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WHY AUSTRALIA NEEDS THE NATIONAL BROADBAND NETWORK; THE FIRST NEWELL PRIZE WINNER; AND THIS JOURNAL’S 75th ANNIVERSARY

It is understandable why the Federal Opposition has been stroppy about the Rudd government’s NBN proposal, and wants to scrap it. After all, one of Stephen Conroy’s first acts as Minister for Broadband was to scuttle the previous government’s $1.9b Opel project, which planned to use WiMAX and ADSL+2 technologies to connect up to 99% of those in rural and remote Australia.

However it is one thing to cancel the other party’s project, another matter to fill the huge gap which that will leave. Both Opel and the NBN were developed as solutions to many years of abject market failure in the Australian broadband market: pedestrian levels of access bandwidth in the cities, at internationally high prices; and miserable dial-up Internet access only in much of rural Australia. But Opel would have only addressed the rural market failure, whereas the NBN promises to raise Australia’s overall economic competitiveness, with the capability of 100 Mbps access for 90% of the entire population and 12 Mbps access for the remainder. It is not surprising that the NBN project has stimulated broadband policy development by the US Federal Communications Commission, since the USA, like Australia, has languished well down the league tables of international broadband capability – through over-reliance on the market– in the decade before the global financial crisis of 2008.

While economists – such as Ian Martin in this issue – rightly query the Australian government’s lack of economic modelling prior to the NBN policy decision, the need for national broadband infrastructure is as self-evident as the need for national roads, ports and railway lines – all of which have required major government investment, in the national interest. There has never been a logical argument for requiring a priori commercial rates of return to justify important national infrastructure in which the private sector has consistently failed to invest; indeed the inability to prove a commercial return logically confirms the reasons for that market failure. Which is not to say that we don’t expect that a robust business model has been developed to underpin the NBN’s rollout, in order to predict its cashflow needs, the expected return on investment, the limits of its wholesale pricing, and the value of the NBN asset at the end of its rollout.

Australia’s future economy and society needs the NBN’s infrastructure and its pro-competitive, retail-neutral wholesale role. ‘Real broadband’ is needed for delivery of modern health and education services – and to participate in the digital economy. Universal broadband is needed for social equity, rural productivity and, as demonstrated recently in TJA, for effective management of the environment. While it is understandable, in an election year, that every government initiative is under attack, the lack of any cogent policy alternative to the NBN by the Opposition creates unwelcome uncertainty for our industry.

*    *    *
In this issue of TJA it is a pleasure to publish the four best papers submitted for the inaugural Telstra-TJA Christopher Newell Prize, named after that distinguished advocate for people with disabilities, the late Christopher Newell.

This $20,000 Prize competition is designed to encourage the publication of papers that demonstrate innovative applications of telecommunications (in the broadest sense) that can assist people with disabilities. The idea for such a competition was actually suggested by the Hon. Bill Shorten MP, when awarding prizes in January 2009 for our parallel competition, the annual Eckermann-TJA Prize, known as the Alcatel-Lucent Broadband Challenge for the Sustainable Environment after its civic-minded sponsors.

It is therefore appropriate that Bill Shorten has been invited to present the inaugural Christopher Newell Prize, at a ceremony taking place at the Telecommunications Industry Ombudsman’s office in Melbourne on 19 May. The Prize winner is Dr Denise Wood from the University of South Australia – and a member of the Australian Communications Consumer Action Network (ACCAN)’s Standing Advisory Committee on Disability Issues. (We also have a great Liz Fell interview with ACCAN’s feisty chairman, Allan Ascher, in this issue.)

TJA wishes to thank Telstra for its generous sponsorship (and Greg Adcock and Robert Morsillo for their championship) of the inaugural Christopher Newell competition. And I wish to thank my fellow judges: Dr Mark Bagshaw (Innov@group), Professor Gerard Goggin (UNSW), Dr Milosh Ivanovich (Chief Technology Office, Telstra), Alex Jones (Access Innovation Media) and Robert Morsillo (Group Manager, Consumer Affairs, Telstra) for their excellent and impartial work.

* * *

When ‘re-regulation of telecoms’ was planned as a major theme of this issue, we expected that by now, the Australian government would have been able to negotiate its Telecommunications Legislation Amendment (NBN measures – access arrangements) Bill through the Senate, and we could invite expert comment on the new regulatory environment. But the Bill was not passed. So instead we have commissioned a tutorial paper by industry journalist Stuart Corner that neatly summarises both the progress to date with the NBN and the unresolved issues that plague its future.

However in the most volatile area of modern telecommunications, the Internet, other important policy issues concerning re-regulation require attention. The first concerns the liability of Internet Service Providers for their clients’ behaviour in violating copyright, to aggrieved content providers. David Lindsay from the Monash Law School provides an authoritative critique of the Federal Court of Australia’s recent decision in the ‘iiNet case’.

The second major issue is how IPTV (or ‘Internet TV’) will and can be regulated. Media analyst Bob Peters provides a valuable assessment of its likely prospects and constraints; media researcher Jeremy Weinstein queries the NBN’s role in adequately supporting IPTV; and David Brennan, from the Melbourne Law School, asks the radical question: Is IPTV an Internet service under Australian broadcasting and copyright law?

* * *
In June 1935 the first issue of the Telecommunications Journal of Australia was published – using the then neologism ‘telecommunication’ (coined by the entrepreneurial French) some fifteen years before the ITU changed its middle name from ‘Telegraph’ to ‘Telecommunications’. So starting even with its title, TJA has always endeavoured to keep abreast with the latest developments.

TJA has been published every year since then, even during the grim war years 1939–45, and has survived radical changes in the industry structure (from monopoly public to pluralist private), in its host organization (from the Postal Electrical Society in 1935, renamed as the Telecommunication Society of Australia in 1959, through to the Australian Computer Society since 2007) and in its publication technology (printed and mailed until May 2007; solely online, with individual articles downloadable, since December 2007).

We will be celebrating TJA’s 75th Anniversary – and 75 fascinating years of the Australian telecommunications industry – with a dinner at the RACV Club, Bourke St, Melbourne on the evening of Monday 2 August. Alan Kohler (from Eureka Report, Business Spectator and the ABC’s Inside Business) and Professor Jock Given (from Swinburne University’s Institute of Social Research) are our guest speakers. More details will be provided at the ACS-TSA website. We hope to see many of you there!

Peter Gerrand – Editor-in-Chief, TJA
AUSTRALIA'S NATIONAL BROADBAND NETWORK
HOW IT CAME TO BE AND WHERE IT MIGHT BE HEADING

Stuart Corner, iTWire Pty Ltd

The Australian Government has committed to build a fibre-to-the-premises network serving 90 percent of Australian homes at an estimated cost of $43b. This article looks at how it came to abandon an earlier plan for fibre-to-the-node network at a fraction of the cost, at how the technical development and rollout plans for the project are progressing, at the political hurdles it must still surmount and at what the Federal Opposition might do should an election derail the Government’s plan. The article also examines legislation the government is trying to push through that would drastically restructure Telstra and which it is using this to try and negotiate Telstra’s participation in the new network.

YOU ARE HERE

On 7 April 2009 the Australian Labor Government dropped a bombshell on the telecommunications industry. It announced plans to spend $43b of taxpayers' money to build a fibre to the premises network that would deliver 100Mbps broadband to 90 percent of Australian homes and provide at least 12Mbps to the remaining 10 percent – many of them in very remote locations – using either wireless or satellite technologies.

That was not what the industry had been expecting. The Australian Labor Party (ALP) went into the November 2007 Federal Election with a telecommunications policy that promised 'a new fibre to the node (FTTN) network…[that] will increase speed to a minimum of 12Mbps’, for 98 percent of the population, and for the two percent of Australians in regional and rural areas not covered by the FTTN network, 'improved broadband services'.

The ALP pledged $4.7b of public money to the project saying: 'This network will help position Australia as a competitive, innovative, knowledge-based economy that can compete and win in global markets'.

After winning the election the ALP stuck doggedly and, many argued, unwisely to this promise. By late March 2009 tenders had been called and received for the FTTN network, the total cost of which was estimated at $8b or $9b. The winning bidder, or bidders, were expected to recoup their investment from future service revenue.

By March 2009 all eyes were on Senator Stephen Conroy, the minister for Broadband, Communications and the Digital Economy who was giving every indication that the plan was on track and that an announcement of the winner(s) was imminent. 1

It was against this background of anticipation that Conroy and Prime Minister Kevin Rudd fronted the press on 7 April 2009 to announce that this entire project – on which millions had been spent preparing tenders and paying a panel of experts convened to provide advice – had been scrapped in favour of something much grander.

The 'blame' for this dramatic change was laid primarily on the expert panel and the advice it had provided. To support its change of heart the government released a short extract from the
panel’s report. However to this day it has resisted strident calls from the Federal Opposition, and others, to make the full text of the report available.

The panel’s report said that the Global Financial Crisis had severely restricted access to funding, that none of the proposals had provided a fully developed project plan, and that none were sufficiently well developed to present a value-for-money outcome.²

WHAT? NO TELSTRA!

However one very significant player, Telstra, was absent from the ranks of bidders evaluated by the expert panel.³ Telstra had put in a 12 page outline of what it said could be achieved under the detailed proposal it had prepared but not submitted ‘due to a number of unresolved issues in the Government’s RFP’.⁴

Telstra may have thought its was odds on favourite to win the tender, but the Government rejected the proposal on the grounds that Telstra had failed to include a plan for how to involve small and medium enterprises in the building of the NBN, as required by the RFP.

So with Telstra out of the running and no other bids offering value for money, the Government increased the stakes; to $43b.⁵

A project of such magnitude faces many challenges that can be broadly divided into two categories: the practical and the political. The second is proving far more intractable than the first and could yet derail the whole hugely ambitious undertaking.

On the practical side, the NBN seems to be progressing exceedingly well. The plan as announced envisaged the creation of a government-owned company (NBN Co) to build, own and operate the network as a wholesale open access network. Rollout was expected to take eight years and the Government said it would sell the company within five years of completion but would encourage private investment ‘from the time that building of the network starts’.⁶

NBN COMPANY GETTING ON WITH THE JOB

Within a month the National Broadband Network Company had been established and on 25 July the Government named Mike Quigley⁷ as CEO and executive chairman pending the appointment of a permanent chairman.⁸

Since then NBN Co has:

• announced the first five 'test' locations in which it will roll out its FTTP network: a mixture of urban and regional locations designed to embrace the range of environments likely to be encountered in the full scale rollout;
• issued a product consultation paper providing an outline of its product plans for the national broadband network, held a series of industry forums on the paper and published its response;
• issued a request for capability statements from satellite network operators and equipment providers able to deliver its satellite service requirements;
• issued a request for capability statements from companies or consortia to provide detailed design and construction services for the fibre to the premises network.

This in addition to finding offices, recruiting well over 100 people and finding suppliers of the wide range of services needed to run its business operations.
Construction of the 'first release' networks - each serving up to 3000 premises - is scheduled for completion early in 2011. NBN Co will then seek retail service providers to use the new networks to deliver services to end-users.

Even before Quigley had come on board the telecoms industry, on its own initiative, had started the NBN ball rolling through the Communications Alliance – an industry body that traces its origins to the government’s 1997 decision to devolve many regulatory responsibilities, in particular the setting of technical standards – which created working groups to develop and propose technical specifications for the NBN.

TELECOMMS INDUSTRY TAKES THE INITIATIVE

Within a month of the Government’s April 7 2009 announcement of its $43b NBN plans Communications Alliance had announced its own plans for a series of industry forums to ‘bring the industry together to kick-start [Comms Alliance’s] response to the Government’s proposed regulatory reforms to facilitate the NBN rollout’.

Comms Alliance said that, as future ‘customers’ of the NBN, ‘the industry [has] resolved to fill the void of information about the scope of NBN Co, its purpose, and how existing service providers will interact with it’. Industry participants – multinational equipment vendors and local companies – committed recourses to developing a set of specifications that could be adopted for the NBN.

The Alliance subsequently issued a discussion paper identifying seven work areas: the NBN Reference Model; wholesale services; early stage deployments; end-user premises; technical; operational; and end-user migration and working groups were set up to develop proposals for each of these.

This work has now largely been completed. As NBN Co has ramped up operations its staff have joined the Comms Alliance Working Groups and NBN Co is now well on the way to developing its own network design, products etc.9

On 15 March 2010 NBN Co announced plans for a series of industry forums at which it promised to ‘set out the scope and purpose of the industry technical and operational development [of the NBN] and outline how the industry will be involved in its development’. At these events NBN Co promised to ‘outline how we will work in with other industry forums such as the Communications Alliance NBN project and NBN Co’s own consultation and decision making timetable’.

In short, the practical – the technical and commercial – aspect of the NBN is progressing rapidly in a spirit of co-operation between NBN Co and other industry stakeholders. On the political, and regulatory, front the NBN faces multiple hurdles.

TELSTRA: THE SOLUTION, AND THE PROBLEM

The biggest of these remains Telstra. As the owner of the public switched telephone network and by far the largest telco in Australia, Telstra's participation as provider of access infrastructure (ducts for fibre to customer premises), and as user of the FTTH Network to serve its own customers is arguably essential for the project's rollout and commercial viability.
When it announced its $43b NBN plan the Government was silent on both the need for Telstra’s involvement and how that would be secured. Prime Minister Kevin Rudd, however, made it clear that one aim of the project was to break Telstra’s stranglehold on access.

He said that the NBN would ‘solve once and for all, the core problem created when the previous Prime Minister [John Howard as head of a Liberal/National Party coalition government] privatised Telstra a decade ago without ever resolving the conflict of a private monopoly owning the network infrastructure and dominating the retail market...That decision has blocked competition and investment for a decade. Today, we draw a line under a decade of policy error and neglect’.

Simultaneous with announcement of the $43b NBN, Conroy released a discussion paper 'Regulatory Reform for 21st Century Broadband ' to seek public comment on ‘ways to improve telecommunications regulations to make it work more effectively in the interest of consumers and businesses’.10

It canvassed:

- the full functional separation of Telstra into wholesale and retail units, along the lines of Telecom New Zealand;
- giving the ACCC powers to determine price and non-price terms and conditions under which other service providers access the networks of facilities-based telcos, primarily Telstra;
- requiring Telstra to divest its hybrid fibre coax network (built in the late 1990s and passing some 2.5 million homes in Sydney and Melbourne) and its 50 percent stake in the user of that network, pay TV service provider Foxtel;
- restricting Telstra’s future investments in the Australian media and communications sectors.

**LEGISLATION TO END TELSTRA’S DOMINANCE**

Then, on 15 September, Conroy revealed the full magnitude of the Government’s determination to ‘fix’ Telstra. He tabled in Parliament a package of legislation for telecommunications reforms drafted on the basis of the ‘Regulatory Reform’ discussion paper and the responses to it: reforms that Conroy said were supported ‘by the overwhelming majority of the submissions' received in response to the discussion paper.

Telstra was given an ultimatum: structurally separate or face forced functional separation, limitations on broadband wireless spectrum acquisition and forced divestiture of its HFC network and its 50 percent stake and Foxtel.

If it were to choose an acceptable form of structural separation the minister could waive either or both of the requirements for divestiture, but Telstra would still face limitations on broadband spectrum acquisition.

The third way was structural separation and divestiture of HFC and Foxtel, in which case Telstra would be free to acquire spectrum and able to continue its other business operations as normal. However the legislation also proposed significant changes to the access and competition regimes that would be likely to have an unfavourable impact on Telstra.

Telstra was given a choice of two routes to structural separation: create a new company and transfer its fixed-line assets to that company, or progressively migrate its fixed-line traffic to the
NBN over an agreed period and under set regulatory arrangements, and in parallel sell or scrap its existing fixed line assets.

This latter course could be fraught with hazard as it would move the huge mass of services on which consumers, business, government and national security depend on the new network – a danger that Telstra had in the past been keen to highlight. Creation of a separate company to operate Telstra’s PSTN assets should ensure that, technically they would operate much as they do today.

If Telstra did not agree to structural separation the bill provided for enforced functional separation under which Telstra would be required to conduct its network operations and wholesale functions at arm’s length from the rest of the company; provide the same information and access to regulated services on equivalent price and non-price terms to its retail business and to non-Telstra wholesale customers; and put in place and maintain strong internal governance structures that provide transparency for the regulator and access seekers that equivalence arrangements are effective.

These would include the establishment of a single wholesale/network unit, separate from its retail business units, and a committee to be known as the Oversight and Equivalence Board reporting to the ACCC and Telstra board.

**TELECOMS LEGISLATION STALLED IN THE SENATE**

The legislation passed quickly through the House of Representatives and the Government tried but failed to get it though the Senate in November 2009. It was blocked initially by the Coalition’s refusal to debate it until the Government released the full expert panel report on the first NBN tender. That hurdle was eventually overcome but the bill was then squeezed out by the highly contentious debate over the Emissions Trading Scheme.

The legislation fared no better in the Autumn sitting that ended on 18 March. The Coalition remains implacably opposed to it, which means that the Government needs the support of the Australian Greens, Family First senator Steve Fielding and independent Nick Xenophon to get the bill through. Xenophon has said he will support the bill. Fielding remains the great unknown.11

The Greens support was also under threat after Conroy initially refused to release an implementation study into the NBN, commissioned at a cost of $25m from a consortium of McKinsey & Co and KPMG. He has now agreed to do so before the Budget sitting on 11 May, setting the scene for the telecoms reform legislation to be debated in the Budget sitting.

However with only 36 Senate sitting days scheduled to the end of 2010 (from the end of April) and strong expectations of a Federal Election by year end,12 there remains the possibility that the only progress by election time will be on the practical side of the NBN as NBN Co presses on with rolling out its five release sites and choosing vendors for rollout of the FTTP, wireless and satellite networks needed to fulfil its charter.

The possibility of an election brings the possibility of a change of Government. The Coalition has been a strident critic of the $43b NBN project ever since its announcement on 7 April 2009, but for most of the past 12 months, concrete alternatives have been conspicuous by their absence from its rhetoric.
Finally shadow communications minister, Tony Smith, addressing the Commsday conference in Sydney on 21 April 2010, gave some indication of what the Coalition would do about upgrading the nation’s broadband network should it be returned to power.

He promised that a Coalition Government would not be ‘taking the approach of simply tearing up [NBN Co] contracts’, and said: ‘The Federal Coalition does not believe that it is the role of government to own – or in this case – build and or buy businesses in areas where the private sector is able to perform the role. You can drive the commercial roll-out of faster, reliable and affordable broadband to many parts of our nation with the right regulatory framework; a framework that protects competition at the retail and wholesale level and also delivers a stable long term environment for network owners, investors and users’.

He added that the Coalition ‘believes there is existing infrastructure that can be better deployed – that is the current network of networks – that can be effectively enhanced and utilised to deliver benefits either now or in a short period of time…There are many areas of Australia which are already served by infrastructure which is fully capable of delivering 100 Mbps.’

Smith promised to ‘prioritise public funding to areas of market failure’, saying: ‘We will deliver action quickly in under-served areas that deserve and need – thanks to Labor’s inaction, better and more affordable broadband as fast as possible’.

He gave every little detail of the Coalition’s alternative plans on the basis that ‘it is sensible and responsible to release our comprehensive alternative closer to the election when it is less subject to changing circumstances’.

Meanwhile, in parallel with the Parliamentary processes, the Government has been negotiating with Telstra over its involvement in the NBN, negotiations centred around the sale of access network assets to NBN Co and the price to be paid.

Late last year Conroy suggested a deal was imminent, sparking concerns among Telstra’s competitors that, absent the big stick of the new legislation, Telstra would be able to get a better deal from the Government. The Government was urged to hold off in anticipation of the imminent passage of the legislation.

Telstra meanwhile called on the Senate to delay debate on the legislation until after it had completed its ‘constructive discussions’ with Government on the NBN – and until after the completion of the NBN implementation study.

Then, on 18 December, Conroy announced that NBN Co and Telstra had formalised Terms of Engagement that ‘includes a preferred model for any agreement which would see a progressive transition from Telstra’s copper access network to a fibre to premise National Broadband Network’.

Publicly at least, there has been no progress since then. On 19 March Telstra issued a ‘NBN Negotiations Update’ indicating that an agreement was nowhere in sight. Then on 13 April rumours of an imminent deal caused a spike in Telstra’s share price forcing the company to issue a statement saying: ‘This rumour is unfounded. As we have previously advised the market in our
ASX announcement of 19 March 2010, negotiations are continuing in relation to NBN. These negotiations remain incomplete and confidential.

Meanwhile the Government released on 9 May the $25m implementation study into the NBN commissioned from a consortium of McKinsey & Co and KPMG. Its conclusions were extremely favourable. After undertaking extensive geospatial modelling it concluded that the FTTH network could reach 93 rather than the planned 90 percent of homes and that the Government's investment would likely peak at around $26b. Significantly it also concluded that the network could be built and be financially viable even without any agreement being reached with Telstra for access to its ducts and backhaul network.

CONCLUSION

Thus at the end of April 2010, Australia's National Broadband Network Company, and the Government are labouring under massive uncertainties:

- Will Telstra be a collaborator, and if so on what terms?
- If not a collaborator how much of a competitor will Telstra be?
- Will the Government be able to get through legislation that would significantly curb Telstra's power?
- Will there be a change of government that will bring the project to a grinding halt?

These are in addition to the uncertainties inherent in the project around technology options, the enormous logistical challenges of the rollout and the uncertainties of uptake by both retail service providers and end users.

On the positive side, the Labor Government has shown no signs of wavering in its commitment. Unless the forces arraigned against it triumph, all the signs are that, by negotiation or legislation, Telstra and the regulatory landscape in Australia will be changed fundamentally and Australia will get a near-ubiquitous fibre to the home network.

ENDNOTES

1 On 12 March Conroy told the Senate during Question Time that the announcement was 'just weeks away' and in a doorstop interview after delivering the keynote address to the Australian Telecommunications Users Group annual conference the following day he re-iterated in no uncertain terms the Government’s commitment to its pre-election promise, saying: 'This is one of the major election promises of [Prime Minister] Kevin Rudd. He talked about it in his first [pre-election] press conference and be talked about it in the last...This is a core promise and Labor's commitment to nation building'.

2 The panel said: 'There has been a once-in-75-year deterioration in capital markets that has severely restricted access to debt and equity funding. As a result all national proponents have either found it very difficult to raise the capital necessary to fund an NBN roll-out without recourse to substantial support from the Commonwealth or have withheld going to the market until they have certainty that their proposal is acceptable to the Commonwealth'.

3 The origins of the $43b FTTP NBN project can be traced back to mid 2005 when Telstra's newly-appointed CEO, Sol Trujillo – in the job for less than two months – took a secret proposal to the Liberal/National Coalition Government.
On 11 August, just after announcing Telstra’s annual results, Trujillo and other senior Telstra executives presented the Government with a proposal for a National Broadband Network that would deliver at least 6Mbps to 98 percent of the population at an estimated cost of $5.7b over five years, to be jointly funded by Telstra and the Government.

Telstra promised to make access to the new network available to others but wanted the Government to exempt the network from ACCC price setting under the competition regime. The Government said no and told Telstra to follow the rules and submit an ‘access undertaking’ to the ACCC. Telstra refused and in December 2005 publicly announced that the project was ‘on hold’.

Negotiations between Telstra, the Government and the ACCC dragged on for much of the remaining two years of the Coalition Government but went nowhere, much to the frustration of the industry as a whole.

It was into the midst of this stagnation, in the run-up to the November 2007 Federal Election, that the ALP unveiled its telecoms policy and, after being elected implemented its plan for the FTTN NBN Mark 1.

It was widely seen as a means of getting Telstra to build the network it had offered to build for the Coalition Government but on the new Labor Government’s terms. It seemed obvious that, no matter how much the Government might try and level the playing field, Telstra was by far the best placed to win any tender.

Shortly after submitting its 12-page summary, Telstra held a media briefing at which were displayed the dozen or so binders that it claimed contained the real proposal.

The Government gave no detail as to how it arrived at the $43b figure, why it had settled on the 90 percent FTTH coverage, or the economic justification for such a massive investment, other than vague statements like ‘The new network will improve Australia’s productivity and economic prosperity, assist the nation’s fight against climate change, improve service delivery in the critical areas of education and health and ensure the connectedness of our regions’. Critics of the project immediately seized on these loopholes, and the clamour of their voices shows no signs of abating.

The island state of Tasmania is being treated as a separate project with its own NBN Company, part-owned by the Tasmanian Government, largely because it is geographically isolated from the rest of Australia and because the State Government was keen to take an active role – it had submitted a Tasmania-specific proposal for the earlier cancelled FTTN tender.

It would have been hard to find anyone better qualified for the job than Quigley; an Australian who started his career as an engineer in the local subsidiary of what became Alcatel and later Alcatel-Lucent. He rose through the ranks and narrowly missed out on the job of running the combined company following the merger of Alcatel and Lucent. Shortly before that he had gained extensive experience in FTTP rollouts as head of Alcatel’s business in the US delivering on large contracts for Verizon for its FiOS GPON network.

Leading businessman Harrison Young, a former chairman of Morgan Stanley, was appointed chairman of NBN Co on 24 March.

There was never any obligation on NBN Co to adopt any of Comms Alliance’s recommendations and while it has broadly adopted many of them there are some significant differences. For example Comms Alliance suggested that NBN Co should sell access to its dark fibre PON network in specific areas allowing service providers to light the fibre and sell wholesale access. NBN Co has decided against this.

The document was extremely critical of Telstra. It brought together condemnations of Telstra’s conduct from numerous players and represented a spectacular failure of the strategy of confrontation with the Government and the ACCC adopted four years earlier by Telstra CEO, Sol Trujillo, and chairman,
Donald McGauchie, in a bid to loosen regulation. Not surprising, then, that both were gone in a matter of months.

11 The Herald Sun reported on 2 April 'Fielding spoke to about 100 Telstra shareholders in Melbourne...telling them he would not support forcing Telstra to split into wholesale and retail arms while talks between the telco and the NBN continued. But, under questioning from shareholders, he declined to say what his position would be if the talks broke down. He said the issue was complex and setting a deadline for a deal was 'not helpful'.

12 The last possible date for a Federal Election is 16 April 2011.

13 Smith did not expect there would be many contracts for the tearing up: 'We do not expect to find that large volumes or irrecoverable work will have occurred by the time of the next election – based upon the slow pace to date'.

14 Smith referred to the HFC networks operated by Telstra and Optus, saying: 'Telstra’s network passes 2.5 million homes, Optus 2.1 million homes. As both operators have made clear, these networks can deliver 100 Mbps with relatively minor upgrades'. However, both networks, to a very great extent, pass the same homes.

15 Smith also gave no details as to what technologies a Coalition government might favour to reach these underserved areas. He said: 'As we go about further developing and finalising our alternative plan we will not seek to drive a particular technology in a one-size-fits-all approach. We will have a broader approach to the use of other technologies, particularly given the vastness of our country and the fast moving technological developments'.

16 The extent of the gulf to be bridged was inadvertently revealed by the accidental tabling in the Senate in late October of a confidential report from the ACCC. It showed that Telstra had valued the replacement cost of its customer access network at $33.03b; made up of a $15.04b valuation on its ducts and pipes, $12.30b for the copper, $1.8b for pair gain electronics and $3.8b for radio bearer equipment. Under a different valuation methodology, the report showed that the Government had valued the same assets at $7.96b.

17 Conroy said: 'While there are many complex issues still to be resolved before any final agreement is reached, I remain optimistic that both parties can find a mutually acceptable outcome...A model that involves the progressive transition from Telstra’s copper access network to a Fibre-to-the-Premise NBN and an acceptable solution to the use of ducts and backhaul infrastructure will deliver structural separation'.

18 Telstra said: 'Currently there is a significant gap between Telstra and NBN Co on what each party considers to be an acceptable financial outcome and there are also a range of commercial matters that are yet to be agreed...Telstra is discussing ways in which the gap can be bridged, recognising that the Government has highlighted the national interest benefits of the NBN and reform of the telecommunications industry... Telstra remains engaged with the Government and NBN Co to achieve a timely outcome that is in the interests of the company and its investors'.

Cite this article as: Corner, Stuart. 2010. ‘Australia’s National Broadband Network: How it came to be and where it might be heading’. Telecommunications Journal of Australia. 60 (2): pp. 31.1 to 31.9. DOI: 10.2104/tja100031.
THE PROMISED LAND
COSTS AND BENEFITS OF THE NBN VISION

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The substance of the Government’s NBN vision has settled on its importance as a productivity driver. Top-down productivity analysis of the NBN appear to be quite strongly positive while bottom-up cost benefit analyses (CBA) seem to be invariably negative. Proposals to build the FTTN version of the NBN were subject to evaluation, which found that none offered ‘value for money’. The second iteration of NBN, the FTTP version, was not subject to such an evaluation. Instead an independent CBA by Henry Ergas and Alex Robson in August 2009 suggests that the incremental benefits of the FTTP NBN do not justify the incremental costs. Productivity gains from high speed broadband may have declining marginal benefit and possible gains from the next set of industry developments may be quite different and harder to achieve compared with those achieved on fixed networks over the past 20 years. The lack of CBA on the NBN means that there is an unquantified risk. We consider the Government’s inherent desire to off-lay this risk from the federal budget undermines telecommunications policy development, legislation and regulation. We argue such a distortion has the potential to undermine industry development for more than a decade as Government tries to protect a poorly evaluated investment decision, a pattern that has long undermined industry development in Australia.

INTRODUCTION – A PROMISED LAND

Who wouldn’t want high speed broadband (HSBB) with all the promise that comes with it? That broadband ‘can bring the knowledge of the world into every classroom, workplace and living room … change the way our services are delivered – such as health and transport … (t)he capacity to change everyday lives in the same way that inventions like the railway, the printing press and electricity did’, (Conroy 2007, 3). Who would stand in the way of reaching such a promised land?

Although the feature of the Government’s broadband policy, the proposed National Broadband Network (NBN), is presented as a breakthrough all-or-nothing investment in broadband, in fact the policy is really a fast-tracking of HSBB capacity increases that would occur commercially in some areas and an extension of HSBB capacity to areas that would either have taken much longer to achieve such capacity, or may never have achieved it without targeted subsidy. The NBN also brings these capacity timing and coverage decisions directly into the hands of a Government Business Enterprise, NBN Co. As well as the NBN, the Government’s broadband policy includes regulatory and structural changes some of which are specific to NBN, notably that it operate as a wholesale only carrier.

The substance of the Government’s NBN vision has settled on its importance as a productivity driver. In a speech on productivity on 29 March 2010 the Prime Minister, Kevin Rudd, highlighted that ‘Infrastructure is a critical ingredient for our future productivity growth’, that a shortfall on infrastructure investment has generated a gap between the infrastructure we’ve got and the infrastructure we need’, and that the NBN specifically ‘is helping support the economy during the economic downturn, filling the gap in investment activity caused by the global financial crisis, but in the long run it helps build our future prosperity’.
The productivity argument for NBN puts the case for it on a more realistic footing than the ‘game change’ argument, given HSBB is now widely available and relatively inexpensive. A review of several studies of the economic impacts of high speed broadband by Access Economics (undertaken for Telstra and published in March 2009) led it to assume ‘that economy-wide multifactor productivity levels would be around 1.1% higher’ with high speed broadband than with dial up internet (Access Economics 2009, 20). Although it noted that the empirical evidence was imperfect and ‘it remains difficult to make strong conclusions about the impact on the Australian economy. Nevertheless, the ... literature allows for orders of magnitude estimates’. It drew on the 1.1% MFP assumption to make its own estimate that a national NBN of 12 Mbps to 90% of population would have an ‘NPV of GDP terms of approximately A$9.5bn’ compared with a slowing current trend of HSBB rollout.

While suitably qualified, the top-down productivity analysis is quite strongly positive. How can this be reconciled with bottom-up analysis from market analysts that seems to be invariably negative? The most thorough Cost Benefit Analysis (CBA) of the proposed NBN was undertaken for the Productivity Commission by Henry Ergas and Alex Robson and shows that ‘costs exceed the relevant benefits’ (Ergas and Robson 2009, 23). Their assessment of willingness to pay for higher speed against the cost of a 100Mbps NBN suggest an NPV range from minus A$3.2bn to minus 37.5bn depending on productivity and crowding out.

There are significant differences between the two studies that make them hard to reconcile: they do different things and they do them differently. Ergas and Robson assess the CBA for the later version of NBN, the fibre-to-the-premises (FTTP) NBN, using a bottom-up approach, that is, calculating the potential increase in willingness to pay across users and comparing this with the modelled cost of the FTTP NBN. Access Economics use a top down productivity assessment for a fibre to the node (FTTN) NBN with a broad assumption derived from a literature review. This is close to the original version of NBN. Nevertheless, they are so different – one inherently positive, the other inherently negative – that it is worth considering the different views of the productive potential of the NBN. If the underlying rationale is not well founded and NBN turns out to have significant negative economic impact, the consequences may be significant and far-reaching.

In this review, we provide a brief background to the NBN and the Government’s NBN vision mainly for context, examine briefly the rationale given by the government for avoiding a CBA, consider the productivity case for NBN largely based on the Access Economics report, against the CBA case and outline some of the potential consequences that may arise in the likely gap between the productivity case and the CBA.

**BACKGROUND TO THE NBN VISION**

The background to the NBN may be well known to readers of the *Journal*. We provide the following background as a context for our discussion but also because the NBN process, as it has unfolded, offers a useful clue to the importance of cost benefit assessment to the Government.

Stephen Conroy, then the Australian Labor Party Shadow Minister for Communications, announced the ALP’s broadband policy at the National Press Club on 21 March 2007 (Conroy 2007). The policy was based on the premise that it would support a commercial HSBB rollout by delivering ‘regulatory reforms necessary to deliver a national open access fibre to the node..."
network (FTTN) ... parties making such investment proposals (would be asked) to specify the regulatory reforms necessary to facilitate such an investment’ (Conroy 2007, 27).

The shadow Minister said that a prerequisite for all proposals ‘is that the parties accept regulated open access to bottleneck infrastructure. Genuine open access in a FTTN world would require: equivalence of access charges; and full scope for access seekers to differentiate their product offerings by allowing customisations of access speeds, quality of services and contention ratios. Regulated access prices for such a network would be set at a level ensuring that the investment’s costs can be recovered and a commercial return can be made’ (Conroy 2007, 28).

Such proposals should ensure access to broadband speeds of a minimum of 12 Mbps to 98% of Australian homes and businesses. To support this, an ALP government would ‘provide a public equity investment of up to $4.7 billion’ (Conroy 2007, 28–29).

Following its election in November 2007, the new ALP government launched a request for proposals in April 2008 for a network that could deliver a capability of at least 12 Mbps to 98 per cent of the Australian population. Several proposals were received by the due date in November 2008, although a partial proposal from Telstra was soon rejected as it did not include a required plan ‘demonstrating how (it would) provide full, fair and reasonable opportunity to Australian and New Zealand SMEs to supply goods and services to the NBN Project’ (DBCDE 2008). Evaluation of proposals was completed by January 2009, although the Government announcement took a further two months. When it was made on 7 April 2009, its focus was a grand new plan, a fibre to the premises (FTTP) NBN rather than the previous FTTN version of NBN.

The centrepiece of the Government’s new plan was the establishment of a new company to build and operate a ‘new super fast National Broadband Network’ providing access to speeds of up to 100 Mb/s.

‘This new super fast National Broadband Network, built in partnership with private sector, will be the single largest nation building infrastructure project in Australian history’ (Joint Media Release 2009).

This new National Broadband Network will:

- Connect 90 percent of all Australian homes, schools and workplaces with broadband services with speeds up to 100 megabits per second;
- Connect all other premises in Australia with next generation wireless and satellite technologies that will deliver broadband speeds of 12 megabits per second;
- Directly support up to 25,000 local jobs every year, on average, over the eight-year life of the project.

‘... every house, school and business in Australia will get access to affordable fast broadband’ (Joint Media Release 2009).

The new company, which was later named NBN Co, would be jointly owned by the Government and the private sector and would invest up to $43 billion over eight years to build the NBN. The Government said it would make an initial investment of A$4.7bn in the network but that
it would also seek private investment and expertise. ‘However, ownership restrictions will be established to protect the Government’s objective of a wholesale open-access network’ (Joint Media Release 2009).

**REASONS GIVEN FOR AVOIDING AN NBN COST BENEFIT ANALYSIS**

The first NBN, the FTTN version, was proposed to be essentially a commercial undertaking supplemented with a public equity contribution of up to A$4.7bn. Cost benefit assessments of actual projects would primarily be a matter for the proponents to ensure their own investment case. However, given the Government proposed to contribute up to A$4.7bn it was careful to conduct its own evaluation to assure it received value for money. As well, if there were to be any concessions on regulation or in some other form, it would be worth assessing if these delivered benefits greater than any costs of such concessions.

The evaluation was not a formal cost benefit analysis. When it announced the process for the FTTN version on 7 December 2007, the Minister for Broadband, Communications and the Digital Economy, Senator Conroy, said that the government was already ‘committed to building a national high-speed broadband fibre-to-the-node network, and that it would run an open and transparent process to determine who would build the network’ (Panel of Experts 2009). Nevertheless, this version of the NBN did weigh up the cost to the government of the proposals (with the exception of the Telstra proposal which was excluded for not meeting the conditions of participation).

However, the second iteration of NBN, the FTTP version, was not subject to even this level of evaluation – that is, an assessment of whether if offered value for money. Surely, this would be a more important evaluation than that for the FTTN version of NBN, given the 10-fold increase in potential government spending; that the Government now proposed to be the lead investor; that there may need to be a Government guarantee to get any private investment; and that a radical restructuring of the industry and associated regulation would be required.

The Minister for Communications said there was no need for a review of costs and benefits of its national broadband network plan as ‘a range of studies have been carried out all over the world that have investigated the economic impact of broadband. ... We don't need any more studies, any more cost benefit analyses, to know that this is an infrastructure investment that this country is crying out for’ (Communications Day 2009, 4).

It is a remarkable comment. Many people hold similar views that the benefits of high-speed broadband are self-evident and that to delay further will put off the realisation of these benefits and push Australia back relative to our international peers. But it is noticeable that many of the people expressing these views are media companies, content developers and industry service providers that may benefit if or as demand for high speed broadband emerges, but typically they are not those that bear the risk if the demand does not emerge. Taxpayers bear this risk. The supporters of high speed broadband and the politicians leading their cause seem happy for taxpayers to do so without assessment of the risk or the reward. That mismatch between risk and reward alone should be sufficient to trigger public sector alarm bells, warning those responsible for spending taxpayer dollars to undertake a detailed analysis.

It is a questionable comment as well, in that the first iteration of the NBN – proposals for an FTTN rollout – did receive an evaluation from a Panel of Experts appointed by the Government.
specifically for this task. On their advice the Government decided to terminate the first NBN process because ‘none of the national proposals offered value for money’ (Panel of Experts 2009).

The Department of Finance and Deregulation has responsibility for cost benefit analysis of government projects from a community-wide point of view. As well a nominally independent body within the department, the Office of Best Practice Regulation (OBPR), promotes the Government’s objective of improving the effectiveness and efficiency of regulation. It has established a CBA Unit to provide training, advice and technical assistance on CBA and risk analysis.

‘The Australian Government has endorsed six principles of good regulatory process as a way of addressing the underlying causes of poor regulation, including the rigorous use of cost-benefit analysis (CBA). In addition, the Council of Australian Governments (COAG) agreed that governments will improve the quality of regulatory impact analysis through the use of CBA’ (www.finance.gov.au/obpr/cost-benefit-analysis).

‘Where regulation is designed to reduce the risk of physical or economic harm, a CBA should include a risk analysis detailing how the regulation will change the likelihood, frequency or consequences of an adverse event occurring. … The Office of Best Practice Regulation (OBPR) CBA is needed for regulatory proposals with significant impacts as part of the preparation of a Regulation Impact Statement (RIS)’ (www.finance.gov.au/obpr/cost-benefit-analysis).

These are the principles outlined by the Department, but not its practice in the case of the NBN. Finance Minister Lindsay Tanner says that is because, ‘We just formed the view that in effect we had to make the clear decision that said this is the outcome we are going to achieve come hell or high water because it is of fundamental importance to the future of the Australian economy’ (Bartholomeusz 2009).

The Government could say the same thing about health, education, employment, infrastructure, motor vehicle manufacture, housing insulation, training, immigration, defence, water policy and the environment. Indeed, it has said similar things about each of these sectors. But if the basic cost benefit analysis is not done for investments across each of these sectors then how can the Government be sure that each sector receives the appropriate resources, or where capital is constrained, the appropriate share of available capital? And then, of course, how should resources be allocated within each sector without a CBA? The media asked the question:

BARRIE CASSIDY: ‘… on the national broadband network … the commitment of $43 billion. Now that’s a huge investment. Have you done an adequate cost benefit analysis given proportionally with the size of the commitment?’

LINDSAY TANNER: ‘Barrie cost benefit analysis of the orthodox kind are basically captives to the assumptions you feed in. So if you fed in my assumptions you’d get one result. If you fed in Henry Ergas’s assumptions you’d get a very different result because we’re dealing here with long term unknowables’.

‘When the mobile phone first appeared was anybody saying at that point, this is going to be a camera, it’s going to be a video camera, it’s going to be an alarm
clock, it’s going to send text messages, it’s going to do all these other things? Yet within 10 or 15 years that’s where it ended up.

‘Was anybody saying that it would spread throughout the developing world, the third world, even more quickly than it has in the developed world? No, they weren’t.

‘So you’re dealing with things that are inherently unpredictable. So the kind of traditional cost benefit analysis that is done for a rail line or something would only tell you exactly what the assumptions and the prejudices were of the people drafting the initial terms of reference.’

BARRIE CASSIDY: ‘So you can’t say for sure that it will return $43 billion to the economy. That’s a lot of money to come back into the economy?’

LINDSAY TANNER: ‘Well the amount that is ultimately going to be contributed as equity by the Government is going to be way below the $43 billion. But we can’t specify precisely how much because we are anticipating private investors up to 49 per cent.

‘And of course, the company as do other GBEs, government business enterprises, will borrow off its own balance sheet. So it will have part equity, part debt. So if you assume it will be roughly 50/50 government money and private investment, it may get to that level, it may not, but let’s assume that, and if you assume a gearing ratio of debt to equity of maybe 50/50, then that means that the initial government equity may be not much more than a quarter of that $43 billion.

‘No we can’t be certain of that because we don’t know exactly how these things will unfold but we can be pretty clear that it’s not the Government stumping up $43 billion’ (Insiders 2009).

In summary, the three reasons given by the Minister for Finance for not doing a CBA on the NBN are: come ‘hell or high water’ we are going to do it anyway; because ‘you’re dealing with things that are inherently unpredictable’; and because ‘it’s not the Government stumping up $43 billion’.

But these are also reasons CBA should be done: to reduce the likelihood of ‘an adverse event occurring’ rather than going ahead ‘hell or high water’; to reduce the level of unpredictability; and because of the Government’s ability to pass risk to other parties (a moral hazard issue that we discuss in the final section of this paper).

A key goal of the CBA Unit is to help build the capacity of departments and agencies to improve the quality of regulatory proposals. With NBN however, we have an example of the selective avoidance of established process to support a preferred capital allocation. The effect of this is to increase the risk of negative outcomes for investment in the NBN and by association investment related to the NBN.
THE PRODUCTIVITY CASE FOR NBN

In a speech on productivity on 29 March 2010, the Prime Minister, Kevin Rudd, highlighted that ‘infrastructure is a critical ingredient for our future productivity growth’, that ‘a shortfall on infrastructure investment has generated a gap between the infrastructure we’ve got and the infrastructure we need’, and that the NBN specifically, ‘is helping support the economy during the economic downturn, filling the gap in investment activity caused by the global financial crisis, but in the long run it helps build our future prosperity’ (Rudd 2010).

A study by Access Economics conducted for Telstra ‘explores and quantifies the economic importance of high-speed broadband (HSBB) to the Australian economy under a range of different scenarios. Using the latest literature, economic data, coverage maps and subscriber numbers, the current and future impact of broadband has been modelled for the period from 2009 to 2020’ (Access Economics 2009, i).

The review was conducted while the Government was evaluating tenders for the FTTN version of NBN, although not Telstra’s proposal, and was published just prior to the Government announcing its decision not to go ahead with that version of NBN, but rather a FTTP version of NBN. The technology considered in the Access Economics report is ‘defined as download speeds of at least 12Mbps FTTN VDSL-based service and the main scenario considered has this rolled out to 90% of population, essentially the same as proposed in the FTTN version of NBN.

The study reviews a number of broadband economic impact studies, tabulating nine with quantified economic results. Most of these are from the US but also include a 2003 study from Australia and a 2007 study from New Zealand. Access Economics says these provide ‘an imprecise sense of the scale of the productivity benefits that may flow from the rollout’. Most of the studies reviewed considered the impacts of broadband rather than HSBB; and the benefits of ‘traditional’ broadband such as email and basic Internet banking, Access Economics notes, should be built into the reference case rather than included as a benefit of HSBB(Access Economics 2009).

Only one of the studies reviewed, the 2003 Australian study conducted by Allen Consulting, analyses the impact of ‘true’ broadband ... considering speeds of 10 Mbps. The incremental benefits of HSBB over ‘traditional’ broadband are those that are unfeasible at lower speeds, including video conferencing and many e-learning capabilities’.

In summarising its literature review the Access Economics paper qualifies the outcome: ‘it remains difficult to make strong conclusions about the impact on the Australian economy. Nevertheless, the aforementioned literature allows for orders of magnitude estimates’ (Access Economics 2009, 15).

In its assessment of such potential uses Access Economics notes that HSBB will not uniformly affect all economic sectors, and where such services have an effect they may produce productivity shocks that ramp up as the network is built and as firms that stand to gain the most from HSBB take it up ‘almost as soon as coverage is available’.

The Access Economics analysis uses a general equilibrium model of the Australian economy to evaluate six scenarios with the core one being the rollout of 12 Mbps ultimately to serve 90% of the population. It considers a number of ways that HSBB will affect economic performance, including improvements in multifactor productivity, new services associated with HSBB, network benefits derived from widespread adoption of HSBB and improved convenience and choice for consumers.
Notably it says the benefits of HSBB are especially difficult to assess because of the newness of the technology, because the impact is diffuse and because of the difficulty in separating additional benefits accruing from HSBB from those that derive from existing networks. For this reason the study considers that it underestimates the net benefits.

Based on its literature review the study assumes ‘that economy-wide multifactor productivity levels would be around 1.1% higher’ with high speed broadband than with dial up Internet (Access Economics 2009, 20). This estimate is then adjusted for productivity impacts over time and across sectors and allows ‘for the fact that some HSBB is available in the reference case’. The adjustments to the 1.1% MFP assumption underlie its own estimate that a national NBN of 12 Mbps to 90% of population would have an ‘NPV of GDP terms of approximately A$9.5bn’ compared with a slowing current trend of HSBB rollout.

It is a useful review of the literature on the potential benefits of broadband but should be left at that. To draw a line between the results of the studies and the specific quantification of A$9.5bn in productivity gains from a 12Mbps NBN seems tenuous because:

- Most of the quantified studies are for the USA which has a very different economy and geography to Australia;
- The reviews are imperfect as Access Economics notes but it considers that they probably underestimate the benefit of broadband;
- The reviews lead to an ‘assumption’ that the MFP level ‘would be around 1.1% higher in an Australian economy with HSBB available’ compared to one without any HSBB after 10 years;
- This assumption is used as a benchmark or jumping off point for a comparison of productivity gains from a 12 Mbps NBN compared to one where some HSBB is available.

To extend such a line about productivity further from a 12Mbps case to the 100Mbps case seems perilously tenuous.

**ARE THERE DECLINING MARGINAL BENEFITS FROM INCREASES IN HSBB CAPACITY?**

The difficulty in jumping off from an imperfect assessment of productivity gains that may arise in the move from no HSBB to 90% coverage of HSBB and applying it to an assessment of benefits when there is already some HSBB is that the benefits aren’t linear. They are likely to decline with incremental improvements given initial coverage; and take up, as Access Economics implies, is likely to be focussed on those sectors and geographic areas that value it most.

There may be also be declining marginal benefits from increasing broadband capacity: that is we may derive the bulk of the value from high speed transmission with initial increases in bandwidth say to 12 Mbps or 20Mbps, more than we do from a later move or moves to 50Mbps or 100Mbps. This is often the case with capacity increases, although there may be exceptions where a certain minimum level of capacity is needed to support certain valued services or if additional capacity leads a step up in service development.

It’s an open question in the case of HSBB, but should give pause and consideration before a significant capital commitment. The possibility raises a significant question: if the net value in moving from the current rate of development to more rapid development of 12 Mbps + FTTN VDSL-based service is in the order of A$9.5bn, the incremental benefit of taking the next step
in capacity is likely to be less than this, particularly if the incremental cost is a multiple of the previous step. At least it’s a sufficient possibility that a more fundamental evaluation be conducted.

**NBN IS EFFECTIVELY AN UPGRADE FROM ADSL2+ IN MOST AREAS TO FTTP**

As we noted, in terms of service capability, the NBN is really a fast-tracking of HSBB capacity increases that would occur commercially in some areas, and an extension of HSBB capacity to non-commercial areas. This incremental nature of the NBN is evident in the major change in the policy from a pre-election proposal to provide 12 Mbps to 98% of population through a policy adjustment in April 2009 to provide up to 100 Mbps to 90% of population and elsewhere connect premises with ‘next generation wireless and satellite technologies that will deliver broadband speeds of 12 megabits per second’ (Joint Media Release 2009). In fact by the time of the policy adjustment 82% of the population already had access to ADSL2+ with speeds up to 20 Mbps.¹

A cost benefit analysis (CBA) of the first NBN proposal would have exposed this flaw, and even the evaluation that was done may have disclosed it.

Without a cost benefit analysis of the revised NBN the Government has not been able to consider whether revised targets or benefits are the best that may be achieved with its resources, or whether resources potentially costing up to A$43bn are best directed to these targets. In some areas or market segments higher speeds such as 1Gbps may be a better use of resources; in other circumstances other speeds may provide the best outcome. And other options might achieve comparable outcomes at lower cost.

Selling the policy as an upgrade and an extension of capacity is not nearly as enticing as claiming that HSBB is a ‘game-changer’ in the way of railways, printing press and electricity. But as the reality of NBN as an upgrade in national broadband capacity has become evident, the Government’s case for NBN has shifted from the ‘game-change’ claims to a more realistic claim about productivity improvement.

**CURIOUS COUNTER-FACTUAL WHEN REALITY HAS OVERTAKEN CORE HSBB SCENARIO**

Another qualification of the Access Economics study for use in supporting a particular NBN project is its counterfactual – that is, the comparison of the HSBB investment with what would occur in the absence of an NBN. The report prepares a counterfactual acknowledging that even without an NBN ‘technologies will continue to advance’ (Access Economics 2009, 6). The Access Economics modelling adopts a midway path between two alternatives: the situation where no further investment in HSBB takes place and speeds remain at 2008 levels; and a case where existing trends in speed and investment continue through to 2018. Although it notes that bandwidth has been increasing at an increasing rate, it takes the midway path because it says the industry faces technological constraints that make a continuation of past trends unlikely without an initiative such as the NBN.

Access Economics’ MFP assumption of 1.1 per cent increase in GDP is compared with the increase that would occur in a scenario without NBN where some HSBB is already available. However, HSBB is now already available to 82% of the population and has been for some time. That is the reality of HSBB availability in 2010 is not only greater than the Access Economics counterfactual but is running well ahead of the core HSBB scenario it evaluated which had 12

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² See Joint Media Release 2009 for details.
Mbps available 90% of the population by 2016. It may well be that without an NBN the remaining 8% gap may not be closed over the next four years, but it could be closed for a very specific incremental cost. The productivity increment for this particular extension to a further 8% of population coverage may be matched against that specific incremental cost, but will likely be a very minor part of the overall claimed productivity increase.

In any case, in the Access Economics assessment the bulk of productivity gain comes as ‘annual productivity shocks over time, combining both the underlying potential for industries to benefit, and the extent to which NBN unlocks this potential by providing more of the population with (HSBB) at any point in time...’ (Access Economics 2009, 21).

Again, the first of these components is already likely to be overtaken by reality: many businesses already have fibre capacity available and 1Gbps service has become widely available. In most population centres we think this level of capacity is now the ‘norm’ for firms that value HSBB.\(^2\) (NBN may extend this coverage but only marginally and unlikely in the early years of the project when it is focussed on reaching commercial sustainability).

The second component – providing wider population coverage for HSBB – may be enhanced by NBN. Possibly, there is a HSBB network effect from services like video conferencing that benefit from an increase in capacity being widely available to the general population. However, given the absence of evidence to support this it may be just as reliable to assume that such network effect follows a normal take-up path as consumers become familiar with the benefits offered by such services rather than for such benefits to be discovered as part of a productivity shock as HSBB network is rolled out.

**A SOCIAL JUSTICE CASE FOR NBN, OR ASPECTS OF IT, SHOULD BE CONSIDERED SEPARATELY**

There are also social justice elements, such as equal access for all, in the case for NBN, especially with regard to regional rollout and national uniform pricing. In principle, these should be assessed as stand-alone policy matters rather than rolled into a case for NBN. That is, the case for NBN should depend on its net benefit. The cases for regional rollout or even uniform pricing have quite distinct benefits and costs which mean they can be made separately to, and may have different answers to, the case for NBN, even if they are contingent on it. Such melding of social issues into what is essentially an economic question has constrained the development of competition in telecommunications in the past, as requirements to provide USOs have been used to obfuscate the case for deregulation.

**TOP DOWN REVIEW MAY HELP POLICY CASE BUT IS NOT SUFFICIENT FOR INVESTMENT DECISIONS**

Such a top-down productivity assessment is useful to inform public debate and policy review, particularly given the literature review of nine specific broadband productivity studies. Such studies might guide where investment may be directed, but are not sufficient to justify specific investment decisions. That is because specific factors may vary considerably between the general top down case and the specific bottom-up case, as occurs between the Access Economics study and a specific evaluation of the NBN.
Fund managers at investment institutions may use such analyses to allocate funds between different market segments, but would require specific assessment of investment potential before committing funds to particular investments. Financial controllers at large corporations may use such analyses to allocate capital between different areas of a firm’s business, but would also require specific assessment of investment potential before committing funds to a particular project.

The Access Economics study describes itself as ‘assessing the impact of future investments in HSBB including possible investments under the NBN’ (Access Economics 2009, 1) – which sounds relatively specific, but its evaluation is relatively general in our view. It’s not intended to support a particular NBN project and its conclusions are qualified by this: ‘… the estimates derived in this report should be regarded as providing preliminary estimates of the magnitude of key aspects of the total economic impact…’.

Although such a review might focus attention on prospective investments, it does not make the case for particular investments. Ultimately, it would be foolish to base a significant investment decision on a particular top-down assumption: an assertion based on a literature review that MFP levels ‘would be around 1.1 per cent higher’. To test the economic justification for a particular project requires a cost benefit assessment.

**RECONCILING COST BENEFIT ANALYSIS WITH THE NBN VISION**

Henry Ergas and Alex Robson in August 2009 prepared a ‘cost benefit assessment (of the FTTP version of NBN), using an engineering cost model developed by Concept Economics to estimate the project’s incremental costs (and) a range for consumer Willingness to Pay and its evolution over time. (The) results suggest that the incremental benefits of the NBN, when compared to the counterfactual scenarios, do not justify the incremental costs’ (Ergas and Robson 2009, 1).

As the Ergas and Robson CBA deals with a FTTP NBN while the Access Economics assessment deals with a FTTN NBN, the cost structures will be different. However, modelling the cost side of the assessment is straightforward notably being engineering based and with some unit cost inputs from vendors. There seems to be less room for judgement on the cost side. It is possible that the different cost structures account for part of the difference between the two outcomes, but the notable difference in approach is in relation to the assessment of benefits.

Indeed, there are significant differences between the two studies that make them hard to reconcile: they do different things and they do them differently. Ergas and Robson assess the CBA for FTTP NBN using a bottom-up approach, that is calculating the potential increase in willingness to pay across users and comparing this with the model cost of the FTTP NBN. By contrast Access Economics use a top-down productivity assessment for a FTTN NBN with a broad assumption derived from a literature review.

Here is where the key difference arises: ‘most of the currently envisaged applications function quite efficiently at speeds well below those contemplated either in the NBN world or in the counterfactual’. The Ergas and Robson study notes advances in compression and coding which reduce bit rate requirements ‘(a)s a result, even high definition broadcasting and high definition video-on-demand have peak transmission requirements of less than 20 Mbps’. They also note an expected decline in marginal benefit ‘It is reasonable to expect the valuation of further reductions in download time to decline as average download times themselves decline (i.e. as speeds increase) (Ergas and Robson 2009, 12).
These assumptions guide the assumptions made in the assessment of willingness to pay. ‘The representative consumer has a willingness to pay (WTP) curve for higher speeds, which ... is increasing but concave as speeds increase. In addition, we assume that this willingness to pay curve is growing over time with increases in income, the development of new applications, and possibly bandwagon effects’.

Ergas and Robson assume $50 WTP for 10 Mbps increasing to $71 for 100 Mbps ‘reasonably close to current market outcomes’. Aggregating these benefits across speed adoption paths and discounting the valuation the analysis finds that ‘the incremental benefits of the NBN are far below the incremental costs; indeed, it is difficult to conceive of credible scenarios for the NBN that would make its incremental costs fall below the incremental benefits’ (Ergas and Robson 2009, 17).

Consumers who value HSBB are more likely to have access to it already, because suppliers have an incentive to provide it and users who value it may locate their premises where it is available. NBN may also find it difficult to price discriminate sufficiently effectively to allow the marginal benefits as modelled. For these reason, Ergas and Robson (again in contrast to Access Economics) consider ‘our estimates may overstate the likely gains and understate the likely costs from the NBN’.

While noting the cost difference between an FTTN NBN and an FTTP NBN may be a multiple of three, the difference of substance between the two approaches is in what benefit is derived from productivity increases. Ergas and Robson consider that ‘while it is of course likely that use of higher speed access lines will allow productivity gains, we would expect those gains to be reflected in consumers’ and businesses’ willingness to pay for that use’ (Ergas and Robson 2009, 19).

The top-down assumption of productivity gain doesn’t look so promising when examined from the bottom-up point of view on what consumers and businesses may pay for additional HSBB. However, the productivity case for the fixed line market in general and high speed broadband in particular is not encouraging. Total factor productivity in fixed telecommunications ran at high levels in the 1990s, averaging around 10% pa. These levels slowed towards the end of the decade, but picked up again as DSL technologies extended the life cycle of copper access networks, effectively increasing output from a given infrastructure with modest upgrade capital and ongoing maintenance costs.

Recent trends show fixed line volume and value declining as incremental take-up of ADSL2+ slows and as mobile substitution occurs, particularly with the recent trend in HS wireless broadband and with the commoditisation of voice over Internet.

PRODUCTION POSSIBILITY FRONTIER: WE ARE NOW CLOSER TO IT THAN WE WERE 20 YEARS AGO

One reason why productivity in the telecommunications sector was so great in the 1990s was that prior to initial competition in 1992 sector productivity was so far below the production possibility frontier. At the sector level the PPF is the level at which the sector most efficiently produces output from given allocated inputs.

Prior to initial network competition in 1992, the telecommunications sector produced too little output but used high levels of capital and labour. In the late 1980s and early 1990s Telstra’s
capital spending was typically around 20% of its revenue while the norm for fixed line incumbents is now around 14%. Its labour force peaked at around 87,000 in 1990 – more than twice the current level – and fewer still on a like-for-like fixed network basis. Against such high input levels, output levels were a fraction of what they were even by 1997 and bear little comparison to the firm’s output today given there was no mobile operation, no broadband, no pay television and directories and content were minor activities in 1990.

Across the industry, taking into account changes at Telstra, the developments by Optus and, from 1997, other fixed line carriers, Australia’s fixed line performance in the 1990s is characterised by a catch-up from levels well below the PPF to a level close to the PPF by 2000, even though the PPF had shifted further out during that decade.

(For comparison, similar arguments have been made about strong productivity growth in China and other developing nations: when a sector or a nation is well below the PPF, ‘catch up’ productivity is relatively easy, particularly if technologies to achieve world’s best practice are relatively available for adoption.)

Fixed line productivity gains achieved in the 1990s were compounded initially by technology developments, among other things the enormous improvements in the IT sector in the early 1990s such as processing and storage capability. These improvements particularly benefited corporate users of telecommunications allowing whole of service provision, remote networking and so on.

These productivity gains slowed after 2000, in part we consider because by then Australian fixed line telecommunications had closed in on the fixed line PPF. However, fixed line productivity was revived as compression technologies emerged to allow more output from copper access infrastructure. In effect these compression technologies increased the fixed line PPF – that is, they allowed more fixed line output for a given set of inputs. This second pick up in fixed line productivity now seems to be at an end as take up of ADSL2+ peaks and is supplanted by mobile growth and the commoditisation effect on fixed services of high capacity access.

In this PPF explanation of fixed line productivity, Australia has already achieved relatively easy first round and second round productivity gains flowing from market reform (i.e. second round effects being long term gains arising from investment in related sectors encouraged by liberalisation in the first sector.) This characterisation of the pattern of fixed line productivity gains over 20 years suggests that further gains from here onwards are less reliable from an investment viewpoint; there may be further incremental gains, or gains may depend on developments not directly related to fixed network investment.

**FALLACY OF EXTRAPOLATION OF PRODUCTIVITY GAINS**

We mentioned the gains in fixed line productivity shared by the corporate sector in the 1990s in part achieved through combining digital network developments with IT productivity gains from processing and storage capability. By 1999 these gains were widely expected to continue to ripple through the economy to small and medium size business through the application service provider (ASP) model. As well, the new medium of dial-up Internet allowed analysts to extend this potential ultimately to home offices and home users. Ultimately, the Internet, it was said, would change the way consumers did many daily activities.

Analysts’ models for telecommunications carriers incorporated these trends into forecasts and many investors bought the change, boosting telecoms share prices, investing in start up ISPs,
on-line shopping companies and network rollout plans including submarine cable. And the Internet bubble was born.

**CLUES TO COST AND BENEFITS FROM THE NBN PANEL OF EXPERTS**

The published extract from the NBN Panel of Experts Evaluation Report (Panel of Experts, 2009) indicates that there was a formal assessment of benefits, but alas no clear indication is provided of what NBN services or developments were considered to be of value by the Panel. There are instead clues in the Panel’s observations about value:

- ‘each proposal contained attractive elements that, taken together, could form the basis from which a desirable outcome might be achieved’. The Panel did not elaborate in the media release on what are the attractive elements were, or on what basis are they were considered attractive, and on what is a desirable outcome.
- ‘The Proposals confirm there are multiple approaches to delivering high-speed broadband and that, with the right technology mix and incentives to create sound business cases being developed, the goal of providing high-speed broadband services to 98 per cent of homes and businesses can be reached’. As ADSL2+ was by January 2009 already available to over 82% of premises the comment suggests that one additional benefit of the FTTN plans was to extend coverage to a further 16% of premises – that is to a total of 98%. But the reference to ‘the right technology mix’ suggests the Panel of Experts had formed a view that FTTN alone was no longer of sufficient incremental value in some areas and too costly in other areas.
- The Panel also appears to have formed a view that FTTP was a preferred objective, and took the view from the proposals received that an FTTN network is ‘unlikely to provide an efficient upgrade path to FTTP’. However, it seems to have made this assessment purely on a cost basis because of ‘the high costs of equipment associated with rolling out a FTTN network that would not be required for a FTTP network (i.e. FTTN is not a pre-requisite for the provision of FTTP)’. However, the optimal timing for rollout of FTTP relative to existing technologies, and whether directly to FTTP or via FTTN and VDSL for that matter, is not just a matter of cost and whether some of the resources used for one might be required for a later upgrade, but it is also a matter of assessing relative benefits and the timing of these. Relative benefit may well be a more important aspect of deciding on the ideal upgrade decision or the better upgrade path; an intermediate technology such as FTTN might offer sufficient valuable benefits for a long period before the greater expense of FTTP need be incurred.

Other things that the Panel of Experts saw value in, but did not quantify in its published extract of observations, were ‘the importance of competition and not just technology to drive improvements in services; the need to improve competition in backhaul supply, particularly in regional areas; the desirability for a wholesale-only provider of any bottleneck infrastructure; and the desirability of improved regulation of the telecommunications industry to provide investor certainty and speed of outcomes’. In contrast the Panel was not attracted to ‘proposals for excessive overbuild protections’.

In summary, it is an odd evaluation from the NBN Panel of Experts. It says that there were no proposals for a national FTTN which offered value for the $4.7bn proposed to be spent by the Government, but that a more expensive FTTP network might offer value. But it offered few
clues to support this view. To further complicate the upgrade recommendation it said there were multiple approaches to delivering high-speed broadband and that the right technology mix, with competition and without excessive overbuild protection, might be the best way to achieve ‘the goal of providing high-speed broadband services to 98 per cent of homes and businesses’. And it also considered a wholesale-only provider of any bottleneck infrastructure desirable, probably on competition rather than on CBA grounds, but again without an apparent assessment of whether any additional benefits to competition (compared with current or better access arrangements) were significant relative to the cost of a wholesale only provision.

The Panel said it could see a way forward and ‘provided that advice in confidence to the Government because of the commercial sensitivities arising’.

**CONSEQUENCES OF THE GAP BETWEEN NBN VISION AND COST BENEFIT OUTCOME**

If there is such a large potential gap between the productivity claim behind NBN and its likely cost benefit outcome, where will the shortfall be made up? Four possibilities to make up the financial shortfall are:

- the federal budget,
- NBN access prices (and therefore access seekers’ earnings),
- higher retail prices (to the extent access price increases may be passed on), and
- Telstra shareholders through the transfer of value from Telstra to NBN Co.

Over the past 30 years Australian Governments have become more disciplined in their management of the Australian economy. They have floated the Australian dollar, with one consequence being that they can’t directly use exchange rates to prop up favoured areas of the economy at the expense of other areas. Free trade agreements have opened up overseas market opportunities for exporters but have also led to an erosion of protection to favoured sectors. Governments have ceased to have direct control over interest rates, with one outcome being that inflation is a less likely consequence of excessive Government spending.

As well there has been increasing pressure for Governments to adopt and demonstrate conservatism in fiscal policy, at least until the recent fiscal crisis led to a weaker economic environment. In his 2007 election speech the Prime Minister, Kevin Rudd, argued for fiscal conservatism: ‘This sort of reckless spending must stop’, he said (Rudd 2007). Post the global financial crisis, the form of fiscal conservatism is subject to a debate, for instance over the appropriate portion of GDP that government spending should account for.

As the constraints tighten over trade and currency exchange policies, monetary policy and now fiscal policy, they constrain more tightly the innate desire of Governments to spend money for policy or political reasons. These increase the pressure for proper evaluation of projects, and in light of this the Government has established Infrastructure Australia to ensure that projects are properly evaluated and economically justified before they go ahead. If a project doesn’t pass such an evaluation, but is still desired by Government, the pressure of these tighter fiscal constraints forces pressure to be felt elsewhere, testing other mechanisms available to government: transfers brought about through undermining policy evaluation, regulation or legislation.
We contend in this paper that the gap between the claims of government about the productivity benefits of NBN and its likely economic and commercial prospects is having negative impact beyond just the direct financial shortfall. Shuffling the cards to distribute the shortfall between budget support for NBN Co, access and retail prices and value that may be transferred from Telstra is undermining policy development in the sector, regulation, legislation and ultimately private investment in the sector.

We also argue the distortion to policy, regulation and legislation has the potential to undermine industry development for over a decade and we argue this follows an historical pattern of excessive political over-reach in the telecommunications industry (at least pre-1990), which limited its contribution to the economy and to the overall benefit of the Australian community through the 20th century.

UNDERMINING THE TELECOMMUNICATIONS POLICY PROCESS

From a public policy viewpoint there are two great drivers of value in the telecommunications sector: the productive benefit that derives largely from the enormous economies of scale and scope offered by telecommunications networks, that is putting more traffic through given infrastructure lowers average cost; second, the allocative benefits that largely derive from rivalry in service provision, highlighted over the 20 years of competition by the huge increase in traffic volume (which compounds the productive benefit of scale), extensive increase in service range, technology development and ultimately providing more service choices at more price options than is the case without rivalry.

For twenty years public policy has largely been concerned with considering and reviewing how to best develop these value drivers, and as they have done then contributing solutions to other policy matters such as universal service and consumer protection. The 1990 Review of Ownership and Structural Arrangements (ROSA) set a broad path for a competitive industry structure including the introduction of competition and supporting regulation.

ROSA and the reviews which followed in 1996/97, 2002 and 2005 reviewed policy and moved industry policy forward to better drive productive and allocative gains. They provided opportunities for industry players and the public generally to contribute to this analysis against a known framework.

The required important policy review and development work has not happened in the case of either the NBN or the structural change that accompanies it, despite the potential negative impact on productive and allocative efficiency in the sector. The initial FTTN NBN was announced in March 2007 and implementation was begun soon after the 2007 election without any further review. During the period in which NBN proposals were prepared and submitted the Government consulted ‘on the regulatory arrangements that should apply as we move to a National Broadband Network’.

It should be no surprise – and indeed few were surprised – when an independent expert panel advised that there were no proposals that offered value for money. A proper evaluation of policy and a decent cost benefit analysis would have exposed the valuation flaw early in the process, avoiding a year of wasted opportunity.

Even then, a proper policy review and development process would have provided the best approach to NBN development. Instead the Government announced on 7 April 2009 the FTTP
NBN policy with significantly greater resource requirement but again without evaluation of proper policy consideration.

Again there was a consultation period within the announced NBN policy. The Department of Broadband, Communications and the Digital Economy (DBCDE) issued discussion papers on each of the two main matters: the industry regulations that should apply, notably over access regulation, and the governance and access arrangements that should apply to NBN Co (DBDCE 2009).

The discussion papers were hurried and poorly considered. They and the consultation process deserve their own evaluation and we consider such an evaluation would expose several flaws, but one in particular serves to highlight the case that NBN policy and the gap between the vision claimed for it and its lack of economic merit has undermined effective policy development.

The DBCDE discussion paper on telecommunications regulation has a section dealing with the vertical integration of Telstra which notes that Telstra’s level of vertical integration raises concerns about the extent to which it has the ability and the incentive to favour its own retail business over its wholesale customers. It provides two options for reform including tougher operational separation for Telstra and the introduction of functional separation. Neither option included an evaluation or estimate of the potential benefits or costs, that is, for instance, whether functional separation added more to competition than it added to cost.

To allay the concerns of Telstra shareholders about the consequences of functional separation the paper draws on experience of functional separation from BT and Telecom NZ to suggest that functional separation is ‘not costly for shareholders’. It’s a ham-fisted attempt at placation given these two carriers are among the worst performing telcos from an investment perspective.

Equity investors quickly responded to this, marked down Telstra shares and moved on. However, when the draft legislation was tabled in Parliament in September, a different alternative was proposed, voluntary structural separation. If Telstra didn’t agree to voluntary structural separation it would potentially face draconian consequences, denial of certain valuable spectrum, disposal of its HFC network and its stake in FOXTEL.

To further highlight the poor policy process, shareholders who hold part of the benefit of integration (having paid for it through various Government sales of equity in Telstra), railed against the proposed legislation and draconian penalties and many wrote to the subsequent Senate Environment, Communications and the Arts Legislation (ECA) Committee Inquiry. However, when the Senate ECA Committee considered the matter Senator Lundy noted that shareholders had not taken the opportunity to make submissions to the consultation processes in the first place and this was confirmed by DBCDE First Assistance Secretary Pip Spence (Spence 2009). We are quite sure that if the consultation process had proposed structural separation, it would have received strong shareholder submissions. We are concerned that the consultation process was structured to avoid such submissions.

Similarly, the DBCDE Secretary Peter Harris came to the Senate Inquiry armed with generic investor warnings in Telstra’s prospectuses that said: ‘There can be no assurance that the current or future governments will not take further steps which alter Telstra’s competitive position or the manner in which the Australian telecommunications industry is regulated’ (Harris 2009). Regulatory risk was well known and considered by investors prior to each sale but on all three sale occasions the Government had ruled out structural separation, and regulatory policy had endorsed the economic benefit deriving from Telstra’s scale and scope.
Shareholders and other stakeholders had a right to expect that if a case did emerge to support structural separation that it would be properly evaluated and that if it was considered to be in the public interest that they would receive ‘just compensation’ as required by the Constitution. (This case was summarised in a TJA article by David Lindsay (Lindsay 2008).

For 90 years until 1990, telecommunications industry development suffered as Government telecommunications policy sought to protect whatever productive efficiency arose from its monopoly network in the PMG and, from 1975, Telecom against threats from potential rival networks and service providers. In doing so they denied the allocative gains that derive largely from rivalry in supply, that is, competition. Now, it seems, the pendulum has swung to such an extent that competition is regarded as so important that productive efficiency gains from vertical integration may be sacrificed for a doubtful gain in competition.

Possibly the gains from further competition may be worth this cost, but there are good reasons to think they may not – with potentially higher cost structures, higher access prices, service constraints, loss of synergy between network development and other infrastructure, an added layer of bureaucracy with a protective mindset and, most importantly, a forced split in the relationship between customers and network infrastructure supply that is the undermining of the most fundamental of economic relationships between buyer and seller. At the very least it deserves a proper evaluation rather than a strategy to avoid difficult questions, and subsequent denial.

UNDERMINING OF TELECOMMUNICATIONS LEGISLATION

Similarly, the gap between the NBN Vision and its likely poor economic case has led to proposed legislation that is poorly designed in terms of achieving policy outcomes and so leads to a deterioration in the rule of law through the removal of appeal rights, removal or threatened removal of legal privilege and exemptions from well established practices in the Trade Practices Act.

After 20 years of moving away from Ministerial discretion to a codification of responsibilities the new legislation reintroduces substantial Ministerial discretionary powers. The Telecommunications (Competition & Consumer Safeguards) Bill 2009 has at least 15 areas where the Minister would have discretionary power to make determinations setting out performance standards and benchmarks for various telephony services, placement of public telephones, setting of penalties, matters that the ACCC must have regard to in relation to considering voluntary structural separation, over designation of radio frequency spectrum that may not be made available for Telstra, undertakings on certain asset sales, setting requirements for functional separation and varying undertakings on functional separation. Some of these powers, for instance those dealing with the firm’s operational structure, potentially claw back ownership rights sold by the previous government. Other draft legislation dealing with NBN would provide further discretionary powers.

While these legislative issues might be considered as issues separate to the case for NBN, our view is that this legislation is intended as bargaining leverage to help the transfer of value from Telstra to NBN either directly as part of a negotiated outcome or indirectly in the long term as Telstra is constrained operationally and legally by it. That is, such extreme legal measures seem to be considered necessary in order to achieve an outcome in which the NBN Co may be economically viable. They are a case of bad policy leading to worse policy.
Perhaps the most significant of all developments is how the NBN policy as it has evolved has undermined the independence of telecommunications regulation. Prior to the NBN policy being established Telstra had a poor relationship with the regulator, but largely in our view because the regulation was relatively effective in encouraging competition. (Regulation and policy may have done better, as we noted, if it had addressed some of the other constraints to competition.)

Mostly, if anything, investors tended to accept the ACCC view on matters such as access policy. Standing apart from Telstra, some Telstra shareholders may have considered that access policy was lop-sided but at least the access pricing approach was well established and well known prior to the Government’s sale of its majority stake in 2006. Contrary to the advice on competition regulation tabled in Parliament with the draft legislation, access pricing for ULL had been very effective in encouraging competition. From when it became effective in mid 2006 (before the sale of Telstra 3) LSS and ULL-based DSL competition had transferred around 15% of lines from Telstra to competitors over three years, and closer to 25% in the target metropolitan areas. Structural separation, or the lack of it, wasn’t a cause of failure in this instance.

In December 2008 the ACCC published draft access prices that would have taken ULL prices even lower to $14 in metropolitan areas. However, before it could finalise these, the Government announced its change in NBN policy and the establishment of NBN Co. The revised policy was quickly endorsed by ACCC Chairman, Graeme Samuel. In a speech in May 2009 he said ‘The NBN will spark a new wave of infrastructure investment, technological change and product innovation in the sector. It will usher in 21st century communications technology ...’ (Samuel 2009).

He listed five ‘serious advantages in a range of critical areas’ that could be offered by the NBN. Again there was no consideration of the costs and benefits of these but there was a preparedness to change access pricing to accommodate it. The ACCC also argued at this point that the new NBN policy provided an opportunity to restructure the industry, again a claim made without evaluation.

To support the NBN case, regardless of the economics, the ACCC weakened its previous strong stance in favour of de-averaged access prices previously seen as critical to competition. The technologies proposed for the NBN it said ‘may reduce the current strong arguments in favour of de-averaged prices’ (Samuel 2009).

And so it turned out, at least for a period. In August 2009 the ACCC changed the trend of its draft ULL prices – instead of reducing them, increasing them in metropolitan areas over three years to $23.50. However, after a strong negative response from industry and after a proposal from Telstra, the ACCC froze the existing set of prices for a further year while it reviewed the basis of access prices in the transition to NBN.

Will industry get an appropriate outcome from the ACCC on access prices both for NBN and in the transition period? It’s doubtful in our view. The ACCC’s support for the NBN policy, unevaluated as it is, has tested its regulatory independence. How will it respond on the access price trend it must regulate? Will it keep the faith with competitors and keep access prices low? This will not encourage them to migrate to the NBN which the ACCC says ‘will be the biggest infrastructure rollout in Australia since the Snowy Mountains scheme ... and unprecedented internationally’. But if it does not, the commercial case for NBN Co becomes even harder.
A second key area that will test the line between the ACCC’s regulatory independence and its support for the NBN policy is the requirement that it consider whether any agreement between NBN Co and Telstra, even a forced one, breaches s45 of the Trade Practices Act which prohibits agreements ‘if they have the purpose or effect of substantially lessening competition’. There is potential for parts of the agreement to have such an effect, but what if these are necessary to help NBN Co’s commercial prospects?

Another area of potential conflict between competition and NBN Co’s commercial prospects is that NBN Co has proposed 200 points of interconnection (POIs). Having more POIs, as Telstra has proposed, increases competition, notably where Telstra has infrastructure running between its current exchanges and POIs. There may be potential for other carriers to develop their own infrastructure beyond the proposed POIs, and this potential may change over time as volumes evolve and as population centres develop. How will the POI structure develop to accommodate a shift in the boundary of potential infrastructure competition? An NBN Co focussed on improving its commercial prospects might resist such development even if it is good for competition. How will the ACCC weigh this given its support for NBN Co?

Craig Emerson, Minister for Small Business, said recently in relation to the use of regulation to fund government projects, ‘the attraction of regulation is that, unlike budget spending, its cost is usually hidden’. To be clear, he was criticising the practice suggesting that where Governments are budget constrained ‘they turn to regulation to indulge their social and environmental engineering obsessions’ (Emerson 2010). All the more reason, in our view, to have a strong independent regulator that can stand up to the potential abuse of regulation to help make up the shortfall on poorly evaluated projects.

**SO IS THE NBN THE BEST WAY TO ACHIEVE THE BENEFITS OF HSBB? NOT EVEN CLOSE!**

Although telecommunications competition is well established in several market segments there are claims that infrastructure investment levels, particularly relating to HSBB, are less than optimal compared with global peers. It is not clear that this is true, much less what the reason may be. It may be that Telstra’s structure and its desire to maintain returns on existing investment are key causes, but there may well be others including rival investment levels, industry fragmentation, poor regulation and foreign government ownership of second carrier Optus. These receive little if any consideration. Only the popular case against Telstra gets a hearing in the policy domain.

Telecommunications competition has developed sufficiently to contribute to an industry that serves the Australian community relatively well in service range and depth, service provision and quality as well as service development and prices. The performance of competition, supported largely by regulation, is part of the reason for this. But another part – a substantial part – is the productive scale and scope of Telstra’s operations. Indeed, part of the initial case made in the 1980s for competition was that it would better hone Telstra’s productive potential. Indeed it was considered then that this impact on Telstra might be the main benefit of competition rather than whatever additional benefits new competitors might bring to the market.

As the next major policy step in the development of the industry the design of the NBN and its implementation fails both allocative and productive efficiency tests. It risks increasing industry
cost and prices. The NBN as proposed does not provide the right model to assess and deliver the benefits of high speed broadband services. As a wholesale-only operation it will not have direct contact with end users and will not be in a position to evaluate and respond to their changing needs. Service providers and retail carriers will either have to do this and then run the gamut of capital allocation by NBN to ensure that access network development and deployment meets their needs. And such allocation has demonstrably been driven by political rather than market needs. Alternatively, they may invest in their own access network capacity. Over time there will be a tendency by better-placed carriers to differentiate their service by direct investment in access in commercially attractive areas that are likely to expand over time. Will the policy, legislative and regulatory processes established to support NBN Co encourage them or inhibit them in this?

And NBN Co as established is not the best organisation to deliver a productively efficient high-speed broadband access service. Its separation of infrastructure operation from retail services leaves it less able to achieve economies of scale and scope through, for instance, retail packaging. Its government ownership makes it vulnerable to political capture resulting in resources allocated for political rather than market purposes. Several major resource decisions so far (initial FTTH rollout in Tasmania, the five backhaul projects and the hiring of senior staff) point to resources being allocated for reasons not primarily related to commercial evaluation.

Given the lack of even a broad cost benefit assessment to justify it sets NBN Co up as a white elephant in waiting and risks further poor policy, legislation and regulatory intervention to address the shortfall. Before 1990 this was a well established pattern in telecommunications policy development in Australia from the first Government intervention over private sector telecommunications industry investment by Government in 1854 (in fact the ‘the first transfer of modern telecommunications technology to Australia’, Moyal 1984, 16), through the crippling investment required for the overland cable that nearly bankrupted the colony of South Australia, the ‘nationalisation’ of the early telephony industry pre-Federation which led to ten years of inaction post federation and a century of protected underperformance, the nationalisation of AWA and Cable and Wireless in 1946 which undermined the Commonwealth position as a leader in development of submarine cable, to the more recent examples of Aussat and the fabled Multi-Function Polis. Each of these interventions, poorly evaluated before they were taken, has had ongoing negative consequences which have inhibited and distorted the development of the industry.

The NBN risks repeating this pattern and taking the industry back 30 years to a time when meeting demand was influenced by government preference and ministerial favour rather than by market demand, prices were poorly related to cost and demand, costs were inflated by the effect of Government protection of its core investment and telecommunications policy development, legislation and regulation were constrained by the priority to protect poorly evaluated investment decisions.

ACKNOWLEDGEMENTS

This article was written as part of work as a part-time Senior Research Associate at Swinburne University’s Institute for Social Research on the 2010–12 Australian Research Council funded Discovery Project ‘Imperial Designs’. The Chief Investigators are Jock Given (Swinburne University) and Richard Collins (Open University, Milton Keynes, UK).
Telstra qualifies its ADSL2+ offer saying ‘(a)bout 50 per cent of members on the 20Mbps plan can access speeds around 10Mbps or more’ (http://www.telstra.com.au/bigpond_internet/adsl2.html). Although the Government’s current NBN policy specifically refers to ‘broadband speeds of 12 megabits per second’ the shared nature of wireless and satellite transmission suggests this may be intended to be speeds of up to 12 Mbps. Its original (pre-election) NBN policy called for proposals to deliver ‘access to broadband speeds of a minimum of 12 Mbps to 98% of Australian homes and businesses’ (Conroy 2007). The RFP for the original NBN also set as an objective ‘a minimum 12 Mbps dedicated downlink transmission speed over each connection provided to a premises’.

For instance nearly half of Amcom’s revenue is from 1Gbps service.

Telstra has 30,924 full time employees but including contractors and outsourced staff, many of whom work on the fixed network, has a total workforce of 43,332.

Closer to thirty years, since 1982, if we include the Davidson Inquiry.

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Allan Asher was appointed in July 2009 as the first chief executive officer of the Australian Communications Consumer Action Network Ltd (ACCAN), the new peak body representing communications consumers.

Freelance journalist Liz Fell interviewed Asher in April 2010 for the TJA. This is an edited transcript.

Allan Asher was appointed in July 2009 as the first chief executive officer of the Australian Communications Consumer Action Network Ltd (ACCAN), the new peak body representing communications consumers.

Asher acquired his initial skills in consumer advocacy at the Australian Consumers’ Association, now trading as CHOICE (1974–84), and was introduced to telecoms policy and strategy at OTC, the Overseas Telecommunications Commission (1984–88), where he was director of Corporate Affairs.

In 1988 he was appointed as a commissioner with the Trade Practices Commission (TPC), which in 1995 became the Australian Competition and Consumer Commission (ACCC). While he was a commissioner, Asher extended his knowledge and skills in competition and consumer law, including telecommunications law. When he left the ACCC in November 2000, he was the deputy chairman and had served, inter alia, as Consumer Protection commissioner, chairman of the ACCC Energy Committee, and chairman and Australian delegate to the OECD Committee on Consumer Policy.

Asher’s next career move was to England where he was appointed as Global Policy and Campaigns director at Consumers International (2000–01), and as Campaigns and Communications director at Which?, the trading name for the Consumers’ Association (2001–03).

In 2003, following an invitation to become a non-executive board member of the Office of Fair Trading (OFT), the new consumer and competition authority in the UK, Asher became chief executive of Energywatch, the gas and electricity watchdog (2003–08). Energywatch became part of a new statutory body, Consumer Focus, in October 2008.
Asher was admitted as a barrister and solicitor to the High Court of Australia and to the Supreme Courts of NSW and the ACT in 1988.

Communications journalist, Liz Fell, interviewed him for the Telecommunications Journal of Australia in late April at ACCAN’s new Ultimo office in Sydney.

* * *

TJA: When did you first decide to devote your working life, and even your free time, to the consumer movement?

Asher: I guess from a very early age I’ve just had a passion about social justice and fairness and that comes to me mainly because of my Christianity. My way of understanding the call that has had on my life is to be active in campaigning for social justice.

TJA: And the first major job you landed was at the Australia Consumers’ Association that now goes by the name CHOICE?

Asher: Yes. In the early 1970s I was working for a financial analyst studying economics and accounting, but I found that was a bit of a dud idea so I switched to law. I wanted a part-time job to fund my legal studies so I applied for a job in the filing room at CHOICE. They wouldn’t give me that job. Instead, they offered me a job as a researcher/policy officer. That was in 1974, and I stayed with them for ten years.

TJA: Was that when activists like Ralph Nader were leading the consumer movement in the US?

Asher: Yes, I even brought Ralph Nader to Australia twice. But the modern consumer movement really started at the beginning of the 20th century – not half way through – with the industrial movement in the US: Upton Sinclair’s *The Jungle* about the meatpacking works in Chicago, Herbert Schlink’s *Your Money’s Worth* and Thorstein Veblen the economist.. Even the Consumers Union and Consumers Reports started in the ‘30s. So Ralph Nader, important though he is, was reasonably late in the piece, and collective action has a much longer pedigree. I used to teach a WEA [Workers’ Educational Association] course on this very issue.

TJA: Was the consumer movement in Australia generally viewed as a progressive political force?

Asher: Sure. The movement in the ‘70s had a strong environmental flavour, while the environment movement was extremely weak, almost absent in Australia. We would say at the time that increasingly the appropriate consumer response was to not consume!. At CHOICE, it was seen as important to encourage people not only to consider consumption but also the consequences and antecedents, production and all of that. So consumer issues in the ‘70s were much more holistic than some people would say they are now.

TJA: So consumerism was seen as a challenge to capitalism?
Asher: Absolutely. CHOICE was a very radical outfit in the days when Ted Wheelwright [former Professor of Economics at Sydney University] was a board member of the Australian Consumers’ Association, and there was a cover story in *The Bulletin* one week saying that CHOICE was the new bastion of the ‘left’ in Australia, along with the Uniting Church and the ABC!

TJA: Has that ‘left’ label ever served as a barrier in your career?

Asher: Well, the day that my appointment to the Trade Practices Commission [TPC] as a commissioner was announced in 1987, Bronwyn Bishop called for a Senate inquiry because she just assumed that there was some terrible conspiracy behind it all!

TJA: What about among the conservative legal fraternity when you became a barrister?

Asher: No, no. I have never practised independently. I expected to, but my main practice in the law was actually on behalf of CHOICE at tribunals and that sort of thing. In fact, CHOICE brought the very first action under the Trade Practices Act seeking corrective advertising. The 1974 legislation had a provision for the TPC [Trade Practices Commission] to get orders for corrective advertising and CHOICE was the first body to ever use the law in a way to get a misleading TV ad corrected.

TJA: When did disadvantaged groups, especially those with a disability, become a focus for consumerism?

Asher: I guess in a way the nature of the consumer movement has always been a bit of a tension. After all, the classic formulation is value for money. But a number of us, especially those involved in international work, could see that it was also about ‘value for people’, and ethical issues were always important. CHOICE was one of the founders of a group now known as Consumers International which was very activist on third world issues like the Bhopal crisis in India and the 1980s multinational campaigns. I was Australia’s delegate for three years to the UN Commission on Transnational Corporations, which was set up by the General Assembly when the Allende government was toppled as a result of the work by IT&T. At that time the US Congress wanted to regulate the conduct of international corporations.

TJA: This international work enabled you to build what was essentially a global network of like-minded people and groups. Were the groups mainly non-government organisations [NGOs]?

Asher: Almost all were NGOs, though during my time at the TPC and ACCC I was chair of an OECD Consumer Policy Committee and there were several other intergovernmental ones. And when the UN revised the consumer protection guidelines in 1989 or thereabouts, I was on the committee that revised those.

TJA: You have also been active in developing countries. In fact, haven’t you just returned from India?
Asher: Yes. I have an agreement from the ACCAN board, as I’ve had with every employer since the mid-80s, to have time off each year without pay to work on development issues. I’ve just finished a project covering Bangladesh, Nepal and India that I’ve been involved in for two and half years on power market issues and consumer protection in the electricity sector. And we’re about to start another project reviewing consumer protection laws in Bangladesh, and yet another on ASEAN consumer laws. I first went to all of the ASEAN countries in 1986 to try and persuade the governments to implement laws to protect their citizens as consumers, but almost none of them had any interest whatsoever in product safety or misleading advertising at that time. Now increasingly they have middle class constituencies, and some of the governments are concerned about issues such as poverty alleviation, so they’ve come to see that consumer protection – when properly understood – is an absolutely vital part of economic development.

TJA: Returning to your career in Australia, why did you leave CHOICE and go to OTC, which had corporate customers rather than plain old consumers?

Asher: Well, George Maltby [OTC managing director in 1985] wanted somebody who had a sense of consumer issues to work in corporate affairs. He could see that the future was about a more competitive market, and he wanted the organisation to form international links. In fact, one of my first projects was to go to China and I also worked on issues in places like Kiribati.

TJA: I should make it clear to readers that I worked for you writing an OTC newsletter at this stage. Meanwhile, I recall some early attempts by OTC to compete with Telecom in electronic messaging services, for instance?

Asher: That’s true. There was lots of organisational rivalry and virtually no market rivalry. But OTC figured that eventually it would be the chief competitor to Telstra in Australia so it wanted to be in a position to bypass the Telstra bottlenecks. My last project there was to secure cabinet approval for Tasman 2, the first optical fibre cable from Australia to New Zealand.

TJA: That dream of competing with Telstra was never realised, of course. Did you find the OTC experience valuable?

Asher: Yes, but I have to say that I was bitterly disappointed at the attitude of the government to its business enterprises.

TJA: You mean quietly grabbing a large share of the profits each year?

Asher: Yes. When I went to OTC I was absolutely convinced that there was no conflict in a government owning a business enterprise and that the model of a mixed economy was very sound. But I became quickly disillusioned. I came to see a fundamental disconnect between governments as owners of business enterprises because they could never link the needs of the business to their own needs. I remember negotiating the dividend one year with the Finance Department. I was a relatively junior person so I don’t want to overstate my role, but really late one year the department more or less said, ‘By the way, this year we’ll take 120 percent of your
profits as a dividend.’ Then another year, when we had made generous provisions for a dividend, they said, ‘Well, it’s an election year next year so you keep all of that.’ So one year we were absolutely skint and couldn’t afford to finance some of our capital investments and the next year we looked like a lazy business because we had these huge profits! I think OTC played quite a role in persuading policy makers of the need for privatisation.

TJA: Where do you sit on that privatisation issue now?

Asher: Governments are hopeless owners of utilities!

TJA: Did the OTC experience stimulate your interest in the telecoms sector?

Asher: Yes, at the time I thought the absolute excitement of that was threefold: there was a huge economic dimension because telecommunications was rapidly becoming a very significant part of the economy; I was fascinated with developments in the technology; and there was a social benefit, the empowerment that telecommunications promised even way back then because it was about connecting people. I had grown up in a house that didn’t have a telephone until more or less the time I left home. Now in an era where penetration is around 150 percent if you add fixed and mobile services, I can see telecommunications as a huge way of liberating people.

TJA: Your next step was as a commissioner at the TPC, which became the Australian Communications and Consumer Commission or ACCC. Was that a culture change?

Asher: When I first went there the chairman was Bob McComas who had been a very conservative barrister and went on to become chairman of British American Tobacco in Australia. It was a very conservative commission and it was said at the time that TPC stood for ‘Timid, Pissweak, and Cowardly’ because it had an almost zero litigation profile. But shortly after I joined, Bob Baxt was appointed chairman and we were able to oversee the Commission becoming a vastly more relevant part of the Australian scene. In that period from ‘88 onward, when the microeconomic reform agenda was in full swing, it was great to see competition law and practice and consumer law become just huge at the Federal level.

TJA: While you were ACCC deputy chairman you took on Telstra and its network costs, which made me wonder how some Telstra executives view your recent ACCAN appointment?

Asher: Well, it was a very hostile time when I was there because I had at least a dozen of the arbitrations all of which, of course, were about access seekers trying to get into the Telstra network. As deputy chairman, I was responsible for all the enforcement work and Telstra was our biggest customer, more or less. I think at one time we had five investigations running. And that period was when the ACCC had formal jurisdiction and covered the 1997 changes and the new access arrangements – Part 3A of the Act and XI B and XI C. Before that it was AUSTEL, and the TPC didn’t have any real jurisdiction except in consumer protection terms. I remember our biggest case against Telstra there was to spring them in charging people rent for household equipment that Telstra no longer owned! We made them give back several hundred million dollars worth
of assets to consumers. And going back to that CHOICE case I mentioned, there were also a couple of misleading and deceptive advertising cases where they had to publish a full-page corrective advertisement apologising to the public. Tragically, things have now gone back to just the way they were 20 years ago and I’m sad to say that regulators seem indifferent again to misleading and deceptive conduct.

TJA: Are you pleased to see the new consumer laws such as the one on unfair contracts that the government is beginning to introduce?

Asher: No, I’m not pleased at all. I think they’re hopeless because…

TJA: Briefly if possible given not all our readers, myself included, are lawyers!

Asher: Here’s the problem. The Australian consumer law, and that’s what is being developed, was intended to implement a Productivity Commission report. I came back to Australia to give evidence to that review when I was in Britain because I was so concerned that the Productivity Commission wouldn’t get it right. But they came up with a reasonably good report recommending that unfair contract terms laws be introduced, and that best practice is national consumer laws. Sadly, what we’ve now got instead is a very limp agreement with all of the States, which is going to do little more than try and perfect consumer laws that would suit for the ‘1970’s. We are now at least a decade behind international best practice in consumer laws. It’s pathetic. And by the way, I was the chair of the OECD Consumer Policy Committee for five years and played a role in the European Consumer Directives on unfair commercial practices, so I have some knowledge on this.

TJA: Why was your ACCC term not extended in 2000? Was someone gunning for you?

Asher: Oh, it was a dispute with the Treasurer, Peter Costello.

TJA: At the time you were quoted in the media as saying you had been ‘expelled’ from Australia and that you were ‘a political refugee’, which said quite a lot about your excellent skills as a spinner!

Asher: [Laughter]. Well, it was the end of my term and I’d been there for 13 years so, in truth, I had been there about as long as I wanted to be. There was a change of government, and the new government clearly wasn’t interested in the reform agenda. One of my key roles at the ACCC was as the Energy commissioner overseeing the implementation of the national energy market and the reform of gas markets and those sorts of things. The new government had no interest in that at all, and so everything went dead. In policy terms, Australia shut up shop in 1996 for consumer protection, competition, energy and telecoms.

TJA: Well, the government privatised Telstra!
Asher: That’s right, but in policy terms really nothing happened for ten years. The action was in Europe.

TJA: So you took off for England where you worked for Consumers International, the Consumers’ Association Which?, and then Energywatch.

Asher: Yes, and at the same time I was a board member of the OFT [Office of Fair Trading] which is the UK equivalent of the ACCC.

TJA: Was that seat on the OFT board offered because you held the Energywatch position or was it the other way round?

Asher: The other way round. I was appointed to the OFT board but the then Secretary of State for Trade and Industry, Patricia Hewitt who is an Australian, said I couldn’t be appointed to the board while I worked at Which?. Since the OFT had just been established with vast new powers I was so interested to join the board that I agreed to leave Which? to take the OFT appointment and I got this job at Energywatch.

TJA: Have you retained your interest in energy markets since Energywatch was folded into Consumer Focus in 2008 and you returned to Australia?

Asher: Yes. In fact, even before I left the UK I joined a group based at the Australian National University called FEMAG, the Foundation for Effective Markets and Governance. I’ve got a project to try to bring to Australia much of the learning from UK energy markets and I’ve prepared about 12-15 papers on UK retail markets, emissions trading and so on that have gone to consumer groups who are advocates in the Australian energy market.

TJA: Didn’t Allan Fels suggest at one stage that there should be an energy body similar to Energywatch here?

Asher: Yes, that should happen but the regulation of energy markets here has, up until now, been a state matter even though the firms that are trading are now national and international and the markets are being regulated nationally and, to an extent, internationally. We are very slow to move to a national form of regulation but that’s happening. And I don’t believe state ownership of energy assets is in the public interest because, like OTC and Telstra, they are using their utilities as a hidden form of taxation.

TJA: Turning to your new position at ACCAN where your focus is on communications markets…

Asher: Well, my main job is to enhance consumer welfare and I work at ACCAN, but there is nothing different about retail markets in communications from retail markets in power and what you might call essential services. In Australia, we’ve adopted the notion of competitive retail markets as a way of enhancing consumer welfare and getting the most effective investment. Whether you like that or not, that’s the dominant model around the world, and I’ve been
working with that, and looking to make it work. But if you have that model, then you must have vigorous and effective competition in fair and informed markets, and we don’t have that here. So my focus is to try to empower consumers so they can drive the market in an effective way and to do that you must have better information, better competitive structures, responsive regulation and, most importantly, you must realise that markets don’t work generally for disadvantaged people, and those living in remote and rural areas. You’ve got to have interventions to fix those problems.

TJA: You’ve been busy in this position at ACCAN making submissions, giving evidence to Senate committees, and using a range of media for about nine months now. What do you see as ACCAN’s major success and major failure at this stage?

Asher: I think the earliest and quite significant success was after Telstra introduced the $2.20 fee for people paying by cash or at post offices. We saw that as an outrage because it was so clearly targeted at people who were least able to afford it. That offended our sense of morality apart from being just silly business practice. We orchestrated a campaign among ordinary consumers, politicians and the media that forced them to withdraw that, and to his credit, the new chief executive, David Thodey, did just that.

TJA: Have you met with Thodey and talked with him about that incident?

Asher: You bet, and he conceded it was wrong and wanted to put it right. I am absolutely convinced that he wants Telstra to provide excellent consumer service. We now have an ongoing arrangement to share with him what happened to convert the energy market in the UK because that market changed profoundly over the five years of Energywatch, though not just because of it, of course.

TJA: Does that sharing of experience involve meeting with him quite often?

Asher: I don’t know about ‘quite often’, but I have had one extensive meeting so far, and we’re planning another when I give him some information.

TJA: What has been ACCAN’s major failure so far?

Asher: The big failure is that we haven’t succeeded in getting the government to extend the Do Not Call Register to make it permanent. It’s a big issue. About 4.2 million Australians have registered, and those registrations start to expire from May 1. We managed to get a Senate committee to recommend that the registration be extended, but couldn’t get that through parliament. So that’s a failure. We will win eventually, but it might cost millions of dollars first in a big unnecessary advertising campaign by ACMA [Australian Communications and Media Authority], and it will upset many consumers for a while until parliament can get its act together.

TJA: What about the troublesome premium mobile services, where I think ACCAN has argued for default barring?
Asher: That’s right, it’s a partial success. There are some reactionary companies who really want to be left alone, and they’re not going to be because they’re providing poor levels of customer service at very high prices. Australians are poorly served by communications providers because they’ve been given so much latitude in the past and we’ve had unresponsive regulation. But that’s over. The time is up for telcos!

TJA: I wonder whether you are actually losing friends every time you make these declarations!

Asher: Well, if the price of retaining friends is to accept poor treatment of consumers, it is too high! Our friends are consumers and the media, we will achieve our goals. And increasingly in the industry there are players who want actually to have a better customer service record.

TJA: Moving to the government’s planned National Broadband Network (NBN), can we talk about ACCAN’s ‘guiding principles or ‘wish list’ of future consumer protections with the NBN. For instance, the obligation for NBN to supply services to all premises.

Asher: The point we’re wanting to make there and, by the way, I don’t consider this as a discussion about the NBN, I consider it to be a discussion about digital society. The NBN is a major means for achieving that but it’s not the only one and that’s why the community service obligation needs to be reframed for this digital era. Currently that obligation falls on Telstra and we’re saying you cannot let that go until we’ve thought through what the dimensions of it are in this new dispensation.

TJA: Another ACCAN principle is for consumer representation on the NBN board and for a consumer advisory group. Has there been any response to that?

Asher: We were critical in our evidence to the Senate committee last week about the extent to which the NBN has been engaging with consumers, and in the evidence straight after ours Mike Quigley [NBN chief executive] undertook to rectify that. We’ve been inviting him to meet with our standing advisory committee on consumer issues.

TJA: I see that ACCAN is also seeking a regulatory instrument to ensure clear wholesale and retail responsibilities in resolving consumer complaints. Are you saying that the TIO [Telecommunications Industry Ombudsman] may not be adequate?

Asher: Oh, absolutely. The TIO is now seriously out of date. Its jurisdiction is too limited and it’s stuck in the old model of telecommunications and hasn’t embraced the broader communications issue. In the future, consumers will have an NBN panel on their wall with maybe eight or ten holes from which a whole range of different services is going to come, some of which are going to be covered by the TIO and some aren’t. Consumers won’t know where to go, and who knows whether that panel is going to be inside or outside the house?

TJA: Isn’t the TIO a private company?
Asher: That doesn’t matter. It is way behind the times in its structure and its mandate. It’s now the only ombudsman left with this old bimameral system and an industry-dominated board. If it had a constitution similar even to the Energy ombudsman where the decisions are made by a unitary body and consumers have the majority, or at least equal numbers, and an independent chair, that issue would disappear. The TIO is still part of the old school which is dominated by the supply side, and even though it has a council with good representatives, it’s simply behind the times. There are other vestiges of the ‘90s that are in the way. The Communications Alliance, for instance, which in the early days as ACIF [Australian Communications Industry Forum] played quite a valuable role in the development of codes and was a rather good tripartite body, no longer has that character and has no legitimacy whatsoever.

TJA: Will ACCAN make any representations to the ACCC on NBN’s wholesale pricing and retail pricing?

Asher: Sure. It depends on how things go but what we’re saying is that for a start it’s a reasonable proposition that government get a return on taxpayer investment if we ever expect the investment to be made in a way that is going to be sustainable. But there’s also an important principle about access and affordability so there are tensions there. What we say is that this universal access principle needs to come into play and that’s going to involve, as it currently does, some measure of cross subsidy to support that. The current universal service obligation is not really adequate, and these measures need to be built into the model, not bolted on.

TJA: In your policy interventions would ACCAN go as far as to recommend there be unmetered and uncapped retail services given their impact on affordability?

Asher: I would say that we do need a thorough rethink of the consumer protection regime. It’s got to work. No matter how efficient and extensive it is, there’s no point in having a wholesale network if policy makers fail to realise that it’s consumers at the end who care about deception and access and things like that.

TJA: Which of the various policy and regulatory agencies do you need to capture for this ‘thorough rethink’?

Asher: Well, we have to start undoing the errors of 1997 and the biggest one was that we didn’t have a competitive marketplace, and we still don’t. We would agree with other commentators who want to get rid of the retail role for the NBNCo or else we’ll end up getting a reconstruction of the worst of the ‘90s.

TJA: Couldn’t the addition in the legislation of a retail role for the NBN just be a strategy in the negotiations between Telstra, NBN and the Minister?

Asher: Yes, I guess we would hope that’s the case. But one of the points we have made in our submissions is to take consumer protection measures seriously and to build them in.
TJA: And is that happening?

Asher: It needs to happen. We think some amendments proposed to the Telstra divestiture legislation by the Greens and others, and which the government, I think, has agreed to, would go much closer to doing that, but we support the general thrust of that Telstra legislation. We also think that Australian consumer law and a set of national principles are important.

TJA: Finally, how would you describe your relationship with the Communications Minister?

Asher: It would be naive to say the Minister is irrelevant for us, but he has said that he was looking for what I think he called ‘a feisty friend’...

TJA: ... and he has got that!
Asher: Well, we’ve criticised the government for its approach to Internet filtering, for its clear failure to extend the Do Not Call register, and we’ve also been campaigning with minority parties for significant changes to government legislation. We’ve been very open about that, and we will continue to be.
OBITUARY: ERNEST BULTE, TSA LIFE MEMBER

Blair Feenaghty

Ern Bulte died on 6th February 2010 at age 100 years and 5 months. He joined the PMG’s Department in 1927 as a Cadet Engineer and retired from Telecom Australia in 1974 after 47 years service. At the time of his retirement he was serving as the Assistant Director (Engineering) Victoria.

He commenced as a young engineer in Victoria but early in WW II he was seconded to the Headquarters Telephone Equipment Section as part of a special team to plan and organise Australian wartime communications. This was designated a ‘protected occupation’ and he was not able to volunteer for war service. He was however given some basic defence training and issued with a rifle.

He stayed in the Telephone Equipment area for some 20 years before moving back to the Victorian administration as Supervising Engineer Metro Service. He later became Superintending Engineer Metro Branch and then Country Branch.

Ern Bulte

Ern played a number of significant roles in the Telecommunication Society of Australia and was made a Life Member in 1965. He was President of the former Postal Electrical Society in
1958/59, chairman of the Victorian Division of the Telecommunication Society in 1961/62 and
Editor of the *Telecommunications Journal of Australia* in 1956/59. When he transferred back
to Victoria in 1959 he became a sub-Editor and continued in that position until he retired in
1974.

Ern was a speaker (as ex–chairman) at the 1974 Centenary celebration of the Telecommunication Society of Australia. He was introduced by Arthur Morton, Chairman of the Victorian Division. The organisation had started out as the Electrical Telegraph Society in Melbourne, 100 years earlier.

During his career in the PMG and the TSA, Ern worked with many notable personalities (“there seemed to be plenty of them in those days”). Some rose to fame and others remained notable. Among these colleagues emerged a select few who shone above the rest and were destined for greater things. A few of these that Ern mentioned were Evan Sawkins, Bill Pollock, Frank O’Grady, Mel Ward and Bob McKinnon.

Ern particularly liked to quote some of the sayings and antics of his colleagues. One was the motto of an engineer by the name of Archie McGregor, who at the time was pursuing the laudable aim of undergrounding as many aerial wires as possible for aesthetic and protective reasons. Archie would move around the office on a regular basis saying “no poles, no poles”. This policy did make an impression in earlier years, but of course was totally demolished when Optus was permitted to string cable on power poles.

In his time in the wartime communication position Ern was located in an old building in
Melbourne named “Lumeah”. His Supervising Engineer was a very capable engineer fondly referred to as Arthur (“I know that”) Wilson. Now the old building was freezing in winter and only had small grate fireplaces for heating. A limited supply of briquettes was provided and Arthur Wilson had the job of rationing these to a bunch of clever frisky young engineers who of course saw their sole aim in life as siphoning off as many as possible for themselves.

Ern used to tell the tale also of the day he yielded to the temptation to visit the MCG for an “inspection” on a day that Bradman was playing in the team against England. To their mutual surprise and embarrassment, he spotted his Superintending Engineer (unnamed but known) also making an inspection! Ern was a keen cricketer, being a star player for the Bentleigh ANA premiership team in 1937/38.

Ern’s other interests were tennis (A grade) and music (violin). He was a member of the Melbourne Symphony Orchestra for two years when he moved from his home town of Ararat to study for his science degree at Melbourne University. The rehearsals became too much in the finish and he resigned to focus on his degree.

Ern is survived by two children, Ian and Merlyn, who both pursued careers in the PMG with his encouragement.

The Telecommunication Society of Australia/ACS Telecommunications Special Interest Group would like to express its great appreciation of the life and work of Ern Bulte, and to offer our condolences to the members of his family.
IPTV IN AUSTRALIA
AN ASSESSMENT OF PROSPECTS AND CONSTRAINTS

Bob Peters, Global Media Analysis

The challenge for aspiring providers of IPTV services is the current high cost of quality video content and high speed and high capacity broadband access. If local consumers are required to pay directly for all or most of IPTV’s content and delivery costs, then the take-up and utilisation of such services is likely to be slower and more limited than many have predicted. For there to be more rapid and widespread take-up and usage of services, innovative business models will need to be developed so that such content and distribution costs can be subsidised by, or co-shared with, other parties.

INTRODUCTION

Expectations in many quarters are growing that significant numbers of Australian households will soon be receiving limitless quantities of Internet delivered, high quality television-like video content on their domestic television sets for little or no cost and that in the very near future this delivery platform will become a significant rival to the established free-to-air (FTA) and subscription (STV) television delivery platforms.

Until now, only a limited number of Australian homes in selective areas around the country have had access to a service which offered even just some of the above-mentioned features. However, many believe that this is will soon change for the following reasons:

• First, that the ever-increasing penetration of high speed and high bandwidth domestic broadband connections will continue;
• Second, and most contentiously, that there will be much faster, much higher capacity and much cheaper broadband access available to every, or most, Australian households after the roll-out of the National Broadband Network (NBN), which many expect to be available in the very near future; and
• Third, that there will be rapid consumer uptake of a number of new services and devices which will facilitate the delivery of Internet Protocol Television (IPTV) and other Internet video content delivery services directly on to domestic television screens.

Even the Federal Government appears to believe that the rapid and widespread uptake of such new services is imminent, with the Minister of Broadband Communications and the Digital Economy citing the impending arrival of such services as a major reason for the Government’s recent decision to lower the licence fees payable by commercial FTA television broadcasters for their use of broadcasting spectrum.

While the increasing availability of such enabling services and devices is clearly evident, there is a divergence of opinion as to just what the rates of take-up and utilisation will be for such services. Some key determinants of such take-up and utilisation rates are likely to be:

• The cost of such services and devices;
• The nature and quality of the content which they will offer;
• The future pricing and data quotas of domestic broadband access plans; and
• The competitive responses adopted by the traditional providers of similar video content, especially the FTA television broadcasters, the subscription television service providers and the DVD rental operators.

Of course, many Australians have for some time been accessing video content via the Internet, however much of that content has been user-generated, short form in length and/or free-of-charge and most has been delivered to, and viewed on, computers and other web-connected reception devices, rather than on conventional television sets.

The next step is for high quality, professionally-produced long form film and television content to be delivered directly from the Internet to domestic television sets in a simple, quick and cost-effective manner which will challenge the established and time-tested business models of the local free-to air and subscription television providers.

This article considers some of the key issues relating to the provision of IPTV and Internet video services in Australia at the present time.

A major source of reference for this article was a publication released by the Australian Communications and Media Authority (ACMA) in April 2008 entitled IPTV and Internet video services which is recommended to anyone seeking more detailed information on this subject.

**IPTV SERVICES**

There are many definitions and interpretations of exactly what IPTV is. Mostly broadly, it can be described as any multimedia service delivered over a managed IP-based network. However, as the focus of this article is concerned with the online delivery of popular television-like mainstream video content to conventional television sets in residential premises, a narrower definition, which is offered by the Open IPTV Forum, is perhaps more appropriate, where IPTV:

> “… stands for Internet Protocol Television, where television service is delivered using Internet Protocol over a broadband network …It can be delivered using a variety of networks, including Managed Networks (end-to-end networks managed by an operator) and the Open Internet.” (Open IPTV Forum 2007)

This type of IPTV service is common in many overseas markets where it is sometimes also referred to as “Telco TV”. Such services are so-named because to the consumer they closely resemble traditional subscription television although they are typically delivered by a telecommunications carrier over a broadband network. According to the ACMA:

> “Such a service usually consists of a broadcast-quality television and a video-on-demand service delivered over managed and Quality of Service (QoS)-enabled IP-based networks.” (ACMA 2008, 15)

In many international markets, IPTV or Telco TV services typically are established and operated by either an incumbent or new telecommunications carriers who wish to both compete in the delivery of video content against an established subscription TV operator and also to generate traffic and customer loyalty for its own broadband networks.
Like a traditional subscription television service, such IPTV services usually comprise a comprehensive suite of thematically grouped linear video channels, which are offered on a subscription basis, combined with a video-on-demand (VOD) capacity, which is priced on a pay-per-view (PPV) basis. Often such IPTV services form part of a bundled double, triple or quad play product offering by a telco to existing and/or new customers.

The ACMA describes the benefits of IPTV as follows:

“IPTV combines the quality of the broadcast services with the interactivity and user choice offered by Internet video. It provides PayTV-like quality and additional interactive services...the benefits of traditional broadcasting delivery and the Internet are both present in the provision of IPTV.” (ACMA 2008, 16)

Technical factors are what differentiate such an IPTV service from a traditional subscription television service. With IPTV, the linear channel content is IP multicast over a broadband network, while the VOD content is IP unicast over the same network which is a managed closed network which guarantees Quality of Service (QoS). Being delivered by, and connected to, a broadband network, IPTV services have a distinct advantage over traditional subscription services when it comes to the provision of interactive and individualised content.

Leading international telco-supplied IPTV services of this type include: AT&T’s U-verse and Verizon’s FiOs services in the United States; PCCW’s now TV in Hong Kong, and France Telecom’s orange, Neuf Cegetal’s neufbox TV and Iliad’s freebox services in France.

In Australia, at present, there is arguably only one international-standard subscription television–style IPTV service on offer. That service comes from Canberra-based regional telecommunications carrier TransACT Capital Communications (TransACT), which offers to its telephony customers an IPTV service, branded as TransTV. This service comprises about 50 digital television channels, plus the locally available free-to-air channels, together with a video-on-demand offering, which are distributed via TransACT’s open broadband network to the domestic television sets of its customers via a set-top box.

The TransTV service is only available to the 90,000 households in the Australian Capital Territory and adjoining areas in Southeastern New South Wales which are reported to fall within the current coverage area of TransACT’s broadband network. The company does not publicly disclose any details pertaining to the take-up or utilisation of its IPTV service.

Another second-tier telecommunications carrier, TPG Telecoms Limited (TPG), also offers what the ACMA would term a “limited content” IPTV service. That service is limited in four respects:

• First, its linear video channel offering is modest and generally non-mainstream;
• Second, it does not include a video-on-demand offering;
• Third, it is only offered to TPG’s ADSL2+ customers on a free-of-charge basis; and
• Finally, it does not, as yet, include a set-top box (STB) and therefore is only distributed to customer computers, rather than to their television sets, although the company has recently stated that it plans to provide a STB which it hopes will drive wider acceptance and uptake of its IPTV offering.
In contrast to the situation in many international markets, at present neither of Australia’s two largest telecommunications carriers, Telstra and Optus, has a subscription television-style IPTV offering. This presumably reflects Australia’s somewhat unique market structure where each of the top two telcos was instrumental in launching competing traditional subscription television services in 1995 and where each has been offering such a service to its respective customer base since that time, with each currently offering the Foxtel service as a bundled product.

Foxtel is Australia’s largest subscription television provider. It leases Telstra HFC cable capacity and Optus satellite capacity to deliver its service to customers in the five metropolitan markets and on the Gold Coast, which are markets which collectively accommodate for about two-thirds of the national population. Telstra, the nation’s incumbent and largest telco, has held a 50 per cent equity interest in Foxtel since its inception. As at 31 December 2009, 459,000 of Telstra’s customers subscribed to the Foxtel subscription TV service as part of a Telstra bundled package offering. That number represented 32% of Foxtel’s total subscriber base at that time.

Given Foxtel’s dominant market position and its steadily increasing customer base and profitability, it is doubtful that Telstra would willingly divest itself of its investment in that business. And for as long as it retains that investment, it is unlikely that Telstra would initiate or actively support a subscription television-style IPTV service which competed directly against Foxtel.

Optus, the second largest local telco, initially established its own HFC cable-delivered subscription television service in 1995. But when it finalised a content sharing agreement with Foxtel in 2002, Optus terminated its own loss-making subscription television service in favour of reselling the Foxtel service.

However, the marketing by Optus of what is currently branded as Optus TV Featuring Foxtel Digital has been rather half-hearted in recent times and this has resulted in a steadily diminishing percentage of the Optus customer base subscribing to that service. Thus, Optus may be more willing than Telstra to consider giving support to a subscription television-style IPTV service which competed directly against Foxtel. However, Optus is unlikely to be a major initiator of, or investor in, such a service in the absence of an extremely compelling business case supporting such a venture.

In summary, given their existing arrangements with Foxtel, it is unlikely that Telstra, and perhaps also Optus, will aggressively support a directly competitive IPTV service, at least in the near future. This means that the success of any nation-wide subscription television-like IPTV service in the immediate future is likely to be dependent upon the active and perhaps coordinated support of a number of Australia’s smaller telecommunications carriers and Internet service providers (ISPs) and/or a content aggregator.

In mid-April 2010, after much market speculation, an aspiring local content aggregator branded as Fetch TV announced the introduction of a subscription television-style IPTV service. That service will offer all of the local FTA digital television channels, a selection of subscription television channels, new release movies in high definition on a pay-per-view basis, interactive and social networking applications and a personal video recording device and will be priced at below $30 per month. Reportedly, it is in the process of seeking to consolidate the support of a number of second-tier telecommunications carriers and ISPs for a new subscription television-style IPTV service, with iiNet having been identified as its inaugural ISP partner. It is not known
at present whether the selection of subscription television channels which it plans to offer will be comprehensive enough to enable it to compete directly with the established subscription television services offered by Foxtel in Australia’s metropolitan markets and Austar in regional areas, which currently offer about 100 unique, high-quality television channels packaged in various configurations.

Its inaugural partner, iiNet, the nation’s third largest ISP, has stated that trialling of the new service is expected to occur over the next few months.

In seeking to compete with the local FTA and subscription television platforms for the delivery of mainstream television-like content, aspiring operators of subscription TV-style IPTV services will be looking to capture a share of a market which has the following key characteristics:

| Number of National Households (HH) | 8 million |
| FTA TV HH Penetration Rate at January 2010 | 100% |
| STV HH Penetration Rate at January 2010 | 29.3% |
| Foxtel & Austar Subscribers as at 31 December 2009 | 2,364 million |
| FTA TV Advertising Revenue in Year End June 2009 | $3,504 million |
| STV Advertising Revenue in Year End June 2009 | $317 million |
| STV Other Revenue in Year End June 2009 | $2,100 million |
| Foxtel ARPU at End December 2009 | >$90 per month |
| Austar ARPU in Quarter Ending December 2009 | $82.90 per month |

Constraints which may inhibit the establishment or development of subscription television-style IPTV services, as well as other Internet video services in Australia are considered later in this article.

INTERNET VIDEO SERVICES

Internet video services, for purposes of this article, are defined as professionally produced long-form video content of a quality similar to that currently offered by free-to-air television broadcasters and subscription television providers, which, in the words of the ACMA, is delivered, usually on an on-demand basis as an IP uni-cast, over the public Internet without any network management or QoS provisions to a computer browser or media player rather than to a set-top box linked to a television set. (ACMA 2008, 17)

In Australia, at present, there are no free online video services such as the popular hulu branded service in the United States which are operated by a content aggregator and which stream free high quality film and television content sourced from major production studios and are supported by an advertising funded business model. However, a number of potential operators, including hulu itself, reportedly are currently considering the establishment of such a service locally.

Two of the more common types of currently available local Internet video services which deliver television-like content are the catch-up and promotional preview television services which are offered by the FTA television broadcasters and the various websites which sell film and television content on a download basis.
A substantial amount of usually shorter form video content is also available from a variety of portal, search engine and social networking sites. However, that type of content is not here considered to be directly competitive with the content of FTA and subscription television, and therefore is given no further consideration in this article.

CATCH-UP TV SERVICES

Over the past couple of years, each of the five local FTA television networks have developed or upgraded online services which offer access to sizeable amounts of video content from their home websites. Some common key features of those services are:

- Each offers free streamed video content which cannot be downloaded or otherwise copied;
- Each offers a catch-up tv function which allows the viewing of full episodes of certain television programs for limited periods, usually of up to 28 days, immediately after such programs having been broadcast on a FTA channel;
- Each offers promotional video previews of certain forthcoming programs and/or select highlights from certain other programming which has already been broadcast on FTA television;
- Most offer “extra features-style” video content, such as interviews with cast and crew members of certain television programs;
- Each service, apart from that of the Australian Broadcasting Corporation (ABC), carries video and banner advertising;
- Each requires a reasonably high speed broadband connection (eg ADSL+ or higher) to function on a reasonable basis; and
- Only the ABC appears to have arrangements with some local ISPs for the delivery of all ABC video content to their broadband customers on an unmetered basis.

Generally, the provision of such Internet video content is regarded by the FTA television networks as being complementary to, rather than competitive with, their core broadcast television services, because such content is considered to generate greater viewer interest in, and involvement with, the programming and also because it is only available for certain programs, for a limited period of time. Moreover, given that such content at present is usually viewed over a computer and requires the usage of a fair amount of relatively expensive broadband capacity, it is not considered to divert too much of the typical television viewer’s time away from conventional FTA television. Brief profiles of the catch-up and preview video services currently on offer from the five local FTA television networks are considered below.

Arguably, the ABC’s iView service, which was launched in July 2008, is the most comprehensive of the local catch-up TV services currently available. The service is described as being a free Internet broadcasting service which offers full-screen video, streamed on-demand at a high resolution designed for people with a high speed broadband connection (1.1 Mbps and above). The video programs on offer are full-length and most are streamed for 14 days after their broadcast on one the ABC’s three FTA television channels.

The iView website lists 9 local ISPs who allow their broadband customers to download iView content on an unmetered basis. Those ISP’s are: AAR Net, Adam Internet, Apex Internet (TransACT customers only), Cinenet, Comcen/SPIN, iiNet, Internode, iPrimus and Westnet. The
ABC also notes that it is in on-going negotiations with other unspecified ISPs for them to offer the iView service to their broadband customers on an unmetered basis in the future. The iView program menu advises users of the duration and bandwidth utilisation of each program on offer.

The Special Broadcasting Corporation (SBS) offers what it brands as the SBS Video Player service from which three types content can be viewed free-of-charge. The three types of television content are: Full Episodes, Web Extras, and Sneak Peek TV. In contrast to the ABC’s iView service, the SBS Video Player carries advertising in the form of banner ads and pre-show video advertisements. The SBS does not report having any existing arrangements with ISP’s for the unmetered delivery to their broadband customers of streamed SBS video content.

The Seven Network has the PLUS7 catch-up TV service which is available on the Yahoo7TV website. It offers free video streaming of full-length episodes of television programs which have appeared on the Seven and 7TWO channels. The programs are available for streaming immediately after their FTA screening and they are available for between 7 and 28 days after listing. There is also a Sneak Peaks branded preview service. The site is funded by video and online banner advertising.

The Nine Network’s video content offering comes via the ninemsn website and its catch-up program offering does not appear to have a distinct brand. Instead, it is accessed via a CLIPS heading on the Nine Network section of the site and the content on offer at present appears to be more orientated to the provision of short clips rather full episodes of the network’s FTA programs. However, the Nine Network reportedly is in the process of significantly expanding the current content offering of its catch-up service.

The Ten Network’s video content offering is accessed through the Video heading on its website. It includes a catch-up TV service where full episodes of many of the network’s locally produced FTA programs are on offer. Considerable extra feature–style video content is also available for a wider range of the network’s FTA programming, including its overseas sourced content. The site carries video and online banner advertising.

**DOWNLOADS OF FILM AND TELEVISION CONTENT IN AUSTRALIA**

High quality film and television video content is also available for purchase as downloads from a growing number of sources. Two high profile providers of such services in the local market are Apple Inc and Telstra’s BigPond.

These two online content providers are of particular interest because each also has recently introduced STB-type devices, branded as Apple TV and T-Box respectively, which have Internet connectivity and personal video recorder-style functionality thereby enabling the transfer of downloaded video content from a Internet modem to a television set while by-passing the home computer.

A considerable amount of film and television content in either DVD or download formats can be rented or purchased online from the BigPond website. The standard download rental prices currently are: $1.95 for an episode of a TV show, $3.95 for a classic movie and $5.95 for a new release movie. Downloading of such content is done on an unmetered basis for BigPond’s broadband Cable and ADSL customers. The BigPond site provides the estimated size of each download and the estimated time to download.
Downloads from Apple’s iTunes Store are similarly priced with short films priced at $2.99, library title movies at $3.99 in standard definition (SD) and $4.99 in high definition (HD) and new release films at $5.99 in SD and $6.99 in HD.

Access to, and usage of, Internet video content such as catch-up TV and downloaded films and television shows should also be greatly facilitated as a new generation of television sets with built-in Internet connectivity come on to the local market. Such television sets should be able to easily access video content sourced from the Internet via a wireless connection linking the set to a household’s Internet modem or wireless router.

In late February 2010 Sony launched 26 new models of its BRAVIA LCD TV set range, of which 21 models will be Internet-enabled. Concurrently, Sony also announced the launch of what was branded as BRAVIA Internet Video, a free service offering 15 channels of Internet-delivered video content, including catch-up TV and made-for-the-Internet content. Other major set manufacturers, including Samsung, reportedly are planning to introduce similar products in the near future.

While hardware products like Apple TV, the T-Box and Internet-connected TV sets like the Sony BRAVIA range will all contribute to making it much easier for consumers to view Internet-sourced video content on their televisions, none of these products addresses the principal obstacle to the wide-spread usage of television-like video content delivered via the open Internet in Australia. That obstacle is the high cost of, and relatively low capacity limits placed on, many local household broadband access plans, and this is an issue considered below.

### CONSTRAINTS ON THE DEVELOPMENT OF LOCAL IPTV AND INTERNET VIDEO SERVICES

In its April 2008 report on IPTV and Internet video services, the ACMA observed that the market in Australia for such services was less developed than in many other overseas markets. Arguably, that assessment remains relatively unchanged today.

The ACMA’s research suggested that supply side factors were the major barriers to the development of such services locally, with three of the main factors being:

- The prevalence of capped broadband plans;
- The substantial capital and other up-front costs required to establish a subscription TV-like IPTV service; and
- The lack of content acquisition expertise on the part of aspiring IPTV service providers.

### CAPPED BROADBAND PLANS

The structure of the Australian broadband market with the prevalence of capped plans and the high price of downloads was, according to the ACMA, the prime barrier to the development of local IPTV and Internet video services. This is a significant constraint because the downloading of video content is very bandwidth intensive and the price of high speed and high capacity broadband access locally is, at present, relatively expensive and likely to continue to be so, at least in the short to medium term.

Video content has a ravenous appetite for bandwidth. For example, according to the ABC, a 30-minute episode of its popular At the Movies program involves 125 MB of data, while a
one-hour episode of Dr Who involves 300 MB. Similarly, according to the Seven Network, in the commercial FTA television sector, a 22 minute TV show (that is a 30 minute FTA show without its advertisements and promotional material) will consume between 45 and 160 MB of data, while a 42 minute show (ie a one hour FTA show stripped of ads and promos) will consume between 90 and 370 MB.

Based on these data rates, a somewhat simplistic calculation indicates that a typical Australian household would consume about 26 GB of data each month of streamed video content if it chose to consume all of its average 180 minutes per day of FTA prime time evening television viewing using one or more of the catch-up TV services offered by the five local FTA networks (at an assumed data consumption rate of 300 MB per hour). Alternatively, as the download of a typical feature length film consumes about 1 GB of data, the downloading of just one movie per night, on a metered basis, would lead to the consumption of 30 GB of data per month for that same household.

Such online consumption of video content would require a household to be subscribed to a broadband plan which would offer a minimum of about 30 GB of peak time usage per month and a typical plan which supplied this amount of capacity would probably cost the household between $30 and $40 per month simply to satisfy its demand for television-like entertainment content. And such a data requirement would be in addition to that household's requirements for all other types of Internet–delivered content and services, which would further increase its monthly data demands and therefore also its monthly broadband access charge.

For an average Australian household, an additional $30 to $40 per month is a not insignificant recurring expense and it is one which easily can be avoided simply by limiting one’s delivery platform for entertainment content to terrestrially-delivered FTA digital television with its expanding multi-channel offerings, perhaps supplemented by the occasion visit to the local video shop.

Many commentators suggest that this impediment soon will be removed following the commencement of the National Broadband Network (NBN), however such an expectation may be premature for a number of reasons, including the following:

- The final structure and cost of the NBN has yet to be finalised; and
- Given its estimated 8 year roll-out schedule, it is likely to be many years into the future before most households have access to NBN-delivered broadband; and most importantly
- Even when available, NBN-delivered broadband access may not be priced substantially below the current pricing levels for existing residential broadband access plans, because any wholesale access price to the NBN will need to take account of the sizeable amount of capital expenditure which will have been made to establish the network on which a reasonable return on investment presumably will need to be earned through wholesale access charges.

In view of the above, until such time as there is a substantial increase in broadband plan data quotes and a significant reduction in residential broadband pricing, the development of local streamed or downloaded Internet video services is likely to continue to be retarded.

It is worth noting that these pricing and data limit concerns need not adversely impact on the uptake of subscription TV-style IPTV services because such services are typically delivered
over a separate and discreet portion of a broadband network and the cost of accessing that part of a network would be factored in to the subscription price of such a service.

**SIGNIFICANT UPFRONT COSTS**

Significant capital expenditure and other upfront costs are required to establish a viable subscription TV-like IPTV service. The major upfront costs associated with the establishment of such a venture were cited by the ACMA as including:

- Network build, upgrade or rebuild costs;
- The provision and maintenance of consumer premise equipment; and
- The cost of content acquisition and licensing.

In relation to such up-front costs, it is important to distinguish between a subscription TV-like IPTV service provider, such as TransTV, for whom the above-mentioned costs are relevant, and an Internet content service provider, like Sony’s BRAVIA Internet Video service, for whom all or most of the above-mentioned costs are unlikely to be applicable.

While a subscription TV-like IPTV service provider acts as both a “content provider” and a “content deliverer”, an Internet content service provider is usually just a “content facilitator”. As a content facilitator, it will simply direct a consumer to free video content available on the Internet and it may often also provide that consumer with a device which enables the viewing of that content on a consumer’s TV set. A content facilitator will not pay for the cost of having the content delivered to consumers over the Internet. Such an Internet delivery cost is to be paid for by the consumers themselves.

**NETWORK COSTS**

It is difficult to be specific about the likely magnitude of network-related capital expenditure costs without first knowing the existing structure and characteristics of an aspiring IPTV service provider’s network and also the profile of the targeted market for its service. However, it is not unreasonable to expect that such costs are likely to be substantial.

**CPE COSTS**

The need to provide and maintain consumer premise equipment (CPE), can also lead to substantial capital and operating cost outlays for an aspiring provider of a subscription TV-style IPTV service. Assuming that $250 of CPE is required to connect each subscriber, an aspiring IPTV service provider targeting 100,000 subscribers would need to spend $25 million on the acquisition of such equipment.

**CONTENT PRICING AND ACQUISITION**

Content is critical to the success of any subscription TV-like service and its acquisition and licensing could be the most substantial up-front and on-going cost item for any aspirant IPTV service provider wishing to offer mainstream sport and entertainment content of similar quality to that offered by the local subscription television operators. As high quality and compelling content is not cheap, any aspiring IPTV service provider seeking to acquire such programming should plan on this being a very substantial cost item.
By way of illustration, Austar's programming costs for calendar year 2009 were $263 million, which represented 57% of its total operating costs and which were also equivalent to 41% of its total subscription revenues. This meant that Austar paid about $30 per month per subscriber just for programming last year.

The ACMA noted that content acquisition was a specialised function and one which smaller local telcos and ISPs were unlikely to possess. However, such a deficiency could be overcome by that function being sub-contracted out to an experienced content aggregator.

**SUBSCRIPTION TELEVISION SERVICE PRICING METRICS**

If they are required spend substantial amounts to acquire quality content, then the aspirant providers of subscription TV-like IPTV services will need to charge monthly fees to their subscribers which allow for the recovery of such costs.

TransTV appears to charge its customers between $27 and $35 per month for its existing offering of about 50 video channels. This compares with the $42 per month fee which Foxtel and Austar currently charge customers to their entry-level offering, which includes access to 35 unique video channels.²

**LIKELY RESPONSES OF INCUMBENT SERVICE PROVIDERS**

An extremely important factor which is likely to impact on the take-up and ultimate success of any new subscription TV-style IPTV services will be the competitive responses of the incumbent providers of similar services, particularly the two major subscription TV providers.

Foxtel and Austar can be expected to vigorously protect their existing customer base, which comprises about 30% of all Australian households. They are also likely to aggressively contest the larger potential market of the 70% of Australian households who to-date have chosen not to sign up to a subscription television service and appear to consider fees of about $40 per month too high a price to pay for additional television-like content.

These two large, experienced and increasingly profitable STV operators are likely to continue to expand their traditional service offerings to include new services built upon interactive capabilities of an IPTV network, which would be accessed through their next generation of set-top boxes.

This does not mean that new IPTV and other Internet video service providers will not succeed. However it does suggest that it probably will be more difficult and take longer for most of them to establish viable and sustainable businesses than has recently been suggested by some enthusiastic media commentators.

The new IPTV and Internet video services likely to do best in the near future will probably be those which do not seek to compete directly against the established subscription television providers. Thus, it could be some time before such services come to seriously rival the established FTA and subscription television operators.

**CONCLUSION**

Television is very popular and most Australians undoubtedly would like to have greater and more flexible access to television-like content. However the majority of Australians do not appear to want to pay directly for such additional content. After all, subscription television has been
available in Australia for 15 years now but, to date, no more than 30% of all Australian house-
holds have exhibited a willingness to pay subscription fees.

So herein lies the challenge for aspiring providers of IPTV and other Internet video services. Quality video content and high speed and high capacity broadband access are both critical for the success of IPTV. However quality content is very expensive, as is access to the broadband networks over which such content is delivered in an IPTV world.

If local consumers are required to pay directly for all or most of IPTV’s content and delivery costs, then the take-up and utilisation of such services is likely to be slower and more limited than many have predicted. For there to be more rapid and widespread take-up and usage of services, innovative business models will need to be developed so that such content and distribution costs can be subsidised by, or co-shared with, other parties.

**ENDNOTES**

1 Based on information provided by Foxtel, it appears that only 106,000 Optus customers subscribed to the Foxtel service through Optus as at 31 December 2009.

2 The 35 unique video channels are in addition to any: FTA TV channels, time-shifted channels, HD versions of SD channels, access and preview channels for pay-per-view services and audio only channels which may also be provided in the entry level packages.

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NBN AND IPTV: RICH POTENTIAL

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This paper sets out to clarify the confusion surrounding what Internet Protocol Television (IPTV) is by classifying three types of IPTV – Computer Based IPTV, Partial IPTV and Full IPTV. By analysing the benefits and pitfalls of each classification a picture emerges surrounding the rich potential to develop additional services for Full IPTV when delivered over a fibre-to-the-premises (FTTP) network. Australia’s commitment to invest in a FTTP National Broadband Network (NBN) offers the prospect of Australia becoming leading innovator in this field.

SOME BACKGROUND

Currently there is confusion about what the term Internet Protocol Television (IPTV) actually means. Mike Quigley, the CEO of NBN Co, responded to this in the February 2010 edition of the Telecommunications Journal of Australia (TJA):

TJA: Was IPTV Alcatel’s term originally?
Quigley: To be honest, I can’t remember.
TJA: It seems to be defined in lots of different ways.
Quigley: Yes, that’s always the problem. Often people think about it as Internet TV and we have to keep trying to explain that it isn’t Internet TV. (Fell 2010, 14.4)

The term IPTV was coined by Precept Software in 1995 when they built an Internet video product they called IP/TV, which was an 'application that sends live or pre-recorded digital video and audio to a large number of users over any IP-based local- or wide-area network' (CISCO 2009). Due to the size of video files and the speed of the network at the time, dedicated local networks used the software; it was not available through the Internet at large.

A decade after the IP/TV software was developed two independent events began the rapidly evolving transition of video from the television screen to the computer. In April 2005 the first video was uploaded to YouTube, and a month later, in May, Apple launched the video iPod. This was just the beginning of another audiovisual revolution.

The uncertainty surrounding IPTV appears to be due to three factors; firstly, a range of terms describing similar things – like Telco TV and Internet TV – secondly, marketing campaigns that promote products as 'IPTV' that are actually not and thirdly, the transitional state of the industry that provides similar hardware that can access different technologies. The current IPTV definition as determined by the International Telecommunications Union (ITU) is:

An IPTV service (or technology) is the new convergence service (or technology) of the telecommunication and broadcasting through QoS controlled Broadband Convergence IP Network including wire and wireless for the managed, controlled and secured delivery of a considerable number of multimedia contents such as Video, Audio, data and applications processed by platform to a customer via
Television, PDA, Cellular, and Mobile TV terminal with STB module or similar device. (ITU 2009)

In order to clarify the confusion surrounding IPTV this paper sets out to differentiate three types of IPTV – ‘Computer Based IPTV’, ‘Partial IPTV’ and ‘Full IPTV’, highlighting the benefits and disadvantages of each of category.

1. COMPUTER BASED IPTV

Computer Based IPTV is, as the name implies, audiovisual content delivered via the Internet protocol and watched on a computer screen or hand-held media device. Another term often used to describe the same thing is the one Mike Quigley evoked – ‘Internet TV’. Watching videos in this form would not actually qualify as an ‘IPTV service’, according to the ITU, because the content delivery is through the (best endeavours) public Internet, not a ‘QoS controlled Broadband Convergence IP Network’. However, due to its extraordinary popularity, it is hard to ignore IP video in this form just because it is delivered through the ‘open’ Internet and not an IP controlled network.

According to [Nielsen], online video usage continued to see strong month-over-month and year-over-year growth. In fact, online video is still ballooning at a current rate of 31% per year in the US. That translates to 11.2 billion total streams in July [2009] alone. That's nearly double the population of the entire world. (Parr 2009)

The most common and well-known form of Computer Based IPTV is YouTube (http://www.youtube.com/), which is currently the third most visited web site and regularly gets over 100 million unique users a month.

YouTube still commands over 50% of all video streams online in the US – totalling 6.7 billion – and more than 76% of all unique viewers in the U.S. with 106 million. (Freidman 2009)

YouTube's invitation to 'Broadcast Yourself', and thus creating a two-way audiovisual conversation between end-users, is coming to define a generation. Previous generations had a television system that was predominantly a one-way exchange, but now end-users can be producers, consumers or, as Axel Bruns described, 'prosumers' (Bruns 2005). Videos can be easily uploaded and downloaded, which has also contributed to its global popularity. With 20 hours of content uploaded to YouTube every minute (YouTube 2010), end-users can 'create' individualised program schedules based solely on personal taste. Beyond the simplicity of YouTube's initial offering it has developed a range of different 'channels' and regular video loggers, known as vloggers, which further enables the programming of thematic or episodic content. YouTube does fall short, however, when it comes to longer form content, such as broadcast television shows or feature films.

The overwhelming success of YouTube has led a number of existing content producers and distributors, such as traditional television networks, to re-distribute their content online via their own websites through a service known as ‘catch-up’ television. This form of content viewing is

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23.2 NBN AND IPTV RE-REGULATION OF THE INTERNET
becoming more commonplace as it allows end-users the freedom and flexibility to construct a schedule of his or her favourite television programs. A number of high profile media companies have created sites for delivering content in this way. In May 2007 the web site http://www.hulu.com/ began as a way for NBC Universal, Fox Entertainment Group and ABC Inc. (Disney) to offer previously broadcast content to its Internet based audience (see Figure 1), whilst the UK's bbc.co.uk launched the iPlayer (http://www.bbc.co.uk/iplayer) in July 2007 as another distribution channel for its programs. Both of these services are only available in their respective countries and are available to locals at no direct cost.

Hulu has begun to use its platform in new and innovative ways, releasing its first direct-to-web series on February 3, 2010, bypassing traditional broadcast mechanisms. It also highlights a shift away from using the platform for the sole purpose of catch-up television and making it an integral part of the media ecology.

In Australia the first television station that provided content in this way was the national broadcaster, the ABC, which launched its iView Player in July 2008. Since then the commercial networks have joined with their web-based affiliates to offer a similar service, such as Channel Seven partnering with http://au.yahoo.com/ and Channel Nine with http://ninemsn.com.au/. This has been a successful means of distributing content once it has already been screened on television.
David Gyngell, Nine Network’s Chief Executive, said that 40% of the audience for some programs were now coming from the web (Sinclair 2009), which highlights current end-user trends of viewing televisual content delivered via IP due to the flexibility of time-shifting or place-shifting the viewing experience.

One additional classification of Computer Based IPTV is traditional broadcast television that is converted to an IP signal and sent over the Internet. Currently in Australia TPG, an innovative Internet Service Provider (ISP), is delivering a Computer Based IPTV service comprising 32 channels from all over the world. The TPG customer accesses the service via their computer only (see Figure 2), however the service is technically difficult to enable because re-configuration of the modem is often required to facilitate the decoding of the video signal. This can be a complicated task. The trial tests the QoS of Australia’s existing fibre/copper network and how it might perform in delivering an IP television service.

Despite its huge popularity, varying QoS and restricted viewing options limit the scope of Computer Based IPTV. Sometimes the best place to view certain content is still on a television set. This has been recognised by the introduction of ‘Media Centres’, computers that can use television sets for display. The following type of IPTV – Partial IPTV – has end-users watching content specifically via a television set.

**2. PARTIAL IPTV**

Partial IPTV, often referred to as Hybrid TV, connects the Internet with a traditional television signal, such as cable, satellite or radio frequency (RF), to a television set. This is done via a set-
top-box (STB) or equivalent technology. This combination enables a television set to access web based services ‘over-the-top’ (OTT) of a conventional television signal. At the 2010 IPTV World Forum held in London in March, Steve McKay, CEO of set-top-box manufacturer Entone, said

The research we’ve read indicates that somewhere between 50 and 60% of TV consumption in the US is still from broadcast TV channels, so a compelling offering may be to offer those channels over-the-air that give you your live TV or sports and news and then couple that with over-the-top services that offer a growing library and array of choice for video or other media services, like Flickr, Pandora and the like. (Reedy 2010)

Partial IPTV services, apart from accessing Internet applications, can also download videos-on-demand (VoDs), which operates like a virtual video library, and synchronises a digital video recorder (DVR) with the traditional television signal, via an electronic program guide, in order to record selected programs.

The most promoted example of Partial IPTV is TiVo, which initially took on a cult like following in the US. TiVo is a Digital Video Recorder (DVR) with built in STB connected to the Internet and a traditional television signal. By accessing a television program guide from the Internet (see Figure 3) the TiVo DVR allows the end-user to record selected television programs, storing to a hard drive for viewing another time. Furthermore, because the STB is connected to the Internet the TiVo user can access the DVR remotely from any computer connected to the network and program it to record an upcoming television show. TiVo also offers a number of additional services such as VoDs from Blockbuster On Demand, Amazon On Demand and Netflix as well as Internet access to YouTube and ‘thousands more entertainment possibilities’ (TiVo 2010).

![Figure 23.3 TiVo Program Guide](image)
Another factor driving the uptake of STBs or equivalent is the global switch from an analogue television signal to a digital signal. This has already occurred for Free-to-Air television in some countries, most notably the US, and is planned for Australia progressively to 2013. This shift means that eventually all television sets will require a digital tuner (or equivalent) to receive free-to-air television.

Digital television (DTV) appears similar to its analogue predecessor, but permits a much greater range of control of factors such as signal definition, video coding and audio coding. The technical standards for FTA DTV are based around existing analogue channels, each providing a digital multiplex (of 6 MHz, 7 MHz or 8 MHz). In Australia each of the major networks has a digital multiplex of 7 MHz that allows a number of digital channels, one of which is currently a Standard Definition simulcast of the main Analogue channel. Each has a number of additional digital channels, offering different content to the 'main' program. All these new DTV channels are delivered via the digital spectrum only, but can form Partial IPTV when connected through a STB to the Internet.

Colin Ashcroft, marketing and communications manager of STB manufacturer Amino, elaborates on the interest in Partial IPTV, at the 2010 IPTV World Forum,

> We've seen a huge amount of interest in hybrid, not just from operators, but also retailers and other people as well. There's a huge amount of interest in Europe in over-the-top in particular. The iPlayer, a BBC service, has been a phenomenal success in Europe. They are seeing a shift in the way that people are using the TVs. (Reedy 2010)

A STB manufacturer can make a more attractive offer to the end-user by incorporating additional services, such as YouTube or iPlayer.

An evolution beyond the STB is the set-back-box (SBB), which is the STB built in to the television set that also provides additional services.

> Television sets capable of directly accessing news, weather details, stock quotes and, eventually, on-demand video content from the Internet will start hitting the Australian market as early as this year. (Moses 2010)

Computer Based Video and Partial IPTV both currently function adequately on most existing ADSL networks, which makes them a cheap and attractive proposition for many telecommunications providers and end-users.

### 3. FULL IPTV

Full IPTV has all of its content delivered via the Internet protocol to a television set connected to a STB, or equivalent technology. This includes the traditional broadcast television signal, VoD and additional services. Full IPTV ensures an adequate QoS of its television service because a dedicated closed network manages the content delivery to the end-user. By using the Internet protocol to deliver the audiovisual content the end-user has additional flexibility with respect to the selection of programs, when these programs can be viewed and additional services and functionality available from the television set. Geof Heydon of Alcatel uses a similar definition but refers to it as 'True IPTV'.
True IPTV has nothing to do with the Internet and is not just VOD. It’s a real broadband experience over an IP closed network with approved quality standards. (Barr 2009).

The flexibility of choice Full IPTV provides is appealing to the end-user because it enables genre selection, time-related viewing or just a single one-off program of interest. U-Verse, owned by the US company AT&T, offers Full IPTV services delivered to the end-user via a fibre-to-the-node (FTTN) network. Despite boasting the ability to record four programs at the same time from the STB with a built in DVR and to handle full resolution high definition (HD) video, the service does not differ that much from Partial IPTV, in that some Internet services are incorporated; but it does offer an assured QoS, which gives an assured, entertainment quality result. Because AT&T owns U-Verse the end-user can access Yellow Pages on-line from the television’s remote control. It has also recently added a Facebook and Twitter widget that allows access to limited functionality of those social networking sites.

Whilst these additions may seem insignificant in isolation, they do provide a window into the future of the possibilities that exist with this added level of connectivity. Unfortunately despite the promise Full IPTV holds, it has yet to realise that potential. According to Goetzl, AT&T provides a good solid service but has not managed to win over large numbers of subscribers, and by April 2009 the company had only 1.3 million subscribers (Goetzl 2009).

Currently one of the few Australian companies that offer Full IPTV is TransACT, based in the Australian Capital Territory (ACT). TransACT began building its FTTN network in 2001 to service Canberra and the surrounding areas. TransACT has a network that supplies television, Internet services and voice over Internet protocol (VoIP) to its customers (Colley 2009). Another company that is offering a Full IPTV service is Internet service provider (ISP), Internode, which offers a Full IPTV service through its TiVo STB, offering similar additional services as TiVo’s Partial IPTV service.

Currently Full IPTV has not lived up to its potential and with many in the IPTV industry preferring to take the Partial IPTV option, as Sarah Reedy reports from the 2010 IPTV World Forum: ‘Many, especially smaller telcos, are looking at hybrid broadcast and over-the-top set-top boxes (STBs) to address consumers’ appetite for content’ (Reedy 2010). While Full IPTV might not be ready for the mass market some are using this as an opportunity to innovate with future services for Full IPTV. One example of this is the French company Free, who have begun building a FTTP network in Paris; this has resulted in offering a broader range of integrated services, such as:

- 'Mosaic', which allows the user to view 20 channels at once in a grid and then select any channel for viewing,
- Phone messages on the television that display time of call and number along with an hour of voice recoding time,
- A list of most popular shows at any given time,
- Enabling watching television via a computer, with up to four different channels being watched at once, and
- 'TV Perso', which permits access to user generated television content to be or accessed by any free subscriber (content can be uploaded live or pre-recorded). (Free 2009)
This innovation has lead to greater competition amongst the telecommunications providers in France and by 30 September 2008, the total number of ADSL subscribers in France was 16.323 million, of which 34.6% (or 5.643 million) had an ADSL TV subscription (ARCEP 2009). This highlights the additional potential of Full IPTV when delivered over a FTTP network. So, what is the future of Full IPTV in the current Australian context?

4. FULL IPTV AND THE NBN

The one thing everybody agrees on is that Internet Protocol TV (IPTV) will be the centrepiece of the proposed broadband network. (Dan Oaks 2009)

While Dan Oaks's assertion above may not actually be the 'one thing everybody agrees on' something is increasingly clear: telecommunications networks are less about transporting voice communication than they are about transferring data and media-rich content.

In the last half of 2009 Telstra recorded a total revenue decline of 2.9% (Telstra 2010). Telstra’s chief executive David Thodey clarifies this in his statement,

’In summary, our growth in mobiles and fixed broadband is not offsetting that PSTN (public switched telephone network) decline and that’s what we keep having to try to balance as we go forward’ (AAP Newswire 2010).

This problem is indicative of a key issue facing the telecommunication's industry in general – if communication networks are now about data and rich media services, what must the network be capable of delivering to satisfy the current consumer demands?

Until now it seemed that the major advantage of Full IPTV was to bundle it with voice over IP (VoIP) and data as a package of services known as 'triple play', providing financial incentives to the end-user of adopting the bundled services. However, the triple play offering – or ‘quadruple play’ if mobile services are included – is also available with Partial IPTV and does not specifically require an FTTP network. While this still presents an attractive offer to end-users, Australia has the unique opportunity to become innovators in a market that has not yet reached its full potential.

By building the proposed high bandwidth FTTP network connecting 90% of the country, Australia can begin innovating with respect to the additional OTT services and networked functionality of a fully integrated IPTV package.

An FTTP network, such as the NBN, is likely to enable greater integration of the Internet and television that could result in the production of a range of innovative applications such as a social network based on end-user viewing habits, personalised program suggestions, purchase of products appearing in programs, minute-by-minute gambling on sporting events, live chat alongside broadcast television and even highly targeted advertising. When these types of applications become a reality the additional benefits to the end-user of Full IPTV might result in greater adoption of the service.

By making the commitment it has and investing in a FTTP network, the Australian government has enabled the rich potential for innovation in relation to a future Full IPTV service. So Dan Oaks' assertion might prove to be right and IPTV could provide the 'centrepiece for the proposed broadband network.'


Cite this article as: Weinstein, Jeremy. 2010. 'NBN and IPTV: Rich potential'. Telecommunications Journal of Australia. 60 (2): pp. 23.1 to 23.9. DOI: 10.2104/tja10023.
IS IPTV AN INTERNET SERVICE UNDER AUSTRALIAN BROADCASTING AND COPYRIGHT LAW?

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This paper questions the common legal assumption that Internet protocol television (IPTV) in its typical form is necessarily a service delivered using or over the Internet. It uses two aspects of Australian law – one in broadcasting and the other in copyright – to examine whether the Internet exclusions enacted truly apply to such IPTV. The conclusion reached is that neither applies for the same reason; IPTV in the form outlined does not implicate the Internet.

INTRODUCTION

This paper is directed to two questions that can be simply-stated: under Australian broadcasting law: is Internet protocol television (IPTV) a service made available using the Internet; and under Australian copyright law does IPTV retransmission take place over the Internet? While the questions appear on their face to answer themselves itself in the affirmative – and indeed that is a common assumption – here a different answer is provided.

The first question asks whether the provision of IPTV is a ‘broadcasting service’ amenable to the licensing regime of the Broadcasting Services Act 1992 (BSA). That regime includes licence fee requirements, local content requirements, programming standards, advertising restrictions and restrictions upon the acquisition of exclusive rights to designated sporting events. The BSA permits exclusion from this regime by ministerial determination (BSA, s 6(1) ‘broadcasting service’ definition). In September 2000 one class of services was ministerially determined not to be a ‘broadcasting service’, and thereby not subject to the licensing regime. That was ‘a service that makes available television and radio programs using the Internet’ (Alston 2000). Thus, if an IPTV service is made available ‘using the Internet’, it is outside of the BSA’s primary regulatory regime.¹

The second question is whether an IPTV provider which wishes to retransmit free-to-air broadcasts as part of its suite of content may avail itself of the Part VC statutory licence to do so under the Copyright Act 1968 (CA). Since 2001 the CA has created an exception to copyright for subject matter included within a free-to-air broadcast when that broadcast is retransmitted to the public by a third party to the broadcaster. That third party, as long as it complies with several conditions (including the payment of equitable remuneration) can lawfully retransmit the subject matter included in the broadcast. The only type of retransmission excluded from the benefit of the Part VC statutory licence is retransmission which ‘takes place over the Internet’. Thus, if IPTV retransmission occurs ‘over the Internet’ it does not attract the benefit of the copyright exception.

In order to consider the question of whether IPTV is a service made available using the Internet, or whether IPTV retransmission takes place over the Internet, there are two preliminary questions that need to be considered:

i. What is meant by ‘the Internet’ in each legislative regime?
ii. What are the functional characteristics of an IPTV service?

It is only once that those two questions are answered that it is possible to begin to ask: is an IPTV service (as understood at (ii)) ‘using’ or ‘over’ the Internet (as understood at (i))? Once having set out an understanding of ‘the Internet’ and the character of IPTV delivery, more particular issues may arise as a matter of legal interpretation of whether an IPTV service that ‘makes available ... programs using the Internet’ in the BSA exclusion and whether IPTV retransmission ‘takes place over the Internet’ in the CA exclusion. These too will be considered by examining the underlying purposes which support each exclusion.

THE INTERNET

To this writer’s knowledge there is yet to be an English-language legislative definition of the Internet. With its provenance in the US military’s ARPANET project of the late 1960s, a judicial attempt was made in 1996 to describe, rather than define, the administration and working of the Internet:

No single entity – academic, corporate, governmental, or non-profit – administers the Internet. It exists and functions as a result of the fact that hundreds of thousands of separate operators of computers and computer networks independently decided to use common data transfer protocols to exchange communications and information with other computers (which in turn exchange communications and information with still other computers).2

Similar to the judge in the above passage, both the BSA and the CA regimes use the definite article and a capital ‘I’. This implies that in each setting the Internet is being used as a proper noun intended to refer to one specific thing. In the case of the Internet that thing is a system. That system is global, and relies upon an overlay of shared applications and protocols to meaningfully transmit data between connected computers. The most well-known application is the World Wide Web (the web) which operates as a popular overlay upon the Internet (Lindsay 2007, 1–3 and 11–12). The most well-known protocol is the transmission control protocol/Internet protocol (TCP/IP) to manage the disassembly, routed transmission and reassembly of file data in discrete packets. Connections between computers can be made with or without wire, and presently those connections are made using an assortment of cable first laid for telephony or television, cable specifically laid for Internet purposes, telecommunications spectrum, and satellite transmission. The Internet, however, as system is not any one of those features, or even a selection of those features. Rather, it is the network of networks formed globally by the interoperability of those features.

THE IPTV SERVICE PARADIGM

The paradigm IPTV service here considered is both a hypothetical one, and also one which reflects the present technological reality of the delivery of typical services in Australia (ACMA 2008, 14–18). The paradigm involves provision by an Internet service provider (ISP) which provides asymmetric digital subscriber line (ADSL) Internet access to a customer through the customer’s connection to its local telephone exchange by twisted copper pair telephony infrastructure. In
the paradigm the ISP supplies Internet access services to customers distinct from telephony services. The supply and its distinct nature are here explained by reference to the following diagram.

Figure 1 The IPTV service paradigm

(I) THE ADSL INTERNET CONNECTION

The ISP computer servers are connected to the Internet [A] through any of the means discussed in the above section. Through a dedicated connection to a digital subscriber line access multiplexer (DSLAM) installed within the customer’s local telephony exchange [C], and the DSLAM’s wiring with the exchange’s main distribution frame box (MDF Box) configured to connect to the customer’s telephone line [D], the ISP is able to deliver Internet data carriage services to the customer through the twisted-pair copper wire telephony infrastructure connecting the customer to its local exchange [F]. Through the use of filters installed at the customer’s point of connection, data traffic and voice telephony traffic are segregated. The voice traffic to and from the customer’s telephone is handled by the MDF Box and its connection to other exchanges [F]-[E]; the Internet data traffic to and from the customer’s modem is passed through the MDF Box on to the DSLAM to be handled by the ISP’s Internet connection [F]-[D]-[C]-[A].

(II) THE IPTV SERVICE

As an additional service to the customer the ISP provides the service of IPTV. In the paradigm the IPTV content is both source licensed (programming owned by or voluntarily licensed to the ISP by rights owners) and content sourced by retransmitting free-to-air broadcasts. Data encoding for both types of content is designated by the green arrows in the diagram (IPTV content data).
Along the [C]-[D]-[F] ISP-to-customer connection the IPTV service shares the same physical transmission route as the Internet data. The IPTV service also employs essentially the same data transmission protocol (TCP/IP) which is applied to Internet data, and it is this which gives the service half its name. However notwithstanding those features, the IPTV service is distinct from Internet access services in that it could be supplied standalone without the ISP being connected to the Internet and without the provision to the customer of Internet access services – a point expanded upon below. (However, typically IPTV services might only be offered commercially by an ISP when bundled with Internet access services.) The IPTV content data is received at the customer’s connection by passing through the filter to the customer’s modem and rendered by appropriate software (such as Windows Media Player) on the customer’s personal computer.

(III) IPTV RETRANSMISSION

IPTV retransmission is effected by the ISP receiving, by ordinary aerial reception, free-to-air broadcasts [B]. Those broadcasts are encoded by the ISP into a form suitable for transmission as data along its cable connections. That retransmission data (together with data encoding source-licensed programming) is transmitted as IPTV content data to the DSLAM, through to the MDF Box and on to the twisted copper pair connecting the customer as described above.

Three salient features of the paradigm can be described:

• At no point is the ISP’s connection to the Internet implicated for the transmission of the IPTV content data. The connection is not relied upon by the ISP as the source of the content encoded to comprise the IPTV content data. The connection is not relied upon for the customer to obtain access to the IPTV content data. The transmission of the IPTV content data merely implicates infrastructure shared by both Internet traffic and voice traffic and employs some of the data transmission Internet protocols.

• The flow of IPTV content data is one-way, point-to-multipoint. Its reception does not entail input on the part of the customer once the customer has obtained access to it.

• Similar to a subscription broadcast, access to the IPTV content data is closed, being transmitted to the customer subject to an access control technological protection measure. This applies in so far as the ability of the customer to avail itself of the IPTV content data is dependent upon ISP satisfaction that the point of access is a telephone number which is that of a current subscriber to the ISP.

THE 2008 ACMA REPORT

In 2008 an Australian Communications and Media Authority (ACMA) report observed – consistent with the above analysis – that a mode of IPTV delivery the same as the paradigm described above (termed in the ACMA report a ‘Telco TV model’) was ‘multicast via a managed IP connection technically separate/distinct from the broadband Internet connection although carried on the same physical copper lines’ (ACMA 2008, 17). When making this observation, the ACMA report described IPTV as the ‘replication of a subscription television service over a managed IP network’ and offered as an example a US service branded U-verse and provided by AT&T (ACMA 2008, 17). Although AT&T’s U-verse is delivered over infrastructure comprising fibre-optic cable to the home rather than twisted copper pair wire, to all intents and purposes, the IPTV service
of AT&T shares the salient attributes of the Australian paradigm described above: non-implication of connection to the Internet; a flow of content data that is one-way, point-to-multipoint; access controlled by a technological measure to subscriber households. While the ACMA report was not a legal analysis of IPTV its authors formed the view that from a technical perspective, such IPTV was not a means of transmission implicating the Internet.

THE 2008 US COPYRIGHT OFFICE REPORT

In the same year as the ACMA report, the US Copyright Office considered the AT&T U-verse service in the context of retransmission. There are presently two retransmission statutory copyright licences in the US: one for retransmission by cable systems and the other for retransmission by satellite systems (Brennan 2003, chapters 5-6). In the US Copyright Office Report, one of the matters considered was the suitability of US statutory licensing for retransmission by Internet-based services. A pair of conclusions arrived at by the US Copyright Office taken together are striking.

The first conclusion was strong opposition to the expansion of an existing statutory licence or the creation of a new statutory licence ‘that would permit any website on the Internet to re-transmit television programming without the consent of the copyright owner’ (US Copyright Office 2008, 188). In supporting that opposition the US Copyright Office referenced both the dispute involving the web-retransmissions of iCraveTV and an obligation precluding a copyright exception for retransmission ‘on the Internet’ in article 17.4.10(b) of the Australia-US Free Trade Agreement 2004 (AUSFTA). Both the iCraveTV dispute and the AUSFTA obligation are described in more detail below. Implicit in the US Copyright Office discussion however was an assumption that a statutory licence exception for the retransmission of television broadcasts via a website would comprise retransmission that was ‘on the Internet’ and be plainly offensive to the AUSFTA obligation.

The second conclusion was in support of the view that the existing cable retransmission statutory licence already operated so as to include within it IPTV along the lines of the paradigm described above, therefore including the AT&T U-verse service and another like service offered by Verizon. The report noted that the Copyright Office had already been accepting Statement of Account forms from AT&T and Verizon for the purpose of their payment of royalties under the cable statutory licence for their IPTV retransmissions. It went on to state:

After consideration of the statutory language and the facts at hand, the Office finds that there is nothing in the Act that would clearly foreclose the application of the [cable] statutory license for the retransmission of distant broadcast signals by either company. By its terms, the statutory license applies only to cable systems and [the relevant provision] defines “cable system” quite broadly. Consequently, both AT&T, as well as Verizon, meet each of the elements of the cable system definition. (US Copyright Office 2008, 199)

This statement occurs shortly after the possibility of web-based retransmission falling within the statutory licences was forcefully rejected by the US Copyright Office for reasons that included such retransmission was ‘on the Internet’ and thereby precluded by the AUSFTA obligation. The key definition in section 111 of the US Copyright Act relevantly provides that:
A “cable system” is a facility, located in [the USA] that in whole or in part receives signals transmitted or programs broadcast by one or more television broadcast stations licensed by the Federal Communications Commission, and makes secondary transmissions of such signals or programs by wires, cables, microwave, or other communications channels to subscribing members of the public who pay for such service.

When concluding that IPTV retransmissions fall within the scope of that definition there was no suggestion by the US Copyright Office that the US was not meeting its AUSFTA obligation by reason of that conclusion. The clear implication of the report is that the view of the US Copyright Office is that the ‘cable system’ definition can accommodate IPTV services without the US contravening the AUSFTA, because IPTV services are not regarded by the Office as being on the Internet. That is an outcome consistent with the technical view of the authors of the ACMA report.

THE AUSTRALIAN LEGISLATIVE LANGUAGE AND CONTEXT

THE BROADCASTING SERVICES ACT LICENSING REGIME EXCLUSION

Notwithstanding the views expressed in the ACMA report and by the US Copyright Office in 2008, IPTV delivered under the described paradigm seems to be assumed generally in the Australian broadcasting industry as falling within the ‘using the Internet’ BSA exclusion. In its June 2009 submission to the Commonwealth Government’s Discussion Paper National Broadband Network: Regulatory reform for 21st Century Broadband FreeTV Australia (the Australian peak body for commercial free-to-air television broadcasters) set out a detailed table to provide evidence of the ‘existing and emerging regulatory imbalance’ between free-to-air commercial broadcasting (Free services), subscription broadcasting (Pay services) and IPTV. The table indicated that IPTV was, unlike Free services and Pay services, outside the licensing regime of the BSA (FreeTV Australia 2009, 6-7). The only explanation for that treatment in the table is the existence of an assumption in FreeTV Australia that IPTV falls within the ‘using the Internet’ BSA exclusion. The correctness of that assumption is here being questioned.

Shortly after the ministerial determination of September 2000 (which as noted above excluded services ‘using the Internet’ from the concept of a ‘broadcasting service’ amenable to the licensing regime of the BSA), the then Department of Communications, Information Technology and the Arts (DOCITA) gave a Report to Parliament which explained the background to and the intention of the ministerial determination. Four policy justifications were accepted by DOCITA to support such exclusion (DOCITA 2000):

- The likely business models for Internet content providers might be significantly different from that of traditional broadcasters;
- The BSA licensing of Internet services as if they were broadcasting services would lead to a competitive disadvantage in the international economy when the Australian regulatory framework might be more restrictive than that of overseas competitors;
• The commercial success of communications and IT companies was subject to high risks and BSA licensing of Internet services, such as audio and video streaming, would create additional impediments for these businesses;
• Streamed audio and video programming delivered over the Internet had the potential to provide consumers with greater access to information and entertainment services, so that the BSA licensing of Internet streaming services as if they were broadcasting services might impede the growth of these alternatives to traditional broadcasting.

It might be observed that, by and large, the IPTV service paradigm is a very close substitute (both commercially and technically) for traditional Pay services. Many of the policy reasons for the exclusion of BSA regulation appeared tied to the needs of those in Australia utilising web-based delivery and seemed inapposite to the IPTV service paradigm.

In explaining the operation of the determination, the DOCITA Report stated:

The determination is intended to include a service that uses the Internet, even if part of the means of delivery of the service is technology which may not clearly be part of the Internet, so long as the service does not deliver programs using the broadcasting services bands. For example, the determination will cover services that enable users to access material from the Internet using a wireless application protocol device such as a mobile phone, whether or not the wireless application protocol is itself part of the Internet.

This passage, when applied to the IPTV service paradigm, lends itself to two possible readings. Its first sentence could, if read in isolation, support an interpretation of the ‘using the Internet’ exclusion as encompassing any service which uses any infrastructure or technology shared by computers connected to the Internet. This would seemingly include the IPTV paradigm described above. But, such a wide interpretation of ‘using the Internet’ could not be correct for its breadth would include too much. For example, such an interpretation would include most Pay services in Australia. This is because cable broadband Internet access has since the late 1990s been provided to households by connecting those households to the Internet using the same cable used for the transmission of most Australian Pay services. However the illustrative second sentence in the above passage clarifies and confines the meaning of the first. It explains that services ‘use’ the Internet in the sense of the determination if the services ‘enable users to access material from the Internet’. As the programming content transmitted by Pay services (sharing its transmission infrastructure with cable broadband) and under the IPTV service paradigm (sharing its transmission infrastructure with telephony and ADSL) does not originate ‘from the Internet’, but rather from the Pay services or the IPTV service, each seems to fall outside of the intended operation of the exclusion, and for the same reason.

THE COPYRIGHT ACT RETRANSMISSION STATUTORY LICENCE EXCLUSION

The CA exclusion of retransmission which ‘takes place over the Internet’ is not easy to locate in the legislative history. As originally conceived in an early 1999 Exposure Draft the licence was to be modelled on the CA section 109 statutory licence for the broadcast of sound recordings. That was however replaced in the 1999 Bill introduced into Parliament with terms modelled upon the CA Part VA educational statutory licence for the recording of broadcasts. In both forms,
however, a government objective of the reform was technological neutrality insofar as retransmission was not confined to any particular means. A report on the Bill in 1999 by the House of Representatives Standing Committee on Legal and Constitutional Affairs (LCAC Report) observed the following concern that arose from the breadth of technologically neutral drafting:

[The Motion Picture Association] argued that the potential harm caused to copyright owners by Internet retransmissions being subject to proposed Part VC is enormous. For this reason they suggested that the definition of ‘retransmitter’ should be confined to retransmission by means of a cable. (LCAC Report 1999, para 5.21)

This concern led to the recommendation that the scope of the statutory licence should be limited to retransmission by a Pay service. This recommendation seemed to be resisted at first by a government wedded to drafting that was broad-based and technologically neutral. However after the LCAC Report, but before the finalisation of a government response to it, a retransmission controversy erupted in North America. A Canadian company, iCraveTV, had commenced web-based Internet retransmission of US television signals which in early 2000 sparked ten US film studios and three US broadcasters to initiate litigation to successfully obtain injunctive relief (Standeford 2000, 9). Sparked by that controversy, in February 2000 the government asked Screenrights – the copyright collecting society then considered most likely to administer the retransmission statutory licence – how it envisaged the terms of the licence proposed in the 1999 Bill would apply to ‘web retransmissions’. Screenrights response included this passage referencing the iCraveTV dispute:

[T]he ... possibility of extra-territorial web retransmissions occurring under the retransmission regime should be carefully considered. Acute international embarrassment may arise if web retransmissions emanating from Australia under a statutory licence represent copyright infringements in other countries. (Screenrights 2000, 7)

Faced with the iCraveTV dispute and the LCAC recommendation, the government persevered with its technologically neutral language but introduced in June 2000 (as one of its amendments to the Bill) the ‘takes place over the Internet’ exclusion. The accompanying explanatory memorandum stated that the amendment clarified that Part VC of the Act ‘does not apply to the retransmission of free-to-air broadcasts via the Internet’ (Sup ExM 2000, para 209). The exclusion represents a major carve-out from the retransmission copyright regime. Insofar as it is possible to say, the two factors that led to this belated exclusion were the LCAC recommendation and, perhaps more importantly, the iCraveTV controversy. In respect of the latter, it is clear that the iCrave business model was open-access and web-based. That is to say that iCrave’s retransmissions were digitised third party broadcast signals, web-streamed from iCrave computer servers so as to enable any user, anywhere in the world, who visited the iCraveTV website to access that content. Quite clearly if iCraveTV-type retransmissions were to occur in Australia, the intent was for the ‘taking place over the Internet’ provision to put those retransmissions outside the operation of the statutory licence. But equally clearly IPTV retransmission under the paradigm is a far cry from the iCraveTV mischief, being retransmission that is closed and not web-based.
The nature of transmissions made by an IPTV service under the paradigm described here does not fall within the intended operation of the exclusion.

The concerns created by the short-lived iCraveTV can be seen in the 2004 AUSFTA provision, mentioned earlier in the context of the US Copyright Office Report. In part its text provided that ‘neither Party may permit the retransmission of television signals (whether terrestrial, cable, or satellite) on the Internet without the authorisation of the right holder or right holders, if any, of the content of the signal and of the signal’.

The Guide to the AUSFTA prepared by the Australian Department of Foreign Affairs and Trade (DFAT) stated that the requirements of this obligation ‘reflects current Australian law’ (DFAT 2004, 98). An exchange of side letters to the AUSFTA opened the door to the renegotiation of this obligation if ‘it is considered in the opinion of either Party that there has been a significant change in the reliability, robustness, implementability and practical availability of technology to effectively limit the reception of Internet retransmissions to users located in a specified geographic market area’ (Vaile and Zoellick 2004). Such geographic limitation, with a technological access control tied to a specific telephone number, is intrinsic to retransmission under the IPTV service paradigm. Implicit in the side letters’ proviso is an understanding that what is intended by the primary obligation is not IPTV retransmission under the paradigm, but rather open, web-based retransmission of the iCraveTV variety.

CONCLUSION

‘Is IPTV a service made available using the Internet?’ and ‘Does IPTV retransmission take place over the Internet?’ Based upon the understanding of the Internet and IPTV paradigm here deployed, the counter-intuitive answer to both these questions in broadcasting and copyright law is: no.

For broadcasting law purposes IPTV is not a service made available using the Internet because, while the service uses the TCP/IP transmission protocols and avails itself of infrastructure shared by an Internet connection, the IPTV transmission is a direct feed from ISP to customer without requiring either to be connected to the Internet. Moreover, to the extent it is possible to discern an intended meaning of ‘made available using the Internet’, the DOCITA Report to Parliament explains that this was to apply in cases where a service enabled end users to access material from the Internet. In the case of the IPTV paradigm the material is merely from the ISP. This conclusion suggests that Australian IPTV services, similar to that described as the paradigm, should be licensed as broadcasting services under the BSA.

For copyright law purposes IPTV retransmission under the paradigm does not take place over the Internet for similar reasons. Again, while the retransmission occurs over infrastructure shared by an Internet connection, as a direct feed from ISP to customer at no point is connection to the Internet by either ISP or customer necessitated. Moreover, the context of the copyright exclusion and the related provision in the AUSFTA is the mischief of open, web-based retransmission. IPTV retransmission is far outside the intended operation of the exclusion, a conclusion implicitly arrived at in 2008 by the US Copyright Office. This conclusion leads to the possibility of IPTV retransmission, similar to that described within the paradigm, falling within the operation of the Part VC statutory licence.
ACKNOWLEDGEMENTS

Two acknowledgements are in order. First, James Dickinson, licensing executive at Screenrights – The Audio-Visual Copyright Society, was instrumental in me questioning the assumption that IPTV used or was over the Internet. Second, a Telecommunications Journal of Australia referee provided several valuable suggestions that have all contributed materially to the final publication. Naturally, I take responsibility for the analysis.

ENDNOTES

1 It might be noted that this declaration does not exclude content services from a BSA censorship regime (in Schedule 7) which is directed in part to services which are not broadcasting services.


3 The Copyright (International Protection) Regulations treatment of foreign broadcasters provides: ‘subject to these Regulations, a provision of the Act that applies in relation to a sound broadcast, or a television broadcast, referred to in section 91 of the Act (an Australian broadcast) applies in relation to a sound broadcast, or a television broadcast, made at a material time by a relevant broadcaster from a place in a Rome Convention country (a foreign broadcast): (a) in the same way as the provision applies, under the Act, in relation to an Australian broadcast; and (b) as if the foreign broadcast were an Australian broadcast’: regulation 4(6). However the USA is not a member of the Rome Convention and thus US broadcasts are not afforded the protection of the Australian copyright under regulation 4(6). Regulation 4(7A) states that a ‘provision of the Act that applies to an Australian retransmission of an Australian television broadcast applies in relation to an Australian retransmission of a US television broadcast: (a) in the same way as the provision applies, under the Act, in relation to an Australian retransmission of an Australian television broadcast; and (b) as if the US television broadcast were an Australian television broadcast’. This regulation was added almost certainly to ensure compliance with article 17.4.10(b) because the term ‘Australian retransmission’ is defined in regulation 3(1) to mean ‘a retransmission of a television broadcast: (a) over the Internet and (b) made from a place in Australia’. It might also be noted that the immunity from suit found in BSA section 212(2) would not apply in relation to a free-to-air signal originating from a US-based broadcasting organisation.

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LIABILITY OF ISPS FOR END-USER COPYRIGHT INFRINGEMENTS
THE FIRST INSTANCE DECISION IN ROADSHOW FILMS PTY LTD V IIINET LTD (NO 3)

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In Roadshow Films Pty Ltd v iiNet [2010] FCA 24, Cowdroy J held that the ISP, iiNet, was not liable for authorising infringements of copyright committed by its subscribers downloading films by means of the BitTorrent peer-to-peer (P2P) system. This article critically analyses the decision of the trial judge, which is now on appeal to the full federal court, pointing out that key aspects of the reasoning are contrary to established law on authorisation liability, as well as to the text of the Copyright Act. As the article explains, while there are good grounds for an appeal, the outcome in the appeal court is far from certain. The article also examines the extent to which an ISP should be held liable for the infringing activities of its subscribers, concluding that this is a complex issue best dealt with by the legislature. If ISPs are to be given greater responsibility for the infringing activities of their subscribers, there may be a need for procedural safeguards to protect against unjust suspensions or terminations of subscriber accounts. In any case, the existing law on the indirect liability of Internet intermediaries, such as ISPs, is manifestly inadequate, and requires reform.

INTRODUCTION

The prevalence of unlawful downloading of copyright material by means of peer-to-peer (P2P) networks presents considerable challenges for copyright owners. The difficulties and costs of bringing actions against individual users have led the music and film industries to attempt to enlist the cooperation of ISPs in deterring unlawful downloads as part of a broad strategy known as “graduated response” or “three-strikes” (Sookman and Glover 2010). Under this strategy, ISPs would pass on educational notices to their customers, generated by copyright industry groups, warning that unlawful downloading has been detected. The strategy envisages that, in the event of notices being persistently ignored, there will be an escalating response, potentially ultimately resulting in suspension of a customer’s Internet account.

As ISPs have no apparent incentive to alienate their customers, attention has turned to legal measures to support the graduated response strategy. For example, in the United Kingdom, the Digital Economy Bill, which was introduced in November 2009 and has recently passed the House of Lords, includes provisions for introducing obligations on ISPs to notify subscribers of reported infringements and, in certain circumstances, to limit or suspend Internet access.

In Australia, the failure of copyright interests and ISPs to reach agreement on a strategy to reduce unlawful downloads apparently resulted in the movie studios bringing an action against iiNet, the third largest Australian ISP, alleging that it was liable for copyright infringements of its users committed by means of the BitTorrent protocol. The iiNet litigation has been watched with interest, as it is apparently the first action to be brought testing the liability of an ISP, which does no more than provide Internet access, for infringements committed by its customers via P2P networks. On 4 February 2010 Cowdroy J dismissed the claims against iiNet stating, in part,
that all that the ISP did was provide “a legitimate communication facility which is neither intended nor designed to infringe copyright” (para [19]).

This article explains the first instance decision in Roadshow Films Pty Ltd v iiNet Ltd (No 3) [2010] FCA 24 (the iiNet case) and analyses the reasoning in the judgment, which has been appealed to the full Federal Court. It proceeds to examine the policy issues relating to ISP liability for end user infringements, and makes some tentative recommendations for law reform. Before examining the case, the article explains the BitTorrent protocol, and how it facilitates the downloading of Internet files. The article also explains the technology used to acquire evidence of unlawful downloading by means of the BitTorrent protocol.

THE BITTORRENT PROTOCOL

The BitTorrent protocol is the most popular method of decentralised, peer-to-peer (P2P) file sharing. Unlike the client/server model, P2P systems involve the downloading of files from end user computers, rather than centralised servers. The BitTorrent system consists of the following three components:

- the BitTorrent client;
- .torrent files; and
- the tracker.

The BitTorrent client is the computer program that must be downloaded to a user’s computer so that the user can download and upload using the BitTorrent protocol. There are a number of BitTorrent clients which may be downloaded for free, including uTorrent, Vuze, Xunlei and the BitTorrent client. While the features of each BitTorrent client differ, the software all works in essentially the same way.

To be able to locate files, such as films or music, the BitTorrent client must use a .torrent file. A .torrent file, which is simply a file that contains the necessary information to identify and locate content files, has two sections, known as the ‘announce’ section and the ‘info’ section. The ‘announce’ section contains the URL of the ‘tracker’, which is explained below. The ‘info’ section contains information about the file that the user is seeking, including the file name, the size of the file, the hash value of the file and the hash value of pieces of the file. A .torrent file must be accessed by the BitTorrent client from various websites that make such files available, including the Pirate Bay site, Mininova and Torrentz.

The third component of the protocol is the ‘tracker’ computer program. The .torrent file directs the client software to the URL for the tracker program for the requested file. The tracker program has the IP addresses of end user computers (or ‘peers’) that are currently transferring copies of the requested file. The BitTorrent client uses this information to connect with the peers that have accessible copies of the file, and to commence downloading pieces of the file. While downloading bits of the file from diverse peers, the BitTorrent client will also make bits of the file available to other end users using the BitTorrent protocol. This is called participating in a ‘torrent swarm’. In what is known as ‘tit for tat’, the more data an end user makes available to other peers, the faster the downloading speeds will be.

Evidence before the court in iiNet indicates the popularity of the BitTorrent file-sharing protocol. For example, a 2007 report by a German company, Ipoque, found that approximately
57% of all Internet traffic consisted of P2P file-sharing, with 73% of this P2P traffic being via the BitTorrent protocol. There is no doubt that the vast majority of files ‘shared’ by means of the BitTorrent protocol consist of the unlawful transmission of copyright protected material.

**EVIDENCE OF UNLAWFUL DOWNLOADING**

Software has been developed that allows the collection of information about copyright infringements committed by P2P networks. To collect evidence of copyright infringement committed by the subscribers of Australian ISPs, including iiNet, by means of the BitTorrent protocol, the copyright owners engaged the services of a Danish company, DtecNet Software APS (‘DtecNet’). DtecNet used its proprietary software, known as the DtecNet Agent, which operates much like a BitTorrent client with additional features.

The DtecNet Agent functioned as follows. First, the agent opened a `.torrent` file for a copyright-protected film from a list prepared by the copyright owners. Second, upon opening the relevant `.torrent` file, the agent queried the tracker, which enabled it to connect with end users participating in the torrent swarm. Instead of connecting to all available BitTorrent users, however, the agent used a filter based on IP addresses to connect only to iiNet subscribers and download a full copy of the requested file. Third, after a full copy of the file was downloaded, the agent reconnected to iiNet subscribers and downloaded further pieces of the requested file. Fourth, the agent kept a running log of information about every piece of data downloaded, and the IP addresses of the source computers. This information was used by DtecNet to prepare a report that was sent to the Australian Federation Against Copyright Theft (AFACT). In *iiNet*, Cowdroy J accepted that the data collected by the DtecNet Agent was highly accurate and reliable.

While the copyright detection software is able to collect information about the IP address of computers that are unlawfully ‘sharing’ copyright protected files, organizations such as AFACT require the assistance of ISPs to be able to identify the names of subscribers who are associated with an IP address. As an ISP maintains comprehensive logs of the IP addresses of their subscribers and their online activities, it is able to match information about the activities associated with an IP address to the name of a subscriber. AFACT used the report provided to it by DtecNet to issue infringement notices to iiNet. The infringement notices included spreadsheets identifying the date and time of alleged infringements of copyright, the IP address of the iiNet subscribers at the time of the alleged infringements, the films and television programs alleged to have been infringed, the names of the copyright owners and additional information, such as hash numbers. The AFACT notices were sent by email, but were also delivered to iiNet’s Perth offices, with a CD version of the spreadsheet.

In response to the AFACT notices, iiNet refused to take direct action against its subscribers. For example, an email from an iiNet officer to AFACT stated that: “iiNet will not take the responsibility of judge and jury in order to impose arbitrary and disproportionate penalties purely on the allegations of AFACT” (*iiNet*, [199]). This response reflected iiNet’s unwritten policy regarding ‘repeat infringers’, which was essentially to take action against a subscriber only where a court has found that the subscriber had repeatedly infringed copyright. The copyright owners therefore brought an action against iiNet alleging that, by failing to take action in response to the AFACT notices, it was liable for authorising the infringing activities of its subscribers.
AUTHORISATION OF COPYRIGHT INFRINGEMENTS

Copyright is infringed by a person who exercises one of the exclusive rights that comprise the copyright without the permission of the copyright owner. Thus, a person will infringe copyright in a film if, without the permission of the copyright owner, he or she copies the film, or makes the film available over the Internet. In addition to primary infringement, a person may be liable for copyright infringement if the person is so implicated in the infringing activities of others that he or she is held to have authorised the infringements.

Authorisation liability was first introduced by the 1911 UK Copyright Act, and was deliberately designed to extend liability beyond that of an employer for the acts of its employees. The main Australian authority on what is required for a person to be held liable for authorising the infringing acts of another remains the High Court decision in The University of NSW v Moorhouse (1975) 133 CLR 1 (‘Moorhouse’). In that case, the High Court held that the university was liable for authorising copyright infringements committed by people using photocopy machines in the university library. Unfortunately, the two judgments delivered by the court in Moorhouse adopted different approaches to what amounts to authorisation.

In probably the more influential judgment, Gibbs J set out the following three statements of principle:

- A person cannot be said to authorise an infringement of copyright unless he has some power to prevent it;
- Express or formal permission or sanction, or active conduct indicating approval, is not essential to constitute an authorisation; and
- The word ‘authorise’ connotes a mental element and it could not be inferred that a person had, by mere inactivity, authorised something to be done if he neither knew nor had reason to suspect that the act might be done.

In applying these principles, Gibbs J held that a person may be liable for authorising infringement if he has under his control the means for infringing copyright, such as a photocopying machine, and makes it available to others, knowing or having reason to suspect that it is likely to be used for committing infringing acts, and fails to take reasonable steps to prevent infringements. As the university made the means for committing infringements available – being both the library books and the photocopy machine – and failed to take any reasonable steps to prevent infringements, Gibbs J held that it had authorised the relevant infringements.

In the other judgment, Jacobs J, with whom McTiernan ACJ agreed, held that authorisation has a wide meaning, which includes both express permission or invitation to commit infringements, and implied permission or invitation. In the case of the university, Jacobs J held that, although there was no express permission or invitation, there was an implied, unqualified invitation extended by the university to use the photocopy machines, which amounted to authorising the infringements. Moreover, as the invitation was unqualified, he held that it was unnecessary to establish that the university knew, or ought to have known, of the infringements. According to Jacobs J, then, knowledge of infringing activities would have been relevant only if the invitation had been qualified in some way, such as the university making it clear that the photocopy machines were
to be used only for lawful copying; that the university knew that the qualification was being ignored; and, yet, that it took no action to prevent the infringements.

Following the decision in *Moorhouse*, the development of authorisation liability has been influenced, first, by the development of consumer products facilitating the private copying of copyright protected materials and, secondly, the emergence of the Internet as a means for disseminating infringing material. In relation to consumer products, the courts were required to decide whether the manufacturers or vendors of products with both infringing and non-infringing uses, such as blank tapes and VCRs, were liable for authorising infringing uses. In excusing the manufacturers and marketers from liability, the courts generally found that liability could not arise as, once the product was sold, the manufacturer or vendor had no control over the way in which the equipment was used. Thus, in *Australian Tape Manufacturers Association Ltd v Commonwealth* (1993) 176 CLR 480, Mason CJ, Brennan, Deane and Gaudron JJ, concluded that the “manufacture and sale of articles such as blank tapes or video recorders, which have lawful uses, do not constitute authorization of infringement of copyright, even if the manufacturer or vendor knows that there is a likelihood that the articles will be used for an infringing purpose such as home taping of sound recordings, so long as the manufacturer or vendor has no control over the purchaser’s use of the article” (at 490). Similarly, in *Sony v Universal City Studios Inc*, 464 US 417 (1984), the majority of the United States Supreme Court held that the manufacturer of a VCR was not secondarily liable for end user infringements, as the technology was “capable of substantial non-infringing uses”.

The recent history of authorisation liability has been largely dominated by the emergence of the Internet as a platform for accessing content, and the potential liability of a range of intermediaries that play some role in facilitating access to content. In an apparent attempt to clarify the application of authorisation liability to Internet intermediaries, the *Digital Agenda* reforms, which came into effect in 2001, introduced two important changes to Australian authorisation law. First, borrowing mainly from the judgment of Gibbs J in *Moorhouse*, the legal criteria for establishing authorisation liability were partially codified in sub-sections 36(1A) and 101(1A) of the Copyright Act. The partial codification provides that, in determining whether a person is liable for authorising infringements, the following three factors must be taken into account:

- the extent (if any) of the person’s power to prevent the doing of the act concerned;
- the nature of any relationship existing between the person and the person who did the allegedly infringing act; and
- whether the person took any reasonable steps to prevent or avoid the doing of the act, including whether the person complied with any relevant industry codes of practice.

While these three factors are required to be considered, there is nothing to prevent other considerations, such as whether the person knew of the alleged infringements, also being taken into account. Secondly, influenced by an Agreed Statement to Article 8 of the 1996 WIPO Copyright Treaty, sub-sections 39B and 112E established awkwardly-worded defences to authorisation liability, known as the ‘facilities exceptions’, that exempt a person who provides commu-
nervations facilities from potential liability “merely because another person uses the facilities” to infringe copyright. The question of the correct application of the provisions introduced by the 2001 Digital Agenda reforms to Internet intermediaries is absolutely central to an understanding of the legal issues in the iiNet case.

Following the introduction of the 2001 reforms, the liability of Internet intermediaries has been considered by the Australian Federal Court in two important cases: Cooper v Universal Music Australia (2006) 71 IPR 1 (‘Cooper’) and Universal Music v Sharman (2005) 220 ALR 1 (‘Kazaa’). In Cooper, the full Federal Court upheld the decision of the trial judge finding that the owner of the web-site, <http://www.mp3s4free.net>, was liable for authorising infringements committed by users of the site. The web-site was a highly structured site that allowed users to post hyperlinks to infringing mp3 music files which could be automatically downloaded from the computers of end users. Mr Cooper, who owned the popular site, did not charge users for using the site, but obtained an income from prominent advertising placed on the site. In finding Cooper liable for authorising the end user infringements, the two main judgments delivered by the full court emphasised the importance of the three statutory criteria set out in s 101(1A) of the Copyright Act, and especially the extent of Mr Cooper’s power to prevent copyright infringements.

Counsel for Cooper sought to draw an analogy with the ‘consumer product’ cases to argue that once the site had been set up, Mr Cooper had no control over the way in which it was used. The court, however, rejected this argument essentially on the basis that Cooper had deliberately designed the site to facilitate copyright infringement, while denying him the opportunity to prevent individual infringements once the site was operating. Thus, Branson J stated that (at [41]):

... a person’s power to prevent the doing of an act comprised in a copyright includes the person’s power not to facilitate the doing of that act by, for example, making available to the public a technical capacity calculated to lead to the doing of that act. The evidence leads to the inexorable inference that it was the deliberate choice of Mr Cooper to establish and maintain his website in a form which did not give him the power immediately to prevent, or immediately to restrict, internet users from using links on his website to access remote websites for the purpose of copying sound recordings in which copyright subsisted.

Similarly, Kenny J distinguished the facts in this case from the ‘consumer product’ cases, holding that (at [149]):

... Mr Cooper deliberately designed the website to facilitate infringing downloading of sound recordings. Mr Cooper’s position was, in this respect, entirely different from that of the manufacturers and vendors of blank tapes, which was considered in Australian Tape Manufacturers.

In addition to finding that Cooper was liable for authorising infringements, the full court held that Com-Cen/E-Talk, the ISP that hosted the mp3s4free.net web-site, had also authorised the infringements. In this respect, the trial judge’s conclusions that Com-Cen/E-Talk knew of the infringing activities, yet provided Cooper with free hosting services in return for advertising on the web-site, were significant. In considering the statutory criteria, both judgments in the full
court held that the ISP had the power to prevent infringements by refusing to host the website. In addition, the judgments held that, short of withdrawing hosting, the ISP could have taken reasonable steps to prevent infringements by requesting Cooper to stop his website from being used predominantly for infringing purposes. As the ISP provided communications facilities, the court was required to determine whether it was entitled to the protection of the facilities exception in section 112E of the Copyright Act. In holding that the exception did not apply, the full court held that, as the ISP was aware of the copyright infringements, yet provided free web-hosting instead of taking steps to prevent the infringements, it had done more than merely provide facilities.

The liability of the provider of a P2P file-sharing system for authorising the copyright infringements of end users came before the Federal Court in Kazaa. In that case, the owners of copyright in sound recordings brought an action against Sharman, which operated the Kazaa P2P system, including providing the Kazaa client software. Although Sharman did not charge for the basic software, it earned substantial income from advertising on what, at the time, was the most popular P2P system. In holding Sharman liable for authorising the extensive infringements of end users, Wilcox J applied the three statutory criteria set out in s 101(1A), which he held were intended to elucidate rather than vary the common law on authorisation.

In essence, Wilcox J held that the Kazaa P2P system, as implemented by Sharman, was deliberately designed to encourage copyright infringement. In this respect, he emphasised the fact that the people involved with Sharman were well aware of the high level of copyright infringements committed by the system, stating that (at [404]):

At all material times, it has been in Sharman’s financial interest for there to be ever-increasing file-sharing, involving an ever-greater number of people. Sharman always knew users were likely to share files that were subject to copyright.

In dealing with Sharman’s power to prevent infringements, Wilcox J held that, even though the way in which the Kazaa system was set up prevented Sharman from controlling individual infringements, it could re-design the system by introducing filtering to prevent access to copyright protected material or to provide access only to non-infringing material. While acknowledging that filtering would not provide a perfect system for protecting sound recordings, Wilcox J was persuaded that it would go a long way towards inhibiting copyright infringements committed by means of the P2P system. In reaching this conclusion, his honour was clearly aware that redesigning the Kazaa system would destroy the Kazaa business model.

In Kazaa, the Sharman parties argued that they were entitled to the facilities exception in section 112E of the Copyright Act. Wilcox J, however, rejected this claim largely on the basis that, by taking active steps to encourage users to share files, Sharman had done more than merely provide communications facilities. In determining whether a defendant has done more than merely provide facilities, Wilcox J held that the three factors set out in the partial codification of authorisation liability must be taken into account. This reasoning seems to suggest that merely providing facilities, without anything more, is unlikely to amount to authorising infringements, thereby denying the facilities exception of any practical effect.

Prior to Wilcox J delivering his decision in Kazaa, the US Supreme Court had to determine the liability of Grokster, which provided a similar P2P service to Kazaa, under US doctrines of
secondary liability. In MGM Studios v Grokster, 545 US 913 (2005), the Supreme Court introduced a new theory of secondary liability to hold Grokster liable for intentionally inducing the copyright infringements of end users. The court evidently adopted this new form of secondary liability because of a disagreement among the judges about the application of the Sony standard, which protects technologies capable of substantial non-infringing uses, to the Grokster P2P system.

While the consumer product cases held that manufacturers and vendors were not secondarily liable where technologies have both infringing and non-infringing uses, the Internet intermediary cases, including cases involving P2P service providers, have found liability where a technology or service is intentionally designed to facilitate infringements, and could equally be re-designed to inhibit infringements. In other words, an Internet intermediary, such as Cooper or Sharman, might have the power to prevent infringements either by not providing a service, or by providing a completely different service. In this respect, an important difference between the consumer product and Internet intermediary cases is that once a physical copy-facilitating product is produced and marketed it is either impossible or prohibitively costly to redesign it to inhibit copyright infringements, whereas a software-based product or service may be comparatively easily modified, even if this undermines the functionality of the service.

The copyright owners in iiNet clearly brought the case against the ISP, and not against a P2P service provider, partly because of the lack of intermediaries commercially exploiting the BitTorrent client software. The case against an ISP, such as iiNet, differs from cases involving intermediaries such as P2P service providers, as the Internet access service provided by an ISP has significant non-infringing uses, and is obviously not deliberately designed to facilitate copyright infringements. The case against iiNet is, instead, based upon the ISP’s failure to take any action against individual subscribers once it was informed of their infringing activities.

THE iiNET DECISION

The main issue in iiNet was whether the ISP had, by failing to take any steps to stop infringements, authorised the infringements of particular iiNet subscribers who were identified in the FACT notices. Although Cowdroy J held that iiNet had not authorised the infringements, he also considered the following important legal issues that were argued before the court, and which would have arisen if iiNet had been found liable:

- Whether the provisions of the Telecommunications Act (‘Telco Act’) protecting the confidentiality of subscriber communications would have prevented iiNet from acting on the AFACT notices;
- Whether the facilities exception in section 112E of the Copyright Act would have excused iiNet from liability; and
- Whether the iiNet would have been protected by the Internet intermediary ‘safe harbour’ provisions in Division 2AA of Part V of the Copyright Act.

After a discussion of Cowdroy J’s decision on authorisation liability, each of these issues, some of which may be important in the appeal, will be briefly addressed. This article does not consider issues raised in the case concerning the primary infringements of iiNet subscribers.
WAS IINET LIABLE FOR AUTHORISING COPYRIGHT INFRINGEMENTS?

On the safe assumption that iiNet subscribers were engaging in infringing activities, the key issue in the case is whether iiNet authorised those activities. In finding that iiNet had not authorised any infringements, Cowdroy J conducted a thorough review of the case law on authorisation liability, some of which is referred to above, but adopted an approach that differs significantly from that previously applied by Australian courts.

To begin with, in dealing with the binding decision of the High Court in Moorhouse, Cowdroy J attempted to reconcile the reasoning of the two judgments in that case. In doing so, he concluded that both judgments were ultimately based on the assumption that a person who authorises infringing activities is the person who provides the ‘true means’ of infringement. According to Cowdroy J, the university in Moorhouse was liable for providing both the photocopy machine and library books, which together constituted the means of infringement. Following from this analysis, he interpreted the decisions in Cooper and Kazaa as being based, in each case, on the defendants providing the ‘means’ for infringement, in the form of Mr Cooper’s web-site or the Kazaa P2P system. Moreover, Cowdroy J considered that the ISP in Cooper, which had hosted the web-site, was liable as being directly involved with providing the means of infringement, namely the web-site.

Applying this reasoning to iiNet’s role, Cowdroy J drew a distinction between providing the ‘means’ of infringement, which will lead to liability, and providing a ‘necessary precondition’ to infringements, which will not result in liability. Thus, for example, his honour suggested that providing electricity to a photocopy machine does not result in authorisation liability as it is providing a necessary precondition to infringements, and not the means. Similarly, Cowdroy J held that by providing Internet access iiNet had provided a necessary precondition to infringements, but had not provided the means of infringement, which was the BitTorrent P2P system, and so could not be liable for authorising infringements.

The great problem with the reasoning of the judge on this important point is that it reflects neither precedent nor the relevant provisions of the Copyright Act. As explained above, in Moorhouse, Gibbs J emphasised the importance of factors such as the power to prevent infringements and knowledge of infringing activities. It was only after taking into account those factors that his honour concluded that having control of the means of infringement and knowing that it is likely to be used to infringe copyright, while failing to take any reasonable steps to restrict infringements, would amount to authorisation. The fact that the university provided the means of infringement was therefore an application of the factors required to establish liability, and not an independent criterion. Furthermore, the courts in both Cooper and Kazaa emphasised the importance, especially in Internet cases, of the three factors identified in sub-sections 36(1A) and 101(1A), which the Copyright Act expressly says “must be taken into account”. Finally, this approach flies in the face of straightforward cases, such as Evans v Hulton (1924) 131 LT 534, where a person has been held liable for authorising infringements by purporting to grant a right to infringe, but where there was absolutely no question of supplying the means of infringement. The novel distinction drawn by Cowdroy J between a necessary precondition to infringement and the means of infringement therefore provides good grounds for an appeal.

Despite basing his decision firmly on the ground that iiNet did not provide the means of infringement, Cowdroy J went on to consider other relevant factors, including the three criteria
set out in the statutory partial codification. Beginning with iiNet’s power to prevent infringements, his honour held that, as iiNet did not provide the means of infringement, the only relevant power to prevent infringements was iiNet’s ability to warn subscribers and suspend/terminate subscriber accounts. After reviewing decisions dealing with this factor, Cowdroy J concluded that a power to prevent does not mean an absolute power, but is limited to circumstances where the alleged authoriser could take reasonable steps to prevent infringements.

To understand this aspect of the case, it is important to realise that iiNet’s standard form contract with its subscribers expressly armed the ISP with the ability to terminate subscriber accounts for copyright infringement. Regardless of this legal right, Cowdroy J held that, in the circumstances, it was not reasonable to expect iiNet to exercise the power. First, his honour held that the mere existence of a contractual power does not mean there is an obligation to exercise it. Secondly, Cowdroy J pointed out that, unlike termination for non-payment for services, a decision regarding copyright infringement must depend upon evidence from a third party, such as AFACT which, as copyright infringement is a complicated matter, may be difficult to assess. Thirdly, his Honour held that merely warning subscribers would not be a reasonable step as, to be effective, it would need to be backed by a credible threat of termination of the account.

Two important considerations appear to underpin Cowdroy J’s conclusion that suspension or termination of a subscriber’s account was not a reasonable step for iiNet to take. First, his honour was concerned that, while account termination would prevent the particular subscriber from using the account to infringe copyright, it would also prevent the subscriber from using the Internet for non-infringing uses. Secondly, his honour clearly considered that, given that account termination is a relatively harsh sanction, ISPs, such as iiNet, should not be made surrogates for courts imposing set forms of legal penalties for copyright infringement. In this respect, Cowdroy J stated (at [441]):

The law knows of no sanction for copyright infringement other than that imposed by a court pursuant to Part V of the Copyright Act. Such sanction is not imposed until after a finding of infringement by a court. Such sanction is not imposed on anyone other than the person who infringed. Such sanction sounds in damages or, if criminal, possible fines and imprisonment, not removal of the provision of the Internet.

Turning to the second statutory factor, the relationship of iiNet with the alleged infringers, Cowdroy J held that, although there was clearly a relationship, iiNet did not necessarily profit from the level of infringing conduct. In part, this conclusion was based on a finding that the level of bandwidth use does not necessarily correlate with infringing use of the Internet.

While Cowdroy J dealt with the availability of reasonable steps to prevent infringement in his treatment of whether iiNet had the power to prevent infringements, as mandated by subsection 101(1A), he returned to this as a separate factor that can lead to authorisation liability. After reiterating his finding that notification and suspension/termination was not a reasonable step, his honour held that blocking a subscriber’s access to particular web-sites would also not be a reasonable step. On this point, Cowdroy J considered that there was insufficient evidence presented as to the technical possibility of blocking access, but also questioned the desirability of blocking access to web-sites.
The main problem with Cowdroy J’s approach to the three statutory criteria is that there is no indication whatsoever in either the previous case law or the Copyright Act that the first factor, the existence of a power to prevent infringements, is to be limited to a power to take reasonable steps. While the ‘consumer product’ cases held that the manufacturers or vendors of copy-facilitating products had not power to prevent the use of such products to infringe copyright this was because, once marketed, there is no way of controlling the use of such products, and not because there are no reasonable steps that could be taken. It is simply wrong to confuse the two statutory factors. Moreover, in doing so, Cowdroy J obscured the central argument made by the applicants in the case, namely that iiNet had authorised the infringements by failing to take any action against the identified subscribers once it knew of the specific copyright infringements. The preferred approach, which accords with previous case law and the Act, is to find that iiNet had the power to prevent infringements, by implementing a warning and suspension/termination policy, then to consider whether, in the circumstances, the ISP had failed to take reasonable steps. In other words, while the focus on what were reasonable steps for iiNet to take is correct, the interpretation of the power to prevent infringements as being limited by the availability of reasonable steps is contrary to authority. It is only after it is found that a person has the power to prevent infringements that an inquiry into whether reasonable steps have been taken becomes relevant.

Following his consideration of the three statutory factors, Cowdroy J goes on to consider the relevance of iiNet’s knowledge of the copyright infringements. On this point, his honour first held that, while relevant to authorisation liability, knowledge alone is not sufficient to found liability. Secondly, Cowdroy J held that, while a general knowledge of copyright infringements might be relevant where, as in Kazaa, the defendant provides facilities calculated to lead to infringements, it is not relevant to a facility such as Internet access. These two points are not controversial. The real question in the case was whether, given the information about infringements in the AFACT notices, iiNet should have taken action against the identifiable subscribers. In this respect, Cowdroy J considered that, at the time the AFACT notices were received by iiNet, the relevant iiNet officers were unable to assess the validity of the information in the notices, meaning that it was not unreasonable for iiNet to leave assessment of the information to an independent third party, namely a court. Furthermore, even though Cowdroy J found that, at some point after the commencement of the litigation, iiNet became aware of the reliability of the information in the notices, he held that, even if coupled with a power to prevent infringements, mere knowledge could not found authorisation liability. In this respect, his honour essentially reiterated that iiNet had not authorised the infringements of its subscribers as (a) it did not provide the means of infringement; and (b) suspending or terminating subscriber accounts were not reasonable steps for iiNet to take.

As can be seen from this explanation of Cowdroy J’s reasoning, the conclusion that iiNet was not liable for authorising copyright infringements is compromised by an incorrect interpretation of the existing law, as well as a lack of clarity in the reasoning. Moreover, the approach adopted by the trial judge appears to downplay the detailed information in the AFACT notices, which can be matched to the accounts of identifiable iiNet subscribers. As further explained above, the legal issues in the case essentially resolve to the following: given the level of knowledge about infringements communicated by the AFACT notices and that iiNet had relevant powers to prevent infringements, does the failure to implement a policy of notification and suspension/ter-
mination amount to a failure to take reasonable steps? As there are considerations that go both ways, this is not an easy question to answer.

On the one hand, as the applicants claimed, it can be argued that, given a contractual power to prevent infringements and reliable information about the infringing activities committed by the use of particular subscriber accounts, it might be reasonable to expect some steps to be taken to deter infringements. After all, as Gavan Duffy and Starke JJ put it in *Adelaide Corporation v APRA*, (1928) 40 CLR 481, 504:

> Inactivity or ‘indifference, exhibited by acts of commission or omission, may reach a degree from which an authorization or permission may be inferred’.

The *Moorhouse* case itself is a good example of circumstances in which providing facilities in the knowledge that they would be used to infringe copyright, without taking any action to prevent infringements, can lead to liability. Moreover, despite the fact that there is no one-to-one correspondence between bandwidth usage and copyright infringement, it is clear that ISPs do benefit from unlawful downloading. For example, evidence in the case indicated that a radio advertisement for iiNet explained the bandwidth needed to download five episodes of the copyright protected television series, the *Golden Girls*. While the trial judge thought that the reference to the television program was intended to be humorous, it at least suggests that iiNet was indifferent to whether or not its subscribers were infringing copyright.

Furthermore, it is arguable that defences that may apply to those who make facilities, such as Internet access, available assume that merely providing such facilities may result in liability. Thus, it could be contended that the facilities exception in sections 39B and 112E can only have practical effect if merely providing communications facilities can result in liability for authorising infringements by means of those facilities. In practice, however, the courts have not interpreted the exception in this way. Equally, it could be argued that the ‘safe harbour’ defence, which provides a limited defence to ISPs that provide transmission or connection facilities, would have no effective operation if carrying out those activities could not result in liability. The defence, which is explained further below, protects such an ISP against monetary penalties for copyright infringement provided it adopts and implements a repeat infringer policy. If the transmission and connection activities of an ISP can never result in liability, it necessarily follows that there is no incentive for an ISP to adopt a repeat infringer policy.

On the other hand, as the respondents in *iiNet* argued, there are real questions as to whether it is reasonable for an ISP to suspend or terminate the accounts of its subscribers on the basis of infringement notices issued by copyright owners. First, while the information in the AFACT notices at issue in the case was found to be highly reliable, there was also evidence that other infringement notices issued by copyright owners are not as reliable. In particular, iiNet provided evidence that it received up to 350 automatically generated emails from the United States each day alleging copyright infringement. The trial judge was unable to find that these emails, referred to as ‘robot’ notices, were reliable. It is quite clearly costly for an ISP to attempt to distinguish those notices that are reliable from those that are not as reliable. Furthermore, if ISPs are found liable for failing to act on some infringement notices, they are likely to adopt a default rule of enforcing notices without assessing their reliability.
Secondly, even though using an Internet access account to infringe copyright is a breach of contract, suspending or terminating an account is a serious penalty. It could be argued that responding to infringement notices by issuing warnings to subscribers is less serious, and is likely to deter infringing behaviour. It is abundantly clear, however, that warning notices can only have a deterrent effect if they are backed by a credible threat of more serious sanctions, such as suspension or cancellation. As iiNet claims, it is arguable that a penalty of this nature should not be imposed by an ISP without a determination of copyright infringement being made by a court. In other words, an ISP is not necessarily the best body to make a decision as to whether to suspend or terminate a subscriber’s account based solely on the information in a notice issued from a copyright owner.

The difficulty of the case against iiNet is illustrated by the extent to which, in the circumstances, it may not be reasonable for the ISP to completely fail to take any action but, equally, the only actions that are likely to effectively deter infringements, namely suspension or termination, may not be reasonable steps. While the trial judge was clearly wrong, as a matter of law, to conclude that iiNet had not authorised infringements as it did not provide the means of infringement and, in any case, had no power to prevent infringements, it is not self-evident that iiNet would be found liable on a more orthodox application of the law. As the last section of this article explains, this suggests a need for the legislature to clarify the potential liability of ISPs to an extent that has not been achieved by legislative reforms to date.

**THE TELECOMMUNICATIONS ACT CONFIDENTIALITY PROVISIONS**

iiNet argued that, even if it were found to be liable for authorising infringements, it was prevented from warning, suspending or terminating its subscribers because of the confidentiality provisions in Division 1 of Part 13 of the Telco Act and, in particular, section 276.

Section 276 of the Telco Act relevantly provides that an ISP (or carrier) must not disclose or use any information relating to the contents of a communication, a carriage service supplied by the ISP, or the affairs or personal particulars of another person, that comes to the ISP’s knowledge as a result of its business. iiNet claimed that, as the information contained in the AFACT notices related to the content of communications, the carriage service used by subscribers, and the personal particulars of subscribers, section 276 prevented it from using the information. The problem with this argument is that, even if, as the trial judge held, section 276 applies, the statutory obligation of confidentiality is subject to exceptions set out in sections 279, 280, 289 and 290 of the Telco Act.

First, section 279 establishes an exception that permits disclosure or use of information where it is in performance of a person’s duties as an employee of an ISP. Cowdroy J held that, as iiNet’s standard form agreement prohibited subscribers from infringing copyright, section 279 operated to exclude iiNet’s employees from section 276 insofar as they were required to investigate breaches of the subscriber contract. Secondly, section 289 establishes an exception to the prohibition on the use or disclosure of personal information where the subject of the information is reasonably likely to be aware that the information is usually disclosed or used, or has consented to the disclosure or use. As iiNet’s subscriber contract specifically provides for the use of personal information in administering and managing accounts, Cowdroy J held that subscribers had consented to the use of the information in acting on the AFACT notices. Therefore, the trial judge correctly
concluded that the statutory obligation of confidentiality in section 276 of the Telco Act was no barrier to iiNet implementing a notification and suspension/termination policy in response to the AFAC...
or services for transmitting, routing or providing connections for copyright material, or the inter-
mediate and transient storage of copyright material in the course of transmission, routing or
provision of connections" (s 116AC). To be entitled to the safe harbour, a Category A service
provider must “adopt and reasonably implement a policy that provides for termination, in ap-
propriate circumstances, of the accounts of repeat infringers” (s 116AH(1), item 1). Once a service
provider is entitled to the safe harbour, the relief a court can grant against a service provider
conducting a Category A activity is limited to an order requiring reasonable steps to disable access
to an online location outside Australia, or an order to terminate a specified account (s 116AG(3)).

Although, as iiNet was not found to be liable for authorising infringements, it was unnecessary
for Cowdroy J to deal with the potential application of the ‘safe harbour’ regime, as the matter
had been fully argued, he proceeded to analyse the availability of the Category A ‘safe harbour’
provisions. As iiNet was clearly conducting Category A activities, the key issue on this aspect of
the case was whether it had adopted, and reasonably implemented, a repeat infringer policy.
Given that the Australian ‘safe harbour’ regime is transparently based on the US regime, Cowdroy
J referred to US case law in analysing this requirement. An important difference between the US
law and the Australian law, however, is that, while the DMCA requires a service provider to
inform subscribers of its repeat infringer policy, there is no analogous requirement under the
Australian regime. The two issues that Cowdroy J was required to consider were: (a) whether
iiNet had adopted a repeat infringer policy; and (b) if so, whether it had reasonably implemented
the policy.

In relation to the first issue, it was clear that iiNet did not have an express, written repeat
infringer policy. Nevertheless, iiNet claimed that it had an unwritten policy that subscriber ac-
counts would be terminated when iiNet was ordered to terminate an account by a court, when
a subscriber admitted to infringing copyright or when a court found that an iiNet subscriber had
infringed copyright. Cowdroy J accepted that, even though the ‘policy’ was unwritten, there was
sufficient evidence of the policy in the copyright section of iiNet’s web-site, which included notice
that hosting or posting copyright material was a breach of the subscriber contract, and in the
clause in the subscriber contract that provided for termination for copyright infringements. Re-
lying on the flexibility of the statutory condition, which states only that the policy must provide
for termination ‘in appropriate circumstances’, Cowdroy J concluded that an unwritten under-
standing, that essentially required action only after a decision by a court, was sufficient to con-
stitute a repeat infringer policy. As his honour put it (at [615]):

The policy need not be written, since there is no statutory requirement that a
policy be in written form. It need not provide clear steps leading to termination.
It need not mention ‘repeat infringer’. Parliament, by the absence of any pre-
scription for the policy, saw fit to grant CSPs significant latitude to formulate
their own policies.

The US case law makes it clear that the requirements for a repeat infringer policy are not
onerous. For example, in Corbis v Amazon.com, 351 F Supp 2d 1090 (2004), Lasnik CJ, com-
paring the requirement for a repeat infringer policy with the detailed obligations of Internet
content hosts to implement a notice and take-down scheme, stated that (at 1100–1101):
The key term, “repeat infringer,” is not defined and the subsection never elaborates on what circumstances merit terminating a repeat infringer’s access. This open-ended language contrasts markedly with the specific requirements for infringement notices and takedown procedures set forth in § 512(c). The notice and take-down provisions demonstrate that Congress infused the statute with specific detail when it so chose. The fact that Congress chose not to adopt such specific provisions when defining a … [repeat infringer] … policy indicates its intent to leave the policy requirements, and the subsequent obligations of the service providers, loosely defined.

Nevertheless, the approach adopted by Cowdroy J comes perilously close to not requiring a policy at all. The extremely minimalist approach adopted by Cowdroy J is illustrated by his treatment of the conclusions reached by Posner J in In re Aimster, 334 F 3d 643 (2003), which concerned the liability of a P2P service provider. In concluding that the P2P service provider, Aimster, did not have a repeat infringer policy, Posner J stated that (at 655):

The common element of … [the] … safe harbours is that the service provider must do what it can reasonably be asked to do to prevent the use of its service by “repeat infringers”… Far from doing anything to discourage repeat infringers of the plaintiffs’ copyrights, Aimster invited them to do so, showed them how they could do so with ease using its system, and by teaching its users how to encrypt their unlawful distribution of copyrighted materials disabled itself from doing anything to prevent infringement.

What Posner J seems to be saying here is that a repeat infringer policy must be a genuine policy for dealing with repeat infringers, and not a mere sham to disguise a business model based on encouraging copyright infringements. Cowdroy J, nevertheless, criticises Posner J’s statement for importing a positive obligation to discourage infringement where all that is required is a policy for dealing with repeat infringers. Contrary to what Cowdroy J suggests, however, the promise of limited liability provided by the safe harbour regime appears to be intended to provide some certainty for Internet intermediaries that they can escape the threat of liability by taking certain minimum steps to deter infringements. In other words, as Posner J’s comments suggest, a repeat infringer policy must be a real repeat infringer policy, and not merely a sham policy or no policy at all. In any case, the information provided on the iiNet web-site, which was relied upon by Cowdroy J as evidence of a policy, is seriously incomplete, as it refers to hosting or posting copyright material, but completely fails to mention that copyright may be infringed by downloading material.

Having found that iiNet had adopted a minimalist repeat infringer policy, it was relatively straightforward for Cowdroy J to find that the policy had been reasonably implemented. After all, as it appeared that no iiNet subscribers have been found by a court to have infringed copyright, iiNet did not have to do anything to implement its policy. The problem with this aspect of the judgment, then, is clearly whether the very low threshold set by Cowdroy J for a repeat infringer policy can be justified. To be fair, the extremely flexible requirements for a repeat infringer policy, namely only that it must provide for termination ‘in appropriate circumstances’ and that it must
be ‘reasonably implemented’, create difficulties for courts required to determine whether an inter-
termediary has adopted a policy. Moreover, like the US law, the Australian safe harbour regime 
provides that service providers are not required to monitor their services (s 116AH(2)). On the 
other hand, it is hard to envisage how the condition required to be complied with for Category 
A activities can be satisfied by a repeat infringer policy that is purely illusory, and the approach 
adopted by iiNet comes very close to this.

SHOULD AN ISP BE LIABLE FOR ITS USERS’ INFRINGEMENTS?

The extent to which an ISP should be held liable for the infringing activities of its subscribers 
raises especially difficult policy questions. The following analysis focuses on the economic argu-
ments for and against holding ISP intermediaries liable for end-user infringements. As such, it 
does not address broader questions relating to the proper scope of copyright protection, or wider 
policy questions relating to the implications of unlawful downloading via P2P networks. In this 
respect, the author agrees with the comments of Lichtman and Posner, that “the copyright dispute 
is in many ways a dispute about the propriety of the underlying property right, not a dispute 
about the proper contours of indirect liability per se” (Lichtman and Posner 2006, p 258).

In general, from an economic perspective, a person should be indirectly liable for the infringing 
activities of another person where it is more efficient to bring an action against the first person 
than to sue the person directly responsible for the infringing behaviour. Thus, as Lichtman and 
Posner explain, where it is difficult to sue direct infringers, indirect liability might be desirable 
where a person, not being the infringer, is in a good position to detect and deter the infringing 
conduct (Lichtman and Posner 2006). Moreover, as those authors further explain, even where 
a person is not in a position to detect and deter infringements, indirect liability might be efficient 
where it is desirable for the person held liable to factor the negative consequences of its activities, 
albeit unintentional, into its decision-making.

First, we can safely assume that there is a high level of infringement by end users downloading 
copyright protected material, such as films, over P2P networks and that this results in an inde-
terminate reduction in incentives for the production of copyright material. Moreover, in significant 
sections of the community, it has clearly become accepted practice to engage in unauthorised 
downloading. Secondly, it is both costly and difficult for copyright owners to bring actions 
against each individual user alleged to infringe copyright. For example, while infringement detec-
tion technologies allow copyright owners to determine the IP addresses of computers participating 
in a torrent swarm, the assistance of ISPs is needed to match an IP address to the name of an 
account holder. It may be, as iiNet argued, that a court will readily issue a warrant requiring an 
ISP to identify a subscriber in an action taken against an end user, but the costs of bringing actions 
against end users mean that most infringers can be relatively confident of escaping the legal 
consequences of their actions. Moreover, actions against selected end users are likely to have 
negative consequences for large copyright owners, as it will be claimed that such users are being 
singled out, or victimised. Finally, individual infringers may not have the assets needed to com-
pensate copyright owners for their infringing activities.

Thirdly, there is no doubt that there are substantial savings in enforcement costs in bringing 
an action against an intermediary, such as an ISP, as opposed to launching multiple actions 
against individual end users (Bomsel and Ranaivoson 2009; Lichtman and Landes 2003). While
actions could be brought against BitTorrent P2P service providers, such as The Pirate Bay, they may be difficult to locate and, in any case, do not provide commercial services. Fourthly, as copyright infringements committed by means of Internet access services provided by ISPs have negative consequences that are not taken into account by the ISP, it is arguable that holding ISPs liable would force them to take these costs into account. As Lichtman and Posner point out, however, providing Internet access also results in public benefits that an ISP also does not take into account, meaning that imposing liability merely to take account of the costs of copyright infringement might create more harm than good (Lichtman and Posner 2006). In any case, ISPs would likely simply pass the costs on to all subscribers, thereby penalising legitimate users. As Lichtman and Landes point out by way of analogy, imposing liability on photocopy manufacturers might benefit copyright owners, but would increase the price of photocopiers, so that legitimate users would be less likely to buy them (Lichtman and Landes 2003).

Fifthly, although ISPs are clearly in a position to take action that deters the infringing actions of end users by, for example, suspending or terminating accounts, there are costs involved with doing so. In particular, it is both costly and difficult for an ISP, unaided, to determine whether a subscriber is infringing copyright. Although copyright owners can assist ISPs by providing information collected about infringing activities, such as the information contained in the AFACT notices, an ISP cannot simply depend on the reliability of the information contained in infringement notices, which are likely to be of varying quality. Furthermore, it is arguable that decisions about whether a person has committed copyright infringements should be made by a public authority, such as a court, which is equipped to make such decisions, and whose processes include safeguards to protect the rights of defendants.

The difficulties entailed in allocating liability for copyright infringements committed by end users by means of P2P services should, by now, be apparent. This suggests that decisions about the extent to which ISPs should be liable for the infringements of users should be made by the legislature, which should be better able to assess the complex calculus of benefits and losses, than the courts. On the one hand, it is now increasingly apparent that, without some participation from ISPs, it is very unlikely that there will be any change in the high levels of infringement committed by P2P file-sharing. In this sense, it may be desirable to allocate some responsibility to ISPs for deterring infringements. On the other hand, there are real problems, especially in terms of legal process, in relying predominantly on ISPs, with information provided by copyright owners, to make decisions about the alleged copyright infringements of individual subscribers. It is therefore easy to agree with Lichtman and Posner when they conclude that the dispute about indirect liability for copyright infringements is “one where there are a variety of plausible legal responses, and thus policymakers must tread carefully as they try to determine which approach offers the best balance in terms of costs and effectiveness” (Lichtman and Posner 2006, p 258). Similarly, as de Beer and Clemmer point out, “an efficiency analysis is always relative to alternative arrangements, so it is difficult to say categorically whether broad safe harbors are desirable or undesirable from an economic perspective” (de Beer and Clemmer 2009, p 409).
CONCLUSION

The extent to which an ISP may be liable for the infringements of its subscribers committed by downloading copyright material by means of the BitTorrent P2P system raises complex issues of law and policy.

As a matter of law, the first instance decision of Cowdroy J in iiNet held that the ISP was not liable for authorising the infringing activities of its end users. As this article has argued, there are good grounds for doubting the reasoning that led the judge to this conclusion. First, Cowdroy J drew a distinction between the means of copyright infringement and a necessary precondition to infringement, to conclude that, as Internet access was a precondition and not a means, iiNet had not authorised the alleged infringements. As explained, the distinction drawn by Cowdroy J has no basis in either prior court decisions dealing with authorisation liability, or the text of the Copyright Act. It is an incorrect application of the law. Secondly, Cowdroy J held that, as implementing a policy of notification and suspension/termination did not amount to reasonable steps, iiNet did not have a relevant power to prevent copyright infringements. As explained, this involves a fundamental confusion between the first and third of the mandatory factors required to be taken into account by sub-sections 36(1A) and 101(1A) of the Copyright Act. It seems clear that, by virtue of the clause in the subscriber contract providing for termination of an account in the event of copyright infringement, that iiNet had the power to prevent infringements by end users.

Despite the errors in the reasoning of the trial judge, however, it remains possible that the first instance decision will be upheld on appeal, on the basis that implementing a notification and suspension/termination policy is not a reasonable step for an ISP to take. On the other hand, there are respectable legal arguments that can equally lead to the conclusion that an ISP which, once armed with specific knowledge of infringements, fails to take action to prevent infringements, is liable for authorising the infringements. These conclusions might be thought to avoid the issue, but given the inherent flexibility of the concept of authorisation, and the fact that an ISP’s indirect liability for the infringements of end users has never yet come before the courts, it is difficult to predict what an appeal court might do. Finally, just as Cowdroy J adopted an approach to authorisation liability that clearly favoured iiNet, it is arguable that he applied an interpretation of the safe harbour provision requiring an intermediary to have a repeat infringer policy that renders that requirement completely ineffective.

The source of much of the legal difficulty in this area is the unnecessary complexity of the statutory provisions dealing with intermediary liability, many of which are poorly drafted. First, the partial codification of authorisation liability in sub-sections 36(1A) and 101(1A) of the Copyright Act, which was designed to lead to greater certainty, adds nothing to the common law. In fact, the partial codification appears to have created greater uncertainty. Secondly, the extent to which the facilities exception in sections 39B and 112E of the Copyright Act may protect facility providers is completely unclear. This is partly because the practical effect of the exception does not ever appear to have been properly thought through, and partly because the exception is poorly drafted. If, as most courts evidently think, the exception has no practical effect, the provisions should simply be deleted from the law. Thirdly, the safe harbour regime in Division 2AA of Part V of the Copyright Act, appears to have been inserted simply to comply with the Australia-US Free Trade Agreement, and with very little consideration being given to the Aus-
alian law governing secondary liability for copyright infringement. Thus, for example, if there is little possibility of a person who merely provides communications facilities being held liable for copyright infringements, there appears to be little scope for the operation of the complex safe harbour regime. In any case, the litigation in iiNet has revealed some ways in which the regime might be improved, especially in relation to intermediaries engaged in Category A activities. For example, the requirements for a repeat infringer policy could be spelt out in more detail, while it would seem desirable to include a provision, similar to that found in the DMCA, requiring intermediaries to inform subscribers of their repeat infringer policy.

As a matter of policy, there may be scope for requiring ISPs to take some degree of responsibility for copyright infringements committed by means of their networks. The extent to which ISPs should be responsible for suspending or terminating subscriber accounts in response to allegations of copyright infringement sourced from copyright owners is, however, both extremely complex and controversial. Much of the policy calculus necessarily depends upon the view taken of the seriousness of the large-scale copyright infringements occurring over P2P systems. Much also depends upon the view taken about the proper role of intermediaries, such as ISPs, which many argue should be completely neutral in relation to the content of communications passing over their networks (Elkin-Koren 2006; Harper 2005). On the other hand, it is an interesting social commentary that, while there is naturally little opposition to ISPs cooperating in suppressing universally condemned material, such as child pornography, there is widespread opposition, and indeed outrage in some circles, at the suggestion that ISPs should be involved in deterring copyright infringements. Furthermore, in the context of the Australian policy of constructing a high capacity National Broadband Network (NBN), it is significant to note, as Lichtman and Posner point out, that copyright infringement is one of the main drivers of demand for higher bandwidths (Lichtman and Posner 2006, p 258). In any case, if some form of ‘graduated response’ were to be contemplated, it would seem to be important to consider introducing some procedural safeguards for Internet subscribers, such as the availability of a relatively inexpensive appeals mechanism. In this respect, it may be important to note that where a subscriber’s account is incorrectly terminated for non-payment of fees, there is scope to bring a complaint to the Telecommunications Industry Ombudsman (TIO).

Given the complexity of the policy issues, this article has not purported to offer any definitive answers to the question of the extent to which ISPs should be liable for end user copyright infringements. While there is no doubt that technologies for detecting copyright infringements are likely to continue to improve, it is still necessary to ensure that end users are not unjustly penalised by reliance on untested information. As explained in this article, ISPs face a potentially difficult task in distinguishing between reliable infringement notices and notices that are not reliable. In these circumstances, it is desirable that, within the confines of our treaty commitments, serious consideration be given to developing a legislative regime governing ISP liability that is both clearer and better than the current regime. While any policy debate in this area is guaranteed to arouse passions, it is best that the costs and benefits of the various policy options be fully and frankly debated, rather than reliance placed on a legal regime that is not up to the task.
ACKNOWLEDGEMENT

The author thanks Associate Professor David Brennan from Melbourne Law School for helpful comments on a draft of this paper.

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Cite this article as: Lindsay, David. 2010. ‘Liability of ISPs for end-user copyright infringements: The first instance decision in Roadshow Films Pty Ltd v iiNet Ltd (No 3)’. Telecommunications Journal of Australia. 60 (2): pp. 29.1 to 29.21. DOI: 10.2104/tja100029.
Online Information Communication Technologies (ICTs) make accessing information any time, any place and using any device a reality for more than a quarter of the world’s population. The Internet can improve communication and increase the independence of people who have disabilities and those who are geographically or socially isolated. Despite this potential, Web 2.0 applications and 3D virtual worlds remain largely inaccessible to many people with disabilities. This paper describes the design and development of an open source accessible 3D virtual world environment and Web 2.0 solution incorporating features that address the identified accessibility limitations of currently available technologies.

INTRODUCTION

3D virtual worlds have the potential to link those who are isolated by disability, geographical location and social circumstances through the establishment of virtual communities. In this way virtual worlds can enable people with disabilities to transcend the limitations of their ‘actual lives’ through virtual space. However, as Mitcham pointed out over a decade ago, ‘the problems with design are not just technical or aesthetic, but also ethical’ (Mitcham 1995, 187). Just as these technologies can facilitate increased social participation of people with disabilities, those who can benefit the most from such collaborative, rich media experiences may be further disadvantaged by the technological barriers to accessibility imposed by such platforms.

This paper begins with a definition of terms and discussion of the benefits of Web 2.0 and 3D virtual worlds in increasing social interaction, facilitating the dissemination of information and engaging learners in simulated experiential activities. The literature review presents findings from desktop research of the various solutions that have been developed and the limitations of some of these existing technologies. Next the paper outlines the methodology employed in undertaking ethnographic research with people who identify as disabled in the 3D virtual world, Second Life, as well as trials of the use of Second Life with undergraduate students at the University of South Australia. Drawing on these case studies, the benefits for people with disabilities as well as the accessibility challenges are reported. The next section of the paper describes a project involving the design and development of an open source accessible 3D virtual world environment and associated Web 2.0 application.

This initial project, which received funding support from the Australian Learning and Teaching Council, has been extended to provide a solution that enables people with disabilities to communicate and attend presentations in either the 3D virtual world or via an accessible Web 2.0 environment using a range of devices. The technical challenges and solutions encountered
through the design process, and findings from preliminary testing are reported. Directions for future research and development are proposed in the final section of the paper.

REVIEW OF THE LITERATURE

This section of the paper provides an overview of the literature beginning with a definition of terms and a discussion of the benefits of Web 2.0 and 3D virtual worlds. Consideration is given to three main areas, which are of particular importance for people with disabilities:

1. increasing social participation;
2. ensuring equal access to information; and
3. enhancing teaching and learning.

The accessibility challenges posed by Web 2.0 and 3D virtual worlds are presented and potential solutions discussed.

DEFINITIONS

While there is some debate regarding the origin of the term Web 2.0 (Alexander 2008), there is general agreement that the expression can be attributed to Tim O’Reilly (2005) who described Web 2.0 as a set of principles and practices that harness collective intelligence. These principles include:

1. light weight programming models;
2. syndicated web services (for example RSS);
3. ‘remixing’ and ‘hackability’ of content; and
4. device independence.

Obasanjo’s (2004) classification of social software enables us to easily identify the core features and particular applications that incorporate the principles of social networking espoused by O’Reilly. Obasanjo identified five classes of social software:

1. Communication;
2. Sharing;
3. Discovery of old and new contacts;
4. Relationship management;
5. Collaborative or competitive gaming.

While Obasanjo’s (2004) classification of social software does not specifically refer to 3D virtual worlds, all five classes of social software can be identified in such environments.

For example, in 3D virtual worlds such as Second Life, communication takes place via residents’ (members of the Second Life community) avatar personae using either Chat or Instant Messaging (IM). IMs can be stored for retrieval if the resident is not online (thus supporting both synchronous and asynchronous communication) and the IM can also be sent to the resident’s nominated email account.
There is a convergence of web services within such virtual worlds. As Bestebreurtje (2007) explains, these ‘mergings’ called ‘mash-ups’ work both ways; web content is displayed within the virtual world as well as content from the virtual world being communicated to websites. For example, there are now applications in Second Life that enable residents to post to a blog, send ‘tweets’ to Twitter and there is even an application that enables residents to display photos from the photosharing site, Flickr within Second Life.

3D virtual worlds also support the establishment of networks of friends as individuals as well as members of virtual communities, and these friendships and groups may extend to social networking sites such as Facebook.

3D virtual worlds such as Second Life, which have been built entirely by the residents, are based on the principles of social collaboration and user generated content. As Ondrejka (2004) explains, Second Life was designed to be an environment constructed by its users and one that fosters ‘creativity and self-expression…to create a vibrant and dynamic world full of interesting content’ (Ondrejka 2004, 1).

Finally, while not constructed as 3D virtual games in their own right, 3D virtual worlds such as Second Life provide a space in which virtual communities may choose to create role-playing game environments.

**BENEFITS OF WEB 2.0 AND 3D VIRTUAL WORLDS**

A recent report published by Media Access Australia (Cahill and Hollier 2009) suggests that social media is an increasingly important aspect of modern life and ‘we all have a place in the network and a role to play’ (p. 3). In this section the benefits of social media are explored, with a particular focus on 3D virtual worlds as places that facilitate social interaction, the sharing of information and as virtual environments for collaborative experiential learning.

3D virtual worlds such as Second Life provide a space that facilitates varied kinds of engagement for people who identify as disabled. While some users with disabilities find the accessibility challenges associated with navigating 3D virtual worlds disabling and exclusionary, others gain a sense of empowerment through their interactions in the virtual world. For example, Simon Stevens, the founder of ‘Wheelies,’ which is a social network of residents and a nightclub in Second Life, enjoys experiencing Second Life in his virtual wheelchair (Is this a real life, is this just fantasy? 2007, para. 5). Other residents like Susan Brown prefer to leave their wheelchairs behind and experience Second Life as walking avatars (Stein 2007, para. 31), while Niles Sopor found an opportunity to forget his disability and experience walking life through his avatar (cited in Cassidy 2007, para. 4).

There are a large number of groups in Second Life that provide opportunities for people who identify as disabled, or who have an interest in disability, to socialise, share information or receive support services. For example, Virtual Ability Island assists people with disabilities to come into Second Life and helps to sustain them in the virtual world through the provision of support services. Virtual Ability is associated with another virtual community, the Health Support Coalition, which provides a medium through which more than seventy health and disability related virtual communities in Second Life can communicate and share information. The GimpGirl virtual community was established outside Second Life in 1998 by Jen Cole and a group of young women with disabilities who were seeking a community that understood their needs and provided a safe
place for women and girls with disabilities. The community conducts regular meetings and seminars in *Second Life* and has a strong Web 2.0 presence as well.

3D virtual worlds also enable learners to engage in simulated learning experiences and experiential learning activities (Mason 2007). The Australia and New Zealand edition of the 2009 Horizon Report (Johnson et al. 2009) reinforces this view, asserting that virtual, augmented and alternate reality worlds are proving to be an effective means for attracting students’ interests and increasing their engagement (p. 5) in a range of activities ‘that blend the virtual and the real in varying proportions’ (p. 17). Such technologies will become increasingly important in the Australian context as universities work towards achieving the Australian Government’s target of 40 per cent of all young people aged between 25–34 years attaining a higher education qualification by 2025, and those from low socio-economic backgrounds comprising 20 per cent of higher education enrolments by 2020 (Gillard 2009). Ironically, the very technologies that can provide opportunities for learners to experience things not possible in ‘actual life’ are also inaccessible to a large number of individuals with disabilities. It is to these issues that we now turn.

**ACCESSIBILITY ISSUES**

In this paper, the term ‘accessibility’ is defined in its broadest sense: Web accessibility is about ensuring that anyone, using any browser or device, is able to access any content on the web. This definition is consistent with Letourneau’s (2009) position that accessibility ought to be concerned with ensuring that all users (regardless of ability) can access virtual environments using current and legacy devices as well as emerging non-browser technologies, and also gain full and complete understanding of the content of those environments.

Despite the potential for accessible design to ‘even the playing field’ Dunlap lamented in 2006 that for some developers, web accessibility is considered a ‘troublesome inconvenience that assists relatively few and diverts energy and resources from web initiatives and development projects that could aid the masses’ (Dunlap 2006, 34). Turning our attention to Web 2.0 applications, a review undertaken by AbilityNet in 2008 (State of the eNation 2008) reported that most of the social networking websites they reviewed were difficult or impossible for people to use. None of the sites were found to satisfy a base level of accessibility. The issues identified include:

- Lack of alternative text for images;
- Keyboard accessibility limitations;
- Accessibility problems created by the CAPTCHA system used as part of the initial registration process;
- No mention of the importance of captions or transcripts for user created video content;
- Use of fixed font size for text;
- Use of JavaScript for some features that cannot be accessed without JavaScript.

Gibson (2007) suggests that while the web will eventually become more accessible with increased accessibility built into web browsers, the next generation of the web (Web 2.0) presents further challenges for people with disabilities as these new interaction models are ‘pushing the limits of the technologies of the web and the ability of assistive technologies to interpret the changing face of the web’. Both Gibson (2007) and Zajicek (2007) note the major challenges imposed by the use of Asynchronous JavaScript and XML (AJAX) to create dynamic Web 2.0
pages and Zajicek (2007) points to a range of issues, which she describes as ‘worrying trends’ including:

- Increasing use of video content within Web 2.0 sites to augment or replace web content;
- Many Web 2.0 applications relying on fast download times, which are unattainable for those on lower incomes and/or those living in remote locations who rely on dial-up;
- Dynamically created websites using AJAX that are inaccessible;
- Use of CAPTCHA to deter bots from accessing sites.

Just as Web 2.0 applications pose accessibility challenges, there is widespread agreement that there are significant technological barriers associated with highly visual environments such as 3D virtual worlds. Judy Brewer, Director of the W3C Web Accessibility Initiative (WAI), outlined some of the challenges during her presentation at an ‘in world’ public conference held in June 2007. Brewer described the pleasurable experience of her acquired virtual abilities (cited in Qi 2007, para. 4). However, in the same speech, as Hickey-Moody and Wood (2008) observed, she also articulated the limitations of this environment for users with visual disabilities, those with hearing impairments and users with cognitive or neurological difficulties.

These two perspectives on Second Life present contrasting viewpoints. On the one hand, 3D virtual worlds such as Second Life are technological developments that are pleasurable and can increase opportunities for social engagement. On the other hand, individuals with sensory and cognitive impairments continue to encounter exclusion in both their ‘virtual’ and ‘actual’ life experiences (Hickey-Moody and Wood 2008) due to the lack of accessibility of Web 2.0 and 3D virtual world environments.

ACCESSIBILITY SOLUTIONS

Inclusive design, also referred to as ‘universal design’ and ‘design for all’, is an area of concern that has gained considerable momentum in recent years. As Coleman (2006) explains, this movement has led to increasing legislation and growing interest in inclusivity as a social goal as well as a means for leveraging economic opportunities. The key elements in universal or inclusive design are said to include: providing interoperability; providing accessibility to users with disabilities; and providing customisation and localisation features for people from different countries and cultures (Usability First 2004).

Web 2.0 and 3D virtual worlds pose greater challenges given their use of rich media and their dynamic nature. Nevertheless, it is possible to apply many of the principles of usable design to the development of such social networking applications. Gibson (2007) notes that while accessibility guidelines were not in place when the web first emerged and there is still much work to be done to make Web 2.0 fully accessible, new specifications can be added to these applications using extended accessibility application interfaces (APIs). Moreover, as Gibson elaborates, the Accessible Rich Internet Applications Suite (ARIA), which is a specification proposed by the W3C Web Accessibility Initiative’s (WAI) Protocols and Formats Working Group, is designed to enable assistive technologies to better represent user interface components and dynamic interactions to the user.
In this next section, a project which aims to provide an open source accessible solution using a combination of Web 2.0 and 3D virtual world technologies is described and the preliminary findings from our trials reported.

**METHODOLOGY**

This section describes the research questions, the research design and the technologies employed in the design of our prototype accessible Web 2.0 and 3D virtual world environment. The study involved several stages outlined in the relevant sections below. Human Research Ethics approval was obtained prior to the commencement of the study.

**RESEARCH QUESTIONS**

1. What are the features and limitations of 3D virtual worlds for people with disabilities?
2. What are appropriate techniques for designing usable and accessible interfaces to 3D virtual worlds?
3. How can accessibility solutions to 3D virtual worlds enhance the learning experience for students with disabilities?
4. What adaptations are required to extend accessibility solutions in closed 3D virtual world platforms such as Second Life to open source 3D virtual world platforms?

**RESEARCH DESIGN**

The research design has involved:

1. Reviewing the existing literature into the usability/accessibility of current interfaces to 3D virtual worlds.
2. Undertaking ethnographic research involving participant observation of stakeholders’ interactions and conducting interviews with individuals who identify as disabled in the 3D virtual world, Second Life.
3. Trialing selected undergraduate courses in Second Life to identify the pedagogical benefits as well as the accessibility and usability issues relating to 3D virtual worlds.
4. Developing guidelines for interface design based on the World Wide Web Consortium’s (W3C) Web Content Accessibility Guidelines 2.0 (W3C 2008) in collaboration with organisations that are designing accessibility solutions within 3D virtual worlds.
5. Adapting technical solutions developed for 3D virtual worlds such as Second Life to an open source Web 2.0 and 3D virtual world solution.
6. Conducting trials of the platform with users who have physical, sensory and/or cognitive disabilities.
7. Modifying the platform based on the findings from trials and making the platform available through open source to the community.
PARTICIPANTS

ETHNOGRAPHIC STUDY

Participants for the ethnographic stage of the study were individuals who identified as people with disabilities and responded to a recruitment ‘note-card’ distributed to various disability groups in *Second Life*. Recruitment notice boards were also set up on SIMs (virtual regions) associated with these disability groups. The project website provided additional information about the project and could be accessed via a link embedded in the recruitment material.

The main process of data collection involved participant observation and interviews using either text chat or audio-recordings for ease of analysis. The participants were not identified in the transcripts and resulting analysis or research outputs. The data material was made available to any of the participants on request and participants were advised that their participation was voluntary and that they could withdraw from the study at any time.

TRIALS OF COURSES IN SECOND LIFE

A total of five undergraduate courses offered by the School of Communication, International Studies and Languages at the University of South Australia were trialled in *Second Life* over a two year period. More than 300 students enrolled in the relevant undergraduate courses participated in a variety of learning activities including: 1) interactive discussions supported by virtual tutorials in a second-year communications theory course; 2) the collaborative design of immersive games in a second-year design course; 3) dramatic sequences performed by students enrolled in a second-year visual theatre course; 4) the creation of online portfolios by students enrolled in a third-year electronic publishing course; and 5) service learning undertaken by final year students working with voluntary groups within *Second Life*. At the conclusion of the courses students were invited to complete anonymous online questionnaires, which sought information about their experiences communicating through the mediated environment of the 3D virtual world, the usability of the interface, and the benefits and challenges relating to undertaking their studies in this virtual learning environment. Students were advised that their participation in the online questionnaire was voluntary and that their anonymity would be safeguarded.

RESULTS

As reported by Wood et al (2009), our review of the literature and the findings from ethnographic research undertaken in *Second Life* identified the following accessibility limitations of 3D virtual worlds:

- The log-in screen of *Second Life* is not accessible for users who are visually impaired and rely on screen reader software;
- The local chat window in *Second Life* is not accessible to screen reader software;
- The user interface of the *Second Life* client is not accessible to screen reader software and there is limited support for alternative accessing devices;
- User generated content within *Second Life* is not accessible to visually impaired users;
- Tab-index needs to be incorporated to provide a logical order between links and options;
- The need for provision of an audio message and a text list of avatars in the vicinity of user’s avatar;
A simple author solution is required that will enable users to add descriptive labels for all objects and longer descriptions for posters and slides containing text in image format; 

- The need for synchronised streaming captions for videos; 
- There is also a need for text transcriptions for streaming audio.

The results from our trials of the five courses in Second Life have been reported elsewhere (Wood and Hopkins 2008; Wood 2009; Fewster and Wood 2009). The key findings of relevance to this project are as follows:

a. Some students had technical difficulties connecting successfully to the Second Life server due to bandwidth or technology limitations of their equipment.

b. Several students remarked on the impersonal nature of the mediated communication in 3D environments. One student commented that ‘It made interaction with others a little less personal and sometimes hard to follow if you were chatting with multiple people from your group at one time’. While some students enjoyed the flexibility of studying off-campus, several were critical of the interface as reflected in a comment that ‘I enjoyed the remote lectures... but the user interface is appalling. The controlling [sic] is sluggish and terrible... that I didn’t enjoy’.

c. Those who persevered felt their experience was worthwhile. In the anonymous course evaluation students reflected on the pros and cons of such a teaching approach: ‘It was a new way of learning’ stated one student’, while another reflected, ‘The ability to gain the same information in an online environment compared to if I was actually in class was wonderful. The freedom to choose to study in this way when you have other commitments is great’.

The trials re-enforced our findings from the literature review indicating that 3D virtual worlds provide a valuable medium for facilitating student engagement, but that the identified technical, accessibility and usability issues need to be addressed.

DESIGN SOLUTION

The following design solution evolved from desktop research, review of alternative solutions and the World Wide Web Consortium’s Web Content Accessibility Guidelines 2.0 (W3C WCAG 2.0). The solution builds on the exemplary work already underway in Second Life including the design and development of Max Voice technology as part of the virtual guidedog project undertaken by Virtual Helping Hands. Our lead developer on the project is, Charles Morris, Vice President of Virtual Helping Hands and Darren Candler, founder of Metadas Media, has provided his expertise with the AJAX implementation of this design solution. Formative feedback has been provided by Professor Norm Coombs, Easy Access to Software and Information (EASI), and Scott Hollier from Media Access Australia.

There are two main components to the accessibility solution we have implemented:

a. The integration of text to speech and accessible interface controls in the open source 3D virtual world client, which has been called Access Globe (see Figure 1).
b. The design and development of a Web 2.0 site, which enables users who are unable to access the 3D virtual world to log into the website and participate in real-time in any sessions being conducted in the 3D virtual world (see Figure 2).

![Figure 19.1 Access Globe interface in the 3D virtual world Second Life](image1)

*Access Globe* is an open source 3D virtual world client which includes accessibility features such as text to voice, and accessible interface controls.

![Figure 19.2 Web 2.0 interface to the 3D virtual world Second Life](image2)

*Users communicate with others in 3D virtual worlds via an accessible Web 2.0 application.*
Figure 3 illustrates the technology that has been employed in this solution. A demonstration video (with captions) is available from the YouTube site: http://www.youtube.com/watch?v=vxohIjxhec8.7

Users logged into the 3D virtual world can type text into the chat window within the Access Globe interface and they can hear that text read aloud, as well as the text messages from others participating in the chat session. The text chat is sent via http requests to the web server through a Cold Fusion gateway page and the data stored in a MySQL database. Similarly, any slides being displayed ‘in world’ are sent as images and text equivalents to the server.

On the web side, users log into the site and are authenticated. Asynchronous JavaScript and XML (AJAX) is used to poll the database and identify any new content that needs to be displayed via either a refresh or append command to the appropriate element within the page. However, as our initial tests with users with disabilities identified, and as Thiessen & Russell (2009) notes, it is very difficult for Assistive Technologies (ATs) to understand Document Object Model (DOM) events in AJAX applications. To resolve this issue, the W3C’s WAI Accessible Rich Internet Applications Suite (WAI-ARIA), which provides a framework for adding attributes to identify features for user interaction, has been implemented. As the WAI-ARIA site explains, ARIA makes it possible to map controls, live regions, and events to accessibility application programming interfaces (APIs) (World Wide Web Consortium 2009). Using ARIA live region markup it is possible to set the priority with which ATs should treat updates to the live regions.

The web application is also accessible via mobile phones and other mobile technologies (see Figure 4). This provides flexibility for users who are unable to log into the 3D virtual world when away from their computer. With an estimated 4.6 billion mobile telephone subscriptions globally and mobile broadband subscriptions now overtaking fixed broadband subscribers (The World in 2009: ICT Facts and figures 2009), ‘low-threshold’ and ‘light weight’ accessible communications with 3D virtual worlds will become increasingly important.
FINDINGS FROM PRELIMINARY TRIALS

As mentioned above, our initial trials identified significant issues with the Web 2.0 integration prior to the implementation of the WAI-ARIA solution. These issues have largely been resolved using live region markup as described in the previous section. There are, however, some other areas of development required to ensure the Web 2.0 application is fully compliant with W3C WCAG 2.0. The findings from preliminary testing undertaken by Scott Hollier (2010) from Media Access Australia based on the WCAG 2.0 principles are listed below. Our responses to the evaluation findings reported through this testing process are indicated in italicised text following each of the relevant criteria.

1. PERCEIVABLE

1.1 PROVIDE TEXT ALTERNATIVES FOR ANY NON-TEXT CONTENT SO THAT IT CAN BE CHANGED INTO OTHER FORMS PEOPLE NEED, SUCH AS LARGE PRINT, BRAILLE, SPEECH, SYMBOLS OR SIMPLER LANGUAGE.

The project effectively complies with this guideline. For images which include words, the site converts these to text, which is then inserted into the chat window. At this initial stage of the project, it appears that all static visual image content is effectively delivered with text alternatives.

   Our response: No changes required.

1.2 PROVIDE ALTERNATIVES FOR TIME-BASED MEDIA.

The website features a refreshed image in the top-right corner, which is designed to provide the user with a view of what’s happening in Second Life, updated close to real-time. While a caption is provided, there is no way to refresh the caption should the image change on screen.

   Our response: The solution we are implementing minimises the frequency at which the image is refreshed and provides a means for dynamically updating the caption when the image changes.
1.3 CREATE CONTENT THAT CAN BE PRESENTED IN DIFFERENT WAYS (FOR EXAMPLE SIMPLER LAYOUT) WITHOUT LOSING INFORMATION OR STRUCTURE.

This guideline is effectively implemented. The delivery of visual content as text ensures compliance with this guideline, and other web-based information such as the use of relative font sizes and the ability to change colour schemes without any accessibility issues demonstrates the effectiveness of this guideline.

Our response: No changes required.

1.4 MAKE IT EASIER FOR USERS TO SEE AND HEAR CONTENT INCLUDING SEPARATING FOREGROUND FROM BACKGROUND.

While the content in Second Life is effectively displayed visually, and some effort has gone into improving the accessible content through the use of WAI-ARIA, there are some accessibility issues in relation to the delivery of real-time audio information from the Second Life environment. Firstly, the module requires the installation of QuickTime, and currently there is no alert to inform the user if this module is not installed. Secondly, the audio text and icon is not intuitive to the user. The issues are that the user has to read two lines of text before discovering the purpose of the icon, and the ‘speaker’ icon is relatively small. A suggested solution would be to modify the icon to make it larger and change to a ‘Play’ arrow, or an embedded player. The text description could be changed to something simpler such as ‘Listen to Second Life now’.

Our response: We have now changed the icon to a more intuitive audio player interface with appropriate text description. We are also implementing an automatic detection to determine if QuickTime is installed, and to prompt the user to download and install if this is required.

2. OPERABLE

2.1 MAKE ALL FUNCTIONALITY AVAILABLE FROM A KEYBOARD.

The brief testing of the site suggested that the keyboard navigation of the site has not been implemented.

Our response: While the controls are accessible via keyboard, we have taken heed of the recommendation to also provide enhanced keyboard navigation such as short-cut keys, skip links and logical tab order.

2.2 PROVIDE USERS ENOUGH TIME TO READ AND USE CONTENT.

The site endeavours to address this issue by maintaining the chat window text for a period of time before fading out. One option might be to allow the user to set some parameters as to how the chat window works, and how long the text remains on the screen.

Our response: We have implemented an option that enables the user to display the full chat log on demand.

2.3 DO NOT DESIGN CONTENT IN A WAY THAT IS KNOWN TO CAUSE SEIZURES.

Although some images refresh regularly, there does not appear to be any content that could cause seizures.

Our response: No changes required.
2.4 PROVIDE WAYS TO HELP USERS NAVIGATE, FIND CONTENT, AND DETERMINE WHERE THEY ARE.

The site has several sections displayed on the one page, including refreshable graphics and audio, a list of users participating in chat, the chat content and an input bar at the bottom of the screen. Given there are a number of elements, it would be helpful to improve the labelling of each element on the page so that users are clear about what information is being provided in each section, and how each section interacts with the others.

Our response: These changes are being implemented.

3 UNDERSTANDABLE

3.1 MAKE TEXT CONTENT READABLE AND UNDERSTANDABLE.

The written text on the site is primarily user-generated and as such it is difficult to assess this guideline. However, the limited text contained on the page appears to be both readable and understandable.

Our response: No changes required.

3.2 MAKE WEB PAGES APPEAR AND OPERATE IN PREDICTABLE WAYS.

The somewhat unique nature of this site means that the website does not currently operate in predictable ways, but additional explanation on the site as the project evolves could address this issue.

Our response: This will be reviewed as the site is developed further.

3.3 HELP USERS AVOID AND CORRECT MISTAKES.

Currently there is little information to guide a user as to how to use the site, and mistakes such as being unable to use the audio, or being unsure how to enter information into the chat window may occur. Additional labelling and explanatory documentation will help in addressing this issue.

Our response: These changes are being implemented.

4 ROBUST

4.1 MAXIMISE COMPATIBILITY WITH CURRENT AND FUTURE USER AGENTS, INCLUDING ASSISTIVE TECHNOLOGIES.

The implementation of WAI-ARIA and other technologies ensures that the website is likely to remain current and compatible with future agents.

Our response: No changes required.

Scott Hollier from Media Access Australia (2010) in summing up his findings noted:

The efforts put into producing a Second Life accessible interface are clearly proving effective, even at this early stage of development. The PowerPoint information is cleverly incorporated into the chat speech, and elements of Second Life such as the audio and visual information are still presented and largely preserved within the web structure. The compliance with the WAI-ARIA also ensures that accessibility issues have been considered and, for the most part, addressed. However, there are still a number of minor accessibility issues that will need to be addressed during the ongoing development process.
CONCLUSION

The United Nations Convention on the Rights of Persons with Disabilities came into force internationally on the 3rd May 2008. The primary aim of this Convention is ‘to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms for all people with disability, and to promote respect for their inherent dignity’ (United Nations Convention on the Rights of Persons with Disabilities 2008). Australia was one of the first Western countries to ratify the Convention in July 2008. The Australian Government has also affirmed its commitment to increasing the number of young people, and particularly those from equity groups, attaining a higher education. Our research has identified the benefits of Web 2.0 and 3D virtual worlds for people with disabilities, as well as the potential of such environments for providing flexible and engaging simulated learning environments.

However, for these benefits to be realised, there is an urgent need for developers to address the identified challenges posed by such dynamic, media rich environments. Without such research the aims of the Convention will not be fully realised. The research described in this paper demonstrates the challenges and describes our design solution involving the development of an accessible Web 2.0 application and a 3D virtual world environment. Preliminary testing highlighted the accessibility issues associated with AJAX and also led us to adopt the WAI-ARIA protocol to address those issues. While our focus has been on the use of the Web 2.0 application as a ‘low-threshold’, ‘light weight’ interface to 3D virtual worlds, the findings from our research into the accessibility challenges associated with AJAX and dynamic websites also provide valuable insight into the solutions required to ensure that Web 2.0 technologies employed for a range of applications (for example social networking sites) are more accessible for users with disabilities.

The next stage of our research will be to address the accessibility concerns reported by Media Access Australia prior to undertaking more rigorous accessibility and usability testing with people who have disabilities. Further developments will include improved access via mobile phone devices, the incorporation of a content management system to provide a more user friendly system for those presenting or conducting sessions in 3D virtual worlds and the preparation of detailed accessibility guidelines for the developers of Web 2.0 and 3D virtual world environments. The findings from our research, informed by the outcomes from BETA testing involving users with disabilities, will be incorporated into the final version of the accessible open source suite of applications scheduled for public release in late 2010.

ENDNOTES

1 This project is supported by The Australian Learning and Teaching Council Ltd, an initiative of the Australian Government Department of Education, Employment and Workplace Relations. The views expressed in this publication do not necessarily reflect the views of The Australian Learning and Teaching Council. The project leaders are Dr Denise Wood (author) and Associate Professor Gerry Bloustien (Adjunct Professor, University of South Australia). Our partner institutions are Flinders University of South Australia, Edith Cowan University, Monash University, Royal Melbourne Institute of Technology, University of Sydney and the University of Sheffield in the UK. Our programmer is Charles Morris, Vice-President of Virtual Helping Hands.

2 Wheelies is now known as ‘Wheelies 74’.
The ‘virtual guidedog’ project is an initiative of Virtual Helping Hands, a Non-Profit, Tax-Exempt Organisation under Section 501(c)(3) of the United States Internal Revenue Code.

Metadas Media is a technical creative solutions company specialising in graphic design and Web development.

EASI is a provider of online training on adaptive technology and provides advice on barrier-free computer and information technology systems for persons with disabilities.

Media Access Australia provides information on access to media using technology.

Carolyn Bilsborow (PhD candidate, University of South Australia) assisted in the production of this video demonstration.

REFERENCES


Innovative applications of TV and broadband will be two key enablers for people with disabilities. The National Broadband Network offers exceptional opportunities for this to occur. This paper outlines international projects focusing on the use of digital TV as a form of interactive communications tool and also how combining broadcasting and broadband will offer enhanced services to people with disabilities. Usability and user involvement are key success factors.

BACKGROUND

The introduction of the Australian National Broadband Network will make available a tremendous resource, connecting 90 percent of all Australian homes, schools and workplaces with broadband services with speeds up to 100 Megabits per second (Mbit/s), 100 times faster than those currently used by many households and businesses, and amongst the fastest of any such services in the world.

The remaining premises in Australia, which cannot currently be provided with the full 100 Mbit/s service, will utilise next generation wireless and satellite technologies to deliver useful broadband speeds of 12 Mbit/s.

Whilst the advantages of having high-speed broadband networks available to businesses and homes have been well documented, it is anticipated that the introduction of such services could have particular benefits for people with disabilities, and this article focuses on this aspect, examining how particular groups of users might be able to make use of previously unavailable applications to improve their lives.

The introduction of fast broadband does not automatically mean that new services will immediately become available. When there is a commercial advantage, new services will be offered quickly, but companies tend to be reluctant to introduce new services of benefit to people with disabilities when there are uncertainties about the likely take-up and commercial viability. This situation can change significantly if there is government support for the introduction of new services, in answer to strong consumer demand for equality in access to services.

More and more digital data transmission capacity will become available in the near future, as governments worldwide seek to maximise the usage of the spectrum that will be freed by the switching off of analogue television services – the spectrum space used for one single analogue TV transmission can be used to carry many digital TV and radio transmissions simultaneously. As an example, the recent ‘Digital Dividend’ Green Paper from the Australian Government (DBCDE 2010) seeks to maximise the benefit that use of the freed spectrum will bring to the Australian community and economy by reorganising broadcasting services to clear a block of spectrum, perhaps as much as 126 MHz. The data capacity that these developments will make available, in conjunction with the Australian National Broadband Network, should prove more
than adequate to carry the many services for people with disabilities that are discussed in this paper.

**ADVANTAGES OF HIGH SPEED BROADBAND FOR PEOPLE WITH DISABILITIES**

**NEW SERVICES BECOME POSSIBLE**

Higher speed access to broadband effectively means that more data can be downloaded (or uploaded) within a given period of time, so that applications requiring a great deal of data become sensibly usable for the first time. As a simple example, it is generally accepted that video pictures require a minimum of around 2 Mbit/s for good quality reproduction; this means that it would simply not be possible to provide any services requiring video if the only networks available have much lower data rates than this. The introduction of high speed broadband can allow for completely new services involving video applications.

**WAITING TIMES REDUCED**

Higher-speed data transfers reduce the waiting time required both to download a piece of information and to gain a response to a simple on-screen ‘click’ when seeking information. A study conducted by Forrester Consulting (Selvidge et al 2000) suggested that two seconds is the threshold in terms of an average online shopper’s expectation for a web page to load, and that 40 percent of shoppers will wait no more than three seconds before abandoning a retail or travel site. Whilst all users understand the frustration of long waits for something to happen in response to a mouse ‘click’, and the shorter the waiting time the less the frustration, the reduced waiting times that result from high speed broadband may prove particularly beneficial for people with some types of cognitive, intellectual or mental disabilities who may become irritated if the expected response to an action doesn’t happen fast enough for their liking.

**CONSTANT AVAILABILITY**

The fact that high speed broadband is available 24 hours a day, seven days a week can make it easier for those providing help and monitoring services to people with disabilities to provide support and services to their users outside the usual working hours. Web-based services can also be used to trigger and route immediate emergency alarm calls to appropriate service centres, without the person requiring aid needing to make a telephone call.

**ADVANTAGES FOR SERVICE PROVIDERS – AND THEREFORE THEIR CLIENTS**

High-speed broadband services allow organisations which look after the needs of people with disabilities to provide a wider range of information and services to their clients. Electronic newsletter and information sheets, tailored advice about what to do in emergencies, perhaps in the form of simple video programmes can be readily disseminated, providing a massive improvement in time, cost and effectiveness.

**COMBINING BROADCASTING AND BROADBAND**

Before we look at the types of services that a broadband service can provide for users with disabilities, there are some basic definitions and some limitations to the delivery of such services that need to be understood.
Although the plans for an Australian National Broadband Network are extensive and provide the promise to deliver large amounts of data and many new services to users, it is important to note that the capacity of such networks is not infinite, and that there are key differences between streaming data services to any number of individuals and broadcasting.

**Broadcasting** (even if, confusingly, it is a stream of digital data that is being broadcast) is a process that sends data from one source to many receivers, and it is an extremely efficient system, where the more people that use the transmitted information, the lower the cost per user becomes.

**Streaming** data over a broadband network is quite different – it is a one-to-one data transfer process using the Internet Protocol (IP) to call up a continuous ‘stream’ of data that may, for example, represent the picture from the distant server on which it is stored, which the receiving equipment puts together bit by bit to regenerate the original material. Streamed data services are actually ‘unicasting’, not broadcasting, since each individual access requires a data link to be set up between the programme or information provider’s server and the customer’s receiving equipment. Every additional service user requires the broadband provider or service company to provide more server space, and uses more of the network bandwidth – the required network capacity is proportional to the number of users.

For this reason, several of the potential services that are discussed in this paper may use a combination of broadcast and broadband services – one example might be to provide high quality digital signing services over broadband which are synchronised with the television programmes being broadcast over air. The European Commission research project DTV4ALL (2010) has successfully demonstrated this technique.

**DIGITAL TV AND THE DELIVERY OF BROADBAND SERVICES**

**USABILITY**

The take-up and use of television ‘access services’, which have involved broadcasters in considerable investment, is very much dependent on the ability of potential users to operate the equipment – it is useless for broadcasters to provide services if viewers find them too difficult to use. The current generation of digital TV receiving equipment is frequently difficult to use, with complex set-up arrangements and confusing operational requirements, and these ‘usability’ issues are creating a real digital divide between those who can use the current digital TV services and those who can’t. Although this issue affects people who have disabilities and older people, the complications of using digital television are affecting vast numbers of people of all abilities. USABILITY needs to be improved in several areas, including the provision of clear, simple remote controls with large, well-spaced and well-labelled buttons. On-screen menu systems need to be intelligently designed, with displays that can be easily read and instructions that are simple and work first time. As the introduction of additional facilities provided by broadband gets under way, great care will need to be taken that usability is not compromised. Digital television needs to be made usable by EVERYBODY. Users need to be involved with industry to improve the interfaces. Personal experience is important and in particular the lived experience of disability will mean that products are designed to accommodate a great diversity of requirements.
INTERNET PROTOCOL TV – IPTV

IPTV is a system where a digital television service is delivered using Internet Protocol over a network infrastructure, which may include delivery by a broadband connection. Although at its simplest the IPTV services could be received on a computer, allowing a broadband user to select from an infinite number of channels, for our purposes IPTV is NOT the delivery of services over the open internet, (sometimes called internet television) but it is the delivery of broadcast-quality services over managed IP networks to the consumer TV set. IPTV thus provides television content that, instead of being delivered through traditional broadcast and cable formats, is received by the viewer through the technologies used for computer networks.

Viewers want to see TV programmes on a TV receiver, and off-air, cable or satellite broadcasts are received via a set top box, although integrated receivers which have the set top box components built in are becoming more common. With the introduction of additional programmes and services via IPTV, new ‘hybrid’ set top boxes are becoming available that have broadband connections as well as the normal capabilities to receive broadcast digital television (Digital TV Group 2006). This arrangement provides the best of both worlds, with the viewer able to receive all the usual broadcast channels off-air, via an antenna, broadcasting being the most efficient means of providing a restricted number of services to millions of people. Yet if a particular specialist programme or service is required, the same set top box calls for it over the broadband connection, and any one of effectively an infinite number of services can then be provided to any particular user. These could be ‘pay per view’ TV services or information services for users with disabilities.

Such hybrid services are sometimes called ‘over-the top’ services, since the broadband internet services are provided in parallel with and in addition to the broadcast services, and currently available set top boxes can support combined IPTV and digital terrestrial services, with support for pause live TV, scheduled recordings and simultaneous play and record of different channels. The ‘unified’ interface allows all services to be accessed via a single ‘programme and services’ guide, and users can use an infra-red connected keyboard to browse the internet and access emails and messaging services. Consumers will soon be able to access digital television and downloaded on-demand programming via a single digital hybrid set-top box. A new service combining Red Bee Media’s Digital Hive technologies, Netgem’s advanced HD-ready devices and Microsoft’s Windows Media applications is expected to be available in the UK soon. Its features will include access to all free to air terrestrial TV channels, navigation of downloaded content, electronic programme and interactive programme guides, pause-live TV, local recordings and playback in high-definition, and broadband connectivity and home networking to enable sharing between devices and PC.

IPTV services are currently in use in Australia, France, Germany, UK and USA, and the European Digital Video Broadcasting (DVB) Project has already developed several international IPTV specifications and standards, published by the European Telecommunications Standards Institute (ETSI). Many of the suggestions that follow take advantage of the use of broadband services in parallel with normal TV broadcast reception, using hybrid set top boxes to provide a wide and flexible range of add-on access services to enhance the viewing experience of users with disabilities.
POTENTIAL APPLICATIONS AND SERVICES

We will begin with a look at current television ‘access services’ and how they may be enhanced by the availability of broadband services before moving on to examine a wider range of potential services and applications.

AUDIO DESCRIPTION

Audio Description provides verbal explanations in gaps between the dialogue of TV or movie programmes, helping people who cannot see details and would otherwise have difficulty in following the programme (Royal National Institute of Blind People 2009). UK broadcasters have for some time been providing over 100 hours per week of audio described programmes that are regularly transmitted over the digital channels – effectively a third audio channel is transmitted as part of the digital TV programme data-stream. Although special equipment was at first required, set top box manufacturers have now developed software solutions, and improvements in chipsets mean that Audio Description is now provided at little extra cost, a good example of a broadcaster-driven research project leading to a practical commercial solution that can benefit millions of people with vision impairment.

The amount of data used to transmit Audio Description is relatively modest (typically 64kbit/s) compared with that required for the video component of a digital broadcast (2 to 3 Mbit/s), so the availability of broadband makes little difference to broadcast transmissions, but since high-speed broadband will be making a wider choice of programme and service channels available to users in the future it will be important to ensure that audio descriptions to accompany broadband services are allocated the required extra bandwidth, and, equally important, that arrangements are made to ensure synchronisation between the audio descriptions and the services streamed over broadband.

SIGNING

Signing for people who have hearing difficulties is another area in which digital television shows great promise. Signed broadcasts are currently shown with the signer visible to all – Open signing – but the signer needs to be of a reasonable size so that their actions can be clearly seen, and this can be distracting for viewers who don’t need the service. The BBC and others are working on a ‘closed’ service which can display the signer or not, at the touch of a button, just as happens with subtitles. Motion capture and animation techniques are used to achieve this, with digital signals driving a cartoon representation of the signer – an ‘avatar’. The system is not yet capable of adequate signing for television; there are problems with finger bends and positions and in getting adequate detail in facial expressions, but work continues, and ‘avatar’ signing may one day provide a satisfactory solution. There is, however, considerable resistance from some users to the idea of using avatars, and an ideal solution could be to have a full-resolution video picture of the signer, whose size could be varied by the user, inset into the main TV picture. This is not technically impossible, but would require large amounts of bit-rate, which is likely to remain a scarce commodity in digital terrestrial television where financial considerations tend to mean that any ‘surplus’ data capacity will be used to squeeze in more TV channels rather than to provide better access services, the argument being that the access services are aimed at a much
smaller audience. The availability of high-speed broadband really could change this situation dramatically.

Research work funded by the European Commission under the SAVANT project (Synchronised and scalable AV content Across NeTworks) and the DTV4All projects has led to a demonstrator for video signing which provides a high quality video image of the signer which the viewer can alter in both size and position on the TV screen as well as being able to choose whether to see the signing or not. The DTV4ALL video signing solution is a hybrid broadcast/broadband service. The programme being signed is delivered over a broadcast network, terrestrial, cable or satellite and the video of the signer is provided on-demand over a wired broadband IP connection. The hybrid Broadcast/Broadband delivery solution enables broadcasters to make the best use of their bandwidth to target the majority of their viewers, whilst the broadband system is ideal for providing extra information (the detailed moving video of the signer) directly to the receivers of those who require it.

The required system architecture in order to synchronise the delivery and display of the broadcast and broadband delivery is complex, but feasible. There is a Digital Video Broadcasting (DVB) compliant transport stream for the main digital television programme, the sign language video encoded in MPEG4 and a service description (called service metadata) based on an extension to the TV-Anytime metadata standard. The service description links all the media elements/service components of the DVB service and holds the timing information required for synchronising them.
**SUBTITLING: WORLDWIDE ANY-LANGUAGE SUBTITLES AVAILABLE VIA BROADBAND**

Broadcast TV subtitling is well established and takes up little bit-rate compared with the video, so the introduction of broadband is unlikely to have a significant impact. Where broadband could help, however, is in the provision of synchronised subtitles for a wide range of Internet or broadband delivered movies. The technology would allow for subtitles, perhaps from some central subtitling house, to be called up whenever an ‘on-demand’ or scheduled movie is called for by a viewer, the subtitles being received as a separate data stream from the movie but synchronised with it at the receiver. This could be particularly useful in allowing a wide range of different languages to be made available to accompany movies, and one could envisage a subtitling centre being set up to deliver subtitles to accompany any streamed or downloaded movie in any available language.

Australia’s Special Broadcasting Service (SBS) already provides multilingual and multicultural radio and television services to inform, educate and entertain all Australians, reflecting Australia’s multicultural society, and may well provide a good basis for the establishment of some of the broadband delivered services suggested above.

**SPOKEN SUBTITLES**

TV and cinema subtitles can present accessibility problems for people with vision impairment and people with dyslexia, the problem primarily arising in non English speaking countries where dubbing is not facilitated, such as in Scandinavian countries and the Netherlands. Research in Denmark, the Netherlands and the UK has shown that there could be technical solutions using a text to speech decoder which can be connected to the television. Effectively, the subtitle content in the presented video stream is decoded and read aloud through a multilingual speech synthesiser. One technique samples the analogue video signal into a binary image of the subtitles, uses optical character recognition to convert the binary image of the subtitles into characters that can be recognised by a computer, and then uses a speech synthesiser to read the decoded subtitles aloud. Such ideas, whilst feasible, are probably impracticable commercially, requiring specific equipment for a limited market of users with disabilities. The coming of broadband might enable subtitles in any desired language to be delivered from a special subtitling centre and synchronised with the broadcast television programme or film.

**CLEAN AUDIO**

For many years the possibility of broadcasters providing a 'clean audio' channel which provides the speech without any background music or other sounds alongside the standard TV sound channel has been discussed and debated. With digital television, the cost (financially and in terms of the digital bitrate usage) of providing an extra audio channel is modest, and it is believed that the extra production costs are likely to be small compared to the large number of people who would be helped by such a facility. There have been several research projects in the UK (Shirley & Kendrick 2010) and elsewhere, including one sponsored by the old UK Independent Television Commission but no consensus on definitive standards has been reached, and no broadcaster is currently offering such channels. The ready availability of broadband data and hybrid TVs that allow for data to be received and played out alongside the normal TV transmissions could lead to a situation where a hard of hearing viewer could select a ‘clean-audio’ feed via broadband to
match and synchronise with any TV programme. The problems aren’t technical, but in providing a business case or suitable funding for such services.

SERVICES AND APPLICATIONS BEYOND TV PROGRAMMING

THE TV-BASED VIDEOPHONE

The coming of high-speed broadband needn’t imply that all its applications are complex or computer based – one of the simplest possible ideas could turn out to be as unexpected a winner as the mobile phone or text messaging did. Imagine a system which allows grandmother to call up any of her grandchildren on her TV screen merely by pressing a button on the remote control. No dialling, no playing with equipment – merely press Button 1 to talk with Mary and see her on screen or Button 4 to look at what is happening at Freddy’s birthday party. Videophones have been possible for years and Internet messaging services have allowed us to see and talk to our friends, but you have always needed to be comfortable with using a computer, which has prevented this becoming mainstream.

The coming of high-speed broadband to Australia could make it the first country in the world to have nationwide videophones.

Once you have this easy two-way TV videophone capability you are not restricted to social chats. There could be many health care benefits, ranging from just being able to check how grandmother is looking and behaving to asking her to hold up her medicine bottle to the living room camera (built into the TV or set top box, of course) so that you can read the dosage instructions to her. Similarly, it might be possible for her to show you cards or presents that she has received, bringing the family closer together and minimising feelings of loneliness or isolation. Ethical or ‘snooping’ concerns could be addressed by ensuring that users know how to switch off their camera equipment.

SERVICES TO THE HOME

An unusual but very useful application is a kind of 'remote eye' for people who are blind or Deafblind. A webcam is installed in the home of the blind person and connected to a monitor at a service centre. The camera can be operated (moved) from the service centre. The customer can call the service centre and ask for help, e.g. asking them to check the colour of a tie or describe the picture on a post-card. The information can be provided either by voice or as text on a Braille display.
In an arrangement set up by the Swedish communications regulator PTS, Deaf-blind people can contact a service centre to get help in various situations, for example, to read documents or to see things in their room, or to deal with other issues that would normally require another person to be present. The solution is based on software in a standard computer, cameras for presentation and a broadband connection. The communications channel uses combinations of video, text and audio to allow the user to show objects to the central operator.


The European T-Seniority project (T-Seniority 2010) has shown the advantages of enabling older people and those with disabilities to send messages from the TV set to communicate with their relatives, friends and colleagues, to make appointments with the doctor, to ask for shopping and repairs to household equipment, to carry out on-line banking, etc. Many such services can be carried out using low data rate links, but once high speed broadband is available to the home a much greater range of remote medical services could be provided, reducing the need for patients to have to travel to see the doctor. As well as ‘face to face via videophone’ consultations, which would allow the doctor to make a visual assessment of the state of the patient, it would be feasible for data from patient-worn monitoring equipment (heart rate, temperature, blood pressure monitors, etc.) to be continuously transmitted to the doctor’s surgery, so allowing the doctor to ‘keep an eye’ on the patient’s progress without the inconvenience to the patient of travelling to the surgery for a consultation lasting just a few minutes. Similarly, the doctor would be able to rapidly see x-ray pictures or test results carried out at the local hospital, all these improved communications speeding up the treatment which the patient receives.

Another relevant application is a communication network, developed by Svenska Bostäder AB (SB) – the largest real estate company with rental apartments in Sweden. SB is owned by the City of Stockholm and has approximately 31 000 flats and 5000 premises, all located in the Stockholm area. A special terminal is used, the Manondo SBox, equipped with a touch-sensitive screen that is installed in the hallway for quick access to various broadband-based service options. SBox is connected to a server via broadband, making it easy to upgrade and add new functions whenever the tenants so wish.
Almost all tenants have an ordinary TV at home, in contrast to computers and Internet access. The goal is to make the home TV a substitute for a home computer and thus give access to SB’s web-based service.

![Figure 20.3 Manodo set top box](Image)

**Figure 20.3** Manodo set top box
Screenshot showing the wide range of information available from the Manodo set top box, which is connected to the SB communication network.
Reproduced with the permission of Svenska Bostäder and Manodo Inc. [http://www.svenskabostader.se](http://www.svenskabostader.se).

**E-GOVERNMENT**

The use of the Internet to deliver government information and services has become widespread throughout many parts of the world, but there are still many instances where insufficient thought has been given as to how older people and those with disabilities can make full use of these services. As one example, the European Commission project T-Seniority is developing scenarios whereby government services and information could be delivered via two-way broadband-based systems utilising the user’s television set as the information terminal.

The forthcoming National Broadband Network could provide the capability to ensure that all users, whatever their abilities, can make full use of e-government services, and that users with disabilities are not disadvantaged by any form of ‘digital divide’.

**VIDEO RELAY SERVICES (VRS)**

Video Relay Services allow sign language users to make and receive phone calls. Text based relay services have been available for many years, but the fact that all the communications must be typed leads to a lack of spontaneity and lack of fluency in conversation. VRS uses a television or a computer with a video camera device and a broadband connection to allow people who are Deaf or have a hearing impairment to communicate through the telephone system with people who can hear or with other Deaf people. The VRS caller generally contacts a VRS centre with a sign language interpreter – they communicate with each other in sign language through a video...
link. The interpreter telephones the person whom the VRS user wishes to call. The sign language interpreter then relays the conversation back and forth between the parties – in sign language with the VRS user, and by voice with the called party. No typing or text is involved. A voice telephone user can also initiate a VRS call by calling a VRS centre.

VRS is a popular service where it is available, since it allows sign language users to communicate in their ‘natural’ language, so that they can fully express themselves through facial expressions and body language, which cannot be expressed in text. VRS calls can flow back and forth just like a telephone conversation between two hearing people, and the parties can interrupt each other.

Video relay services are available in several countries, with the largest number of users in the USA where sign language users use VRS to make phone calls in almost real time, services being available in both English and Spanish. Successful trials have taken place and services exist in France, Germany, the UK and Sweden, which was the first country to implement a publicly-subsidised VRS system.

Images transmitted by VRS need to be of good quality. Video via broadband can be more than good enough, with quality continually improving as transmission speeds increase and new coder/decoder software is introduced. It is notable that in Sweden and in some parts of the USA dedicated videophones are provided to VRS users.

Australia’s forthcoming high-speed broadband system should be ideal to provide a top class VRS service to Deaf users, and a universally installed system could provide a service whereby sign language users could ‘phone’ each other directly, as well as using VRS to communicate with hearing people.

SIGNING DEVELOPMENTS

Remote communication via signing could be made easier by developments in the USA (Hernandez-Rebollar et al 2004) which use a special glove to convert American Sign Language into electronic text and speech using gesture-recognition technology. Sensors (accelerometers) on each finger of the glove, and on the signer’s elbow and shoulder, generate electrical signals from the movement and position of the hand and fingers in relation to the body. These signals are then analysed by a microcontroller to find the correct word associated with that particular hand movement, this taking only milliseconds. Similar trials have taken place in Japan. This could help Deaf people to communicate more easily with the hearing world.

LIP-READING POSSIBILITIES

Given sufficient definition in the transmitted pictures, which will present no problem for a high-speed broadband system, consumers with hearing impairments could actually use videophone services to lip-read each other’s conversations, providing a useful new service and a real additional benefit for users.

MULTI-MODAL CONVERSATION

Some consumers with hearing impairments might benefit from a combination of signing, lip reading, text display and enhanced audio. This type of multi-modal communication is sometimes referred to as ‘Total Conversation’ (International Telecommunications Union 2007).
Total Conversation effectively means a standardised concept where one can use video, text and speech at the same time. Deaf people, people with hearing impairments and Deaf-blind people make especially good use of Total Conversation.

![Allan eC](http://www.omnitor.se/sve/allan_ec.html)

**Figure 20.4 Allan eC**

Allan eC, an acronym for ‘All languages electronic Conversation’ is designed for communication over the Internet and other networks using Internet Protocol, and offers a unique opportunity to use image, text and speech, while in a call. The user can select the most suitable communication method. Allan eC conforms to international standards for Total Conversation with picture, text and speech simultaneously, developed with the need of people with disabilities in mind, but integrated in the common standards for video communication. The computer used can even be used as an ordinary office computer for word processing and Internet surfing. There are several versions of Allan eC, e.g. as add-on to an ordinary computer, a stationary Allan eC computer and a lap top version.


**VIDEO REMOTE INTERPRETING (VRI)**

VRI is another method of enabling Deaf people to communicate with hearing people, which is often used for businesses and others who need the services of a sign language interpreter, perhaps at short notice or at locations where it is difficult to find an interpreter.

With video remote interpreting, a Deaf person sits in a room with video conferencing equipment. The interpreter is not in the room, but appears on the screen from some remote location. The remote interpreter listens to what is being said and interprets it into sign language. The Deaf person watches the interpreter on the screen. Likewise, the interpreter is able to see the Deaf person via the camera. The key difference between a VRS call and VRI is that the remote interpreter is effectively interpreting a normal telephone call made by one party to the other. A VRI
interpreter is a substitute for a live, physically present interpreter, with the disadvantage that there is no person-to-person contact (National Association of the Deaf 2010).

Australia’s National Broadband Network will be able to provide the required video services for VRI users.

CONCLUSION

The National Broadband Network promises to be a significant enabler for many important services and applications aimed at assisting older people and consumers with disabilities.

There is a real need to go further than investment in the broadband infrastructure. Government support for applications that enable the Australian community, including consumers with disabilities, to obtain maximum benefit from the National Broadband Network is vital.

But we must remember that consumers with disabilities have to be an automatic and respected part of the building blocks, the planning and the implementation for the applications to be truly successful. It is important to work towards an answer to the question that Goggin and Newell ask:

‘how can we bring about a future in which disability in its digital incarnations may unfold in new, unexpected, and fairer ways to the genuine benefit, and with the assured, ubiquitous participation and imaginings of people with disabilities?’ (Goggin & Newell 2003)

ACKNOWLEDGEMENT

Gunela Astbrink wishes to acknowledge the tremendous legacy that Assoc Prof Christopher Newell AM has made in shaping the disability debate. You are not forgotten!

NOTE

This paper is based on research commissioned by the Australian Communications Consumer Action Network (ACCAN) on international developments in high-speed broadband applications to benefit consumers with disabilities.

REFERENCES


Broadband has been credited with ‘opening up the world’ to people with disability, allowing them access to both employment and social opportunities. At the same time, people with disability struggle not to be left behind in this digital revolution. YouTube as it has provided opportunities to some people with disabilities while excluding others highlights the importance of a cultural conversation about the future of telecommunications in relation to both content and the medium of transmission.

As a disability cultural movement emerged in the 1990s, activists, academics and media producers argued that people with disability should be in charge of their own image. Further, these images must make the able bodied audience feel uncomfortable in order for social change to occur. YouTube is the realisation of this vision. I offer two YouTube productions as case studies; In My Language and Talk (parts 1 and 2). These films demonstrate the way in which disability is a social construction dependant on environment and prejudicial attitudes. The paper then moves to situate YouTube within the broader digital context as it has disadvantaged people with disability through an inaccessible network.

By bringing together Christopher Newell’s (and others) work across the three disciplines of media, disability and Internet studies, this paper generates an approach that recognises the equalising potential of Broadband telecommunications to provide a purposeful rebuilding of the disability narrative and work that still needs to be done in this area.

The purposeful use of narratives can help transform the lives of people with disability. [...] In imagining such futures and telling stories we need to remember that when my whole life and story as a person with disability has been colonised and devastated, told by others for me, I will need to have some purposeful rebuilding not just of my individual story but of the collective story of people with disability.

—Christopher Newell (2008, 83)

Christopher listened carefully to the stories of others, especially those most marginalised whose accounts are often systematically ignored, disavowed or not well known, if at all. Thus he retold such stories when he spoke and wrote. His enthusiasm for story-listening and storytelling stemmed from a sense that such practices were of great use in confronting otherness – especially in the collective task of transforming the relations of who speaks and who listens, and the accepted modes of doing this.

—Gerard Goggin (2009a, 494)

Everyone can watch videos on YouTube. People can see first-hand accounts of current events, find videos about their hobbies and interests, and discover the
quirky and unusual. As more people capture special moments on video, YouTube is empowering them to become the broadcasters of tomorrow.

~YouTube Company History

INTRODUCTION

In 2006 Google’s chief executive officer Eric Schmidt described Google’s acquisition of YouTube as a ‘natural’ partnership and promised an exciting future for the already rapidly evolving telecommunications industry:

The YouTube team has built an exciting and powerful media platform that complements Google’s mission to organise the world’s information and make it universally accessible and useful. Our companies share similar values; we always put our users first and are committed to improve their experience (Information gatekeepers 2010).

YouTube and other platforms enabled via broadband have increased the impact of telecommunications on social life and relationships. Broadband has been credited with ‘opening up the world’ to people with disability in particular, allowing them access to both employment and social opportunities. At the same time, people with disability are struggling not to be left behind in this digital revolution (Martínez-Cabrera 2010). As Goggin and Newell (2003, 40) argue ‘disability in global telecommunications has been governed by narrow norms, left to the state in a world where increasingly the market rules’. This status often means that disability is disregarded. However, the innovative use of video streaming via broadband telecommunications is changing the social status of disability. The YouTube videos under discussion in this paper and the flow on positive effects for accessibility, take us to the ‘challenging place’ Christopher Newell referred to in his work where people with disability are accepted as part of the community (Newell 2004).

Goggin and Newell (2005b) contend that a discussion of technology as it benefits people with disability must consider two aspects; firstly, the role it plays in assisting the individual and secondly the influence it has on the way disability is ‘conceived, experienced, and framed in society’. A consideration of the innovative use of YouTube allows such an important discussion but importantly also reveals the potential of social exclusion via these same devices. This exclusion is analogous to a digital curb cut where features that enhance access for groups with a certain type of impairment can diminish accessibility for another.

Many theorists have recognised the importance of the Web to people with disability in terms of education (Li & Hammel 2003, Mullen et al 2007, Alltree & Quard 2007, Hasselbring & Glaser 2000), employment (Westin 2005, Roulstone 1998), entertainment (Ability Net 2008), and social interaction (Istance et al 2008, Huang & Guo 2005). The possibility for people with disability to participate in broader society via digital avenues is an important outcome of the increased use of broadband. Yet, the increasing use of graphics, user generated content, and the tendency of web browsers to move away from web standards has created accessibility problems for people with disability (Craven 2008).

Borrowing from the definition of telecommunications as ‘networks [which] provide the foundations for digital interactive communications, supporting a wide variety of contemporary...
communications and media [… including] video streaming’ Goggin and Newell (2003, 39) I argue that the video sharing site YouTube demonstrates tangible benefits to people with disability in relation to both representation and participation. In this sense, telecommunication refers to both the message and the medium through which it is sent. People with disability are demonstrating an innovative use of this new form of telecommunications in both of these areas with vibrant disability communities networking on the sites and people with disability working behind the scenes to make the platform more accessible.

The first part of this paper focuses on the representation of disability in the media and how disability theorists have suggested this should change in order to improve the social position of people with disability. As a disability cultural movement emerged in the 1990s, activists, academics and media producers argued that people with disability should be in charge of their own image. Further, these images must make the able bodied audience feel uncomfortable in order for social change to occur (Hevey 1997, 213). YouTube is the realisation of this vision. I offer two YouTube productions as case studies; *In My Language* and *Talk (parts 1 and 2)*. These films demonstrate the way in which disability is a social construction dependant on environment and prejudicial attitudes.

The second section of the paper situates YouTube within the broader digital context as it has disadvantaged people with disability through an inaccessible network – and this despite the reigning view that the web would allow ‘access for everyone regardless of disability’ (Tim Berners-Lee 1997). However, just as Berners-Lee predicted regarding the ‘move towards a highly connected world’ (cited in Goggin and Newell 2003, 109); web accessibility has become increasingly important to the broader community. In their book *Digital Disability* Goggin and Newell lamented the lack of disability theorisation within the discipline of Internet studies (Goggin and Newell 2003). In a later article they took the more revolutionary stance suggesting that disability studies should start interrogating digital technologies within that discipline (Goggin and Newell 2005b). I will address both of these disciplines and their inter-relationship to consider the social and cultural impact of the current telecommunications environment on the independence of people with disability. I conclude with reflections towards this end.

**FRAMING DISABILITY**

Christopher Newell argued that a questioning of deeply entrenched accounts of normalcy, as they excluded people with disability, was vital to a discourse of Human Rights. In *From Others to Us and Human Rights Education* Newell invites us to consider the ways ‘we have allowed a variety of norms in the built environment and technologies to dominate’ (Newell 2008, 78). Newell argues that because these norms often exclude people with disability, it is apparent that disability is a ‘social issue demanding a human rights response’ (Newell 2008, 77). Newell’s work encourages us to think about disability as ‘a socio-political space’ (Goggin 2009a, 492) in which people with certain bodies are oppressed and others accorded the right to speak on their behalf:

> When we think about disability we are thinking about some of the most entrenched accounts of normalcy, that which is nice, normal and natural. In particular we see that medical accounts of disability are so dominant that so often I find people failing to understand the distinction between the impairments that I have and the way society regards me. (Newell 2008, 78–79)
Newell’s terminology draws on the social model of disability as articulated by Michael Oliver, who redefined disability as a social construction by separating impairment, which he located in the body, from disability – the social interpretation of that impairment (Oliver 1996, 22). Newell describes this disabling environment as a social choice arguing that ‘many of us have impairments, yet whether or not they become a disability depends upon physical structures and norms’ (Newell 2008, 78). As these ‘social norms’ are communicated via the media the theorisation of an inaccessible built environment must be expanded to include narratives, characters and images (Mitchell and Snyder 2000). Traditional media individualises disability by emphasising the importance of personal attitude through the ‘super cripple’ stereotype popularised in films such as My Left Foot, Born on the Fourth July, Forrest Gump and A Beautiful Mind. These inspirational heroes perpetuate the individualisation of disability and do not acknowledge the way people with disability are disabled by society (Goggin and Newell 2004, par9). Two popular YouTube films In My Language and Talk (parts 1 and 2) confront audiences with social disablement by revealing ability and disability as a series of social choices.

YouTube has a growing community of people with disability. A number of grassroots videos have emerged that question social interpretations of the experience of disability and the tendency of the media to value the ‘expert opinion’ of people who have no direct personal experience of living with disability. YouTube is structured to allow the audience to comment following each video. This has resulted in lively discussions that see users questioning each others’ perceptions and experiences. This feature of YouTube invites a consideration of production, text and reception in line with the recommendations of several theorists within disability media studies (Ellis 2008; Shakespeare 1999; Ferrier 2001). In this post-structural model the filmmaker and the spectator have equal weighting, as ideology and context are acknowledged. While wanting to effect social change is an important starting point for the filmmaker, audience reception is crucial to the acceptance of this change. An active audience engaged in politics accepts social responsibility (Hevey 1997, 213). YouTube certainly has an active audience with the potential to enact lasting change. YouTube is not a minority media, videos can be (and are) viewed by millions of people and can even be translated into other languages (Jackson 2007, 409).

Amanda Baggs’ In My Language depicts people with autism, including herself, as a linguistic minority and questions who has ‘the right to communicate and define one’s own identity within the culture’ (Verlanger 2008). Baggs’ offers a radically different way of representing disability, beyond the deficit and super cripple stereotypes we are so used to. The filmmaker’s way of interacting with the world is valued:

The first part is in my ‘native language’, and then the second part provides a translation, or at least an explanation. This is not a look-at-the-autie gawking freakshow as much as it is a statement about what gets considered thought, intelligence, personhood, language, and communication, and what does not (Baggs 2007).

The film does not aestheticise impairment in order to make it entertaining or easier to watch, and furthermore highlights the intersecting experience of impairment and social disablement. Baggs can be seen in the film rocking back and forward, making a constant ‘e’ sound and performing repetitive behaviours such as running a tap and moving her fingers across a keyboard.
The film has initiated an energetic cultural conversation through YouTube’s format which allows the filmmaker to provide context and the audience to comment – indeed a conversation. Some agree with Baggs’ critique of socially constructed notions of personhood:

Unfortunately, when people (scientists or general public) find somebody not understandable, they just label them as ‘strange’, ‘deficient’ or ‘inferior’. It happens to people with autism or other mental conditions, but also happens to another race (black, asian)

[ ... ] We use our self-centered, over-simplified standard to judge other beings. After watching your video, I realise that how foolish and arrogant we are... Thank you!
(post to Baggs)

This comment echoes Newell’s position on the way that people with disability are not treated as the experts in the narrative of their own lives (Goggin 2009a, 493). However, others do not believe that Baggs is offering a critique of restrictive interpretations of communication:

How can you even begin to claim that you’re having a conversation, when you’re not even establishing any sort of sense? You’re like a homeless man screaming at parked cars and calling it a ‘debate’.
(post to Baggs)

Yet Baggs is communicating, both in the film and through her activity in the YouTube forum. Baggs comments that ‘this is not a freakshow gawk at the autie film, rather it’s a strong statement about what we value and what we don’t’. The potential contradictions of this were debated by the YouTube community:

Wonderful video, but I have to ask: should thinking – any kind of thinking – equal personhood? Is that all there is to a person? Is that all that we should value and protect? It seems that your argument would lead to a marginalisation of those things and people that cannot think.
(post to Baggs)

Narrative was vital to Newell’s conception of confronting otherness (Goggin 2009a, 494). For Kestrell Verlanger (2008) In My Language is an eloquent example of the types of cultural conversations suddenly available through new media and broadband technologies:

While other cultural groups are constructing categories of taste about the value of new media over old, people with disabilities are always experimenting with new tools and technologies that will allow them to participate in the culture at large. Often it is the mere act of participating, of breaking into cultural conversations, which becomes a political act.

Verlanger claims that for this reason people with disability are often the earliest adopters of new technologies. Broadband, which allows video streaming sites such as YouTube, provides a
new opportunity for media representation by putting control into the hands of people with disability. Seth Godwin (cited in Zetter 2009) describes the conversational features of social networking sites including YouTube as the emergence of a new type of tribe. He argues that through this cultural conversation people become ‘connected to each other, to a leader and to an idea’ and that lasting social change is possible as a result.

The Talk series produced by the Disability Rights Commission (2007) likewise provides rich interpretative grounds for considering how disability is socially constructed through an unadaptive environment and prejudicial attitudes. These films follow the experiences of Robert, an able bodied worker charged with the task of looking into what his company should do about the new Disability Discrimination Act, albeit with the agenda of doing just enough to stay ahead of their competitors in the corporate world. Given that his cousin is disabled, Robert thinks he knows what it’s like ‘for them’ however he doesn’t think the company should spend too much money, especially due to the fact he doesn’t think anyone with a disability actually works for them.

Uninspired by the task, Robert falls asleep at the computer, only to wake up in a world where having no disability is a barrier. He is unable to communicate in sign language on the street, he is stuck in the rain as wheelchair taxi after wheelchair taxi drives past him and later finds that he can’t get home by ‘wheelchair only’ bus. Indeed everywhere he goes people are condescending and patronising. Throughout his life, Newell likewise had similar feelings of frustration when social constructions excluded him:

A wheelchair user, in 2008 I am still needing to take complaints about access to premises and know the reality of waiting in a wheelchair in the rain for hours while non-disabled colleagues head off with no delay in non-wheelchair accessible taxis (Newell 2008, 78).

Although an attractive man, Robert finds it difficult to gain female attention and is treated like some kind of sexual novelty. Newell likewise admitted to an overwhelming ‘lifelong and daily socialisation’ regarding his romantic potential. Newell uses his initial apprehension regarding marriage to demonstrate the way the exclusion of disability is internalised by all of us (Goggin & Newell 2005a, 200). The Talk films also reveal this internalisation by creating a world where the non-disabled are disabled by the actions and attitudes of people with disability. When Robert is unable to read a form written in Braille or when people in a night club rub his head and tell him how brave he is for coming out, and how great his mates are for taking him places, it’s clear that Robert is not the problem, the rest of the world is. These films show that disability is society’s unwillingness to accommodate the needs of people with impairments. This unwillingness is evident through both the physical environment and the prejudicial attitudes. Robert’s inability to communicate via Braille or sign language is clearly more about hegemonic communication practices than any deficit on his part.

These YouTube videos are the creative realisation of pioneering disability social modellist Vic Finklestein’s imaginary community where everyone uses a wheelchair. The physical world is structured accordingly, as are social relationships and it is the ‘able-bodied’ visitors to the world who are disabled (Finklestein 1980, 31). These imaginary scenarios reveal the social creation of disadvantage and restriction of activity in response to impairment. The world in which Robert...
finds himself in a very unwelcoming place – fellow diners in a restaurant are outraged by his mere presence and there is no possible way for him to be successful at a job interview he attends.

While YouTube has attracted a lively disability community and allowed people with disability, and disability rights organisations, a way to redefine the narrative of disability, it has been heavily criticised for being inaccessible to people with a number of impairments. The UK disability organisation Ability Net only gave it 1 star (out of 5) in their 2008 review of social networking sites. While new media is affording new opportunity for representation of disability, issues of accessibility cannot be glossed over (Goggin 2009b, 7). It is encouraging to note however, that paralleling the increased presence of disability activism on YouTube, is the prioritisation of an accessible Internet.

DIGITAL DISABILITY

As a way to participate in social networks and advocate for a more equitable and accessible world, the Web is a crucial medium for people with disability. Broadband allows a number of different ways to communicate using, for example, text, still images, moving images, and sounds. The opportunity to participate in the creation of ‘user generated content’ in ways that suit the user has proved invaluable to people with disability. However, while advantaging some, these modes of access can simultaneously block others from participation. For example, without captions people with hearing impairments cannot authentically experience YouTube videos. For this reason, measures to improve access for people with disability have become increasingly important to people with disability.

Although web accessibility is of most benefit to people with disabilities, older people and people in the developing world, the recent trend toward mobile applications and Internet usage suggests the majority of Internet users would benefit from accessibility options (Zajicek 2007, 1). Digital information is most useful when it can be accessed by users with different needs in different ways. For example people with vision impairment have adopted podcasts while people with hearing impairments opt for video blogging (Goggin and Noonan 2006, 166). As these YouTube videos demonstrate, the social and personal commentary enabled via broadband telecommunications potentially advances a social understanding of disability that moves beyond and between the medical and social divide (see also Goggin and Noonan 2006; Ellis 2009).

Although accessibility has become more widely understood by web developers, many struggle with measures as simple as providing meaningful alternative text for images (Zajicek 2007, 2). As the Web becomes more complex and dependant on visual imagery and sound, alternative (ALT) text becomes more and more important. ALT text is a tag attached to the image that describes what the image is attempting to communicate in the context of the site. This text allows users with vision impairment to access a non-visual alternative. Similarly, people with hearing impairments are provided with the means to enjoy the video mode through captions. According to Ability Net in 2008, YouTube still had a long way to go in this respect:

On the first page of the website, and in any search result listings, a thumbnail image of the video is used as the link to the actual video. However, the thumbnail image does not have any alt text assigned to it so a screen reader user will just hear the image filename, often cryptic and meaningless.
In 2009 Ken Harrenstien, a Software Engineer for Google/Youtube announced on his blog that Youtube was now automatically captioning all of its videos:

more and more people are becoming aware of how useful captions can be. [...] captions not only help the deaf and hearing impaired, but with machine translation, they also enable people around the world to access video content in any of 51 languages. Captions can also improve search and even enable users to jump to the exact parts of the videos they’re looking for

This demonstrates that ‘technologies and innovations designed to improve access by the disabled actually enhance access for all users’ (Ellis and Kent 2008). YouTube’s enhanced accessibility features are of great benefit to all people. This is particularly so in light of the recent mainstreaming of video search technology (Whitney 2008). The automatic captioning service demonstrates YouTube’s philosophy of continually improving their service by putting their users first. Further, it demonstrates the broader benefits of not treating users with disability as an afterthought. Harrenstien’s argument that captions improve search highlights the need to think about constructions of ableness rather than disability as deficit (see Campbell 2009, Goggin 2008). While a focus on users with disability is highly unusual, in this case it has done much to move Google forward towards its aim of making information accessible to all.

Captioning had been available since 2006 but had not been universally adopted because it wasn’t considered important by the content generators. For Goggin and Newell (2003), the Internet will never be fully accessible until disability is considered a cultural identity in line with class, gender and sexuality. Google and YouTube have a responsibility in initiating this shift, as the technical skill required to construct a blog, wiki or web page is minimal. Harrenstien, who has a hearing impairment, has pledged a ‘long-term goal of making videos universally accessible’ (Harrenstien 2009). While this first generation of automatic captioning has some flaws, it is an important step in making Youtube more accessible. It can reasonably be predicted that technological advancement in the future will result in further advancements in the achievement of accessibility.

By building accessibility into the initial template, end users will recognise the value of increasing accessibility (Gibson 2007, 4). Now that Internet giants such as Google and YouTube have started a conversation about accessibility, end-users are becoming more aware of the far-reaching benefits of accommodating for people with disability. As time goes on the general public will more and more question what are in reality unacceptably disabling technologies:

Once upon a time we had accounts of women as inherently inferior, based on so-called scientific accounts. Once upon a time we cherished myths of different creeds and races as other, even constructing a science of phrenology [...] Yet the medical account that has been so central to the oppression of so many social groupings and narration as other is even more pernicious when we think of [...] disability (Newell 2008, 79).

Newell calls for a respectful narration of the lives of people with disability, beyond that of ‘special needs’ in order to reveal the oppression that people with disability experience as something from which all people need to be liberated (Newell 2008, 83). While a more rigorous investigation
of disability studies within the burgeoning field of Internet studies is required, in light of both the exciting debates on YouTube and its improving accessibility measures, the discipline of disability studies needs to embark on an examination of Internet technologies.

This is especially important given recent calls to interrogate ableism rather than disability in these types of discussions (Campbell 2009). The broad uptake of mobile devices to access the web confronts many of the same access issues that people with disability routinely experience. If web designers continue to ignore accessibility, mobile Internet users, like many people with disability, will find themselves disabled by the network. In the context of the digital divide, the obstacles faced by people with disability shed light on the potential problems each of us could encounter if excluded from the web (Liccardi et al 2007). This exclusion of people with disability is at odds with what the World Wide Web was intended to be.

In articulating his vision for a platform to share information, Tim Berners-Lee (1997) believed that access for everyone regardless of disability was a crucial factor. Although integral, disability is rarely foregrounded as a case study or recognised for its potential to move grand visions forward. Digital technologies, including the Internet, broadband and advanced telecommunications have the potential to revolutionise our lives and have been held up as a way to eradicate disability yet disappointingly continue to ‘build in’ disability at the point of production (Goggin and Newell 2003, xiii–xv).

Since the publication of Digital Disability in 2003, there have been massive shifts in the way the web is used and developed. Although they foresaw the important role that video streaming could have for people with disability, YouTube did not become a reality until 2005. Using the framework of Goggin and Newell (2003), it becomes apparent that YouTube is an example of how people with disability can be both empowered and disabled by the network. Accessibility issues are more widely understood in 2010 than in 2003 when Goggin and Newell were first writing, yet restrictions on accessibility remain. This is primarily due to the continued existence of the social prejudices that Goggin and Newell sought to expose. At the same time, this social prejudice is being exposed on sites such as YouTube as they offer a purposeful rebuilding of the disability narrative and promote accessible technologies in their quest to make information universally accessible and useful. YouTube, with its vibrant disability activism community is leading the way in creating a socio-political space in which to confront disability and has had a significant impact on the accessibility turn in broadband technologies.

CONCLUSION

In the Conclusion to Disability in Australia: Exposing a Social Apartheid, a book he co wrote with Gerard Goggin, Christopher Newell confronts the feelings of social pressure he experiences as an academic with disability in the masculinist Australian culture:

Perhaps in Christopher’s striving to do too much he has taken on the very values which say we need to ‘do better than our best’ values associated with being a ‘super crip’. This can be a very real issue for many people with disabilities as they are exposed to some degree of success and opportunity, and to do all that non-disabled super-achievers manage (Goggin & Newell 2005a, 204)
That such a prominent disability theorist was willing to publically confront being influenced by the super cripple social values reveals the importance of offering another discourse. The YouTube films discussed in this paper offer a purposeful rebuilding of the collective story of people with disability. They recognise the social construction of disability and value the experiences of people like Christopher Newell.

While the media representation of people with disability is linked to ‘larger cultural modes of representation’ (Goggin & Newell 2005a, 94), Youtube is offering a varied representation precisely because it is a different media. The cultural conversation that allows filmmakers to have their say in their productions and then engage with people making comments later is revolutionising disability representation, increasing the visibility of disability, and highlighting access issues. However, new forms of exclusion, such as inaccessibility are likewise arising through these new disability cultures.

YouTube, as an example of an innovative telecommunications technology embraced by people with disability, is important to disability studies and people with disability in two ways. Firstly, it allows for different types of representations and encourages discussions around this. Secondly, YouTube’s recent focus on accessibility reveals that impairment and disability are crucial factors influencing whether people with disability can access this technology.

While it is important to celebrate the innovative use of broadband and other telecommunications technologies in assisting individuals with disability, it is vital too that we ‘explore the continuing nature of disabling telecommunications’ (Goggin and Newell 2003, 39). By bringing together Newell’s (and others) work across the three disciplines of media, disability and Internet studies I hope to generate an approach that recognises the equalising potential of Broadband telecommunications to provide a purposeful rebuilding of the disability narrative. A focus on cultural conversation rather than assistance likewise reveals the way disability can continue to be built into the network at the point of production and work that still needs to be done to avoid this.

REFERENCES


ARE WE THERE YET?
THE STRUGGLE FOR PHONE ACCESSIBILITY INFORMATION

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Paper written while at Australian Communications Consumer Action Network

An international online database was launched in 2009 by the Mobile Manufacturers Forum on accessibility features on mobile phones for people with disabilities (AMTA 2009). This was a direct result of the development of an Australian Industry Code about information on accessibility features for telephone equipment.

This paper outlines the need for phone accessibility information by consumers and describes the complex processes that led to this new service. It examines the code development process and its difficulties. It is an example of the need to consider changing the self-regulatory model to better benefit consumers with disabilities.

BACKGROUND

Technology such as vibrating alert, speech recognition and speech generation was invented to enable people with a disability to participate more fully in our society. These features are now included in many mobile phones and used by the bulk of the population (Law 2006). The features assist the able-bodied community at times when, for example, they are not able to hear their phone ringing while in a noisy environment or not being able to see the phone while driving a vehicle.

Whereas we might think of this as a temporary disability, it is simply a functional limitation due to a particular circumstance at a given time. In a similar way, we need to think of a disability as a functional limitation due to a physical impairment. The reality of a longer-term functional limitation is more accurately portrayed when we take age into account. At 18–24 years, 9.5% of the population have a disability, climbing gradually to 64% of the 75 years or older group (Trace 2001).

This fact and the importance of the integration of people with disabilities into our technological society has highlighted the need for functional limitation to be taken into account at the time of product design; commonly referred to as Universal Design (UD) or Inclusive Design. Universal Design has often been misinterpreted as the design of a single product to suit the needs of all people with a functional limitation. Rather, UD is a process that takes into account the needs of those with a functional limitation at the time of design (Preiser & Ostroff 2001, Keates & Clarkson 2003). This can be a zero or low cost option when, for example, increasing the contrast of keypad characters through appropriate choice of foreground and background colours and the choice of the size of the characters on the display. Adopting UD principles will increase the number of people able to use the product and consequently the size of the market that the product will appeal to.

The fact that a product (or phone) does not have a certain feature does not make it inferior or unsuitable. A phone with large keys will be easier to use by a person with gross motor control but will be unworkable for a person with only fine motor control. Hence the size of the keys is...
important in the matching of a particular phone to suit a person’s needs. Similarly, a person who is blind will have no use for a visual display and a person who is deaf has no need for sound output. Clearly a phone that has spoken text, a large visual display and high quality sound output will be applicable to a larger population. Many current phones do have features that are needed by people with a disability or who are ageing.

By informing the public about the accessibility features that do exist on phones, industry can help those with a disability or a functional limitation to choose from a range of phones to identify the one most suitable for their disability/functional limitation.

**INTRODUCTION**

The Global Accessibility Reporting Initiative (GARI) was launched in 2009 by Senator Stephen Conroy, the Minister of Broadband, Communications and the Digital Economy (GARI 2009). GARI is an international database of information about mobile phone accessibility features developed by the Mobile Manufacturers Forum. This initiative will assist consumers with disabilities to obtain information on mobile phones that meet their requirements.

The GARI was established as a direct result of the Australian Industry Code on Information on Accessibility Features for Telephone Equipment. There was a long regulatory road to the establishment of this Code.

**THE REGULATORY PROCESS**

Following the de-regulation of the Australian telecommunications industry in 1997, the Australian Communications Industry Forum (ACIF) was established to facilitate and support an effective and viable telecommunications industry to meet the needs of the Australian population. In particular, ACIF was responsible for the development of Standards, Codes and Guidelines in telecommunications according to the self-regulatory model.

One of the early tasks was to develop a Disability Standard in telecommunications equipment to meet the particular needs of Australians with a disability or impairment. The corresponding Federal Government Act is:

> **TELECOMMUNICATIONS ACT 1997 – SECT 380**

Disability standards
(1) The ACMA may, by written instrument, make a standard relating to specified customer equipment if:
   (a) the customer equipment is for use in connection with the standard telephone service; and
   (b) the customer equipment is for use primarily by persons who do not have a disability; and
   (c) the standard relates to the features of the equipment that are designed to cater for any or all of the special needs of persons with disabilities.

(2) The following are examples of features mentioned in paragraph (1)(c):
   (a) an induction loop that is designed to assist in the operation of a hearing aid
   (b) a raised dot on the button labelled “5” on a telephone’ (Commonwealth of Australia 1997).
An ACIF Working Committee was formed and met over a two-year period commencing in 1999 to develop the required Standard. Despite the extensive research into consumer needs conducted by the Consumers’ Telecommunications Network (Corbin 1998) and the tabling of other documents of significance by the consumer representatives (e.g. Brandt 1995), agreement was only possible for the examples that were referred to in the Act. None of the many additional features of significance to people with disabilities were considered in the final Standard (AS/ACIF S040:2001). The industry had demonstrated its commitment to go no further effectively ensuring that there would be two sectors of the Australian population; one that could access any phone anywhere and a significant second group who would require ‘special’ features to access the telecommunications network. Thus a sector of the population would be marginalised and be considered or defined as disabled.(Goggin & Newell 2003).

However, sectors of the industry continued to work on these issues informally and as a result the Disability-Industry Partnership was established. Members of the Partnership developed a specification for a web site that would list the features of significance to those with a disability that existed on the phones available in Australia. This specification included a facility where an end user, health care worker or relative would be able to search for the particular features needed by the end user to effectively gain access to the Australian telecommunications network. Even though considerable resources were applied to this task, no funding was forthcoming.

In 2002 the Australian Communications Authority (ACA) requested its advisory body the Communications Technical Regulation Advisory Committee to establish a Disability Standards Working Group to consider issues for inclusion in a revised Disability Standard or for adoption as part of an industry guideline to enhance the accessibility of telecommunications services for people with a disability.

The resulting report (ACA 2003) recommended that specific additional features designed to aid people with disabilities to access telephone handsets be included in the Disability Standard. However, the ACA’s response recommended that the features identified be included into an industry guideline instead. At the time, it was noted that there was inadequate information available on accessibility features of existing phones for consumers with a disability.

In October 2003, ACIF (now the Communications Alliance) was asked by the ACA to develop:

- an industry Code requiring importers and manufacturers of customer equipment that use a telephone handset or keypad that is manufactured in, or imported to Australia, for use with the standard telephone service, to provide information about whether or not their equipment has certain features that could enhance accessibility for people with a disability; and
- an industry guideline outlining the types of features that would enhance the accessibility for consumers with a disability, to be considered during the future importation and manufacture of telephone handsets or keypads that are manufactured in, or imported to Australia, for use with the standard telephone service.

The objective of the Code was to ask equipment suppliers to provide information on the features of their equipment which may assist in meeting people’s communications needs. This was to be done in one of two ways:
through the provision of such information by equipment suppliers (ES) to carriage service providers (CSP) in order that CSPs may be able to inform their own customers about equipment features; and

through the provision of such information to consumers, on request of that consumer, with such information on features of their customer equipment that might meet that individual’s communications needs.

The first meeting of the Working Committee to develop the Code was held on 13th April, 2004. Approximately 20 face-to-face half and full day meetings occurred. A draft version of the Code was released asking for public comments by 13th December 2004. These were received but due to unresolved issues between key stakeholders, a new approach was proposed in mid-2005. The proposal contained:

• A significant decrease in the features to be recorded by the suppliers. The features were reduced to questions that nearly all required a yes / no answer and did not require any physical measurement.
• A requirement that the suppliers respond to customer enquiries regarding the particular features on a particular phone.
• The introduction of a regular review process.

The Code (ACIF C625:2005) finally was submitted to the Australian Communications and Media Authority (ACMA, formerly the ACA) in November 2005. However, there were considerable delays in registration of the Code by ACMA due to industry concerns about aspects of the Code. The Minister was informed about the delays. The Code was finally registered on 12th October 2006. Suppliers were given six months to implement the Code following registration. A regular review process was built into the Code.

The Code did not apply to the provision by equipment suppliers of information on customer equipment to retail outlets not under the control of carriage service providers. If that information was not available from retail outlets, people would need to request it directly from the equipment supplier.

The accompanying Industry Guideline lists the equipment features that equipment suppliers are required to report (ACIF G627:2005). The end result was a Guideline that left out key consumer information such as hearing aid compatibility and the size of the keys, lettering and screen.

A key issue was the method used by manufacturers and importers of telephone equipment for the supply of information to carriage service providers (CSPs) on accessible features. There was no direction in the Code on this aspect. Initially it was done through the use of spreadsheets based on the matrices of features and distributed to CSPs for further dissemination to their customers. This was a clumsy and burdensome way to provide this type of information. For many years, the consumer body, Telecommunications and Disability Consumer Representation (TEDICORE) had been discussing with key government and industry stakeholders the need for an online database. Such a centralised database would have provided a streamlined and uniform way for manufacturers and importers of telephone equipment to input the data in a secure environment. This data would then be searchable by CSPs and consumers with disabilities based on criteria of a variety of features. The results of the search would list a number of fixed, mobile,
cordless or office telephones offering the required features. This online database needed to be designed so that it was accessible for users and easily navigable through a website. Unfortunately, there was limited support from industry to set up an online database for all types of phone equipment.

Therefore, consumers were faced with a burdensome method of obtaining the information. Even when companies like Nokia and Motorola followed the Code requirements by placing information prominently about each phone model on its website, it was time-consuming both for retail phone staff and customers to open the link to each of the 39 models listed (in the case of Nokia) and go down the list manually to find which of the models had a particular feature.

Another problem was the lack of compliance by some of the key suppliers and manufacturers of phone equipment. This was very frustrating for people with disabilities who needed to find phone handsets to meet their needs. This was made clear to Communications Alliance through its Disability Council. As a result, Communications Alliance wrote a letter in December 2007 reminding the relevant parties of the requirements under the Code. The Code was registered with the Australian Communications and Media Authority (ACMA), requiring compliance with the Code, yet there was no enforcement of the Code. After TEDICORE raised its concerns, ACMA undertook an audit in 2008. This comprised a shadow shopping exercise in a number of phone shops as well as checking phone manufacturers' websites for accessibility information. Recommendations were made to the Authority about the best ways to improve compliance to the Code. These recommendations are still to be made public.

Clearly the Code needed to be considerably expanded in its reporting of features, by informing consumers about features that they really need rather than those that are easy to report.

As required by the Code, Communications Alliance initiated a review in 2008, resulting in a revision of the Code. The Working Committee first met early in 2009 and were able to distribute a draft copy of the revised Code and Guideline for public comment on 31 July 2009. The final committee ballot occurred in September and was unanimously positive. The Code & Guideline (C625 2009; G627 2009) has been approved by the Communications Alliance Board, published and submitted to ACMA for registration.

In contrast to the original Working Committee there was an acceptance that the information being sought was important to those with a disability and the industry representatives acknowledged their commitment to provide the necessary information.

There was a requirement by Communications Alliance to report to the ACMA on progress at specified intervals. There was a marked improvement in the Working Committee process and a genuine commitment to finding a consensus solution. The cooperation provided a clear indication that we are now “well down the road” to identifying meaningful information to assist those who need particular features on a phone so that they can gain meaningful access to the telecommunications network.

**INTERNATIONAL DATABASE OF ACCESSIBILITY INFORMATION ON MOBILE PHONES**

Just prior to the Code & Guideline review, some of the members of the Working Committee had made contact with the Mobile Manufacturers Forum (MMF), an international organisation with a mandate to facilitate the joint funding of key research projects and cooperation on standards,
regulatory issues and communications concerning the safety of wireless technology, accessibility and environmental issues (MMF 2009). There was a growing international trend for requirements on industry to document accessibility features on their mobile phones and the Australian Code with its specific Guidelines presented the incentive to systematically provide this information. Importantly, industry would need to provide the information once only on an international basis. Thus, the Global Accessibility Reporting Initiative (GARI) was born. In general terms, GARI aimed to provide a central information source on accessibility in mobile devices. The GARI website (GARI 2009) provided an avenue to search for the various features that a mobile phone may have and link through to manufacturer’s websites for specific information on particular models. The feature list (also referred to as the GARI template) was built on the matrices in the ACIF G627:2005 Guideline.

Cooperation with the MMF led to their Secretary General becoming involved in the Working Committee as a non-voting member and, as a consequence, the features included in the Guideline under revision were closely aligned with those included in the GARI template. The Working Committee agreed to modify the Code so that MMF participating companies who have already completed and submitted the GARI template and now wish to make the phone available in Australia only need to flag that within the web site to meet the requirements of the Code.

The Global Accessibility Reporting Initiative web site enables users with disabilities to nominate the features they need so that only those mobile phones that match the requirements are presented. A photograph of each of the phones aids the consumer as well. The user can select up to three phones presented and see a comparison table of all of the device characteristics for each phone. In addition, by hovering over the ‘?’ next to each feature, an explanation of the feature is presented. The list of features are categorised under the headings of ‘Type of Device’, ‘Physical features of the phone’, ‘Features assisting people with mobility/dexterity impairment’, ‘Features assisting people with vision impairment’, ‘Features assisting people with hearing/speech impairment’ and ‘Features assisting people with cognition impairment’.

Users of the website need to indicate the world region they live in to identify the phones available to them. The user of the website can select English, French, Spanish, Portuguese or German languages. This will assist Australians with a non-English background to select an appropriate mobile phone. Information supplied by the manufacturer describing extra features and capabilities of the phone is currently only available in English. The GARI website is compliant with the W3C Web Content Accessibility Guidelines ensuring that consumers with disabilities can successfully use the site for effective information retrieval.

It is important to note that not all phone manufacturers are MMF members. Therefore, there are a few key omissions to the mobile phones listed on the website.

As broadband becomes more ubiquitous in Australia, it should be possible for consumers with disabilities to avoid a visit to a retail outlet in the first instance when choosing a mobile phone to meet their needs. This is especially important for people with restricted mobility and those who live in rural and remote areas.

**DISCUSSION**

The initiative of the MMF resulting in the creation of the GARI website is a significant and important milestone. This site will enable a large number of people with disabilities from across
the globe to access the vital information needed to ensure that they can effectively join in the community of mobile phone users. Clearly the need has been highlighted internationally and the mobile phone manufacturers have responded. The push by Australian consumers with regulatory oversight by the ACMA has resulted in a meaningful, cost effective and global solution for information about mobile phone accessibility features.

Disability comes in many different forms. Some limitations are simple and straightforward enabling users to quickly identify the features they need and to then identify the range of mobile phones likely to meet those needs. However, those with cognitive and multiple disabilities often require additional professional support to identify the phone features and characteristics needed. The GARI website is an important tool which will be used by health professionals to identify possible solutions thus decreasing the time and cost of the intervention.

The mobile phone industry has demonstrated that they are listening to the needs of consumers with a disability. Dialogue with key industry stakeholders is an essential process and, when supported, can produce meaningful results. Given the conflicts between the profit motives of the industry and the needs of those with a disability, positive dialogue may be difficult and sometimes avoided. The Australian Mobile Telecommunications Association and its Accessibility Committee members has been a good conduit at times. The authors’ experiences indicate that a meaningful dialogue between the key industry players and end users is essential for working towards satisfactory solutions.

No corresponding website currently exists for home phones. Compliance with the Code requires suppliers to complete the matrix for each phone model. CSPs and end users will still have to look through individual matrices to find solutions suitable to their needs. This is clearly unacceptable and without an effective way of enabling end users to find appropriate fixed and cordless phones there is the potential that the information collected by suppliers will not be used effectively.

The need for information on phone accessibility features was highlighted back in 1999 and it has taken 10 years to arrive at this solution that still does not cover all types of phones nor from all manufacturers or importers. This is unacceptable. The current regulatory process in Australia has not worked for consumers with a disability. The length of time and complexity in reaching a successful outcome in communications regulation was studied by Choice and Galexia. The ACIF Code and Guideline for Information on Accessibility Features for Telephone Equipment was used as a case study (Galexia 2008). This clearly indicates that there are limitations in the regulatory processes. It should not take 10 years to get a reasonable outcome for consumers with disabilities. Even when finally, after consumer representation and regulatory direction, the Code development process commenced in 2003, positive results should have been achieved within a realistic timeframe. This would have enabled consumers with disabilities to benefit much earlier.

The British communications regulator, Ofcom, has explored appropriate regulatory solutions in terms of the role of self-regulation, co-regulation and statutory requirements. Ofcom found “that self-regulation is most likely to work where the following conditions are present: industry collectively has an interest in solving the issue; industry is able to establish clear objectives for a potential scheme; and the likely industry solution matches the legitimate needs of citizens and consumers. It is unlikely to be appropriate where the following conditions are found: there are incentives for individual companies not to participate; or there are incentives for participating companies not to comply with agreed codes” (Ofcom 2008, 2–3). Ofcom further stated that where they determined “that self-regulation is unlikely to succeed, co-regulation may be used to
ensure that incentives are effectively aligned. Where neither self- or co-regulation are appropriate but regulation is necessary, a statutory solution will be required” (Ofcom 2008, 2–3). In Australia, we are at the cross-roads of regulatory reform and consumer organisations such as the Australian Communications Consumer Action Network (ACCAN) are working to achieve change so that consumers will not in future be disadvantaged by an imbalance between industry and consumer needs as is currently the situation (Conroy 2009).

CONCLUSION

Consumers with disabilities clearly articulated a need for information on phones to meet their accessibility requirements. We are nearly there through the combined effort of many stakeholders but it has been a very long and bumpy journey with some roadblocks still ahead.

Consumers are benefitting from the Global Accessibility Reporting Initiative database. However, there needs to be an online database to provide information about accessibility features for fixed and cordless phones as well as the current mobile phones.

Working towards an improved regulatory framework that is fast, responsive and enforces when necessary will make the next ten years a smoother ride for the consumer.

ACKNOWLEDGEMENT

Assoc Prof Christopher Newell AM was the Chair of the Communications Alliance Disability Council and this paper is a tribute to his leadership.

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Cite this article as: Garrett, Rob; Astbrink, Gunela. 2010. ‘Are we there yet? The struggle for phone accessibility information’. Telecommunications Journal of Australia. 60 (2): pp. 22.1 to 22.9. DOI: 10.2104/tja10022.
Because of the conduct of some of our telemarketing and door-to-door marketing agents between 1 January 2008 and 30 July 2009, People Telecom has recently given an enforceable undertaking to the Australian Competition and Consumer Commission to do certain things, including publishing this notice. If your company uses outsourced telemarketers or door-to-door marketers, you should be aware that you are responsible for their conduct. You need to monitor what they are doing and investigate complaints about them.

People Telecom has admitted that, as a result of both telemarketing and door-to-door marketing by People Telecom’s agents, People Telecom has churned some customers’ services from their current telecommunications carrier to People Telecom without their informed consent and has from time to time made representations to the effect that:

- the prospective customer was being contacted on behalf of his or her current telecommunications carrier, being a different telecommunications carrier to People Telecom;
- People Telecom was an agent or subsidiary of the prospective customer’s current telecommunications carrier or resold that carrier’s services;
- the prospective customer was required to change their telecommunications carrier to People Telecom; or
- transferring to People Telecom would not compromise any current contractual or billing arrangements with the prospective customers’ current telecommunications carrier

when this was not the case, and thereby People Telecom:

- engaged in conduct that was misleading or deceptive or likely to mislead or deceive in contravention of section 52 of the Trade Practices Act 1974 (‘the Act’); and
- made representations that it has affiliation it does not have in contravention of section 53(d) of the Act.
People Telecom apologises for this conduct, and is taking steps to remedy the detriment it has caused. It will offer refunds of cancellation, late payment and debt collection fees to affected consumers, and provide a letter stating that, where a debt has been listed on a consumer’s credit report, that listing did not arise from default by the consumer.

It is also taking steps to ensure the conduct does not occur again. It will set up an escalated trade practices complaints handling team empowered to discipline staff and cancel debts as appropriate, as part of an upgraded compliance program.

Further details of the undertaking can be found at www.accc.gov.au, via the Public registers > Undertakings register (s.87B) link on the left hand side.
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ACS-TSA (the Telecommunication Society of Australia, a special interest group within the Australian Computer Society), is grateful to the following sponsors for supporting its journal *TJA* and ACS-TSA’s other activities in support of a well-informed telecommunications industry:

– and to a very generous retired Fellow of the TSA who wishes to remain anonymous.