KEYNOTE ADDRESS BY JONATHAN LEVY
Deputy Chief Economist
Federal Communications Commission
USA

Introduction

It is an honor and a pleasure to address this gathering. I wish to express my gratitude to the organizers, Mark Armstrong and Franco Papandrea in particular, for this opportunity. I am delighted to be back here for the first time in five years, but I did not come to inflict on you my nostalgic memories of Oz. I am here to talk about the transition from analog to digital television. Before beginning, I must make the standard disclaimer of the US government employee that any opinions expressed herein are mine and do not necessarily represent the views of the Federal Communications Commission or any other member of its staff. I will, however, endeavor to get my facts right.

Today, Australia is five years from digital switchover, and the United States is fewer than five months away. In Australia, decisions regarding the magnitude and disposition of the so-called ‘digital dividend’ have yet to be finalized but are under intense discussion and debate. It is therefore timely to examine how the United States has found its way to the brink of switchover, how it is educating the public about the transition, how it is allocating its digital dividend, and how the transition is affecting the quality and quantity of free-to-air (FTA) television. What were the results of the US spectrum auctions? What remains to be done? What combination of HDTV, multicasting, and other services will be available to the US free-to-air viewer? And, most importantly but also most tentatively, taking due account of differences as well as similarities between the US and Australia, what productive use can Australian policy analysts make of the US experience?

I shall begin with a dispatch from the front lines of the US DTV transition—Wilmington, North Carolina, where on September 8, 2008, all commercial television stations turned off their analog signals for good. Then I shall provide a very brief background description of the US DTV regime.

I will organize the bulk of my remarks around a series of propositions about the US transition. First, a large share of US television households will be able to maintain the status quo with regard to television reception without taking any action. Second, for those who need to take action to maintain the status quo, the out-of-pocket costs are low. Third, strong private and public demand for new services means that the digital dividend of reallocated 700 MHz spectrum is extremely valuable. Fourth, the transition is bringing significant improvements in US television service. Under this heading, I shall touch on the distribution of service improvements between HDTV and multicasting, the role of public service broadcasters in multicasting, and the impact of the transition on competition between free-to-air and pay television. Before concluding, I will attempt to draw some comparisons between the US and Australian experiences, with a few words on the British example, from which I think there is also much to learn.

Background

The basic US story is probably familiar to most or all of you. In 1996, the US picked a flexible DTV standard called ATSC. In 2006, Congress set February 17, 2009 as a national ‘hard date’ for completing the transition. During a simulcast period, each US full-power television station has had two 6 MHz channels, but post-transition, each station will return one of them. US DTV service
rules include a minimum requirement to provide one free-to-air video program stream of quality at least as good as the analog. Licensees may provide HDTV, but there is no legal requirement to do so, and they may also multicast. They may even provide ‘fee-based’ services, that is, services for which they charge either end-users or content providers for receiving or transmitting content, provided that the licensee pays the government 5 percent of the gross revenues from those services. As part of a phased process, beginning with a 2002 FCC Order, from March 1, 2007, all new television sets, regardless of size, are required to have a DTV tuner. And, as I will discuss in somewhat more detail later on, both cable television and Direct Broadcast Satellite (DBS) services are subject to ‘must-carry’ rules for local television signals. And now, on to Wilmington.

The Wilmington Switchoff

On September 8, 2008, the five commercial television stations in the Wilmington, North Carolina market turned off their analog transmitters and commenced digital-only service. This early transition provided the opportunity to test a variety of consumer outreach efforts, identify potential difficulties, and heighten national awareness of the impending transition. Wilmington is the 135th largest of the 210 television markets in the United States. It contains 180,000 television households and approximately 400,000 people.

The transition appears to have gone rather smoothly. The FCC set up a toll-free DTV Transition helpline and recently released an analysis of the 1828 telephone calls received during the first five days of the transition. This total represents less than one percent of the total television households in the Wilmington market. (A more recent compilation, covering the first two weeks, raised the total to 2272 calls, representing 1.2 percent of households in the market, but there was little change in the composition of calls.) Only a small fraction of calls, 5 percent, were from people unaware of the transition. About 18 percent of calls were from consumers who had initial difficulty with their converter boxes, including problems with understanding the instructions and/or scanning for channels. A significant share of these issues was resolved over the phone. Around 22 percent of callers had reception and technical problems, which in some cases were solved by re-scanning or by repositioning or otherwise adjusting the reception antenna. The call-in data appear consistent with previous Commission estimates that relatively small numbers of viewers (under one percent) would need a new antenna to compensate for the ‘cliff effect’ associated with digital transmissions. (The cliff effect refers to the fact that, unlike analog transmissions, where the picture deteriorates gradually as signal strength weakens, the digital picture remains clear until, when signal strength drops below a critical level, it abruptly disappears.) Outstanding issues are still being worked on. Slightly more than 30 percent of calls were from viewers unable to locate the signal of WECT, the Wilmington NBC affiliate. This station’s analog service area stretched well beyond Wilmington, but its digital signal does not reach the same ‘out of market’ areas. Thus, many of these callers are likely to be from outside of the Wilmington market. Analysis of the service contours of other NBC affiliates in the region shows that a significant portion of the area that had analog coverage but does not have digital coverage from WECT is, in fact served by another NBC affiliate. However, there may be some that do not have off-air access to an NBC affiliate. The Commission’s goal is to ensure that all viewers have access to the same television signals that they did prior to the transition. It is currently exploring what steps can be taken to address this problem and to minimize the burden on viewers throughout the country. FCC Chairman Kevin Martin indicated that the Wilmington experience provided an important lesson regarding this matter. About 10 percent of calls were from viewers who had problems with the converter box coupon program, which will be described below. FCC Chairman Kevin Martin stated that ‘[T]he measure of success in Wilmington is what is going to happen next February, and what we are able to learn from what occurs in Wilmington so we can take those lessons and move this process through the entire country.’ Hence, it is premature to make a comprehensive evaluation of the Wilmington early transition. Nevertheless, some conclusions may be drawn. The Commission learned, or perhaps confirmed is a better way of putting it, that working with grassroots organizations such as police departments, fire departments, religious organizations, and other local groups is extremely important. We learned that we needed to take
action to ensure emergency preparedness for natural disasters, such as hurricanes, that might knock out electric power. This led the Commission to work with a manufacturer to introduce a battery pack designed to allow its converter boxes to work in tandem with battery-operated television receivers in the event of a power outage.

And we learned something about ‘soft tests’, brief shutoffs of analog service, accompanied by an on-screen message about the transition. Based on the Wilmington experience, we learned that a test of five minutes’ duration is far more effective in getting people’s attention than a test of one minute’s duration. This lesson will be particularly useful in the months to come, as broadcasters in a variety of locations are planning ‘soft tests’.

Let’s now step back and look at the big picture.

Many US households will be able to maintain the status quo without taking action

The US DTV transition has been structured so that the cost to viewers of maintaining their status quo level of television service is quite low. Indeed, many will not need to take any action. Of course, those who wish to take advantage of new services such as HDTV or DVRs (digital video recorders) will need to acquire additional equipment.

In the US, pay television will play an important role in the DTV transition. The consensus estimate is that more than 85 percent of US television households subscribe to a pay television service. FCC signal carriage rules ensure that in almost all cases subscribers will retain access to broadcast television stations, which they currently receive via their pay television platform. It is important to be aware of the exceptions to this broad proposition. First, not every television receiver in pay television households is connected to the pay service. Some of these ‘unconnected’ receivers may be used for such things as viewing pre-recorded content or gaming, but some of them are used for receiving television signals off-air.

With regard to cable subscribers, on February 17, 2009 they will retain broadcast service on receivers connected to cable, either because the household already has chosen to utilize a digital set-top box or because the FCC required cable systems that are not all-digital to extend analog retransmission of local ‘must-carry’ stations for an additional three years, in addition to the obligation to retransmit the digital version. All-digital systems need not retransmit broadcast signals in analog format, provided that all subscribers have the equipment to view digital transmissions. In order for subscribers to maintain broadcast service on receivers not connected to cable, they would need to take action, as I shall describe in a moment.

In general, FCC signal carriage rules require retransmission of broadcast signals ‘without material degradation’. Because the term ‘high definition’ does not have a precise meaning, the Commission has adopted the requirement that HDTV broadcast signals be retransmitted by pay television distributors with the same quality that non-broadcast high definition channels are transmitted. Cable operators will thus generally retransmit HDTV broadcast signals in HDTV. In order to display HD images, a subscriber of course needs an HD set-top box or other HD home reception equipment. However, a recent Commission Order permits certain small cable systems to retransmit digital television signals in standard definition for three years after the transition date.

The DBS situation is similar but not precisely the same. Local-into-local service, that is satellite retransmission of a market’s local television broadcast signals, is available to the overwhelming majority of DBS customers. However, it is not available to all, and not all of those to whom it is available choose to purchase it. Those who do not currently purchase the local-into-local package can certainly add it on televisions currently connected to DBS, without the need for additional equipment. Households that wish to extend local-into-local to an additional television receiver in the home would need to acquire an additional satellite set-top box for that receiver. And households to which local-into-local service is not available would need to take action to acquire one or more
DTV converter boxes. As in the cable case, in order to receive and display HDTV, the subscriber must have HDTV reception equipment.

In a decision similar to the transitional exemption for small cable systems just mentioned, the Commission has adopted a four-year phase-in of the requirement for DBS carriers, which have always been all-digital, to retransmit all stations in a market in HDTV if any local station in the market is carried in HD. It is worth noting that on a voluntary basis, the two DBS carriers currently provide high definition local-into-local transmissions in markets covering a substantial portion of the country.

For those who must take action, the out-of-pocket costs of maintaining the status quo are generally low; and a major consumer education campaign is underway.

It is fair to say that the 12–15 percent of US television households that rely solely on off-the-air reception for their television service (so-called ‘OTA’ households) face the biggest transition adjustment. Some have already purchased digital equipment, whether it is a digital-to-analog converter box for their analog television receiver or a new integrated DTV receiver. It is important to keep in mind that all new receivers sold since March 1, 2007 have DTV capability, and that most but not all DTV receivers now being sold can display HDTV rather than just SDTV (‘standard definition’ television). Those OTA households that have not acquired digital equipment will need to do so between now and February 17, 2009. Precise figures on the number of OTA households that have not yet acquired DTV equipment are not available.

In terms of overall readiness for the transition, Nielsen has been publishing a monthly ‘Analog-Digital Transition Readiness Report’. The August 2008 edition counts 8.9 percent of US television households as ‘completely unready’ for the transition, i.e., they have no television receivers capable of receiving digital signals, and an additional 11.4 percent of US television households as ‘partially unready’, i.e., they have at least one television receiver that can receive digital signals and at least one that cannot. Some of this category are cable or DBS households.

In order to smooth the transition, Congress created a program to subsidize the purchase of basic digital-to-analog converters. It directed NTIA, an agency of the Department of Commerce, to implement the plan. In its first phase, running from January 1, 2008 to March 31, 2009, each US household may receive, upon request, two coupons, each valued at $40. The coupons may be applied to the purchase price of converter boxes with specified features. They may not be combined, and they may not be utilized for purchase of full television receivers. There is no means test for eligibility. Effectively, the program provides a subsidy to households wishing to maintain the pre-transition status quo.

Congress authorized $890 million for phase one, plus administrative costs. Thus, as many as 22.25 million coupons could be made available during this phase. Under the law, coupons are valid for 90 days and may not be renewed. Phase two of the program will commence after March 31, 2009 and will be open only to households that rely solely on off-air reception. Congress provided an additional $450 million, if needed, for phase two. According to NTIA, as of September 10, 2008, 10 million coupons had been redeemed, 7.4 million were ‘active’, and 7.9 million had expired. In other words, at least five million households had acquired converter boxes through the program, and at least another 3.7 million households had at least one valid coupon in hand.

To set the stage for a comparison with Australia, let me add a few summary statistics, based on industry surveys or estimates. US consumer awareness of the DTV transition is over 85 percent and 49.8 percent of US television households have at least one digital television set. Taking account of additional households with digital cable or satellite service, over 60 percent can receive DTV programming. According to the recent ACMA publication ‘Digital Television in Australian Homes 2007’, 67 percent of Australian households are aware of the digital transition, 41.8 percent have at least one digital television, and 54.2 percent have either digital FTA or digital subscription television service. On the assumption that those with subscription television service can, in fact,
receive retransmissions of FTA signals, I take this to be comparable to the ‘over 60 percent’ US figure. To my knowledge, Australia has not yet taken any position on converter box subsidies.

The FCC has mounted an extensive consumer education program with respect to the DTV transition. Particular attention has been paid to seniors, minority/non-English-speaking communities, rural consumers, consumers on tribal lands, persons with disabilities, and low-income consumers. On August 18, 2008, FCC Chairman Kevin Martin announced a nationwide initiative to increase awareness about the upcoming transition to digital television. The effort will target markets in which more than 100,000 households or at least 15 percent of the households rely solely on over-the-air signals for television. FCC Commissioners and staff will visit these and other markets in the time leading up to the digital television transition. The visits will feature public events highlighting the transition, and the FCC will work with local broadcasters and radio stations to increase the broadcasts of radio and television DTV PSAs.

The Commission has also placed educational requirements on various industry parties, including but not limited to television broadcasters, cable and DBS providers, and equipment manufacturers. The US consumer education effort is spread over multiple government agencies and private entities. The US government is investing substantial resources in this initiative. However, I have no unified estimate of the total cost that I could use to compare to the Australian government’s ‘AUS$37.9 million strategy’.

Let me now turn to the benefits of the transition, which fall into two major categories—spectrum reallocated from television service to other valuable uses, the so-called ‘digital dividend’, and improved quality and quantity of terrestrial television service. The US digital transition will permit reallocation of 108 MHz of valuable spectrum in the 700 MHz band from terrestrial television to other uses. This contiguous spectrum block represents over one quarter of the spectrum that has been allocated for analog television service.

Strong demand for new commercial and public safety uses indicates value of the digital dividend.

The US Congress directed the FCC to allocate 24 MHz for public safety use and to auction the remaining 84 MHz for commercial use. To date, 74 MHz has been auctioned successfully, with net proceeds to the US Treasury of $19.6 billion. The most recent auction of reallocated television spectrum closed on March 18, 2008. Five spectrum blocks, totaling 62 MHz, were offered. Only four of the blocks sold, with net proceeds of $19 billion. The 10 MHz ‘D Block’ did not attract a bid equal to or greater than its reserve price. This nationwide block was offered with the condition that the licensee would be required to form a ‘public safety/private partnership’ with the public safety broadband licensee. The Commission is considering the conditions under which it would re-offer this block for auction, but no final decision has yet been taken.

On September 25, 2008, the Commission released for public comment a rulemaking notice with new proposals regarding the D block. The public safety/private partnership framework is to be retained. The notice suggests resolving through competitive bidding the questions of the geographic license area (regional versus national) and the common broadband technology platform to be used nationwide (Long Term Evolution or WiMAX) and effectively reducing the reserve price compared to the earlier D block auction (the proposal is not to have a formal reserve price distinct from the minimum opening bid and to set the minimum opening bid at US$750 million on a national basis, significantly lower than the previous reserve price.) The Notice also proposes, and seeks comment on, rules involving significant clarifications and revisions of the respective obligations of the D Block licensee(s) and the Public Safety Broadband licensee regarding the construction and operation of the shared wireless broadband network.

It is noteworthy that another block that was successfully auctioned at the same time the D Block was offered also had a condition attached. The 22 MHz C Block was auctioned with a platform requirement to allow users to employ handsets of their choice and access applications of their choice (subject to reasonable network management conditions). Based on the proceeds of the recent
700 MHz auction, the average price per MHz-pop is US $1.287. By comparison, the AWS-1 auction of spectrum in the 1.7–2.1 GHz band, which closed in September 2006, yielded prices per MHz-pop in the range of US$0.40–0.73.

The substantial 700 MHz auction revenue suggests that commercial demand for this spectrum is very strong. The two biggest winners were ATT and Verizon, both of which have announced plans to use their spectrum for advanced wireless services, with Verizon highlighting an expected 2010 launch of an LTE (‘Long Term Evolution’) network and ATT speaking of using its spectrum for ‘higher-speed 4G (fourth generation) services’. Some of the spectrum is or may be used for mobile video service. I will shortly discuss Qualcomm’s MediaFlo product, and I note trade press reports that auction winner Frontier Wireless, a subsidiary of a US DBS provider, may use its spectrum for a ‘nationwide video network’. Another winner, Cox Cable, plans to use its spectrum to become an ‘integrated provider’ of wireless services.

For a variety of reasons, including that we do not know the precise conditions under which the D Block will be re-offered and that the social and private valuations of the 24 MHz of public safety spectrum may differ, it is not possible to develop a good estimate of the value of the 34 MHz of the digital dividend that has not and/or will not be auctioned. However, the value is likely to be considerable. US experience, whether it is the events of September 11, 2001, the onslaught of Hurricane Katrina in 2005, or this year’s one-two punch of Hurricanes Gustav and Ike, has clearly demonstrated the value and importance of additional public safety communications infrastructure. On the other hand, making additional spectrum available to the market could lead to lower prices. In the absence of clear direct evidence of the value of this spectrum, a very rough ballpark estimate could be obtained by applying the price per MHz-pop from the recent 700 MHz auction to this 34 MHz.

Before moving on to the benefits of improved quality and quantity of television service, it is worth mentioning the so-called ‘white space’, potentially usable spectrum within the bands still allocated for television service. There are some geographic areas in which it may be possible to accommodate additional uses within the TV bands without interference to television. Sometimes the analogy is made to a ‘Swiss cheese’ pattern.

The topic of whether and how to make white space spectrum available is under intense debate and investigation in the United States. One threshold question is whether to make it available on a licensed or unlicensed basis. The other big issue, which arises especially in the unlicensed situation, is how to ensure that harmful interference to incumbents is properly limited. The problem is complicated in the United States by the fact that in addition to television stations, wireless microphone transmissions occur on some television spectrum. Moreover, it is possible that ‘white space devices’ may cause interference with cable television transmissions on subscriber premises (‘direct pickup’ interference). Proponents of unlicensed white space devices suggest that the use of sensors on the devices, possibly in tandem with GPS and a location database of incumbents, could prevent harmful interference to incumbents by those devices. The FCC has run tests on these devices and is evaluating the data to determine how to make the most effective use of this spectrum.

With regard to the implications of this for a potential Australian digital dividend, as a threshold matter, the foregoing suggests that the digital dividend can be quite large. I recognize that market conditions in Australia and the US may well differ, but the following illustrative calculations, using the US$1.287 per MHz-pop average price from our recent 700 MHz auction, may be of interest. With a current population of 21.3 million in Australia, applying the US pricing yields US$27.4 million per MHz. Pre-transition, both Australia and the US allocated roughly 400 MHz to terrestrial television; and the US is in the process of reallocating about one-fourth of that to other uses. I am no expert on spectrum management in the US, let alone in Australia, so I am leery of venturing too much further down this hypothetical calculation path. But I will nonetheless offer the following observations. My understanding is that your television Band I contains 21 MHz but no digital television allotments. Australia relies much more heavily than the US does on FTA transmissions to
deliver television service. In the US over 85 percent of television households subscribe to pay TV, while in Australia the current figure is slightly over 30 percent. Thus it is possible that Australia will feel the need to retain more spectrum for maintaining FTA television service than the US did. One outside range consistent with these factors is on the order of 21–91 MHz, with a market value of perhaps US$ 576 million–2.5 billion.

Of course, this scenario implicitly assumes that public and private demand for spectrum in Australia has similarity to that in the US. I leave it to you who are more expert than I in this area to assess how good an assumption this is. Concomitantly, the scenario assumes that contiguous blocks of spectrum are available for reallocation; that is, that Australia chooses to ‘restack’ its television spectrum. In the US, we called it ‘repacking’. In any event, the US examination of how to utilize the ‘white space’ within our allotment of television spectrum suggests the challenges of reaping a digital dividend without restacking. The ABC, in its submission to ACMA on the Five Year Spectrum Outlook, appears to raise these challenges in the Australian context, expressing concerns regarding whether ‘mobile and/or white space uses are able to co-exist with television channels in this band without causing interference’.

The transition brings improved TV service via HDTV and multicasting

The DTV transition is clearly bringing improved quality and quantity of television service to the United States. All of the major broadcast networks are carrying HDTV content, including commercial networks ABC, CBS, FOX, and NBC, as well as the Public Broadcasting Service. Other broadcasters also offer some HD content, including local news in some cases. Anecdotal evidence suggests but does not yet conclusively prove the value of HD programming. A study released in August 2008 by Knowledge Networks concludes that ‘those who have HD reception develop a clear preference for high-definition programming; one third (33%) go to high-definition channels first when looking for something to watch’. Moreover, ‘HD viewers are more likely to plan their viewing ahead of time’. The study also has a bit of good news for advertisers, finding that ‘viewers of HD programs are more likely to agree that ads in high-definition programming are relevant to their needs than are regular viewers about ads in regular programming’. Back in January 2008, an executive of ESPN reported that the network’s audience in Los Angeles was 22 percent higher in HD households than in ‘standard definition’ households and that programs not yet transmitted in HD rate lower than HD content.

The other major category of improved television service is multicasting. The single biggest multicasting effort comes from the public broadcasters. Public stations have four digital multicast program streams from which to choose. PBS-HD is a 24-7 channel of high-definition and widescreen content, covering diverse genres such as science, drama, and children’s programming. World is a 24-hour channel of news, history, nature, and science programs, while V-me is a Spanish language channel. Create, produced by American Public Television, offers lifestyle and ‘how-to’ programming. There is also a certain amount of local multicasting by noncommercial stations. For example, in Washington, DC, a company called MHz offers eight channels of international educational and arts programming, including news, delivered in over 20 languages.

On the commercial side, multicast channels include weather, Spanish language, and ‘classic’, i.e., old, television programming. Let me describe a few representative offerings. The most widely available multicast channel is ‘Weather Plus’, an NBC service offering local and national weather information in roughly 100 television markets, including most of the larger ones. The second most widely available multicast channel appears to be RTN (Retro Television Network), which offers old television shows in approximately 75 markets. In the foreign language category, perhaps the biggest multicast player is LATV, which describes itself as ‘the nation’s first bilingual music/entertainment network distributed via digital multicast’, and it targets ‘the 12-to-34-year old Latino’. It is available in 33 markets. Examination of these and other examples provides an idea of the range of multicast
options likely to be available in the US. In many cases, they are based on content already produced or already being produced for other purposes/platforms.

Some have argued that multicast services require cable and perhaps DBS retransmission in order to succeed. The FCC’s signal carriage rules do not require this. Although cable operators carry some multicast services, including those from public stations, on a voluntary basis, some have argued that must-carry rules should be extended to these program streams.

As I hope you noticed, titling this talk ‘binary benefits’ was designed to make a clever connection between digital transmissions and the two major benefit categories I have discussed. But perhaps one should identify a third category, or at least a sub-category, under improved service. In the US, the digital transition will help FTA television maintain its competitiveness with pay TV. US DBS service has always been all-digital. Digital cable service is available to almost all cable subscribers; currently 59.1 percent of them, or roughly 38 million, choose to receive digital cable service. Both of these distribution systems made their own choices about when and how to go digital.

There is significant competition among pay television providers in the US, and one of the product characteristics they are competing on is HD channels. Although the numbers are constantly changing, and there are some ambiguities in the way channels are counted, one of the US DBS carriers now claims to offer over 130 national HD channels, in addition to the local-into-local television channels it retransmits. The order of magnitude for the other DBS carrier and many cable operators is the same. Taken together with the anecdotal evidence regarding developing viewer preferences for HD, this suggests that for US FTA television stations, HDTV is an important competitive product characteristic.

In the US, as in many countries around the world, including Australia, pay television is making significant inroads into FTA viewing, putting pressure on the advertiser-support business model. In the US, and, I believe, in Australia, there is a kind of ‘universal service’ obligation associated with FTA television. In the US, much of the local programming, including local news, that is available, comes via FTA television. The share of all-day viewing to pay television in all households has grown from 13.5 percent in 1984–85 to 56.1 percent in 2003–04 to 60.2 percent in 2006–07. In pay television households, the pay programming share is even higher, 66.4 percent. On the other hand, the major broadcasters still have the ability to deliver substantially larger audiences than pay television channels, a characteristic that advertisers, in particular national advertisers, value highly. Nevertheless, it is fair to say that strengthening the competitiveness of FTA, including via the transition to DTV, is important for bolstering its viability.

In this connection, it is worth mentioning the advent of mobile video. The whole history of video distribution has been characterized by increasing range of viewer choice and viewer control over what, when, and now where content will be accessed. Hence broadcasters have a strong interest in being able to deliver their content via mobile platforms. A few options are currently available in the US, and the US DTV standards organization is hard at work on an ATSC standard that will allow US broadcasters to utilize a portion of their DTV allotment for mobile video transmissions.

One of the 700 MHz auction winners, Qualcomm, is using its digital dividend spectrum to provide mobile video under the name ‘MediaFlo’. Qualcomm acquired one nationwide six-MHz channel, over which it claims to be able to provide 21–23 video channels, with an average per-channel bit rate of 250 kbps for video plus audio. By comparison, this technology can provide 25–28 channels in a 7 MHz allotment. Both of the largest US mobile phone operators, Verizon and ATT, now offer MediaFlo, which is transmitted, as noted, over MediaFlo’s own spectrum to their customers.

Mobile phone operators also offer data plans that permit subscribers to access the Internet. This platform is the basis for another flavor of mobile video. A firm called Sling Media offers a product that permits remote access via a broadband connection to whatever television service a subscriber has at his or her home. Data rates available from mobile phone operators are sufficient to support the service.
With regard to video market structure and programming, there are broad similarities between the US and Australian markets, but also major differences. In Australia, the maximum number of analog FTA services available is 6, in some of the metropolitan markets, with lower availability in regional and remote areas. By contrast, the average US television household, can receive a substantially greater number of analog FTA channels, probably more than twice as many. [The high pay television penetration in the US makes it hard to compile statistics on purely FTA reception.]

Moreover, public service broadcasters attract a much larger audience share in Australia—around 17 percent for the ABC plus SBS—than in the US—2 percent for PBS. On the pay television front, although service is generally available to all households in both the US and Australia, roughly 85 percent of US households subscribe as compared to slightly more than 30 percent of Australian households. With regard to overall viewing, figures reported by ASTRA suggest that for 2007, the share of all-day viewing to pay television across all households is in the 20–22 percent range. In pay television households it is 59 percent, comparable to the 66 percent US figure cited previously. Presumably the overall 20–22 percent pay television viewing share would rise if the share of Australian households subscribing to pay television rises.

My understanding of the Australian DTV service rules is the following. Australia is gradually relaxing the regulations regarding both HDTV transmissions and multichannelling. Once the digital switchover has taken place (and before then in cases where the simulcast period ends earlier), broadcasters will be able to choose whether and how much to transmit in HD and whether and how many multichannels to offer. Coming from an environment of licensee flexibility as I do, these appear to be reasonable rules.

But what can Australians expect in the way of service. I suspect that HDTV will become a big part of DTV service, in part due to competitive pressure. Foxtel, the major pay television provider, has already introduced a modest package of HDTV service—five linear channels plus on-demand movies—as part of its roughly 120-channel offering. US pay television services offer a much wider range of HD services and a much larger total number of channels. Unlike Australia, the US has a significant level of competition within the pay television sector. Moreover, some assert that the quality of current Australian FTA service is such that HDTV is not a significant improvement. Nevertheless, I think it is reasonable to surmise that competitive pressure from pay television will lead Australian FTA broadcasters to devote substantial resources to HDTV over the medium to long run.

I believe that the appeal of multichannelling is likely to be greater in Australia than in the US. Indeed, in this respect, there is probably more for Australians to learn from the UK experience than from the US one. Scanning both the US and UK horizons, here are a few points that may be of interest.

First, public service broadcasters are likely to be the leaders in multichannelling, due to their noncommercial goals and access to non-market revenue sources. This was illustrated earlier in my description of the US situation. A quick look at the British Freeview service reveals a similar picture. At this point, UK digital terrestrial television is ‘SDTV’ only. Setting aside the audio and text channels and five video channels offered on a subscription basis via the Freeview platform, the service consists of 42 channels. This is a substantial increase over the five analog services that most but not all British households can receive FTA. The leading provider, with eight channels, is the BBC, which benefits from a substantial public subsidy. The fact that both the BBC in Britain and the ABC plus SBS in Australia attract substantially larger audience shares than does the US Public Broadcasting Service strengthens the conclusion regarding the role of public service broadcasters in multichannelling.

Second, it is likely that a number of multichannels will not involve substantial additional investment in programming. Of the UK Freeview lineup, three channels are time-shifts of other channels. Six are shopping channels, and one provides lottery results. Two are ‘specialist’ channels, including one aimed at teachers. A few, e.g., BBC News and BBC Parliament, appear to be based on material
already being compiled in connection with other channels/programming. Back in the United States, weather and archival programming are playing a prominent role in multichannel offerings to date.

Third, multichannelling may well offer an opportunity to bring new program options to minority audiences. There is little evidence of this in the UK, but the apparent early popularity of LATV in the United States suggests the possibilities. There is another area that I would like to mention in a cautious and tentative way. US television is, I believe, much more local than Australian television. That is to say, in the US there is much more variation across cities in the range of television programming available, both because more of the production, in particular local news, and more of the selection, is done locally in the US than in Australia. In a country where pay television is essentially a national service and where there apparently is room for expansion in local content on FTA television, I submit that it is worth thinking about whether broadcasters eventually might find it in their interests to differentiate themselves from pay television by offering more local content.

Before concluding, I would like to make some comments about Channels A and B. I confess to having some taxonomic difficulties about what box to place them in—digital dividend, additional television service, or something else. My understanding is that Channel A is to be a national license for a fixed point-to-multipoint service, specifically provision of datacasting, narrowcasting, or community broadcasting services to domestic digital television receivers, I hope it is accurate to assume that the Channel A licensee can provide different services in different geographic areas. For example, community broadcasting might be viable in some but not all markets. In order to provide for a flexible business model, it might be wise to permit the Channel A licensee to provide fee-based services. That is, perhaps the licensee should be able to charge content providers for delivery and/or end-users for access to content. As you may recall, US DTV licensees can do this, provided it does not interfere with the DTV broadcasting function and provided that they pay five percent of gross revenues to the government. I see that the Channel A licensee will pay an annual fee based on revenue, although it appears that the magnitude has yet to be determined. Last but not least, I would hope that local programming, or at least local news and public affairs programming, would fall within the permissible services for the Channel A licensee.

Channel B, with its required access regime and express ability to transmit television broadcasting services to hand-held devices appears tailored to be a kind of common carrier mobile video service. The initial success of MediaFlo’s service in the US on one 6 MHz channel suggests that there is likely to be demand for mobile video. My first question regarding Channel B is what services might it transmit? I am aware that at least within the US ATSC standard, it is possible to utilize a portion of the DTV bitstream for mobile transmissions. I suspect that subscription television service providers might be as interested as commercial television service providers in mobile transmissions. So the Channel B licensee might end up retransmitting commercial FTA services, subscription services, or a combination of the two. To the extent that commercial services ended up making mobile transmissions on their own spectrum, I wonder if they might want to be on the program guide that hand-held device users would employ to select channels. And if so, I wonder if the ACCC access regime could address this.

I also want to venture a comment about the price-based allocation scheme for Channels A and B. I see that the ACMA consultation paper ‘Allocation of spectrum for new digital television services’ tentatively proposes open outcry auctions for this purpose. The two channels are of course not perfect substitutes for one another, but there appears to be a significant degree of substitutability. This is precisely the scenario for which the simultaneous multiple round auction design was developed, so I would put in a plug for considering that alternative carefully.

Last, and probably least, I note that the ACMA ‘Five-Year Spectrum Outlook’ alludes to future government decisions ‘in relation to the number of commercial television services’ and ‘on Channels A and B’. Even as a foreigner with limited technical to say nothing of political expertise, I cannot pass over the juxtaposition of these two questions and cautiously opine that it might be better not to impose content restrictions on either Channel A or Channel B, although I am
sympathetic to the ownership limits. It is also important to bear in mind that the speculation above regarding mobile video in Australia could be affected by these future government decisions, as well as by other developments in technology or demand conditions.

Conclusion

Let me quit while I am ahead or at least not too far behind. In the end I cannot really give a definitive answer to the question with which I began: what productive use can Australian policy analysts make of the US experience? (However, I can refer interested readers to the websites listed in the Appendix for further information on that experience.) I certainly have no answers for the big questions like how much spectrum should be reserved for television service in Australia, who should make that decision, and how much flexibility and discretion should be left to licensees in this regard.

But I can suggest that the DTV transition could yield a valuable digital dividend, particularly if spectrum is repacked or restacked to free up contiguous blocks. I can suggest that auctions, perhaps with conditions attached, are a productive and efficient way to assign new licenses under the digital dividend. I would also venture to suggest that in a world of changing tastes and advancing technologies, flexible service rules for DTV licensees make some sense. I can say that, based on the US experience, the transition is likely to emphasize HDTV programming. I can say that, based on the US experience, public broadcasters are likely to be leaders in multichannelling, with commercial broadcasters offering primarily multichannels based on content with low marginal cost (weather, archival television programming) or minority-targeted programming. I can say that making the transition go smoothly from a consumer perspective is easier in an environment of high pay television penetration and retransmission of broadcast services by pay TV, but there is still a significant challenge to be met in terms of consumer awareness, information, and ensuring the timely availability of necessary equipment.

I am not sure you needed an outsider such as me to tell you any of this, but I do hope that you have found this external account and perspective of some value. Thanks for your kind attention.

APPENDIX

Sources of US DTV Information:
www.dtv.gov [FCC’s consumer-oriented informational website]
www.fcc.gov/dtv/ [Regulatory information re DTV, including FCC decisions and notices]
www.ntia.doc.gov/dtvcoupon/index.html [NTIA’s TV Converter Box Coupon Program website]
www.zap2it.com [TV program listings: enter postal code, click on ‘TV Listings’, then click on ‘Local Broadcast (antenna)’. Sample postal codes include 20814 [J. Levy, Bethesda, MD] and 99654 or 19884 [home towns of US Vice Presidential candidates]