

Digital Radio Broadcasting

5.1 While focussing in this inquiry on issues relating to the radio services as currently delivered to and received in regional Australia, we were mindful of the impact that digital radio may have on regional radio services in the future. Initially announced in 1998, at around the same time as digital television, the implementation of digital radio has lagged well behind that of digital television. The evidence suggests that it may be some time yet before it is introduced.

5.2 Digital radio uses digital compression techniques to convert sound into a digital format that can then be transferred in a fairly robust manner from one point to another.¹ One of the great advantages of digital radio is its potential to deliver additional functionality as explained by ntl as follows:

Digital transmission technology provides the opportunity for content providers to deliver multiple services via one transmission signal. While analog transmission technology requires one content stream per transmitted signal, digital technology allows multiple content streams per transmitted signal and hence the opportunity to deliver greater content to the public for similar transmission costs.²

5.3 Digital radio will bring opportunities for improved services in metropolitan and non-metropolitan areas. Its advantages include:

- better (CD) sound quality
- better reception, and
- access to ancillary data, text and possibly images.

5.4 Digital radio makes more efficient use of spectrum which creates opportunities for new entrants, provides opportunities for incumbent

1 Exhibit No 43, ntl.

2 Submission No 192, Vol 6, p 1224 (ntl)

broadcasters to offer more services and for new data services. Digital radio also offers the opportunity for single frequency networks, a feature that would be of particular value to services such as radio services for the print handicapped.

- 5.5 Digital radio is, however, costly, from the perspective of both listeners and broadcasters. For listeners, there is the cost of the new receivers. Most households have a number of radios and radios tend to have a long life. Radios often operate in the background and the advantages offered by digital radio may not be perceived to warrant the outlay for a more expensive receiver or set of receivers.
- 5.6 The costs associated with introducing digital radio for broadcasters are significant although it may be possible to achieve some economies through the sharing of infrastructure.
- 5.7 There are a number of implementation issues that are still to be resolved. These include:
- consumer interests including access, competition, new services and receiver costs;
 - whether digital radio should be treated as a replacement for analog radio or as a supplementary service;
 - the implications of different technologies on the 'conversion' process (eg in-band versus out of band technologies);
 - whether a single set of technical standards ought to be applied;
 - the basis on which incumbent and new broadcasters might access spectrum for digital broadcasting;
 - the nature of simulcasting requirements and the timing of any hand back of spectrum;
 - spectrum planning issues, particularly allocation of L-band and VHF spectrum;
 - the types of new or additional services which might be offered by digital radio; and capital and running costs for digital radio services particularly for national and community broadcasters.³
- 5.8 In October 2000, FARB lodged a submission with the Minister outlining its views on how digital radio broadcasting (DRB) in Australia should be structured. The main elements of the submission are ambit and are hardly likely to form the basis of responsible radio industry policy. For instance, the adoption of point 3 could essentially commit many Australians to a complete loss of their current radio services. Nevertheless, FARB's submission is as follows:

3 Submission No 188, Vol 6, p 1162 (DCITA)

1. Automatic access by existing commercial radio operators in the broadcasting services band to L-Band and VHF spectrum without charge.
2. No date for the return of analog spectrum until a review of progress in 2009.
3. No compulsion to simulcast existing analog services.
4. Flexibility on spectrum usage.
5. No new licences outside the current planning process until 2009.
6. No mandating of technology at this time.
7. Allocation of channel 9A in the television spectrum for DRB.
8. Allocation of existing vacant spectrum notionally set aside for satellite audio broadcasting spectrum for terrestrial DRB.
9. A moratorium on licence fees for regional broadcasters for eight years.
10. Each DRB service to be allocated an allotment of 256 kbps.
11. ABC and SBS to be allocated spectrum in the same way, i.e. one digital allotment of 256 kbps for each analog service.
12. Freedom to use portion of spectrum allotment for datacasting.
13. Resolution of a model with legislative endorsement by the middle of 2001 with a view to commencement by 2002.⁴

5.9 In order to progress the introduction of digital radio, the Government has offered the industry an opportunity to conduct trials of the different technologies. Discussions about the proposed trials are taking place between FARB, DCITA, the ABA and the ACA.

5.10 Most of the decisions concerning the implementation of DRB need to be made in the context of radio broadcasting generally; that is, in metropolitan and non-metropolitan areas. However, in keeping with the focus of this inquiry, our discussion is confined to issues of particular pertinence to radio services in regional and remote areas.

Potential for improved services to regional areas

5.11 Digital radio may provide a means of extending services to regional Australia. As explained in the ABC's submission, the economies of

4 FARB, 'Digital Radio Update, June 2001.

operating a single multiplex instead of a number of transmitters may allow it to extend the full suite of ABC Radio services across Australia.⁵

- 5.12 Digital radio will present opportunities for increasing the number of services and for adding to diversity. Digital radio will also allow for the entry of new players. In an earlier chapter, we discussed the impact of new services on the level of diversity of services and the commercial viability of operators. In our view, the issues that need to be considered in decisions concerning the introduction of new services remain the same regardless of whether the services are delivered by analog or digital technology. While digital radio may present opportunities for new entrants, the decisions to allocate spectrum in regional areas should be based on three factors:
- community demand;
 - entrepreneurial demand; and
 - the revenue base of the community.
- 5.13 In terms of content, digital technology will enable operators to cater for niche interests. According to the ABC, the flexibility of the digital spectrum would enable it to 'channel-split' – run different programs simultaneously on the one frequency – in order to more sharply focus its existing services'. It may, for example, use channel-splitting to provide 'separate livestock market information in different areas of the one region, where appropriate.'⁶
- 5.14 In broader terms, however, content is determined by policy rather than technology, as pointed out by the CBAA.

Digital technology may allow for localised radio services but there is nothing inherent in the technology that would cause new services to become localised or otherwise targeted. It is really a matter of spectrum planning, policy and regulation as to whether the introduction of digital radio broadcasting can provide the opportunity for enhancing localism in radio services.⁷

Satellite delivered digital radio broadcasting

- 5.15 Satellite delivered DRB may offer the solution to the problem of providing access to radio services in remote areas without them. Satellite delivered radio services are already available in remote areas. In communities with retransmission arrangements in place, people within range of the

5 Submission No 108, Vol 3, p 474 (ABC)

6 Submission No 108, Vol 3, p 474 (ABC)

7 Submission No 130, Vol 4, p 642 (CBAA)

transmitters can access the services through satellite-fed retransmitted terrestrial broadcasters. Beyond the radius of these transmitters or in areas without retransmission systems, listeners need to have their own satellite dish and associated equipment. They are, however, restricted to listening to the services in their own home.

- 5.16 People relying on satellite radio are therefore denied the benefit of one of the key features of radio, namely its portability. Given the amount of time many people in regional and remote Australia spend in vehicles or working away from home or other buildings, the portability of radio is one of its most valued features.
- 5.17 The Western Australian Department of Commerce and Trade identified two means of making radio more portable in remote areas. The first entails using cheap fairly low powered transmitters on remote properties. The Department pointed out, however, that this would require 'serious administrative work by the ABA in providing frequencies' and may 'require a large investment of resources for a comparatively small return.'⁸
- 5.18 The second option involves persuading car manufacturers to include digital radio as a standard issue in vehicles. According to Department, 'the critical and most significant benefit of satellite delivered digital radio would be the ability to reach vehicles across the whole state.'⁹
- 5.19 The lack of radio services available on vast stretches of the nation's highways is a serious problem. We support the introduction of technology that would enable road travellers to have access to radio services wherever they are driving. In this context, we were extremely interested in the evidence provided by Asia Space, a satellite radio broadcasting Operator. AsiaSpace is the Australian subsidiary of WorldSpace Corporation, a USA based global satellite DRB Operator. AsiaSpace 'currently operates the Australian notified satellite AsiaStar (ITU name is ASIABSS) which is delivering digital radio broadcasting and multimedia services to Asia-part Pacific countries'.¹⁰ Of particular interest is the fact that the services are delivered using 'direct to low cost personal portable radio receivers.'¹¹
- 5.20 Citing a number of ways in which satellite delivered DRB can benefit regional and remote areas, AsiaSpace called for the reservation of spectrum for satellite DRB in Australia. The choice of spectrum is discussed in the next section.

8 Submission No 178, Vol 5, p 954 (Department of Commerce and Trade, Western Australia)

9 Submission No 178, Vol 5, p 954 (Department of Commerce and Trade, Western Australia)

10 Submission No 189, Vol 6, p 1169 (AsiaSpace)

11 Submission No 189, Vol 6, p 1169 (AsiaSpace)

Implementation issues

- 5.21 There are a number of implementation issues that need to be resolved before digital radio is introduced. It is imperative that the choices made ensure that regional areas are well placed to receive digital radio services. One issue that needs to be considered when decisions are being made is the extent to which it is possible to match the existing coverage with digital coverage. As pointed out by the ABC, many people in remote and rural areas receive fortuitous (ie unplanned) reception particularly of AM services which will be almost impossible to replicate with DRB.¹²
- 5.22 We are concerned that the mistakes of the analog digital cell phone conversion are not repeated with digital radio leaving 5 or more per cent of the listening population worse off. We firmly believe that reasonable 'equivalent coverage' should be clearly defined well ahead of the introduction of digital radio.
- 5.23 A decision is still to be made concerning spectrum for digital radio. The two bands of spectrum that have been identified for digital radio largely on a global basis are the L-Band and VHF Band III.
- 5.24 The L-Band is in the high UHF region of spectrum. Described by ntl as a line of sight operation, an operation in the L Band requires approximately 20 per cent more transmission sites that does a VHF operation.¹³
- 5.25 VHF Band III spectrum is used for television. In metropolitan areas, VHF spectrum is scarce. It is considered by some, however, as suitable for digital radio in regional areas and, indeed, preferable to the L-Band.
- 5.26 According to the ABC, the 'coverage of individual DRB transmitters will not be as great as that from current high powered FM and AM transmitters, particularly if the L-Band is used.'¹⁴
- 5.27 FARB also claimed that VHF spectrum would allow for 'a far closer replication of the existing coverage areas in regional and rural Australia and would ensure that those people now receiving analog services, will also receive digital.'¹⁵
- 5.28 According to FARB, the ABA has maintained in the preliminary planning of digital spectrum that 'there is insufficient VHF spectrum available for digital radio as the spectrum may be required for television in the future.' However, FARB Technical consultants have identified, 'through the

12 Submission No 108, Vol 3, p 474 (ABC)

13 Exhibit No 43, .ntl

14 Submission No 108, Vol 3, p 473 (ABC)

15 Submission No 133.02, Vol 9, p 1979 (FARB)

Digital Conversion Plan for Television, sufficient surplus VHF spectrum available for digital radio, It also suggests that there may be some scope for relocating 'some television translators utilising VHF spectrum to UHF spectrum, to make further VHF spectrum available for digital radio.'¹⁶

- 5.29 In calling for the reservation of spectrum for Satellite DRB in Australia, AsiaSpace specified L Band spectrum.
- 5.30 The Committee is not in a position to make a judgement about the technology used to introduce digital radio broadcasting. It supports the proposed trials referred to earlier in this chapter and suggests that in order to ensure that choices are made which serve the interests of regional and remote areas, some of the proposed trials for digital radio take place in regional and remote areas. These trials should test not only primary coverage but also fortuitous coverage equivalents.

Recommendation 18

- 5.31 **The Minister for Communications, Information Technology and the Arts should ensure that some of trials that are proposed for digital radio broadcasting are conducted in regional and remote areas. The Minister should stipulate the trials take into account the fortuitous coverage areas of AM services as a basis for the new digital service footprints or coverage areas.**

Recommendation 19

- 5.32 **In the context of these trials, the Minister for Communications, Information Technology and the Arts should also consider the potential application of the hybrid satellite/terrestrial technology being promoted by AsiaSpace with particular attention to the provision of radio services to moving vehicles.**

Involvement of all sectors

- 5.33 In addition to ensuring that the choices made concerning digital technology lead to improved access to and quality of radio services in regional areas, we are also concerned that all sectors of the industry are involved in any steps taken to progress the introduction of digital radio. In

16 Submission No 133.02, Vol 9, p 1979 (FARB)

discussing the advent of digital radio, ATSIC suggested that digital broadcasting would not be a high priority for Indigenous broadcasters until the digital receivers are more affordable. It stressed, however, 'that advances in digital radio implementation must involve consultation with indigenous bodies. It is essential that Indigenous broadcasters are not left 'out of the loop'.¹⁷ Similarly due consideration should be given to Radio for the Print Handicapped broadcasters.

- 5.34 We support these views and consider that the community sector and the indigenous broadcasting sector must be given the opportunity to fully participate in the planning and implementation stages of the introduction of digital radio. They should also be involved in the proposed trials referred to above.

Recommendation 20

- 5.35 **The Minister for Communications, Information Technology and the Arts should ensure that the community, Indigenous, Radio for the Print Handicapped broadcasters are included at all stages in the planning and implementation of digital radio.**

Conversion costs

- 5.36 Both the commercial and community radio sectors raised concerns about the cost of conversion to digital radio.
- 5.37 FARB suggested that regional radio broadcasters be given the same assistance with capital equipment purchase as that given to regional television.¹⁸
- 5.38 CBAA estimated that conversion would cost between \$75,000 and \$150,000 per station depending on location, size of station, service area and the prospects for arrangements to be made with the multiplex operator. Given the financial circumstances of many regional community stations, it is difficult to imagine them being able to embrace digital radio unless assistance is provided by the Government.
- 5.39 At this stage, no decision has been made as to whether digital radio will replace analog radio or whether it will be a supplementary service. Until such decisions are made, we consider that it would be premature to make

17 Submission No 190, Vol 6, p 1213 (ATSIC)

18 Submission No 133.02, Vol 8, p 1979 (FARB)

judgements about the degree of financial support that should be provided by Government to assist operators convert to digital radio.

- 5.40 Although there is some sense that the implementation of digital radio is inevitable, we expect that it will be some time before it is finally introduced in Australia. Its development is taking place within the context of rapidly evolving and converging technologies, internet radio being a typical example of this. Many of the touted benefits of digital radio relate to additional features it may offer such as ancillary data and interactive capability. While some of these added features may prove of value to regional and remote communities, we consider that the most promising feature of digital radio is its potential to expand the range of services that regional and remote audiences receive. The potential of satellite delivered DRB to provide radio services to people driving in regional and remote Australia, if realised, will also be of immense benefit.
- 5.41 In our enthusiasm to embrace new technologies, we should not lose sight of the fact that the qualities for which radio has been traditionally prized are essentially very simple qualities. Radio is prized for its accessibility, affordability, portability, immediacy, and local program content and presence. The features that have made regional radio such a distinctive and valued voice in regional and remote Australia should be preserved.

Paul Neville MP

Committee Chairman

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