Network Ten Pty Ltd

Submission to House of Representatives Standing Committee on Communications, Technology and the Arts

Inquiry into the uptake of digital television

May 2005

Executive summary

- Australia's commercial free-to-air sector delivers the best of local programming, sport and international programming at no cost to viewers through a fully advertising funded model. Despite its relatively small size, Australia's free-to-air market is highly competitive by world standards.

- The digital television regulatory framework is designed to facilitate a smooth transition of the current analogue system to digital with minimum disruption to viewers, at a low cost to consumers, and in a manner that does not create an unstable environment for investment.

- The current digital television take-up rate should not be a concern for the Government or Parliament. Ten estimates that by the end of 2005, around 23% of homes and 11% of television sets could be watching free to air digital television services either terrestrially or through digital pay TV services.

- Current digital TV penetration rates are comparable with take-up of digital terrestrial services in the UK, and with take-up of technologies such as DVD and widescreen.

- Under the current legislative framework, take-up of digital television will continue to progress steadily. Equipment prices are falling and consumer awareness of the benefits of digital television (TV) is increasing. Digital terrestrial conversion is well ahead of progress in the US, and Australia leads the world in the rollout of high definition (HD) broadcasting. In contrast, while producers in the UK are acknowledging the worldwide demand for HD programming, the lack of an HD component in the UK's digital TV framework has left a gaping hole in that country's conversion to digital.

- Introducing a mandate on the gradual phase-in of integrated digital tuners in television sets, as done in the US, will drive take-up even further and benefit consumers wishing to replace or upgrade their television set at a time of their choosing.

- High Definition television, the highest picture quality available, is critical to drive take-up of digital, particularly as HD receiver and display devices become cheaper and more HD programming becomes available.

- The free-to-air sector is investing $1 billion in digital conversion at the same time as audience numbers are under pressure due to increasing competition from a monopoly pay TV sector, mobile phones, digital video discs (DVDs), personal video recorders (PVRs), the Internet and broadband. In combination, these factors have the potential to change the

face of free-to-air broadcasting within five to ten years and to threaten the viability of the free-to-air broadcasters' role as the backbone of the local production sector.

- Now is not the time to introduce free-to-air multichannelling, which would threaten the quality of the current system without any discernable consumer benefit.

- Free-to-air multichannelling is likely to result in dispersal of the current quantity of high-quality, first-run content across more channels, increasing the costs for broadcasters and fragmenting audiences without any offsetting lift in revenue. This would impact negatively on diversity, as networks would be less able to invest in high cost programming such as domestic and international news, quality Australian drama, and documentaries.

- Given the fundamental differences in the structure and size of the respective markets, comparisons with the United Kingdom and the United States are limited.

- In particular, claims that the UK's Freeview service could be replicated in Australia are highly misleading. Freeview operates in a market three times the size of Australia's and is not "free" to viewers. It is driven almost entirely by the BBC, which is funded by the Television Licence Fee of £126.50 ($305 AUD) paid by every television set owner every year.

- The BBC has used its scale and large chunks of its vast £2.8 billion budget to create new programming and run extensive marketing campaigns on Freeview. However, even with this level of support, less than 5% of the Freeview audience watches the BBC's digital-only channels and BBC Three and Four have been found to be poor value for money which do little to connect the BBC with viewers or drive digital take-up.

- Whilst competition for each ratings point is fierce amongst Australia's commercial free-to-air broadcasters, there is a pressing need for more competition and diversity in our pay TV sector. Australia has the only de facto monopoly in any major pay TV market in the world and it is becoming more entrenched day by day amid an ACCC-sanctioned access regime that has failed Australian consumers.

- Allowing subscription multichannelling in the broadcasting services band (BSB) is the only way to introduce quality programming and competition without downgrading current free-to-air services. A new digital terrestrial subscription platform will drive digital television and provide real diversity at a low cost to the 70% of Australians who either cannot afford or do not want Foxtel's digital service.

Introduction

The Ten Group Pty Ltd ('Ten') owns and operates Network Ten's five capital city television stations. Ten's television operation focuses on low operating costs and innovative programming which has established it as the number one network in the 16-39 year old demographic.

Ten welcomes the opportunity to make a submission to the Committee's Inquiry into the uptake of digital television.

Ten is a member of Free TV Australia ("Free TV") and Digital Broadcasting Australia (DBA) and supports both the Free TV and the DBA submissions made to this Inquiry. The Ten submission will address issues that have not been addressed by Free TV or DBA.

Ten notes that the Department of Communications, Information Technology and the Arts (DCITA) is currently carrying out a number of reviews of the digital television framework.

- In August 2004 Ten made a submission to the DCITA issues paper on the provision of services other than simulcasting by free-to-air broadcasters on digital spectrum (Ten's submission to that review is available at http://www.dcita.gov.au/broad/policy_reviews/digital_broadcasting_policy_reviews).

- Ten's position on the issues raised in the other DCITA reviews on: digital spectrum availability and allocation; and the provision of commercial television broadcasting services after 31 December 2006 is outlined in the Free TV submissions to those reviews.

- Ten notes that DCITA is required to review the HDTV quota by 1 July 2005, and is also required to review the duration of the analogue/digital simulcast period by 1 January 2006.

Ten's submission will provide an overview of commercial broadcasting and digital TV in Australia. It will compare the Australian and UK/ US television markets and digital TV rollout, and will look in detail at the Freeview service in the UK. Finally, the submission will look at options for driving digital television in Australia with a particular emphasis on why a digital tuner mandate is essential and why free-to-air multichannelling is not the answer.

Commercial free-to-air broadcasting in Australia

Despite the fact that Australia only has a population of about 20 million people (and approximately 7.6 million homes), it has five free-to-air (FTA) TV networks, with three highly competitive commercial free-to-air networks. This equates to four million people per free-to-air channel.

Most Australians receive their FTA TV services through broadcasts from transmission towers designed to cover their local area (terrestrial broadcasting). Traditionally these services have been delivered using analogue technology. In 2001, the metropolitan broadcasters started simulcasting from these same towers using digital technology - know as digital terrestrial television. Since then, digital terrestrial television has been deployed across the country, so that now 85% of the Australian population can receive all of their local channels through digital terrestrial, if they purchase a digital receiver.

Capital city viewers who want more content, and are willing and able to pay for it, can access 101 additional video and audio channels through Australia's monopoly pay TV provider, Foxtel. Foxtel pay TV services are delivered to the home using cable or satellite technology. In March 2004 Foxtel launched its digital subscription service.

Commercial free-to-air broadcasters in Australia pay licence fees at 9% of gross revenue which contributes over $200 million per annum to consolidated revenue.

Strict local content transmission quotas and sub-quotas ensure that commercial free-to-air broadcasting reflects Australia's identity, character and cultural diversity and provides an Australian perspective on local and international events.

The latest Broadcasting Financial Results released in May 2004 by the Australian Broadcasting Authority (ABA) show that in 2002-03 total expenditure on Australian content by the commercial free-to-air broadcasters was $723m, or more than 70% of the total programming spend of $1 billion.

This included spending well in excess of $150m on Australian drama, children's programs and documentaries, which already present significant challenges in generating sufficient advertising revenue to cover costs.

Based on the ABA figures, commercial TV spend on Australian drama increased by 45%, from $89m to $131m between 1999/2000 and 2002/03

Over the same period, commercial TV expenditure on all Australian programs increased by more than $100m, or 21%, from $596.6m to $723m.

This can be contrasted with the total spend by pay TV on new Australian drama which reached just $17m in 2003/04 (down from $19m in 2002/03).

These figures highlight the fact that free-to-air television is the backbone of the local television production industry. In recent years Ten has produced a bold, highly innovative and commercially challenging Australian slate, particularly in the area of drama. The Network has delivered groundbreaking Australian drama such as The Secret Life Of Us and Crash/Burn and acclaimed features such as After the Deluge and Bryce Courtenay's Jessica. This year Ten will screen Mary

Bryant, the largest budget mini series ever made in Australia, which tells the true story of a spirited female convict transported to New South Wales on the First Fleet.

Ten also has a well-earned reputation for quality Australian children's television with shows including TTN, Totally Wild, In The Box, and award-winning dramas Wicked Science, Ocean Star and Pirate Islands.

Meanwhile, Australian productions including Big Brother, Australian Idol and Neighbours provide work and professional development opportunities for hundreds of people, and Ten is the largest employer of independent producers of all the commercial networks.

Ten News produces approximately 38 hours of pure news and public affairs programming each week. That includes: one-hour First at Five bulletins that are local in each of Ten's capital city markets, Monday to Friday; daily 11.30am and Late Night News bulletins; weekend early and late news bulletins; Meet The Press; and Ten's weekly children's news program, TTN.

In addition to locally produced drama, comedy, children's shows, news, sport and other programming, the free-to-air networks offer Australian TV viewers the pick of international programs, including the most popular international sporting events. At the moment the free-to-air networks can afford to invest in adding an Australian flavour to these broadcasts by providing their own production teams and commentators. Australians who want to watch the world's best sport but cannot afford pay TV are protected by current anti-siphoning regulation

Popular programs such as, American Idol, Sex and the City, Queer Eye for the Straight Guy, The 4400, The Osbournes and Newlyweds, and favourite children's cartoons Spongebob Squarepants and Rugrats which are only available to paying cable subscribers in the US, are shown on free-to-air television in Australia. Any new broadcasting channel, be it a free-to-air multichannel or a fourth commercial broadcaster, would simply not be able to provide superior or more diverse international programming as Australians already receive the pick of content on our five existing free-to-air broadcasters.

The broadcasting legislative framework recognises both the important public benefits that free-to-air broadcasting delivers and the need for a strong free-to-air sector to deliver these benefits. In supporting the digital TV legislative framework, with its restrictions on new commercial broadcasting services, the Parliament recognised that any threat to the economic viability of the free-to-air sector would impact on viewers and in particular on Australia's film and television production sectors, which are heavily dependant on a robust and competitive free-to-air sector. According to Kim Dalton, Chief Executive of the Australian Film Commission:

> *Local television production is the bedrock of the industry. If that's beginning to look shaky, that has enormous implications for the whole of our industry, including our ability to operate a service sector for foreign production*." (“Subsidies urged for ailing film industry”, Garry Maddox and Cosima Marriner, Sydney Morning Herald, 5 August 2004)

Limiting the number of free-to-air licences and free-to-air services in the market is the specific means by which the broadcasting regulatory framework delivers the public benefits outlined above under an advertiser-funded model. In particular, the restrictions acknowledge the finite advertising spend available to television.

This is particularly important because Australia’s free-to-air system operates entirely in an advertiser-funded model which is based on networks’ share of audience and viewer numbers. Free-to-air broadcasters generate revenue in direct proportion to the number of viewers they are able to offer to advertisers. Each broadcaster’s revenue therefore depends on maintaining its share of the viewing audience. With each commercial share point worth more than $25 million in annual advertising revenue, competition for ratings and audience share between the three commercial free-to-airs is constant and fierce.

The Australian broadcasting industry faces many challenges ahead, some having the potential to change the face of free-to-air broadcasting within five to ten years. Whilst competition from other mediums is nothing new to free-to-air TV, the Parliament must consider what it wants free-to-air television to look like in the future.

Foxtel now has a total subscriber base of 1.3 million (including Optus and TransAct subscribers). In homes with pay TV, pay channels’ share of viewing sits at just over 50% of total viewing time. Increasing penetration of Foxtel’s digital service will affect free-to-air advertising revenue in the future as the viewing audience continues to fragment (“Foxtel pushes right buttons to finetune finances” Neil Shoebridge, Australian Financial Review 06 May 2005).

The proliferation of DVDs has already had an impact on free-to-air broadcasting, particularly with respect to recent Hollywood film releases. The high quality pictures and sound combined with extra features such as cast interviews, ‘making of’ documentaries and director commentaries, and the more wieldy nature of DVDs compared to VHS tapes, have led consumers to embrace the technology.

Meanwhile, broadband access to information services and interactive content via the Internet and on-demand is increasing rapidly, as is the popularity of gaming consoles.

In addition, emerging products and services such as personal video recorders (PVRs) and other so-called ‘ad-skipping’ technologies will also potentially impact viewing habits and advertising revenue.

Australian consumers are happy with the free-to-air services they receive, and it is not in anyone's interest for television's current funding model to fail, particularly as a result of policies which are formulated in pursuit of a superficial promise of more choice.

Digital TV in Australia

Take-up of digital television in Australia is on track and progressing steadily despite claims to the contrary. Current digital TV penetration rates are comparable with take-up of digital terrestrial services in the UK, and with take-up of technologies such as DVD and widescreen. Moreover, as equipment prices drop substantially, and as coverage increases, the pace is continually accelerating.

On 28 April 2005, Digital Broadcasting Australia (DBA) reported that at the end of March 2005, sales of free to view digital TV set top receivers and integrated digital television sets had reached 777,000 units. Assuming that sales of digital free-to-air receivers continue at the current rate of 40,000 units per month, by the end of 2005, around 1.1 million receivers will have been sold.

Although not yet concluded, should Ten and Seven reach a retransmission deal with Foxtel, and if Foxtel continues at it current rollout rate of 68,000 per quarter ("Foxtel ads go interactive", Neil Shoebridge, Australian Financial Review, 19 April 2005; "Foxtel pushes right buttons to finetune finances", Neil Shoebridge, Australian Financial Review, 6 May 2005) by the end of December 2005 a further 833,000 people would have access to free-to-air digital television services through Foxtel.

It has been estimated that there are 7.6 million homes in Australia and that on average each home has 2.3 TV sets, Ten calculates that by the end of 2005 around 23% of homes and 11% of television sets will be able to view free-to-air digital television services (these figures include an assumption that 10% of free-to-air digital receivers have been bought for use on second TV sets by homes that already have digital television and this figure does not take Austar digital subscribers into account, as Austar subscribers cannot receive retransmitted free-to-air services).

While the take-up of free to view digital was slow at the outset, the take-up of digital terrestrial television services in Australia compares well with the take-up of digital terrestrial television in the UK as illustrated in Figure 1.

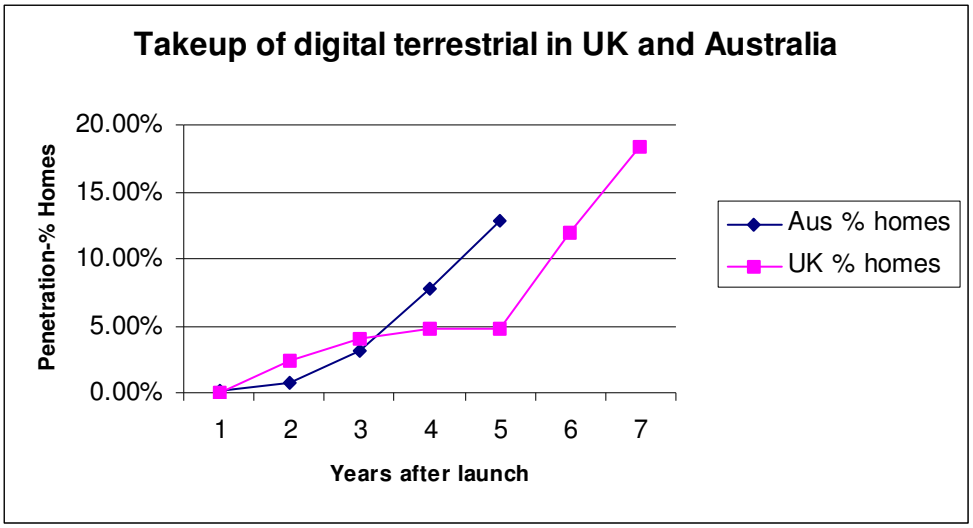

Figure 1: Comparison of UK and Australian deployment of digital terrestrial television. (UK figures have been sourced from "Digital Television Update – Q4 2004 and from "ITV digital posts worst figures since launch", Barry Flynn, Inside Digital Television, PBI Media, February 2, 2002. The Australian figures have been sourced from Digital Broadcasting Australia.)

These take-up figures are also consistent with the take-up rate of comparable consumer electronic devices such as DVD players and widescreen TVs in Australia.

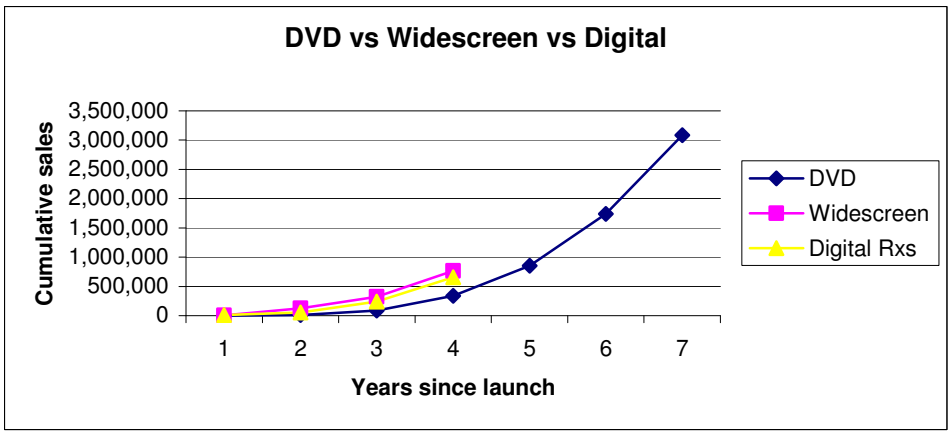

Figure 2: Comparison of digital receivers sold in Australian market with the sales of Widescreen and DVD players.

Importantly, DBA has noted that customer awareness of the benefits of digital TV, including sharper pictures, clearer sound, widescreen and other extra features, had significantly increased. This can be at least partly attributed to the promotional campaign that the commercial free-to-air broadcasters have run on TV and in retail outlets for the past two years.

One of the key objectives of the Australian digital framework was that the transition to digital would be smooth and at low cost to the consumer. This intention was reiterated in the DCITA Multichannelling Issues Paper:

> *The digital conversion policy framework aims to ensure that viewers continue to enjoy high quality television services throughout the conversion process and that the changeover to digital is undertaken with minimum disruption to viewers' enjoyment*. (p4 DCITA Multichannelling Review Issues Paper)

Furthermore, it was always acknowledged that as with any new technology, although the first digital set top boxes (STBs) would be too expensive for many consumers, prices would come down over time.

In a June 2000 media release, the then Minister for Communications, Information Technology and the Arts, Senator Richard Alston, stressed the importance of consumer access to easy-to-use and affordable equipment ("Success of Digital TV will Rely on Consumer Choice" Ministerial Media Release, 30 June 2000).

When Digital TV was launched in January 2001, as expected with new technology, equipment was relatively unaffordable to most consumers. As predicted, however, equipment prices have tumbled. Whereas the cheapest standard definition (SD) STB was $699 in 2001 and $599 in 2002, STBs are now available for as little as $79. High definition (HD) STBs are now available for under $500, whereas the 2001 entry price was $800 (www.dba.org.au).

As is the case in the US and the UK, free-to-air broadcasters were loaned spectrum for digital transmission. Unlike the UK, Australian free-to-air broadcasters pay licence fees of 9% of gross revenue. Ten derives no additional revenue from its digital broadcast operations despite investing more than $100 million to migrate to digital.

Ten has configured its 7MHz channel so that consumers can enjoy the highest quality SD and HD services. Attachment A provides an overview of how Ten currently uses its 7MHz channel.

Attachment A also outlines some of the emerging technologies that will potentially shape digital television going forward. Ten considers it important for broadcasters to carefully manage spectrum use in order to retain sufficient flexibility to provide high-quality digital services to consumers in the future.

When looking at options going forward it is important to note that the regulatory framework for digital television was never designed as a stopgap measure aimed at simply kick-starting the conversion to digital. Rather, the Parliament agreed to a legislative framework designed to create an environment that engendered both consumer confidence in the new technology and certainty for investment in digital TV. The DCITA Issues Paper on the multichannelling review recognized this:

> *In undertaking these reviews, there is therefore a need to carefully balance changes to improve the outcome of the framework with maintaining a stable environment for investment by industry and consumers*. (p5 DCITA Issues Paper).

At this stage of digital deployment, Parliament and the Government should be looking at options to finesse the current framework, rather than abandoning any central components of a regime that has only been in place for a relatively short time and is producing benefits to consumers.

High definition television (HDTV)

HD television is a critical plank in the digital television regime. With the metropolitan commercial free-to-air networks broadcasting at least 1040 hours of native HD programming per annum, consumer demand for HD is increasing. DBA figures show that one in four STBs sold is an HD box which is evidence that the envisaged market for higher quality pictures both exists and is growing.

Meanwhile, producers in the UK are realising that they have to produce in HD to meet the demands of the world market. The BBC has announced that it intends to produce 100% of programming in HD by 2010. Pay TV provider BSkyB has announced that it will commence an HD service in 2006. Because free-to-air broadcasters do not have enough spectrum to broadcast in HD, BSkyB hopes to use its new pay HD service as a point of differentiation and a selling point from the BBC, ITV and Channels Four and Five. The fact that there is no free-to-air HD capability in the UK is seen as a key problem in that country, one that Australia, fortunately, does not share.

A recent study by Jupiter Research has found that over a quarter of those surveyed ranked HDTV as the most important factor in deciding whether to switch to digital. According to Ian Fogg, a senior analyst at Jupiter Research:

> *Quality television is critical to drive digital TV growth, but today European digital television delivers just a standard definition picture, and is the poor sibling of world television..."* (*Picture quality drives digital* TV BBC News UK Edition www. bbc.co.uk 4 May 2005)

To date take-up of HD has been held back somewhat by the lack of programming and affordable HD receivers and HD displays. However we have now reached the tipping point: there is a much greater variety of HD programming being produced and consumer equipment is becoming affordable. In the near future, all major events will be available in HD. It has already been announced that the 2006 World Cup Soccer in Germany and the 2008 Olympics in China will be produced in HD – these events will showcase HD and drive the uptake of digital TV in Australia.

Given that the market for large screen displays is growing and since increasingly these large screen displays will be capable of displaying HD, it is critical that free-to-air broadcasters continue to broadcast the highest quality digital pictures to these screens.

Simulcast requirement

The simulcast requirements in the digital framework are critical to the smooth transition from analogue to digital as it ensures that analogue viewers are not disadvantaged. Network Ten continues to support the existing framework in relation to simulcasting, as any step away from replicating the analogue service - whether outside of primetime only, or for time shifting or other purposes - would constitute a form of multichannelling.

At a time when evidence suggests that consumers are becoming progressively more aware of digital television and its benefits, it is hard to see how disrupting the underlying principles of the framework and retreating from a full simulcast would do anything to increase take-up. On the contrary, Ten considers that it would more likely create confusion and potentially damage the expectations of those who have already purchased a digital STB if the services were in any way a second rate version of the primary channel. Any change to the current simulcast requirement would also disadvantage analogue-only viewers.

Comparisons with overseas markets

Digital TV in the UK

Being the most advanced digital TV market in Europe and arguably the world, the UK experience of the introduction of digital television, additional television services, pay television, and free-to-air multichannelling provides some insights for Australia.

However, there are a number of fundamental differences between the Australian and UK markets which limit the usefulness of most comparisons.

In the UK, five free-to-air broadcasters (BBC One, BBC Two, ITV, Channel Four and Channel Five) serve a population of 60 million people in 25 million homes. This equates to a market of 12 million people per channel and can be contrasted with Australia's four million people per free-to-air channel.

Of the five UK free-to-air broadcasters, only Channel Five and ITV are commercial free-to-air broadcasters. Although Channel 4 is fully advertiser-funded, it is non-profit, operates under a public service remit and its board is appointed by the regulator.

Despite the size of the market and recent consolidation, specifically the merger of Carlton and Granada, there are still questions about the continuing viability of five

free-to-air channels and Channels Four `and Five have admitted to holding informal merger discussions.

As in Australia, UK free-to-air broadcasters were loaned spectrum to commence a digital terrestrial service. However, unlike Australia, no licence fees were imposed on broadcasters for the first 12 year term of the digital licences. This was done in recognition of the significant costs of conversion to digital. ITV receives a licence fee rebate for each household that transfers to digital TV: the "Digital Dividend". In contrast, Australian commercial free-to-air broadcasters pay licence fees as a percentage of gross revenue.

The BBC is without doubt the engine room of the British broadcasting sector. It is extremely well funded by British television viewers through the television licence fee which is set by the Parliament and currently costs UK television owners £126.50 annually for a colour TV licence and £42.00 for a black and white licence. Licence holders must notify authorities when they move house in order to avoid invalidating the licence, and BBC detection vans and enforcement officers roam the streets using detection devices to catch people watching a TV without a licence.

In 2003/04 the BBC received a total of ₤2.8 billion from the licence fee. (p112 *Building Public Value – Renewing the BBC for a Digital World* June 2004).

With this vast budget at its disposal, the BBC accounts for 40% of all UK program investment (p89 *Building Public Value*). In a speech to the Incorporated Society of British Advertisers, Stephen Carter, head of Ofcom, noted that while ITV, and Channels Four and Five spend a combined total of £1.6 billion on programming activity, the BBC alone spends £1.8 billion (Stephen Carter, speech to Incorporated Society of British Advertisers, 1 July 2003).

Digital television launched in the UK in 1998.

Seven years later, as at 31 December 2004, total digital television penetration was estimated at 59.4% of UK households, up from 55.9% from the previous quarter. This brings the total number of digital households to around 14.77 million.

However, of these totals, only around 4.5 million or 18.5% of households are watching a digital terrestrial service via an aerial and not through pay TV service, BSkyB (Ofcom Digital Television Update - Q4, 2004 Ofcom, 30 March 2005).

As yet, there are no HD services in the UK although BSkyB has announced that it will launch an HD subscription service sometime in 2006 and the BBC plans to produce 100% of programming in HD by 2010. However, the free-to-air terrestrial broadcasters are currently unable to transmit in HD due to spectrum shortages.

While these penetration levels are a significant achievement, as noted by Ofcom in its April 2004 report "Driving Digital Switchover", digital TV in the UK did not grow from a standing start:

> …*it is a development of pre-existing multichannel services and, at least until recently, most of the growth in digital TV take-up has come as a result of the investments and efforts of pay TV operators* (p29 *Driving Digital Switchover – A Report to the Secretary of State* Ofcom, April 2004)

The early UK digital experience demonstrates that free-to-air multichannelling and the extra content it provided was not a key initial driver of take-up. The pay TV operators, who derive revenue from both subscription and advertising, provided the momentum.

In 1998 the BBC launched two digital channels, BBC Knowledge and BBC Choice. By the end of 2001, the BBC estimated that only 300,000 households were receiving its digital channels on a subscription-free basis. (p13 *The BBC's Investment in Freeview: National Audit Office Review Presented to the BBC Governors' Audit Committee by the Comptroller and Auditor-General,* May 2004).

In 2002 BBC Knowledge became the first BBC channel in the UK ever to close. Importantly, the BBC itself has acknowledged that despite the extent of the resources available to the national broadcaster, its first digital channels were "not good enough" (p59 *Building Public Value*).

Subscription multichannelling on the terrestrial platform has always been permitted in the UK. However, the first digital terrestrial subscription platform, ONdigital, which launched in 1998 and began offering free set top boxes to customers in 1999, was not a success. Despite re-launching in 2002 as ITV Digital, the service closed down later that year.

A new digital terrestrial subscription service, Top-Up TV Ltd, was launched in March 2004. Top Up TV offers a range of existing channels such as Discovery, Cartoon Network, TCM and UKTV Gold for £7.99 per month. This service has been classified as a 'lite' pay TV offering, and is accessible via equipment sold by high street retailers.

Freeview

It was in the climate of general uncertainty over the future of digital terrestrial broadcasting following the collapse of ITV Digital (formerly ONdigital) that Freeview emerged.

A consortium made up of the BBC, Crown Castle and Sky launched Freeview on 30 October 2002. On launch, the service was immediately available on a subscription-free basis to between 800,000 to 1 million households through the

old ONdigital boxes which had been left languishing in viewer households when ITV Digital collapsed.

Importantly, Freeview is not ‘free’. It is widely acknowledged that from day one the lead driver of the success of Freeview has been the BBC. Its services, which include six digital only television channels with BBC One And BBC Two being simulcast in both analogue and digital, make up more than a quarter of Freeview’s offering.

The BBC itself describes its involvement in the Freeview consortium as a “public intervention” to prevent the collapse of digital terrestrial television in the UK in 2002:

> *The BBC can play a particularly powerful role when the commercial market fails in an area of high public value. The BBC’s successful intervention in digital terrestrial television (DTT) to create Freeview was an example of this. Had DTT collapsed along with ITV Digital, which was a likely outcome without public intervention, digital switchover could have been delayed indefinitely, with real social and economic costs for the UK. The high-risk nature of broadcasting investment will continue to make public intervention of this sort necessary from time to time for the foreseeable future.* ***As the success of Freeview has shown, the BBC can be highly effective at such times, largely because of its ability to shoulder risk and take a lead in the industry, and because of the trust people have in its brand.*** (p41 *Building Public Value;* emphasis added).

A 2004 report from the UK’s National Audit Office (NAO) held that the BBC had "contributed significantly to the quick and successful launch" of Freeview in 2002 (p6 *The BBC’s Investment in Freeview: NAO Review*).

Through huge marketing and programming investments, the BBC has wielded its considerable resources and scale to drive take-up of Freeview.

As an operator of domestic and international television and radio services and a strong website, the BBC is also able to leverage its multimedia capability to provide content for its digital multichannels.

In contrast, advertiser funded network multichannels in the UK, such as ITV2, broadcast large volumes of network repeats and spin offs.

Driven by the BBC and the ONdigital legacy, the Freeview platform has been a success in the UK. Unfortunately, without a BBC equivalent in the Australian market, a Freeview model platform would not work here. Rather than providing a competing platform for Foxtel, free-to-air multichannels would weaken the existing free-to-air structure. However, the fact that a Freeview model would not work in Australia does not lessen the need for a competing platform to Foxtel in subscription multichannelling.

Digital TV in the USA

The structure and size of the US television market are significantly different to Australia, however, broad US market trends may foreshadow developments here. In the US, six leading networked national channels serve a population of around 281 million people, or 106 million homes. This equates to around 45 million viewers per free-to-air channel, underscoring how well served 20 million Australians are via five free-to-air services.

US audiences also benefit from a vibrant pay television market comprising both cable and satellite operators whose intensely competitive offering is driving consumer uptake of digital pay television services.

Given the issues under consideration by the Australian Government, the US experience of digital transition is instructive because digital terrestrial television is yet to make any significant mark in the US. However, the two drivers of growth in the US market are consumer interest in HDTV, and platform competition between cable and satellite pay TV providers.

In 1998 existing US free-to-air services were allocated a second 6MHz channel in the terrestrial broadcasting spectrum band. No licence fees for use of the second channel for digital broadcasting were imposed although a fee applies to revenue derived from ancillary services such as subscription multichannelling.

Broadcasters are required to transmit at least one free digital programming channel of equal resolution to the existing analogue system (i.e. SDTV). Additional spectrum capacity can be used for HDTV services or for ancillary or supplementary services, such as subscription multichannelling.

Despite this apparent flexibility, as in Australia, initial consumer take-up of digital was limited.

In 2002 the Federal Communications Commission (FCC) responded by mandating that all new television sets sold must contain a digital terrestrial tuner. The requirement was to be phased in over a period of years based on the cost of the TV set, with the more expensive sets being the first subject to the mandate.

The FCC mandate recognises that with the average life cycle of a TV set about seven years, integrated digital TVs therefore have a critical role in the take-up of digital television. By phasing in the mandate, the FCC has ameliorated possible adverse consumer reaction and lessened the impact at the lower end of the market. Initially the target was for all television sets to contain a digital terrestrial tuner by 2007, although that timetable is now unlikely to be met.

Future options for driving digital television

As noted above, the transition to digital television is already happening, driven largely by proliferation of DVD players, widescreen programming and falling equipment prices.

Consumer awareness of the benefits of digital pictures and sound is rising, and having become accustomed to the high quality of DVD, many are keen to replicate that quality in their terrestrial free-to-air television viewing.

Widescreen programs are also driving take-up, particularly for sport. The majority of Ten's sport and all of Ten's AFL coverage is in widescreen, for example, with Harvey Norman sponsoring our AFL telecasts under the banner of "Widescreen Weekend". The cost of widescreen equipment has also fallen dramatically in recent years.

Similarly, quality high definition programming is encouraging sales of HD digital receivers, with the plummeting cost of plasma screens also a contributing factor.

IMS research suggests that the growing market for DVD recorders will also facilitate the transition to digital with the majority of DVD recorders sold expected to contain integrated digital tuners by 2009, thereby replacing digital STBs. IMS forecasts that the worldwide market for DVD recorders will grow from 4.5 million units shipped in 2003 to 61 million units in 2009 ("DVD Recorders Replace DVRs and STBs", media release, www.imsresearch.com, 13 July 2004).

If all of the free-to-air broadcasters can conclude a retransmission deal with Foxtel, a further 833,000 people will have access to free-to-air digital television services retransmitted via either satellite or cable.

Digital tuner mandate

Ten considers that a mandate on the inclusion of digital tuners in television sets, modeled on the FCC mandate, would accelerate take-up of digital television. Integrated digital TV sets will be essential to achieve widespread take-up of DTV and switch off of the analogue service. These sets are easy to use and conceptually familiar to consumers, unlike set top boxes which may be more closely associated with subscription services.

Unlike mobile phones and computers, TV sets have an average life cycle of about seven years. As such, in order to contemplate analogue switch off in the next decade, and to accelerate the take-up of digital TV, it is important that the Government consider mandating the inclusion of digital tuners in television sets.

To avoid noticeable price increases for consumers, a phased approach should be taken whereby the mandate is first applied to TV sets with large screen displays and later extended to smaller screen sizes.

In 2004, Australian consumers purchased around 1.5 million TV sets. About one third of these sets were widescreen TVs and around 25% of these sets were of screen sizes larger than 76cm. The downward pressure on the pricing of these high-end products will ensure that the inclusion of digital tuners will not result in noticeably higher prices for the consumer.

When commercially viable, the mandate should be applied across all TV products to achieve widespread take-up of DTV and the analogue switch off.

This approach will ensure that there is no cost impact on the consumer and it will make it easier for the consumer to access digital television as there are no connection issues with set top boxes, no need for multiple remote controls and less power consumption.

In fact, the environmental benefits of a mandate could be considerable. The Australian Greenhouse Office is currently looking at putting limits on power usage on STBs, for both 'standby' and 'active' modes. Ten calculates that because most people don't turn their STBs to standby when they turn the TV off, if everyone bought a STB for each of their 2.3 TV sets the average household power would increase by around 2.5%. With 7.6m homes in Australia, this translates to 1378 million kilograms of carbon dioxide per year.

As noted above, the average life cycle of TV sets is around seven years: in order to avoid substantial legacy problems, it is critical that this issue is addressed immediately.

Free-to-air multichannelling

Ten does not support lifting the current restrictions on free-to-air multichannelling.

While free-to-air multichannelling offers a superficial promise of more diversity and choice, in reality viewers are likely to be faced with less.

This will occur if program variety becomes more limited and broadcasters are forced to cut local programming investment because advertising revenue is drawn away from supporting content on the primary channel and used to fund new digital services.

Meeting the costs of programming content for two or three additional channels without any additional revenue and without impacting on the primary channel is not a realistic proposition for a commercial free to air broadcaster. Even the well-funded BBC has acknowledged that BBC One's program quality suffered in the late 1990s as investment was increased in digital services (p59 *Building Public Value*), and in its 2003/2004 Annual Report the BBC acknowledged its concern that there is a decline in perceptions of quality of BBC television output overall (BBC Annual Report and Accounts 2003/2004 p 24).

Indications from the UK on whether viewers will watch digital-only multichannels are not encouraging. Even with the substantial BBC resources poured into original content and heavy marketing of Freeview, a recent review found that less than 5% of the Freeview audience watch the digital only channels - (C&AG's Review *The BBC's Investment in Freeview*, presented to the BBC Governors, 28 May 2004). The BBC's digital only channels are Cbeebies, BBC3, BBC4, CBBC and BBC News. The BBC itself has acknowledged that perception of the value of digital channels BBC3 and BBC4 remains low (BBC Annual Report 2003/2004 p 24).

In October 2004 an independent review of the BBC's Digital Television Services found that because of their low viewing figures, BBC3 and BBC4 are still providing poor value for money as well as doing little to connect the BBC with viewers or drive digital take-up.

It is also not legitimate to claim that, as in the UK and the US, free-to-air multichannelling will be attractive to advertisers wishing to reach highly targeted 'niche' audiences because the vastly different sizes of those markets makes comparisons with Australia meaningless.

Whilst programming that can deliver a single national ratings point in the US is big enough (at 2,755,000 viewers or 533,500 for similar audience share in the UK) to be meaningful to advertisers, the equivalent in an Australian metropolitan market (136,560 thousand) is not enough to fund additional quality programming.

Even Fox 8, the Pay TV channel with the highest Zone 1 audience share (0.7% of total free-to-air & subscription viewing), achieves an average zone 1 audience of 35,000 viewers – a figure that simply would not be viable in a purely advertiser-supported environment.

With little or no additional revenue coming to new free-to-air channels from advertisers, existing revenue would have to be spread more thinly to pay for additional content and operational costs.

Furthermore, fragmentation of audiences and reduced advertising revenue brought about by multichannelling, pay TV and new media will threaten the commercial broadcasters' ability to continue to meet public service objectives. Discretionary spend on expensive Australian programming, particularly high-quality drama and some sports telecasts, would be in jeopardy. There is no doubt that it is becoming increasingly difficult to finance high-end Australian drama, and free-to-air multichannelling would only exacerbate those difficulties.

The BBC in its Building Public Value report has acknowledged the implications of audience fragmentation and the impact on programming:

> *Audience fragmentation has important implications for programme quality. By spreading the same revenues over a growing number of services, it is*

> *putting a strain on quality and range in both television and radio. Though most analysts expect broadcast revenues to continue to outpace the economy as a whole… this will not be sufficient to compensate for huge growth in media competition. The consequences are:*
>
> > *New television channels launching in the UK will be able to invest only modestly in original UK content. While the UK's public service broadcasters invest over 55% of their income in original UK content – with the BBC at 65% - pay-television channels invest an average of only 3%. To be profitable they are heavily dependent on repeats and acquisitions (*p55 *Building Public Value*).

In fact, fragmentation in the UK has already had an impact on local production in the UK, with Ofcom recently permitting the commercial free-to-air broadcaster ITV to cut its children's' programming to about eight hours per week because of competition from multichannel broadcasters (*New Media Markets* Volume 23 Number 9 March 2005 p12).

The BBC has also recognised the impact of fragmentation extends to the news market where competition for dispersed news audiences in both print and broadcast journalism is putting pressure on standards and diversity of views. (p56 *Building Public Value*)

As Ten has made clear in previous submissions, the competitive nature of the free-to-air broadcasting market would ensure that despite the damaging impact that free-to-air multichannelling could have on the existing service, if one broadcaster launched a multichannel, others would be forced to do the same.

However, Australian commercial free-to-air multichannels would not contain content that is innovative, risky or distinct from the current offering because without additional revenue, networks will not be able to afford to create new programming or take risks with it.

Even with vast resources at its disposal, the BBC's digital multichannels have failed to make a success of niche programming. The poor ratings performance of digital channels BBC3 and BBC4 led the chair of the October 2004 Independent Review of BBC digital TV services, Professor Patrick Barwise, to recommend that:

> *What people want from the BBC is more good programmes with broad appeal that cover a range of genres. I recommend the BBC to stop thinking of BBC3 and BBC4 as niche channels and start treating them as mainstream channels, like BBC1 and BBC2 but smaller and more innovative* (Independent Review of the BBC's Digital Television Services, October 2004 available at www.culture.gov.uk).

In order to minimise revenue losses, multichannels in Australia would likely be made up of cheap, time-shifted and spin-off programming and repeats. Despite reports suggesting that UK commercial terrestrial broadcasters have managed to attract niche advertisers, their multichannels are nevertheless filled with this type of low quality content.

FTA multichannels launched under these conditions in Australia would not drive take-up of digital television and would operate at the expense of the quality of the primary channel and the overall quality of Australian free-to-air television. While there will be more hours of television available to consumers, the range and variety of genres and programming are likely to decrease. The primary beneficiaries of free-to-air multichannelling in Australia would therefore be the Hollywood studios as networks compete for cheaper US programming to fill the extra hours of television.

Finally, should free-to-air multichannelling be permitted on broadcasters' existing spectrum, it is also important to be realistic about the impact on the overall digital service. Due to limitations on available spectrum, and the need to continue to provide high quality HD services to those consumers who have already invested in the technology on the basis of the current legislative framework, any multichannels could only be operated on a part-time basis

In order to offer FTA multichannelling on a full time basis, Ten would have to lower the bit rate of both its current SD service and its HD service. This would have an impact on the take-up of digital, because it would result in a lower quality signal being made available to consumers. Given the recent trend towards large flat screen displays, it is critical that broadcasters continue to operate the digital service at high quality levels.

Subscription Multichannelling

The only way to bring about increased choice and diversity for consumers, and drive digital TV take-up while creating real competition in the broadcasting market, is to allocate the two spare spectrum blocks for the establishment of a new digital terrestrial subscription platform.

While the free-to-air broadcasting market competes vigorously for each $25 million commercial share point, the one area in the broadcasting landscape which is a de facto monopoly is pay TV.

Consolidation and the collapse of multicultural pay TV service, TARBS, in July 2004 has left Foxtel, and its owners PBL, News Corporation and Telstra, as the only provider of pay TV services in metropolitan markets. Optus merely re-packages Foxtel content.

TARBS' inability to reach a deal with Foxtel on programming and access to the Telstra cable, despite several successful court actions, demonstrates that the

access regimes are unworkable and will do nothing to ensure competition in the pay TV sector. The access regime does not even apply to satellite which will dominate as Foxtel's delivery platform for digital pay TV.

Pay TV in Australia is expensive by international standards. In Canada, a similar sized market, where there are six major operators competing for subscribers, the entry point for the basic package is as low as C$20 and penetration has reached 80%. At current prices, 70% of Australians may not be able to afford the digital service from the sole pay TV provider, Foxtel.

With Foxtel's digital rollout continuing, the current digital review process provides what is likely to be the last opportunity to establish a competitive platform to pay TV before Foxtel's position becomes unassailable. As Foxtel's entrenchment progresses day by day, the likelihood that any competing DTT platform will succeed is reduced.

Subscription multichannelling is also the only way to introduce high quality programming on the digital terrestrial platform without downgrading current free-to-air services. As per the Top Up TV model, such a platform could offer a much lower entry point to pay TV services which would provide a much greater proportion of Australians with more real, affordable choice in addition to driving take-up of digital TV.

As such, in order to create a viable, digital terrestrial platform that can compete with pay TV, offer increased choice and diversity for Australians, drive take-up of digital TV and introduce competition, the two unassigned UHF national spectrum blocks (the "datacasting" spectrum) should be allocated for the purpose of setting up a new digital terrestrial subscription platform. Allocation methods and an equitable payment scheme for the distribution and use of this spectrum for subscription multichannelling should be explored. However, in order to ensure diversity and competition, Ten considers that participation in a new terrestrial subscription platform should be restricted to new entrants in the subscription market.

With the introduction of MPEG 4, a vastly superior new compression technology, a new platform could contain up to 36 channels (MPEG 4 allows between 10 and 18 channels in the spectrum currently used by one datacasting channel). Whilst MPEG 2 digital receivers are expected to dominate the market for another two years, industry transition to MPEG 4 is expected within two to five years.

With a monopoly pay TV provider and an access regime which the ACCC itself admits is ineffective, there is a vital need for more competition in the Australian subscription broadcasting market. The two spare digital spectrum blocks represent the last chance and the only available option to establish a competing subscription platform which would introduce real competition, diversity and choice in the broadcasting sector.

Conclusion

Australia has a very successful and competitive free TV sector which supports the local production industry and provides consumers with no-cost access to the best of local and international programming.

There are many commercial, financial and technological challenges ahead for the free-to-air broadcasters, which will impact on the benefits that they deliver to Australian consumers

The conversion to digital television is on track with a framework that allows consumers to upgrade to the new technology at a time of their choosing, when they are in the market for a new television or when the entry point for a digital set top box is right for them. The growth of high definition broadcasting and a mandate on integrated digital tuners in TV sets will speed up the conversion process.

Ten opposes free-to-air multichannelling, especially at this time, as it will threaten the viability and quality of the existing system in Australia for no discernable consumer benefit.

Unfortunately, pay TV has become an expensive monopoly which, coupled with a failed access regime, limits real diversity and consumer choice in subscription services.

In Ten's view it is clear that the unassigned digital spectrum provides the last chance for the Government to create competition in the pay TV sector, through a new digital terrestrial subscription platform, that will bring increased choice and diversity for consumers in the years ahead and continue to drive digital take-up.

ATTACHMENT A

Technology trends influencing Digital Television

1. Introduction

In the Free To Air (FTA) horizontal market, where the consumer chooses when and at what price digital television display and reception products are bought, the broadcasting environment is being complicated by the speed at which the underlying technology is changing. As a result of this pace of change FTA broadcasters will have to support legacy technologies at the same time as moving forward with new technologies that will deliver better television services to the consumer. This will require careful management of broadcasters' spectrum in the coming years.

The four dominant technologies that will influence the way FTA broadcasters will use their digital terrestrial spectrum are:

- Take up of large flat panel screen displays by consumers
- The availability of MPEG-4 (or the Window Media 9) – the replacement technology for the current video encoding technology known as MPEG-2
- The availability of technology which will allow the delivery of digital terrestrial television to mobiles
- Interactivity – worldwide deployment of the open interactive standard developed by DVB known as MHP.

The key differentiator between FTA TV services and pay TV services has always been the quality of the FTA television services, both in terms of content and presentation. The take up of large flat screen, high-resolution displays by consumers today will help FTA broadcasters to build on this strength. While this trend will promote the take up of digital television, it also means that broadcasters will have to operate both SD and HD services at high bit rates to ensure that these services appear at the highest possible quality on large screen flat panels. For this reason it is not possible to operate full time multichannelling services and deliver good quality HD and SD services using MPEG-2.

The following sections provide an overview of Ten's current use of its digital spectrum and the impact of new technologies on the use of this spectrum.

2. Current use of Ten's spectrum

Ten has configured its 7MHz digital channel to obtain 23 Mbps of capacity. Ten has allocated the following bit rates to its services:

- Standard Definition: 7 Mbps
- High Definition: 14 Mbps

- Video Guide: 1.5 Mbps
- Service Information: 0.5 Mbps

3. Display Screen Technologies and the retail market

The Australian digital television market consists of 7.6 million homes, with an average of 2.3 TVs per home. In 2004, Australian consumers purchased around 1.5 million TV sets and around a third of these sets were widescreen TVs.

The trend towards the larger screen displays (both 4:3 and 16:9) is evident in Australia, where the takeup of screen sizes larger than 76cm, has increased from 10% in 2002 to 15% in 2003 and was around 25% in 2004. With the price of flat screen displays falling on average 30% per year, the take up of flat screen displays is continuing to escalate – in 2003, around 25% of widescreen TVs sold were Plasma and LCD displays and in 2004 it was around 41% of widescreen TVs.

With the resolution of HD screen displays continuously improving, retailers in collaboration with manufacturers, are bundling flat screen displays with High Definition Set Top Boxes for the high end of the market.[1] The current take up of High Definition STBs in the market is around 1 in every 4 sales, even though the price differential between HD and SD STBs is between $400 to $600.

As screen sizes become larger, defects in television picture quality become more noticeable to the viewer. Flat panel displays magnify impairments, particularly in comparison with CRT displays. In order to meet consumers' expectations of picture quality on these products, it is increasingly important for broadcasters to transmit high picture quality.

This trend has already been recognised in Europe where the European Broadcasting Union (EBU) is requesting its members to review the way they deliver television in light of the move towards large screen flat panel displays. The EBU has suggested that it may be necessary for EBU members to operate Standard Definition services as high as 8 to 10 Mbps for large screen flat panels or consider High Definition broadcasting.[2]

Take up of these larger screen sizes in the UK market is the reason that both the BBC and BskyB are looking at HD in the 2006 timeframe. Due to constraints in bandwidth, it is very likely that Europe will move to High Definition using MPEG-4 encoding rather than MPEG-2 encoding.

These trends clearly indicate that it is important to maintain the quality of the HD service and SD service so that consumers can continue to enjoy high quality FTA

[1] 1366 x 768p is becoming the defacto resolution of the new Plasma and LCD display panels entering the Australian markets at $13K price mark for 42" displays. These panels also display better brightness and contrast ratio than entry level 42" displays at 480 x 832p.
[2] EBU Technical Information 139-2004

services that are of equal or better quality than DVDs. As a result FTA broadcasters do not have the capacity to simulcast in HD and SD as well as provide a full time mulitchannelling service.

4. MPEG-4 encoding

MPEG-4[3] and Windows Media 9[4] (WM9, from Microsoft) are second-generation video encoding technologies, which will eventually replace MPEG-2 systems. Both these technologies are twice as efficient as MPEG-2 and are capable of supporting both SD and HD services.

MPEG-4 will enable the carriage of video services on DSL lines, the delivery of digital broadcasts to mobiles, the delivery of HD video services on networks with bandwidth restrictions (e.g. satellite Pay TV systems such as BskyB) and the distribution of HD content on DVDs.

In Europe, there is growing awareness that digital terrestrial broadcasters will need to broadcast HD services in order to compete with the "quality" of DVD pictures on large screen displays. According to a new report by Strategy Analytics, *HDTV In Europe: This Time It's For Real*, the take-up of high-definition television is expected to soar in Europe within the next few years. The report indicates that 2.6 million homes will be receiving HD broadcasts by 2008, with some 17.4 million homes owning HD-capable sets.

In France, the government has formed a High Definition Forum, with participation from all the broadcasters. The French government has also proposed to form a group to draw up a list of propositions to facilitate the move from MPEG2 to MPEG4. Likewise, in the UK, both BskyB and BBC are looking at using MPEG-4 for HD services.

While it is likely that Australian FTA broadcasters will move to MPEG-4 in line with other markets, given the nature of the FTA horizontal market, it will be necessary for the broadcasters to continue to support legacy MPEG-2 based systems while moving forward to MPEG-4. This means that for period of time, FTA broadcasters will have to transmit the same service in both MPEG-2 and MPEG-4. Again, this points to the need for FTA broadcasters to carefully manage the use of the digital spectrum, so that we have enough capacity to move forward to new technologies.

5. Mobile Broadcasting

While mobile video streaming is already being offered today on 2.5G and 3G mobile services, the high delivery costs based on communication with single users has limited its potential. However, in the coming years, the mass-market

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[3] All references to MPEG-4 in this attachment refer to MPEG-4, Part 10, which is also known as H.264 and AVC.

[4] WM9 is being standardised through Society of Motion Picture and Television Engineers (SMPTE) and will be known as VC9.

deployment of broadcasting of television services to handheld mobiles will become a reality.

Currently several technologies are competing for a place in this lucrative market. These technologies are based on either satellite, terrestrial or cellular technologies. The mobile broadcasting technologies that are either being trialed or being deployed in a number of countries include Satellite – Digital Multimedia Broadcast (S-DMB –deployed in Japan and South Korea in late 2004), Digital Video and Audio Broadcast (MBSAT), DVB-H (trialled in Finland, Germany and the US), Terrestrial – DMB (South Korea), Integrated Service Digital Broadcasting – Terrestrial (ISDB-T, Japan only), BCMCS (Broadcast and Multicast Service – Cellular technology) and MBMS (Multimedia Broadcast/Multicast Service – being deployed in the US).

In Australia, The Bridge Network, which is owned by Broadcast Australia, is planning to conduct a 12-month DVB-H trial in Sydney in conjunction with Telstra with around 1000 participants. While this trial will assist in understanding the terrestrial frequency planning issues, further research must be done to ensure that the best technology for the local environment is selected. This is particularly important because the solution that is chosen will have to cover the whole of Australia in an efficient manner so that the service is robust for in-door/out-door environments and in mobile applications. Furthermore, given that our market is relatively small, the technology chosen should be aligned with larger markets so that we can benefit from the economies of scale.

Clearly there are also commercial and regulatory hurdles to be resolved before these services are deployed commercially. While some of the business models overseas have been based on subscription based mobile broadcasting services, Ten believes it is important for FTA broadcasters to explore the possibility of FTA broadcasters offering mobile terrestrial services, possibly by operating a DVB-T multiplex in a shared mode offering both MPEG-2 services to the home and mobile services operating in MPEG-4 services.

6. Interactivity

In September 2004, the FTA broadcasters reaffirmed their commitment to supporting interactivity based on DVB-MHP. While there is broad support from both manufacturers and broadcasters to introduce interactive services based on MHP, there are a number of commercial and technical hurdles that will potentially impact on its deployment on the FTA digital terrestrial platform. These hurdles include the pricing of interactive STBs, the commercial viability of interactive services that can be used only by a small number of viewers, and the amount of bandwidth required to operate interactive services.

It's expected that MHP STBs would retail in the Australian market for around $300 to $400. Hence, these STBs would be around $300 more expensive than the cheapest SD STBs. The manufacturers are hesitant to deploy these more

expensive boxes since viewers are unlikely to purchase these interactive STBs until there is sufficient compelling interactive content. Similarly, for the commercial broadcasters, it is not commercially viable to invest significant amounts in production of interactive content, which can only be used by the small number of digital FTA users that have interactive STBs. There are also challenges for broadcasters such as Ten to promote these services without alienating our viewers who cannot access interactive content.

Our current testing of prototype MHP applications indicates that interactivity will require around 1000 kbps. This demand for bandwidth will also make it difficult for Ten to deploy large amounts of interactive content, while maintaining the high quality of our HD and SD services.

Hence, at this stage, Ten will continue to offer interactivity using services familiar to our viewers such as mobile SMS, so that we can maximise the reach of our interactive content.