



Professor Richard Snape
Presiding Commissioner
Broadcasting Inquiry
Productivity Commission
Locked Bag 2, Collins Street East PO
MELBOURNE VIC 8003

Dear Professor Snape

Thank you for the opportunity to provide input into the Inquiry on Broadcasting. This submission is made by the Education Network Australia (EdNA) Reference Committee, which is recognised by the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) as the national forum of the education and training sector for the provision of policy advice on information and communication technology. The submission highlights the importance of changes to broadcasting policy for the sector, as well as addressing several of the recommendations proposed in the Productivity Commission's Draft Report.

Importance of broadcasting to the education and training sector

The education and training sector is diverse, comprising schools, vocational education and training and higher education providers - both publicly and privately funded. The sector provides a vibrant community service, underpins future economic prosperity and successfully markets to students worldwide.

The transition to digital broadcasting has the potential to substantially enhance the delivery of education and training to the Australian public. It could offer greater diversity in both format and content of educational products, with students having access to an increased range of multimedia at an affordable price (provided standard definition television is retained). It could also facilitate flexible delivery of education and training, by enhancing student control over what, when, where and how they learn. It could also increase access to education and training services by students who may be disadvantaged by physical disabilities, geographic isolation, or socio-economic factors. Finally, with Australia's export earnings in education and training currently around \$3 billion, there may be valuable export education potential in the new delivery options available through digital broadcasting.

We believe that two key strategies will be instrumental in enhancing the accessibility and delivery of education and training through broadcasting:

- making a low-cost, accessible, data-capable transport layer available to the education and training community; and
- ensuring that regulatory mechanisms allow the public radiofrequency spectrum to be accessed for educational content at an acceptable cost.

To achieve these objectives, the needs of consumers and the general public interest must be paramount.

Broadcasting licences and spectrum allocation

Technology and thus educational delivery models are evolving rapidly. The education and training sector supports a regulatory environment that responds constructively to consumer forces for technological change and that fosters the availability of a range of cost-effective technological options capable of interoperability and of meeting emerging and latent demand. To create such an environment, it is necessary to maximise the use made of public spectrum, and the enjoyment and benefit derived from that spectrum by the Australian community. It is therefore important that regulatory mechanisms encourage flexible responses to ongoing technological innovation and changing social expectations.

We would support the separation of data content providers and spectrum license holders as a means of promoting competition for spectrum (Recommendation 4.1 of the Draft Report). We believe this model to be appropriate for determining the real cost of public spectrum, and also for providing the framework for market forces to operate competitively, transparently and freely in a technologically neutral and efficient manner.

Movement towards a purchaser-provider model creates real opportunities for flexibility in the use of spectrum. Broadcasters could purchase spectrum directly, or multiple content providers could operate through spectrum brokers, with different spectrum premiums available at different times depending on inherent commercial value. Funds raised by selling spectrum to the highest market bidder would provide a ready income stream, which could be used to provide increased data connectivity for community use – such as by education and training providers – as legislated recently in the US for education institutions and libraries.

From the perspective of the education and training sector, while HDTV has a place in the broadcasting market, standard definition digital television (SDTV) offers the most advantageous use of spectrum, providing the ability for content diversity and, for the first time, the targeting of services beyond the ‘homogeneous’ broadcasting market. We therefore support Recommendation 6.1, and furthermore, advocate that spectrum be specifically allocated for the transmission of educational content at standard definition resolutions – as a community service, using a community asset. Even if public ownership of a broadcasting channel for education and training delivery is not feasible at present, it could well be in the future. Broadcasting licenses should not exclude education and training or community interests from access or delivery options.

We should note that for educators, the instructional design and interactivity and choice of media is more important than high resolution of particular media. The availability of technology options, as affected by conditions on spectrum allocation and use, should be enhanced to allow the most cost-efficient and educationally effective use. In our view, this argues for the widest choice in transport options and providers, for both medium and high bandwidth options to be available and for interactive services to be enabled.

Digital TV

We strongly support Recommendation 6.1 that transmission of high definition digital television should not be mandatory, and applaud the recent announcement by Senator Richard Alston that free to air broadcasters will be required to provide a standard definition television signal at all times. Mandating HDTV would subject many education and training stakeholders to unnecessary expense, reduce educational delivery options and reduce access to diverse educational content.

The education and training sector market is very cost-sensitive. While primary and secondary students and their parents do not make direct purchasing decisions (other than whether to attend private or public schools), schools themselves must carefully consider the allocation of their resources. Most schools and VET providers will find it difficult to purchase HDTV sets at their anticipated prices if the use of such is mandated. Even if the price of equipment were to drop, it may still be problematic for many institutions. A similar situation has been seen with the introduction of data projectors, which are still under-utilised because of their prohibitive cost.

Mandatory transmission of high definition picture resolutions may needlessly force Australian education and training providers and their students to purchase HDTV sets when high-definition offers no educational gain. Buying patterns overseas suggest that consumers are not driving, nor benefiting from the push for high-definition viewing resolutions. Similarly, the education and training community would not significantly benefit from the introduction of HDTV.

Post-secondary students will only use a service that offers a tangible future financial or educational benefit. From the perspective of these users, the value of digital broadcasting technology rests with the inherent high-information/low-transmission cost characteristics. It is unlikely that the education and training sector would broadly embrace high-definition transmission, not only because there is little educational benefit in doing so, but also because few students would be able to access this technology in the foreseeable future, unless prices were maintained at a low level. Even with better than anticipated technological take-up, it is likely that digital broadcasting will only be viewed as a supplementary medium until lower socio-economic groups have access to digital broadcasts (whether SDTV or HDTV) at reasonable cost. We do not envisage widespread access of the digital signal until Australian digital television standards are brought into line with the dominant foreign markets, allowing economies of scale to occur.

Mandating HDTV would also lead to a reduction in available spectrum, resulting in a severe and permanent limitation on the number of available channels. This in turn would significantly reduce opportunities for end users to access a diverse range of educational content, and virtually rule out the possibility of a free-to-air broadcasting channel to be used specifically for education and training.

We feel obliged to point out the massive opportunity cost to the sector, not just directly but in terms of its capacity to serve the wider social and educational agendas, were HDTV to be mandated. With the education and training market currently estimated to be around 3.5 million people, removing viable delivery options would clearly disadvantage a large section of the Australian public and reduce its education and training options. Innovative teaching and learning techniques in use or being developed in campuses and schools, involving in many cases interactive video, would not be able to be extended off-campus. Interactive and resource-based learning styles would not be widely encouraged and facilitated.

New digital services such as datacasting

We support the minimising of regulatory restraints on new digital services (Recommendation 6.2).

The transition to digital television has the potential to allow education and training providers to diversify and expand their services by offering TV broadcasts that are supplemented by multimedia content such as webpages, QuickTime movies, text scripts etc. This would be of enormous benefit, as students would be able to download courseware and other study material to their digital TV or computers in real time, allowing access either during or after the broadcast. Students would also be

able to access high levels of data without needing to subscribe to an online service or to have a wired computer connected to a high-speed Internet connection.

Digital broadcasting is also likely to result in a significant increase in available bandwidth which can be used for one-way data traffic such as Web TV, thereby freeing existing methods of delivery (such as wireless communication, spread spectrum, cable modems etc) to act as 'back-channels' from the recipient to the provider. While for some educational uses, digital broadcasting will not have the flexibility of existing internet technologies, by supplementing those technologies it could provide significant cost savings to educational institutions seeking to deliver fixed content to large numbers of students.

Expansion of innovative learning styles and opportunities of benefit to providers and consumers must be facilitated. By continuing to decouple content, services and technology (as has been done already with the telecommunications and information services/ISP markets), we can use broad-, data-, and multi-casting for information dissemination and learning interactivity using the same or other channels for user feedback. The separation of the content, spectrum and transmission/technology elements of public dissemination of information will foster development of new products and services and, in particular, the accessibility, affordability and effectiveness of educational program delivery.

The separation of content, spectrum, and transmission medium will enable the various technologies to be combined in effective ways. Broadcasting can be done over the internet, airwaves, and cable. The internet is also routinely used for unicasting. Streaming is a technology that enables the internet to be used efficiently for the transmission of multimedia content (by broadcasting, multicasting, or unicasting). With streaming, content is played as it is received. This resolves the copyright issue involved with other internet delivery techniques in which it is necessary for the content to be received and stored before it can be played. Material could be broadcast simultaneously over the airwaves and the internet while being stored on the internet for later replay by unicast. The broadcast over the airwaves could be received simultaneously and in real time by all in the reception area. The broadcast over the internet could be received simultaneously and in real time by all with any sort of internet connection. The stored version could be played on demand by individuals with an internet connection.

The potential to deliver high bandwidth at reduced cost could also stimulate commercial interest in producing Australian education and training content, leading to greater choice and diversity of available resources.

Equity and access

New broadcasting technologies have the potential to play an important role in providing cost-effective, high quality and equitable education and training opportunities for students who would otherwise be unable to access their education and training through conventional means.

Geographically isolated students stand to benefit considerably from the introduction of digital broadcasting and the increased use of available spectrum to create greater viewing choices. While there have been a number of technological advances that allow for a broader range of education services to be made available to students living in rural areas, many still experience difficulties in accessing these services because of inadequate telecommunications infrastructure and the high cost of Internet connectivity. Current arrangements relating to infrastructure and equipment for the education and training sector are key impediments to its full participation in the information economy. The result is that remote students have not enjoyed the degree of low cost of access to

academic resources that is taken for granted by urban students. New digital services will enable students to access data through the airwaves at a relatively lower cost of transmission and at a level of quality which is not prejudiced by distance in rural and remote Australia.

This reduced cost will also benefit other disadvantaged groups, as they will be able to gain access without being required to subscribe to an online service or to possess high speed Internet connections. End-users such as smaller schools would be able to access material for a relatively small cost outlay.

We also support the allocation of bandwidth specifically for indigenous groups (Recommendation 5.2). This addresses the fact that indigenous groups tend to be marginalised through isolation, both geographically and often socially. Draft Recommendation 5.2 is a means of providing culturally reinforcing content specifically directed toward the maintenance and enrichment of indigenous culture—clearly an important educational and social goal.

We note that, with the ‘convergence’ of media, computing and communications, the supposition that the reception apparatus is a TV will be under challenge. It is almost certain that games systems (as currently mooted) will support interactive Internet-supported video; that standard home computers (such as PCs or Apple systems) will support interactive video (at CD-ROM/SDTV resolution); and that systems controllers and set-top boxes will be developed to cater for this market. This offers the opportunity for a dramatic increase in accessibility and participation at close to zero incremental cost, were digital casting at SDTV and lower rates to be available. Again this argues against mandating HDTV and argues for allowing wide diversity in content development and content transport and delivery options by digital means.

Summary

We encourage the Inquiry to recommend a regulatory framework that promotes educational and technological flexibility and user choice while minimising costs for education and training sector providers and the consumer. Specifically, this means:

- a) low cost of access for education and training providers, students, and education and training workers;
- b) user choice over an acceptable price to pay for a digital television set;
- c) optimisation of the public spectrum to provide diversity in broadcasters and program choices for education and training consumers;
- d) demarcation of public spectrum for greater use by community users – such as the education and training community; and
- e) user choice in digital content and services and flexibility in market development for providers.

Yours sincerely

(signed 22 December 1999)

Peter Grant
Chair
EdNA Reference Committee
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