable because affordable DVD players and computers with the DVD facility are widely available in the Australian market and hence, it is unlikely that consumers or web casters would see the need to view or provide movies on the web, given the problems related to downloading and picture quality, currently faced by those not having broadband connections. However, trailers / highlights of entertainment content appear to be on five (5) or 25% of the webcasts. They often serve marketing and publicity purposes or ‘cross promotion’ for the content of other forms of media belonging to the same media organisation or conglomerate.

Audio Genres

Table 2 also summarises the ‘audio’ genres represented in the webcasting sample. The most commonly offered genres were music and news clips (three (3) or 15% of web casters for each). Variety, talk shows, documentaries, interviews, weather forecasts and market reports were each included in one (1) or 5% of webcasts. These ‘audio genres’ can be expected as most of the webcasts were affiliated with radio stations.

Discussion

Appendix A provides the details of the content offerings of each of the 20 web casters analysed in the study. The following general observations are made about the Australian web casting environment, its related technological issues of high speed broadband connections, and the alternative technologies of mobile phones and Internet TV that currently appear to fill the void of web casting in Australia.

The Best Performers

The content analysis indicated the ABC as the most active web caster among the 20 sampled for the study. (See Appendix A for details of content provided by each of the 20 webcasts analysed.) Its home page ABC Online included content sourced both locally and from overseas and carried out e-commerce via the ABC Shop for Videos and DVDs for programming broadcast on their channel. Its offerings consisted of text, audio and video and transcripts of its programs. The web caster has received awards for its performance and services provided.

ABC Radio 1222 Newcastle proved to be an exceptionally comprehensive web cast among those analysed, with original video documentaries, variety shows, news clips and audio interviews provided. Craig Preston sees this as an indication of the com-
mitment and enthusiasm for webcasting of the staff and management of this regional radio station, which appears to have efficiently utilised the funding and grants set aside by the network for the purpose (C. Preston, personal communication, August 23, 2005).

Indymedia, which is a grassroots advocacy group dealing with worldwide issues of humanitarian and environmental concern, was a good example of how an alternative organisation or advocacy group could use a comparatively less expensive, emerging medium to reach its audience. Unlike the mainstream media on any platform, it represented minority and developing world perspectives and voices in its content which resulted in the web cast carrying diverse and cross-cultural viewpoints on the issues addressed. The web cast depends on voluntary contributions from visitors to the site as a source of revenue.

‘The Echo Boomers’

Even though seven of the 20 webcasts in the sample content analysed belonged to ABC, Craig Preston, its Operations Coordinator for New Media and Digital Services considered the status of Australian webcasting as "Pretty Dead" with respect to the medium as a whole (C. Preston, personal communication, August 23, 2005). This is due to the apparent reluctance of the commercial media to invest their resources on a medium which is not yet established to make money for commercial broadcasters and fears of 'cannibalising' their dwindling audiences in the face of increased competition from the Internet, Pay TV and other media (Ross Monaghan, personal communication, October 26, 2005). This fragmented audience is especially applicable to 'echo boomers' or 'Generation Y' or the Millennium generation born between 1982 and 1995 as the children (or echoes) of 'baby boomers', who are surrounded by a range of communication technologies and number 250 million worldwide. Riekert (2006; p. 6) describes this generation as 'in love with screen culture- but not TV' and 'always on' with new technologies such as mobile phones with video cameras, the Internet, iPods, and who play video and online games, carry portable media players, watch cable or subscription TV, send and receive instant messages or SMS, and use Voice Over Internet Protocols (VoIP). In Australia, echo boomers are considered to be 20% of the workforce with considerable disposable incomes who watch less free-to-air TV than the rest of the population and read even less.

This raises the issue of reaching this market via non-traditional media such as webcasting for advertising since the Australian online advertising market was worth A$205 million (US$105 million) in 2005, indicating a 50% increase from the previous year. It is expected to reach A$1.5 billion (US$1.1 billion) in 2009 (Reikert, 2006). Therefore, it would be in the interest of current commercial broadcasters and other traditional media organisations to take up webcasting in order to harness the buying power of this demographic, which wants its 'entertainment on the devices of their choice when they want it...' (Bob Peters- Director, Global Media Analysis cited in Reikert, 2006; p. 6). Rupert Murdoch- the owner of News Corp- one of the largest media conglomerates in the world and owner of News Limited in Australia- also one of the largest media companies in Australia, appears to have understood the potential of this market when he purchased ‘myspace.com’ - a popular youth oriented website. Murdoch whose media conglomerate cross owns several media such as print (The Australian newspaper, The New York Post etc.), radio, TV (Fox network in the US) and Pay TV (Fox News in the US and Foxtel in Australia), is also reported to have requested that his news staff file their stories on the internet first (Ross Monaghan, personal communication, 20th July 2006).

Since the study was completed in January 2005 and the 20 websites in the sample were rechecked in December 2005, it appears that some recent developments in the Australian media landscape may have improved the chances especially of Australian commercial broadcast media in taking more notice of webcasting and its potential. For example, in July 2006, Channel 10's Big Brother reality TV program was web cast 24 hours a day to its subscribers, instead of providing it free on the web as with Big Brother 5 in 2005. In June 2006, when Channel 9 TV reduced its newsroom staff by 22% or 100 of 450 as a cost cutting measure, its new CEO- Eddie McGuire explained that the decision was part of a strategy to develop a 'new cutting edge blueprint' focusing on the internet and mobile technology (Westerman, 2006; p. 9). Currently, Channel 9 TV's website offers downloads of past episodes of its popular Australian TV drama 'McLeod's Daughters' at a nominal charge. These agree with the Theories of diffusion of innovations that the perceived relative advantage and the perceived risks related to the investment on webcasting should either be in terms of cost or performance of the new technology for the prospective web casters. The observability or the visible benefits of the new technology over the existing ones (other media) for both web casters and end-users are also factors relevant to adoption and diffusion (Hawkins et al., 1994; Rogers, 1995)

The 'Problem' of Broadband

Telstra is a large telecommunications company in Australia which in December 2005 was 51.8% owned by the Australian government (Hogan, 2006b). Before 1994, as the fully state-owned telecommunica-
tions service provider (under the name Telecom), it held the complete monopoly of providing telecommunications to all Australians. In 1994, Optus (before its purchase by SingTel of Singapore) was allowed into the market and deregulation allowed others to enter it in 1997 (Turner & Cunningham, 2002). Telstra was twice allowed to sell parts of its shares held by the government with public floats commonly called T1 and T2. The Australian government with its control of both houses of parliament, allowed the sale of its remaining interest in Telstra-called T3, to go through in November 2006. However, in recent times, Telstra has faced a decrease in its share prices often blamed on the current ‘outdated’ regulatory regime, competition and a global downturn in Telco values (Hogan, 2006b).

Even today, Telstra holds the monopoly on the Asymmetric Digital Subscriber Line (ADSL) and Unbundled Local Loop (ULL) markets in Australia. ADSL that uses the copper wire telephone infrastructure, makes up three fourths of the market even though its data download speed is only 10% that of cable. Cable uses the fibre optic infrastructure, available either through the subscription TV companies Foxtel and Optus or through independent broadband providers operating in major metropolitan areas (Hallaby, 2003). Since regional and rural areas use satellite dishes or antennas for receiving subscription TV signals instead of via cables, they will most probably miss out on broadband connections, unless some other funding arrangements are made to provide the necessary infrastructure (Weerakkody, 2007). ADSL has more opportunities for providing Internet connections to households due to its geographically wider coverage and ease of installation (Hallaby, 2003; Weerakkody, 2007).

The two Senate inquiries that examined the broadband issues in Australian telecommunications supported the upgrading of the necessary infrastructure to improve broadband connectivity, and suggested more proactive regulation (James, 2005). The inquiry on ‘Competition in broadband services’ suggested the need for structural changes to the telecommunications industry to remove Telstra’s media interests (e.g., 50% interest in Foxtel subscription TV) and to set a ten year national target for broadband service provision (James, 2005; Weerakkody, 2007).

Apart from Telstra, there are nine other significant players in the Australian telecommunications industry interested in providing broadband telecommunications services to Australians. Nicknamed the ‘Gang of Nine’ or ‘G9’, and led by Optus, they are: AAPT, iiNet, Internode, Macquarie Telecom, Optus, Primus, Soul and TransACT (Davidson, 2006).

The ‘Horse Trading’ for Broadband

By June 2006, the total number of subscribers for broadband services in Australia was 3.1 million and indicated a comparatively rapid growth in the year leading to it. The inhibitors of a universal availability of broadband in Australia are mostly related to the limitations of fixed-line access, which use the existing infrastructure (ACMA, 2006; pp. 132-134). In early 2006, Telstra was in negotiations with the Australian Competition and Consumer Commission (ACCC) on a proposed plan released on April 21, 2006 and costing A$3 billion over a three-year period to dramatically increase the speed of residential broadband connections to 12 mbits per second. This plan suggested building a fibre network that will be combined with Telstra’s existing fixed line network (Hogan, 2006a). Telstra was blamed for having ignored an earlier proposal from Optus to invest A$1 billion (US$730 million) for a jointly-owned fibre-to-the-node (FTTN) network. FTTN involved the extension of fibre optic cables past telephone exchanges to cabinets (nodes) on street corners, replacing the copper wire currently used for the ‘home stretch’ (Hogan, 2006b; p. 1).

Telstra’s current ADSL residential broadband network is considered limited because the connection speeds drop when the distance between a subscriber’s home and the telephone exchange becomes more than 1.5 km (Hogan, 2006b). Under Telstra’s FTTN plan, 4 million households or ‘service addresses’ were to be placed within 1.5 kms of fibre as the plan expects to extend the fibre optic cable past these exchanges to 20,000 nodes (Hogan, 2006a and b).

The G9 coalition’s proposal was for the telecommunications companies including Telstra to jointly design the network, share the investment and pay the same pre-determined wholesale access costs to use the network. This proposal expected to use the existing equipment of the coalition members. But Telstra’s spokeswoman Liz Jurman called this plan as ‘pitching a tent on top of a skyscraper and demanding rent from all the tenants’ and criticised the plan’s lack of detail, facts and data, describing it as a publicity stunt to distract the ACCC from its discussions with Telstra on the latter’s proposal and to make ACCC indirectly coerce Telstra to co-operate with the G9 (Hogan, 2006a; Maiden, 2006).

However, Bartholomew (2006a) described the G9 proposal for an open-access, industry-funded broadband network as a ‘good idea’ but one which would simply remain so even though it could increase competition in broadband services and have greater convergence than Telstra’s plan for the FTTN network at a lower construction cost. This was due to the G9 plan’s lack of detail as to how much money or what infrastructure each coalition member would provide. They also did not commit to providing the
$3 billion needed, probably because most of the investment and traffic of the proposed network would come from Telstra. Therefore, Bartholomeusz (2006a) labelled the G9 proposal as a ‘red herring’ for politicians to chase down.

Telstra which had not been consulted by the G9 on the proposal accused the G9 as trying to be the ‘ultimate parasite’ on its network and creating a situation where one is ‘announcing your engagement and forgetting to tell the bride’. Telstra was also the only company with the capacity and willingness to invest the capital on the scale needed to build the network while its competitors were not willing to submit the capital required to seriously compete against it (Bartholomeusz, 2006a; p. 3).

Paul O’Sullivan – CEO of Optus argued that a Telstra-owned FTTN network would be ‘extremely damaging to the national interest in terms of reducing broadband competition’ and warned of legal action if the plan received preliminary approval from the ACCC. The protracted negotiations between Telstra and ACCC were often seen as hindering the Federal Government’s plan to sell its remaining 51.8% stake of Telstra as T3 (Hogan, 2006b). The G9 plan also suggested network access to be controlled by an independent management company called SpeedReach, which would provide wholesale access to all participants on equal terms. Telstra’s Liz Jurman retorted that ‘this proposal appears to be one that actually wants to reduce competition. The investment of Telstra shareholders is not community property to be shared among our competitors’ shareholders’ (Hogan, 2006b; p. 2).

Maiden (2006) reported on the G9’s argument which claimed that if Telstra rejects their proposal, they could look to building their own less extensive fibre network that would end up serving only the richest suburbs not served by broadband services on Telstra’s copper wire telephone lines, indicating Telstra’s action could lead to inequities in society.

The G9’s proposal for a competitive model for a national broadband upgrade and an industry consortium was described by Bartholomeusz (2006b) as far less serious than many believed it to be. He thought the G9 knew it would not happen even if they wished it to be and that Telstra would not let it happen anyway. The G9 also knew that they cannot force Telstra to make it happen. If Telstra builds its own FTTN network, it was also very unlikely that the G9 will build one of its own, even at a lower scale than originally suggested (p. 12). The G9’s main problem is that a Telstra-built FTTN will replace their existing broadband infrastructure. If G9 were to install its own network, they would need to replace the copper wire with fibre. Anyhow, it is unrealistic to expect Telstra to agree to SpeedReach which gives its competitors control over the network’s building and operational decisions (Bartholomeusz, 2006b; p. 12) when Telstra is expected to carry the burden of providing the investment needed.

The above discussion indicates the power struggle that took place in mid-2006 over the establishment of a high speed broadband network, between its major stakeholders and the arguments, discourses (‘G9 can only provide for the wealthy customers’; ‘the Telstra plan will destroy competition’; ‘the buck stops with Telstra’; ‘it will be against the national interest’; ‘G9 is looking for a free-ride at the expense of Telstra shareholders’; ‘we will take legal action if the ACCC approves the Telstra plan’); and the conflicting agendas (The government wanting to sell Telstra as promised to the people during the election campaign and the G9 trying to gain from the situation and protect their investments already made, while Telstra was trying to maintain its profits, market dominance and investment), agreeing with the theory that policy making and regulation about new communication technologies are shaped and influenced by the existing power relations in society (Green, 2001). Bartholomeusz (2006a; p. 3 ) used the term ‘horse trading’ to describe the process of negotiation between Telstra, the G9 and ACCC. The Australian newspapers also played part in this debate sometimes referring to Telstra as a ‘bully’ (Maiden, 2006; p. 1) and the G9 plan as ‘a red herring’ thereby carrying out the process of ‘framing’ (Solomon, 1992) the discourse by highlighting certain information about an item such as specific aspects of the debate and elevating them in salience, in their news reports.

### Web Casting and ‘Mobile’ Technologies

While the ‘horse trading’ (Bartholomeusz, 2006a) over the establishment of a high speed broadband network needed for webcasting went on, other technologies were serving the ‘echo boomers’ and others who make up the 16. 5 million Australians who subscribe to mobile phone services, with audio and video content. This subscriber base translates into an 92% penetration rate for mobile phones in Australia (Riekert, 2006; IBIS World Pty Ltd, 2005). In addition, portable media players and pod casting also have supplemented TV viewing for echo boomers with downloading of movies etc.

The heaviest mobile phone users in Australia belong to the 18-34 year age group (Australian Mobile Telecommunications Association, 2005). This techno-savvy consumer group can be effectively catered to with suitable audio visual media content. In November 2005, 3G (third generation) mobile phone subscribers of the ‘3’ (brand name ) network were offered video broadcasts of the Australia vs. West Indies cricket games by Hutchison 3G Private Ltd (www.three.com.au ). Similar services were
later offered by Telstra as well. In June 2006, '3' also offered video casts of Big Brother 6 and the World Cup 2006 soccer games from Germany to their mobile phone customers.

However, webcasting on computer screens, pod casting on video iPods or video broadcasting on mobile phones share one common shortcoming. We normally watch TV in comfort, seated in a comfortable chair away from the screen and quite passively except when changing channels with a remote control. With the trend of purchasing TV sets with larger and wider screens and surround sound for the home, the experience of viewing full length movies or video content of a long duration on a small screen such as of the video iPod, or mobile phones, while holding the equipment in our hand, or using a lap top or desk top computer to watch video content of longer duration from a web cast is not really an enjoyable or relaxing activity. Therefore, as Riekert (2006) and Ross Monaghan (personal communication, 20th July 2006) point out, webcasting via mobile phones or video iPods would be suitable mainly for watching short clips or when one is away from home or to obtain news flashes such as current scores of sporting events one is unable to attend or watch on live broadcast TV. Megan Harding the Executive Producer of the Rage Music video) Show on ABC TV thinks that 'mobile phones and downloads are all perfect for ...shorter form mediums such as music videos' (cited in Beaumont, 2006; p.3). In other words, it is unlikely that mobile phones, video iPods or webcasting via computer screens will replace the home TV in the foreseeable future, just as the portable TV set which had been around for a long time has failed to do (Ross Monaghan, personal communication, 20th July 2006).

However, webcasting will provide an excellent opportunity for viewing of content broadcast from overseas, to those who specifically wish to, such as Australian expatriates living overseas listening to the webcasts of ABC radio programming (Porter, 2006) or migrants listening to radio programming or music streamed by (eg. Sirasa Radio from Sri Lanka) or downloaded from websites in their countries of origin (eg. www.colombobeat.com for Sinhalese music webcasts from Sri Lanka). (Australia and especially Melbourne and Sydney have large concentrations of migrants from Sri Lanka.)

**GOTV - A New Way to go?**

While the broadband debates were going on, another form of webcasting was recently introduced as a first for Australia in the City of Geelong. Geelong is a regional city in Victoria which is located 80 km west of the state capital of Melbourne. It is the second largest city in Victoria and the 10th largest in Australia. Due to its proximity to Melbourne, it does not have its own TV station but is able to receive the broadcast signals of the three commercial TV networks - Channels 7, 9 and 10 and the national broadcasters ABC and the Special Broadcasting Service or SBS.

On 13th July 2006, Geelong launched its first commercial internet based TV station named GOTV, which can be viewed on www.gotv.com.au or via the Pay TV network Neighbourhood Cable. Two years in planning and three and a half months in test broadcasts, GOTV averaged 5300 viewers a day on its website during the test period. It mixed a range of local content including local sports and events and generic programs during the early stages (Breen, 2006).

GOTV allows for broadband speeds of less than 512 kbs. The GOTV website states that 'the service utilises the existing Neighbourhood Cable Broadband Internet, Cable TV hardware and infrastructure for the broadcast of high rotation, local TV programming. Its potential daily viewing audience is estimated to be around 70,000 (www.gotv.com.au).

GOTV indicates a useful application of webcasting in regional cities and by community and other groups to establish a local TV outlet that addresses the needs of that specific region or group and may be an option to be explored in the future.

**Further Research**

The author hopes to carry out another content analysis of the same 20 webcasts in 2006 and examine any others that may have become active since this project was completed to compare the status of Australian webcasting in 2005 and in 2006. This will be carried out while observing the developments and negotiations for providing high speed broadband services to all Australians and the power relations that will play out in the process.

**Postscript**

In August 2006, Telstra abandoned its plans for the proposed FTTN network for providing high speed broadband internet connections. Effective July 12, 2006, it offered a widely publicised and marketed wireless broadband service to its Big Pond internet subscribers. This service claimed to be available in selected areas of all capital cities and some regional areas (Big Pond Wireless Broadband, 2006). Wireless broadband access (WBA) as a generic term refers to a combination of technologies that use the radio frequency spectrum instead of fixed-line or cable. The predominant WBA technologies used in Australia are satellite (available Australia-wide but mainly used in rural and remote areas where other infrastructure is lacking), and mobile broadband
services (using 2G and 3G mobile phones). By June 2006, terrestrial wireless broadband reported a 99,1000 end-user base with an additional 123,000 accessing broadband via satellite, the latter which translated into 3.5% of all broadband end-users (ACMA, 2006; 135).

In November 2006, Telstra also offered 12 channels from the Foxtel Pay TV services (of which it owns 50%), to its ‘Next G’ mobile telephone subscribers, claiming the service will be available in most places across Australia (Telstra, 2006; p. 3). As of December 1, 2006, the G9 coalition has been silent on their plans for a proposed alternative to Telstra’s FTTN to provide broadband services, suspending the ‘horse trade’-at least for now.

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Appendix A

Details of Web Casters and Their Offerings

Note: The ABC (the Australian Broadcasting Corporation) and its web casts are funded by the Australian Federal Government as one of its two national broadcasters. All ABC webcasts are set up for ecommerce of media and entertainment related products via the ABC Shop.

ABC dig: The webcasts of ABC dig cater to a niche market using audio, text, graphics, animation and a chat room and offered live streaming of its radio broadcasts. It provided Jazz and Country music genres and featured both local as well as international artists. The foreign sources of content, appeared predominantly to be the USA and the UK. The textual content provided news about the music scene.

ABC Online: As an award winning web caster, the ABC Online webcasts provided a variety of services and comprehensive content of a very high standard, obtained from both local and overseas sources. It provided on demand streaming as well as on demand downloading which was free, but required a Real Player for the purpose. The real Player was available free for 14 days, but thereafter required subscription. ABC online provided audio, video, animation, interactive graphics, interactive games, text and a chat room, but was mostly text, which included transcripts of radio interviews provided on request. It provided dramas, comedies, variety, business, news clips, talk shows, music videos, documentaries, sports and travel shows. It also featured emerging artists. At the time of the content analysis, the number of video clips and other items available on the webcasts was over a 100.

ABC Radio1233 Newcastle: This webcasts belongs to the ABC’s regional radio station located in Newcastle, in the state of New South Wales. It provided a web version of its on air counterpart and provided on demand downloading. The content available included videos, text, graphics and a chat room. The site contained variety shows, news clips, audio interviews, original video documentaries and a video about the radio station and the Newcastle region. The video archive contained videos from past years for downloading. This was an exceptionally good webcasts, in terms of the videos provided.

ABC Rural: ABC Rural’s webcasts provided comprehensive, good quality content for the niche market of rural audiences, offering weather forecasts and market reports aimed at the farming community. It was the web version of its on air counterpart and provided on demand downloading. It provided audio news clips, text, graphics and animation which were all domestic productions and included 2 video clips at the time of the content analysis.

The Australian (Rules) Football League (AFL): The AFL was the only webcasts in the 20 strong sample analysed, which required subscription to view videos, via subscription to the ISP Big Pond’s Broadband service to access the AFL-Telstra network. However, one should note that the AFL is a non-profit organisation set up to administer the sport.

The webcasts provided a good service for AFL fans and the general public who want to keep up with the sport and its activities. The site was serviced by Big Pond -an ISP provider, which is owned by Telstra- the largest telecommunication company in Australia and a 50% owner of the Pay or subscription TV service Foxtel.

The webcasts provided on-demand downloading and streaming and included videos, text, graphics, trailers, news clips, and the interactive capability for visitors to the site to create their own video clips. The audio content provided included news, talk shows and sports content. The site also carried 2 advertisements, which were for the ISP Big Pond. It was set up for ecommerce for AFL merchandise.

‘The Australian’ Newspaper: Owned by News Limited (with Rupert Murdoch’s News Corp as its parent company), ‘The Australian’ is a national newspaper and its web site was the digital version of the newspaper.
It contained print, graphics and a wide range of photographs. The website qualified as a web caster due to its inclusion of the single promotional video 'Mars and Beyond' produced by NASA (the National Aeronautics and Space Administration of the USA) for on demand streaming at the time of the content analysis. When the author re-examined the site in October 2005 for verification, this video was no longer available, which means the site no longer qualified as a web caster.

**FoxSports Audio:** The site was a web version of its on air counterpart and provided on demand streaming of 2 audio (tennis and soccer) and 2 video clips (tennis and basket ball in the US) and was part of the News Corp website. The video clips were of a reasonable duration and provided play as well as interviews with players. The site contained mostly text and graphics related to news and sports with the foreign content sourced mainly from the USA. The website was colourful and provided promotions of its own programs.

**Melbourne Indymedia:** Run by the Melbourne Indymedia collective, the webcasts was a pure play providing branded content by a stand-alone non-ISP provider webcasting service. It is a joint venture between a domestic and foreign company and the webcasts served as an alternative media source for an advocacy group. The site provided on demand downloading of videos, audio, text, graphics, animation, a chat room and allowed audience members to submit items for publication. It provided news clips, talk shows, cartoons/animations and provides a few 30 second Public Service Announcements (PSAs). It also accepted donations from visitors to the site. At the time of the content analysis, the site contained 19 audio and video clips.

The grassroots advocacy group that runs the webcasts, deals with worldwide issues of humanitarian and environmental interest and as a result, the webcasts provided an outlet for viewpoints that are not always represented in the mainstream media. The site included photos, audio and videos. Its foreign content was drawn from a wide range of countries viz. the USA, UK, West Asia, India, Oceania, South Africa, East Asia, Europe, Canada and many parts of Africa. This webcasts was a good example of what the new medium of webcasting can do for alternative content, voices, and non-media organizations.

**The National Rugby League (NRL):** This stand-alone non-ISP provider webcasting service offered on demand downloading of video, audio, text and graphics and included trailers, news clips and sports content. At the time of the content analysis, the site included around 15 shows or video clips. It was well set up for e-commerce of NRL merchandise and was linked to websites of all individual clubs in the NRL league. It also provided a wireless service for mobile phones for certain information such as the latest scores of games currently being played. The available content was limited but good. However, during the content analysis, downloading some audio content proved problematic as error messages kept propping up. The video clips in contrast, were downloaded without any problems.

**Ninemsn- Channel 9 TV:** Jointly owned by the domestic PBL (Publishing and Broadcasting Limited) and the foreign owned Microsoft Network (MSN), this webcasts was a web version of Channel 9 TV's on air counterpart. It provided on demand downloading of video, audio, text, graphics, animation and interactive games content. It also included TV commercials, music videos, cartoons and sports, with its foreign content coming mainly from the USA and UK. The number of video clips available on the site at the time of the analysis was about 50. The audio content included contemporary pop music, news and sports.

The sources of revenue for the site included advertising, with about 10 advertisements available at the time. It was set up for ecommerce of media/entertainment related products and other commercial products and services. In summary, the webcasts mainly consisted of promotional materials for Channel 9's TV programs and content of other media outlets also owned by PBL.

**The Parliament of Australia:** This parliamentary proceedings webcasts was a simulcast of Parliament TV. The webcasts were available only as live streaming as broadcast archives were not available at the time of the content analysis. However, this web cast could be very useful for educational and research purposes as it had links to the Hansard (official records of Parliamentary proceedings). It included audio, video, texts and graphics.

As a Federal government entity, it was not set up for business or expected to carry out revenue earning functions.

**Radio 3PBS Melbourne:** This site was the online live streaming version of the on air counterpart of the 24-hour Independent/community radio station of the same name, dedicated to indie and alternative music. The musical genres included in the webcasts /radio broadcasts were jazz, indie music, funk, soul, alternative and world music. It used advertising, voluntary subscriptions and tip jar/ voluntary contributions as its sources of revenue and was set up for e-commerce of station-related merchandise such as T-shirts.

The subscriptions were of different types based on factors such as age, income level, for a band or an individual. It only carried audio and text. The quality of the webcasts proved quite high for a free community radio station.

**Radio Australia:** Another service provided by the Australian Broadcasting Corporation (ABC), this webcasts provided live streaming of its on air counterpart. It included audio, text and graphics and provided news clips, documentaries and talk shows. The webcasts (just as the radio service) was aimed at a niche market of those
living in rural and remote regions of Australia, who cannot access the commercial radio stations. Radio Australia can be considered as a national radio station.

**Radio National - Saturday Night Country**: This webcasts was the web version of its on air counterpart, which provided both on demand and live streaming of country music. The site included text, audio and graphics and provided the audio archive of previous weeks’ programs. As the webcasts of just one radio program - Saturday Night Country, the site was well set up to service a niche market.

**Real Radio 2Ser 107.3 FM Sydney**: Also known as ‘Sydney Educational Radio’ which was established in 1975, this webcasts was run by the private company formed between Macquarie University and the University of Technology-Sydney. It was the web version of its on air counterpart and provided live streaming of business, news clips, talk shows, documentaries, sports and non-formal educational programs and used the audio, text and graphics in its webcasts. The radio station receives government funding in the form of grants etc. and offered voluntary annual subscriptions on a flat rate of A$55 (US$ 40). It provided a variety of programming and broadcasts from stations in other cities to suit a national audience.

**SBS Online (The Special Broadcasting Service)**: The SBS is the multicultural National Broadcaster of Australia, which is owned by the Federal Government and receives government funding, but is also allowed to accept commercial advertising. SBS offers both television and radio services as free-to-air broadcasting. However, this webcasts was a web version of its on air counterpart of radio providing on demand streaming of news clips. It also offered audio, text, graphics, a chat room, shopping and at the time of the content analysis in January 2005, a Tsunami appeal for donations.

The webcasts was set up for e-commerce of licensed merchandise and other commercial products. The unusual feature of this webcasts was the choice available in selecting newcasts broadcasts by SBS in different languages. It carried about 10 advertisements on the site at the time of the analysis. The site did not webcasts any video content but was primarily meant for promoting SBS’s programming, in which sense, the site was more like the websites/webcasts of the commercial TV broadcast stations.

**The ‘Sydney Morning Herald’**: The site was a web version of the newspaper of the same name, owned by the Fairfax group, which has interests in other media. The site provided on demand downloading of about 15 videos, text, graphics and animation. It also offered educational/instructional content, trailers, news clips/ interviews, music videos, documentaries and video advertisements. The audio content included contemporary pop music, news, talk shows/interviews, sports and advertisements. Its revenue sources included two advertisements and subscriptions. It was set up for e-commerce of commercial products and services. The site mostly included text from newspapers but had used video content to enrich the stories.

**Triple J Radio**: Triple J is a radio network owned by the Australian Broadcasting Corporation (ABC) and its webcasts was a web version of its on air counterpart. It provided on demand downloading from an archive, on demand streaming, live streaming and provided content in audio, text, graphics, animation and a chat room. It provided variety shows, news clips and carried all local content aimed at the youth market, offering youth contemporary music. At the time of the content analysis, about 24 video clips were available on the site. The audio content on the site consisted of music, news, talk/interviews and a guest book. Triple J radio is well known for providing air play to local artists.

**Triple M Radio**: The Triple M or 105.1 FM Radio's webcasts was the simulcast of its on air counterpart and provided live streaming. It carried video, audio, text, graphics, animation, interactive games and a chat room. The program genres available on the webcasts were TV commercials, business, news clips, talk shows, sports and music radio. The types of audio content provided by the webcasts were music, news, talk/interviews, sports and game shows. It used advertising (with seven ads counted during the content analysis) and was set up for e-commerce for media and entertainment related products and other commercial products and services.

The website was colourful and suitably attractive to the youth audience as it aimed at and was well designed to promote the station and its purposes. The company also operates radio stations in Sydney, Brisbane, Adelaide, in addition to Melbourne, which are the four largest cities in Australia.

**Yahoo! Australia & New Zealand (Now Yahoo?)**: A joint venture between the foreign owned Yahoo! and domestically owned Channel 7 TV, this webcasts provided on demand downloading of video, audio, text, graphics, animation, interactive games, a chat room, personal shopping, astrology and a slide show. It also provided video trailers, news clips, music videos, sports and polling for one's favourite movie. At the time of the content analysis, about 115 video clips were available on the site. The audio content included music, news, talk, sports, and music ring tones. The site accepted advertising with about 15 ads present on the site at the time. It was set up for e-commerce for media/entertainment related products and other commercial products and services.

In summary, this webcasts was an excellent provider of children's content and music videos with the top 100 hits available for viewing.
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