

DIGITAL TERRESTRIAL TELEVISION IN AUSTRALIA

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ABSTRACT

Digital Terrestrial TV broadcasting began in Australia on 1 January 2001. Companies interested in making DTT a success formed Digital Broadcasting Australia. They include free-to-air broadcasters, suppliers, manufacturers and retailers of consumer electronics equipment. DBA facilitates industry coordination in DTT implementation and provides consumers with accurate and objective information about services, coverage, rollout, installation, products, and programs.

Australian implementation of DTT is gathering pace after a slow start. Initial, inflated expectations have given way to a more realistic understanding of the prevailing business and regulatory environment.

Policy decisions by government and its instrumentalities about receiver specifications, digital simulcasting of video and audio, channel planning and interference issues, datacasting, High Definition quotas and the like have all affected the pace and momentum of Australian DTT implementation from time to time.

The Australian consumer proposition is taking shape around DTT aspects that seemed earlier to be of secondary importance - widescreen and interference-resistant pictures, improved picture quality and good sound.

INTRODUCTION

Digital Terrestrial Television broadcasting (DTT) in Australia formally commenced on 1 January 2001, when all broadcasters in the major capital cities of Sydney, Melbourne, Brisbane, Adelaide and Perth began to transmit in digital mode, as required by law, a television service identical to the services being transmitted by them in analog mode.

This commencement of DTT in Australia had been preceded by many years of preparatory work by industry and regulatory authorities, and by the provision of a legislative framework.

Background

In 1992 the Australian Broadcasting Authority (ABA) convened a Specialist Group of representatives from the broadcasting and manufacturing sectors to work on the prospect that digital terrestrial television broadcasting (DTT), then emerging as the next major development in broadcast television, should be introduced into Australia. The ABA's Specialist Group produced its Final Report in 1997.

In 1997 the ABA (of which I was Chairman at the time) recommended the Australian Government support the early introduction of DTT into Australia, as a HDTV system, but with sufficient flexibility to enable broadcasters to experiment with program offerings and find programming approaches acceptable to the Australian viewer.

In 1998 the Australian Government introduced the *Television Broadcasting Services (Digital Conversion) Act 1998*, which contained the first elements of a legislative framework designed to support and authorise the introduction of digital television. This first legislative package left a number of important matters unresolved. Some of them were the subject of Ministerial reviews and, in 2000, a second major set of laws was enacted by the Australian Parliament in the form of the *Broadcasting Services Amendment (Digital Television and Datacasting) Act 2000*.

The *Broadcasting Services Act 1992* (the BSA) now contains all relevant legislative provisions relating to DTT conversion.

In simplified form the BSA presently outlines the following

- The ABA is to formulate schemes for the conversion, over time, of the transmission of television broadcasting services from analog mode to digital mode
- There is to be a simulcast period throughout which broadcasters are to transmit their television programs in both analog mode and Standard Definition (SD) digital mode, and, at the end of the simulcast period, analog transmissions are to cease
- Broadcasters must meet standards relating to quotas for the transmission of TV programs in High Definition (HD) digital mode
- Broadcasters must meet standards relating to captioning of television programs for the deaf and hearing impaired
- Broadcasters will be allowed to use spare transmission capacity on digital transmission channels to provide datacasting services
- There are to be reviews before 1 January 2004, 2005 and 2006 of certain elements of the digital television regulatory scheme, including -
 - the HDTV quota, and its application in remote areas
 - the nature and duration of the simulcast period

Commercial and National Conversion Schemes

The policy objectives of these schemes, which the Parliament has directed be formulated in writing by the ABA, are as follows

- Each commercial television operator for a metropolitan licence area is required to commence transmitting its service in SDTV digital mode on 1 January 2001

- Each regional operator is required to commence transmitting its service in SDTV digital mode by such date as the ABA determines during the period
 - beginning on 1 January 2001 and
 - ending immediately before 1 January 2004¹
- a transitional simulcast period of 8 years, or of such longer period as is prescribed, applies in all metropolitan and regional areas
- each additional channel should occupy 7MHz of bandwidth
- digital coverage and reception quality of digital services are to be the same as for services in analog mode
- the ABA must pursue spectrum efficiency in allotting channels
- separate provision is to be made for simulcasting in remote areas of Australia for such period as the ABA determines
- simulcasting is not compromised by the transmission in digital mode of -
 - electronic program guides
 - both a live sporting event and a regularly scheduled news program where they overlap
 - specified advertising or sponsorship matter
 - program-enhancement content (text, data, images etc), for example -
 - different camera angles on a live sporting event
 - player statistics
 - video highlights from previous matches
 - players' ranking and career highlights

A conversion scheme may provide for the ABA to make digital channel plans that allot channels to broadcasters and set technical parameters on channel use. And broadcasters must submit implementation plans - plans outlining how DTT will be implemented in an area - to the ABA (commercial broadcasters) and to the Minister (national services) for their respective approval.

Major Government Decisions

The Australian Government has, during the course of policy development, and notwithstanding its general inclination to allow industry to make as many implementation decisions as possible, made a number of crucial determinations affecting DTT design and implementation.

These have included -

¹ Note that this does not mean that all communities in a regional area will begin to receive digital television services by 31 December 2003. In fact, many communities in regional areas will not begin to receive such services for some years after that time. Regional operators are only required to begin broadcasts in digital mode somewhere (and not everywhere) in the region.

- imposing on broadcasters a requirement that an SDTV service be broadcast at all times, even when a HDTV service is also being broadcast.

The Government was concerned that any SD-only receivers of consumers would go to black when a HD program was being broadcast. Some manufacturers supplying the Australian market lobbied strongly for this outcome. This decision has ensured that Australian consumers equipped with receivers that are only SD-capable can always receive digital TV services, but it has also effectively reduced the bandwidth available to broadcasters for HD programs, resulting in picture quality for Australian HDTV that is lower than its true potential.

- Altering its original HD quota requirements for broadcasters by changing each broadcaster's obligation to broadcast 20 hours per week of native HD effective from the second anniversary of the start of digital broadcasts in an area, to an annualised obligation to broadcast 1040 hours, effective from the same time (but from 1 July 2003 in major metropolitan markets - effectively a six months postponement)
- The conduct of an auction process for datacasting licences.

The auction was cancelled after nearly all potential bidders dropped out, claiming that legislative definitions of datacasting services were so restrictive as to make datacasting uneconomic. Commercial free-to-air broadcasters were concerned that datacasting represented an opportunity for aspirant broadcasters to enter the market by the back door. Fresh datacasting trials are now in contemplation.

Major Industry Decisions

DVB-T versus ATSC

In 1997 and 1998 Australian free-to-air broadcasters, the ABA, and the Australian Government's Communications Laboratory conducted field trials of the competing European DVB-T and the US ATSC transmission systems. This was one of the first major trials of its kind in the world and the results were keenly anticipated worldwide.

A useful summary of the results of these field trials can be found on the DVB web site at http://www.dvb.org/dvb_technology/whitepaper-pdf-docs/fieldtrial.pdf.

The selection panel unanimously recommended adoption of the DVB-T system for Australia.

DVB-Multimedia Home Platform

On 31 October 2001 the free-to-air television industry announced its support for DVB-MHP as the standard for delivery of interactive television services.

During August and September 2001, the DTV Strategy Group had sent a delegation to review progress in the European television marketplace on the development of set top boxes and televisions based upon the DVB-MHP standard. This supplemented continued Australian work on the development of a common, open platform for the horizontal television market in Australia. Global developments of DVB-MHP continue to be observed by Australian broadcasters and manufacturers.

Several major broadcasters recently cooperated in the testing of a prototype MHP Electronic Program Guide. Cross-carriage of EPG data is a major issue in Australia's digital terrestrial network. In order for viewers to be able to consult guide information whilst watching any channel, the trial saw the same EPG application and data transmitted as an un-bounded application by each broadcaster so that the application could remain constantly running in the background and accessible to the viewer. The prototype application is also intended to stimulate thoughts on the unique design and user interface issues facing the Australian free to air market.

The prototype was written to the DVB MHP 1.0.2 standard.

Standards Australia

Australia's industry standard-setting body is Standards Australia.

Standards Australia provides the forum for the setting of Australian standards for transmission and for receivers. Standards in both fields have been determined, but each is currently the subject of amendments being discussed within industry.

Australian free-to-air broadcasters also issue, from time to time, Operational Practice Notes. These are generally adjuncts to the Australian standards. Potential suppliers to the Australian market can, and should, take full account of these standards and OP Notes when designing and building receivers designed to work in the Australian environment.

Australian Industry Opportunities

In 1998 the Australian Government commissioned the author and Mr Tim O'Keefe, of Digital Business Consulting Pty Ltd, to prepare a report on industry opportunities arising out of DTT.

This report - entitled 'Digital Broadcasting - Australian Industry Opportunities for the New Millennium' - can be viewed on the relevant Department's web site at http://www.dcita.gov.au/download/0,6183,4_111656,00.pdf.

Based on the findings in the report, the Minister for Communications, Information Technology and the Arts subsequently approved an Industry Action Agenda, which, inter alia, called for the establishment of an industry group to coordinate industry initiatives in the field of digital television.

A body called the Digital Broadcasting Industry Coordinating Group (DBICG) was initially convened. Its members consisted of various industry associations - drawn from the broadcasting, manufacturing, online, communications and other industries.

But the DBICG failed to achieve industry support and failed.

Eventually, a new industry group - Digital Broadcasting Australia Limited (DBA) - emerged.

DIGITAL BROADCASTING AUSTRALIA (DBA)

DBA is a private company, which provides a range of information and other services to companies that subscribe to its membership.

DBA's members - there were 24 founding members to begin with - are all companies with an interest in seeing that DTT is successfully implemented in Australia. 59 companies are now members of DBA.

Free-to-air broadcasters, manufacturers and suppliers of consumer electronics equipment, retailers, hardware and software suppliers, antenna installers, and the like, have decided that the successful implementation of DTT in the horizontal market will depend heavily on empowering the Australian consumer.

DBA sees retail sales staff principally, but also antenna installers, as the 'front line', where consumers will traditionally seek advice.

Consumers must be given easy access to information about digital television, and the information they receive must be accurate and authoritative. Consumers in Australia over the next few years must be able to approach their buying decisions about free-to-air television equipment, even non-digital equipment, with confidence.

DBA has adopted a number of information initiatives designed to grow consumer confidence. They include the collection, collation and publication of DTT-related information, such as

- Comprehensive FAQs (Frequently Asked Questions) re DTT
- DTT coverage estimates in metropolitan areas (see DBA web site Coverage Maps)
- Reception characteristics, including -
 - Australian standards for receivers and transmission
 - Broadcasters' operational practices (eg, Logical Channel Numbers, Closed Captions etc)
 - Local rollout information re startup dates, channels, frequencies and sites used for digital transmissions (see DBA web site Reception Locator)
 - Modulation parameters
- Detailed information (by locality) about interference (particularly to VCRs when channels used by VCRs to output signals to receivers are allocated to broadcasters by the ABA)
- Installation Guides and tips (including advice re reception difficulties in blocks of home units, apartments, hotels etc serviced by Master Antenna TV (MATV) systems)
- Specifications of DBA members' receivers (STBs and integrated digital receivers (IDTVs))
- Widescreen TVs available from DBA members
- HD and widescreen program schedules (widescreen programs already constitute over 60% of prime time programming, and HD quotas will commence on 1 July 2003 in major metro markets)

Web Site

DBA also provides one of the most comprehensive and authoritative web sites about DTT in the world - www.dba.org.au. The web site receives over 2 million visitors a month and over 50,000 visitors every month spend longer than 8 minutes on the site in individual sessions.

DBA provides a large number of forums on the web site for the discussion of DTT-related issues. The forums include geographical viewers' forums, content, equipment, and others. The forums are a valuable source of information and feedback for all parties, but particularly for consumers, about DTT progress.

DBA as Information Hub

DBA produces a range of information services, and documentary and point-of-sale (POS) materials, including -

- Brochures, POS posters, strut-cards, display cases and the like for retail sales staff and consumers explaining digital television and the currently available services
- Regular online newsletters for retailers and consumers containing the latest information about programs, rollout and transmitter commissioning, products etc
- DVDs incorporating material provided by each broadcaster in every digital market illustrating DTT features like widescreen, multichannel, audio etc
- Retailer training/product nights, usually held in a broadcaster's studios, where broadcasters, suppliers and installers give presentations and engage the audience in Q&A sessions

THE AUSTRALIAN MODEL

Australia's experience to date with the implementation of digital terrestrial television provides a ready example for other countries considering such a step.

Careful planning and design, followed by realistic action plans and industry cooperation are the keys to success in this field. Progress may at times seem slow but the change for horizontal markets is evolutionary and cannot, and will not, be hurried.

In Australia successful DTT implementation will be built on the foundations of growing consumer acceptance of home theatre systems, DVD players and widescreen TV sets. DTT represents an opportunity to bring the consumer proposition evident in these appliances - much higher picture quality, better sound, and widescreen pictures - to a very wide section of the community.