

Digital decisions

The Government is confronting major questions about the future shape of Australia's television industry as it considers a decision about the introduction of Digital Terrestrial Television. This special section of this month's CU examines the issues and arguments.



“When the history of communication in this decade is written, it will be a story of how communications technologies – all technologies – telephones, cable TV, cellular and broadcasting – converted to digital technology”. The transition to digital technology “is truly a transforming event of our times”.

Bill Kennard, Chair, Federal Communications Commission

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What is DTT?

DTT is a new way of transmitting television signals from land-based transmitters. Currently, most Australians receive their television in an analogue format from terrestrial transmitters. DTT would require broadcasters to install new transmission infrastructure and television viewers to acquire new digital television sets and digital decoders.

DTT will allow *more* television. DTT systems use the same VHF and UHF frequency bands as are currently used for, among other things, terrestrial television broadcasting. The frequencies in these bands deliver signals to a base of receivers across a wide area. DTT systems offer more efficient use of the VHF and UHF spectrum because they allow the use of frequencies whose simultaneous deployment for analogue transmissions would result in unacceptable interference. Digital transmission also permits compression of signals so that more than one “television service” (up to six, and on average three) can be delivered as part of a single transmission using the bandwidth currently used to transmit one TV “channel” (7MHz in Australia).

Television is not the only thing that can be transmitted using DTT systems. A 7MHz channel provides for the transmission of around 20 megabytes per second of digital “data”. This might be occupied by “television” and other services, or it might not be used for television at all.

DTT permits *better* television – wide screen, sharper resolution, improved sound. This could include *enhanced or high definition television* (EDTV or HDTV) as opposed to standard definition television (SDTV). It may facilitate new forms of *interactive* television. The insertion of a digital converter into the transmission path from broadcaster to television allows for the introduction of *conditional access systems* into terrestrial television, of the kind used in pay TV. These can restrict access to particular signals, thus providing a technical mechanism for introducing terrestrial pay TV.

DTT represents a “*convergence*” of communications technologies and services, because more than one kind of service would be transmitted using the same digital delivery technology and received using the same reception equipment.

What the U.K. is doing

The U.K. is taking the “multi-channel route” with digital TV.

The model emphasises early commencement and eventually complete migration to digital transmission but no capacity, at this stage, for HDTV. Multiplexes (the transmitters which send the digital signal) will be licensed and regulated separately from the “digital program services” carried on them. Six multiplexes have been allocated. The rights to use these multiplexes have been separately allocated:

- one to the BBC (the multiplex with the broadest coverage of the U.K.) – services will be a mix of free-to-air and pay;
- one to the existing free-to-air commercial broadcasters, Channel 3 and Channel 4 – services may include some pay or pay-per-view services;
- one-half to Channel 5; and
- 3.5 to the British Digital Broadcasting consortium, which comprises two of the largest existing broadcasters in the U.K. – Carlton Communications and Granada. The consortium won a “beauty contest” but was required to drop Rupert Murdoch’s BSkyB, a member of the initial consortium. Services will include premium pay services such as Sky Movies and Sky Sports.

No date has been set for switching off the analogue transmissions. Ownership and control rules limit the number of multiplex licences which can be held by any one person to a maximum of three. They also set 15 per cent of total U.K. television viewing time as the maximum audience share that can be reached by a holder of digital program licences. Program requirements reflect the European “Television Without Frontiers” directive – “majority” European content and 10 per cent independent productions. Standards for a digital terrestrial set-top box were agreed by the industry in November 1997.

See also the “UK Broadcasting Act 1996”, *IIC Communications Topics*, No. 19, September 1996.

A Model for Digital TV

In its submission to the federal government, the CLC fundamental issues: the social and cultural importance markets and the need for flexibility

The Model

The CLC has proposed a model for the introduction of DTT with the following key elements:

- seven “frequencies” to be available from the outset in metropolitan areas for digital transmission;
- five frequencies to be made available without cost to the existing commercial and national free-to-air television broadcasters –
 - to be used predominantly to transmit *free-to-air* television services *universally accessible* throughout the licensee’s licence areas – licensee to be able to offer free-to-air HDTV or multi-channel television services, or other communications services, provided the predominant purpose remains free-to-air television transmissions;
 - services to remain *diversely controlled*, through adaptation and supplementation of the existing one-to-a-market, cross media and foreign ownership rules (see below);
 - public interest obligations currently applying to commercial and national sectors respectively, including substantial levels of Australian programs (including independently-produced programs), children’s programs, captioning, program classification and complaints processes to be retained for digitally transmitted services;
 - two frequencies to be made available by auction to new players -
 - capacity to be reserved by the ABA across these two frequencies for at least one standard definition channel, to be provided by a non-profit organisation, selected by the ABA through a merit-based process (“beauty contest”);
 - otherwise no restriction on the services which can be provided;
 - no one player to control more than 25 per cent of the content or carriage of “digital frequencies” available to serve an area (that is, one player could not control more than 25 per cent of transmission facilities, or control services transmitted using more than 25 per cent of those frequencies);
- no date to be set for shut-down of analogue TV broadcasts. The ABA should consider setting a date once there is substantial take-up of digital receiving equipment in households.

The Arguments

Television

Television provides Australia’s most popular recreational activity and is a crucial part of our social and cultural life. The ability to choose to participate in its worlds, regardless of income, geography or special needs, is one of many opportunities which needs to be offered to all Australians.

The transition to digital transmission must ensure that free television, universally accessible to audiences, retains a central place in Australian communications.

Television’s special nature is partly a product of the regulatory environment in which it operates. If the existing free-to-air television industry is to receive privileged access to the “digital spectrum” its essential characteristics must be preserved – universal coverage; free-to-air services; control and participation by a diverse range of institutionally distinct (commercial, public, non-profit) Australian organisations which do not control other major media and communications

television in Australia

*argued that the introduction of DTT needs to address three
visions, the competitiveness of media and communications
exploring the potential of digital transmission technologies*

outlets; a substantial commitment to Australian and childrens programs; and a sensitivity to prevailing community standards. The maintenance of "sectoral diversity" will also require adequate budget supplementation to the ABC and SBS to facilitate their transition to digital transmission.

Competition

DTT is a relatively low-cost way of delivering a wide range of old and new communications services. In a country which is struggling to develop serious telecommunications infrastructure competition, DTT should be seen as a major technical breakthrough to be encouraged, not simply as a competitive threat to the controllers of existing delivery systems.

This means, first, structuring access to the "digital spectrum" in a way which maximises its potential to provide competition in the provision of communications services, including television. In this, it is worth noting that the television business, with five national networks, has the widest range of substantial Australian players of any media or telecommunications sector in the country. At the very least, in introducing DTT, we should avoid compromising the level of diversity already achieved in the television industry.

Second, we should not simply auction access to the entire digital spectrum. Australia's experience with auctioning access to the pay TV business shows how this is likely merely to lumber any new players with debt levels that ultimately hand the new business to the biggest of the old players. Policy decisions which destroy the capital base of a "new" industry are as damaging to its dynamism as those which inflexibly prescribe its technology choices.

Third, regulators will need to vigorously scrutinise a range of emerging competitive bottlenecks, including conditional access systems, electronic program guides, major program rights and the bundling of service offerings.

Flexibility

Australia needs to embrace the potential of DTT firmly. However, it also needs to do so flexibly, since it is far from clear what the most commercially profitable and socially beneficial uses of the "digital spectrum" will be for the industry and consumers.

We need a range of diverse institutions to be in a position to explore DTT's potential. Traditional television broadcasters need to be given a chance to adapt their businesses to the reality of convergence, while ensuring that the characteristics of their current services which justify such a chance are preserved.

Telecommunications, pay TV and computer companies, Internet service providers and others need to have scope to explore new and more cost-efficient transmission technologies and business strategies, without leaving television viewers with a technically confused and expensive array of service offerings.

The government must leave the technology risk with the industry which is clamouring for access to the "digital spectrum". Analogue broadcasting must not be shut down until the overwhelming majority of households have chosen to upgrade, and reasonably affordable means exist for the rest to do so. Consumers must not be driven into expensive upgrades of their television sets to suit some timetable forced by broadcasters seeking to avoid the cost of simulcasting or governments seeking prematurely to recover analogue spectrum.

For the complete CLC submission, see <http://www.comslaw.org.au>

What the U.S. is doing

The U.S. is taking the "HDTV route" with digital TV.

It has set an aggressive timetable for the introduction of digital terrestrial services. All existing free-to-air services have been assigned a channel for digital transmission. They have not had to pay any fee for this. Those in the top ten markets will commence transmissions later this year. Digital broadcasts will be available to 53 per cent of the American public by the end of 1999. The analogue spectrum was initially required to be returned by 2006, although amending legislation in 1997 allows this date to be extended by the FCC in specific circumstances, including where less than 15 per cent of TV households in a market are not receiving digital broadcasts.

Broadcasters are required to transmit at least one free, digital programming channel of equal resolution to the current analogue system, and during the same hours of the day. They may offer high definition programming. They may also offer "non-broadcast" services but if they choose to do so they will have to pay a spectrum access charge.

The broad public interest obligation of television broadcasters remains, with the FCC adopting rules to ensure that current standards will continue. A separate committee, appointed by the President, is examining any additional specific, non-commercial obligations. Particular issues being examined include localism, educational programs, program classification, restrictions on advertising, free time for candidates for elected office, political editorials and right of reply, a personal attack rule, a "fair break" doctrine, closed captioning and public inspection file.

At this stage, there are a wide range of ideas about the mix of service numbers and definition being proposed by different stations. No single model for the use of the channel available to all existing broadcasters has emerged.

See also <http://www.benton.org>

What (we hear) the networks are arguing

- Digital transmission is simply the next step in the technical evolution of television. Just as established broadcasters moved from black and white to colour transmission in the 1970s, they need to move to digital transmission at the turn of the century.
- Broadcasters are not asking for anything more than they've already got. They currently have the use of a 7MHz channel. After conversion to digital and the handback of the "analogue spectrum", they will still have the use of a 7MHz channel. Moreover, by moving to currently unused frequencies, they will be freeing up the currently used "analogue spectrum" for new uses, thus enhancing the total value of the VHF/UHF spectrum. And they will fund the new transmission infrastructure themselves.
- Giving broadcasters access to use a whole 7MHz channel will allow them to transmit HDTV, a quantum leap in the quality of television received by audiences.
- Commercial broadcasters already pay special licence fees over and above the tax paid by all Australian companies. These will total around \$180 million in 1997/98. They are calculated according to a sliding scale which makes the biggest six stations in Sydney and Melbourne pay nine per cent of their gross revenue.
- Free television with significant levels of Australian and children's programs is a vital social and cultural service whose continued viability in the digital age is a matter of significant public interest.

These arguments, broadly, are being supported by major advertisers.

Television and the Public Interest

"If television content is sent to homes through many different transmission media, and if these transmission media together simply replace traditional analog (sic) delivery, don't we have to make sure that all transmission media have clear and comparable public interest obligations?"

Reed Hundt, Former Chair, Federal Communications Commission

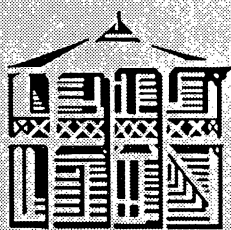
"[The] huge investment [Congress has made] by giving [broadcasters] the spectrum [they] need to broadcast digital television has made [them] the envy of other industries starved for more bandwidth... [W]e must develop a framework to ensure that the public interest remains vibrant and meaningful in the digital age. Broadcasters have been given new ways to expand into the digital age, so it is only fair to expect that they provide new ways of serving the public interest."

Bill Kennard, Chair, Federal Communications Commission

For further information, see:

Digital Terrestrial Television Broadcasting in Australia: Final Report of the Australian Broadcasting Authority Specialist Group on Digital Terrestrial Television Broadcasting ABA, Sydney, 1997

"Being Digital: Australia's Television Choice", by Jock Given, in *Media and Arts Law Review*, Vol 3 (March 1998)



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What (we hear) the others are arguing

- Digital transmission represents a technical revolution for television. We should not simply migrate existing industry structures into this fundamentally different transmission environment.
- Broadcasters are asking for the opportunity to completely change the nature of their business. They currently have the ability to transmit a SDTV service. Use of a full 7MHz "digital channel" would permit the transmission of several SDTV services, or data services, or a mix.
- Giving "digital spectrum" to the networks at no cost would provide them with a "free" mechanism to provide new television and other services. Such an uncontested outcome would be anti-competitive. It would also be unfair to pay TV broadcasters who have had to pay billions of dollars to install cable and satellite networks to create such additional bandwidth for themselves.
- It is unclear what the most socially and economically efficient use of the VHF/UHF band will be with the new capabilities made possible by DTT and other technologies. An auction of the relevant spectrum would be the most appropriate way to assess this. It would also be likely to raise considerable revenue for government, perhaps substantially more than the annualised equivalent amounts already paid by commercial television broadcasters in licence fees, to put to other socially valuable uses.
- HDTV alone is not a serious consumer product and is being used by the networks as a smoke screen for other ambitions. They are much more interested in the possibility of providing multi-channel and/or subscription services and thus directly competing with cable and satellite pay TV.

These kinds of arguments are being put by pay TV operators, telecommunications carriers, Internet service providers and non-broadcast media organisations.