

markets, but rather a series of processes, enabled by digitisation of communications networks, which effect technologies, gateways, services and markets in different ways.

The anti-competitive possibilities raised by convergence also must be recognised, and regulators must maintain a strong interest in anti-competitive behaviour in communications markets. Rather than scrapping the current industry-specific regulatory regimes in broadcasting and communications, convergence regulation, at this early stage, should focus on three issues - ensuring that like issues are regulated in a similar manner, addressing the risks of cross market leverage, and ensuring adequate regulatory tools for monitoring and intervention.

Converging industries are increasingly important to our lives and economics. We must ensure that inappropriate regulatory decisions based on the promises of convergence do not squander their very real potential.

1 Arthur Andersen Consulting, *Report on Issues Raised in Submissions*, New Zealand Ministerial Inquiry into Telecommunications, 29 June 2000 at 5.

2 NECG, *Regulation and the Convergence of the Telecommunications and Content Industries*, November 1999.

3 There are a number of other examples from the UK - in 1979/80 BT introduced a consumer videotext service called Prestel, which was intended to revolutionise the way customers accessed information in the UK. By the mid 1980's Prestel only had a 100,000 subscribers and in 1994 BT eventually sold it. In the UK, teletext has been very successful with over 60% of households having teletext capability. This service is used daily by 9.4 million people and

weekly by nearly 20 million people. It is the largest holiday advertising medium in the UK. By contrast, teletext has been largely unsuccessful in Australia, with the Seven Network being the only remaining terrestrial broadcaster to offer teletext services.

4 Ted Leonsis, *The Failure of New Media*, *The Economist*, August 19, 2000.

5 Spectrum, *The Scope, Pace and Consequences of Convergence*, November 1999, at 3.

6 "Convergence is a desirable phenomenon because of its ability to increase the level of competition in the market... convergence is not only a substitute for regulation, it is a phenomenon that can be placed at risk by regulation." Arthur Andersen Consulting, *Report on Issues Raised in Submissions*, New Zealand Ministerial Inquiry into Telecommunications, 29 June 2000 at 5.

7 "Fixed costs are frequently associated with economies of scale. Specifically, where a firm faces both a fixed cost and a constant or declining variable cost, the firm's average unit cost will fall as output increases, and the firm's cost structure is said to exhibit economies of scale. For example, the costs a competitive LEC incurs to construct its own fibre transport ring would constitute a fixed cost, because, at least in the short run, this cost would not vary as the competitive LEC's output changed. If a competitive LEC incurs significant fixed costs when it uses a particular facility, in its early stages of development it would have a significantly higher average unit cost than the incumbent LEC, which has a significantly larger output and customer base over which to spread the fixed costs.

Certain network facilities also involve sunk costs, because the facilities cannot be easily redeployed or sold should the competitor decide to cease offering service over those facilities. For example, the cost of the loop serving a customer's home is largely a sunk cost because it cannot be recovered if the carrier ceases serving the customer. It is generally recognised that the need to incur sunk costs can constitute a barrier to entry. Specifically, where an incumbent has already deployed sunk facilities to serve all customers, a competitive LEC may be unwilling to sink the costs of duplicative facilities, either because it may be unable to lure customers away from the incumbent and

generate enough revenue to cover those sunk costs, or because resulting competition between itself and the incumbent LEC would drive prices so low that, even if the competitive LEC won a significant number of customers, it would still be unable to recover its sunk costs. In such situations, the incumbent has a "first mover" advantage." FCC, Third Report and Order, FCC 99-238, 1999, pp 40-41.

8 The Commission stated in its preliminary advice that:

"The impact of this proposed acquisition could be further compounded by the fact that Telstra is the major provider of infrastructure services to other ISPs. This acquisition coupled with Telstra's strength in the wholesale provision of internet services could give it the capacity to distort and hinder the competitive process. It is possible that Telstra would attain dominance through this acquisition in the provision of residential internet subscriber services which could have a significant flow-on effect into other markets. It is possible that the proposed acquisition could have a detrimental impact on the competitive dynamics for Australian online content, online advertising and electronic commerce. These internet markets are still in the early stages of development in this country. The emergence of a dominant Australian ISP could retard competition and stifle innovation in these evolving markets". ACCC, *Telstra/Ozemail Preliminary Advice*, Press Release, 28 January 2000.

9 Carl Shapiro and Hal Varian, *Information Rules: A Strategic Guide To The Network Economy*, Harvard Business School Press, Boston, Massachusetts, 1999 at p 176.

10 Robert Pitofsky, FTC Chairman, "Antitrust Analysis in High-Tech Industries", Speech to ABA Antitrust Issues in High Tech Industries Workshop, 26 February, 1999.

11 Erkki Liikanen, Member of the European Commission for the Information Society, Speech, 21 January 2000. Available at: [http://europa.eu.int/comm/information\\_society/speeches/liikanen/athens01\\_en.htm](http://europa.eu.int/comm/information_society/speeches/liikanen/athens01_en.htm)

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## Internet Television and Radio Services -The Streaming Controversy

**There has been plenty of bluster but little legal analysis of the Internet streaming controversy. Raani Costelloe provides a thoughtful analysis of the legal issues.**

**Q**uestion: Are television and radio services delivered or accessed using the Internet or Internet protocol regulated as *broadcasting services* under the *Broadcasting Services Act 1992* ("BSA")?

**A**nsWER: Yes and no. Yes, if they are delivered over the broadcasting services bands, which is the part of the radio-frequency spectrum allocated by the

Australian Broadcasting Authority ("ABA") to broadcasting and datacasting licensees under the BSA. No, if they are delivered outside of the broadcasting services bands.

This article explains why this differentiation exists and also examines the regulation of video on demand services.

### DIGITAL TV AND DATACASTING

A section of the Second Reading Speech to the *Broadcasting Services Amendment (Digital Television and Datacasting) Bill 2000* relating to Internet streaming created a great amount of controversy within the Internet industry following the recent enactment of the Bill. It raised the issue of whether television and radio

programs delivered over the Internet come within the definition of *broadcasting service*.

With respect to broadcasting services, the BSA imposes various requirements in relation to licensing and licence fees, the ownership and control of licences, Australian content, advertising and restrictions on the times at which particular classified programs may be shown. Of particular importance is the present moratorium on the issue of new commercial television licences until 2007 and restrictions on the issue of radio licences. Also, it is an offence under the BSA to provide a broadcasting service without a licence. There is a concern within the Internet industry that an extension of the BSA to the regulation of Internet radio and television services would effectively prohibit the operation of such services within Australia.

Senator Alston, Minister for Communications, Information Technology and the Arts, released a statement on 21 July 2000 which sought to clarify the Government's position ("Statement"). On 27 September 2000, the Minister issued a determination under the BSA which makes it clear that services which make television and radio programs available using the Internet (other than services using the broadcasting services bands) do not fall within the definition of broadcasting service ("Determination"). However, the Determination doesn't resolve the conceptual weaknesses in the definition of broadcasting service which have been exposed by new technical means of communication.

By way of background, the type and quantity of audio-video content delivered over the broadcasting services bands by datacasting licensees under the BSA will be highly regulated. The Government has restricted datacasters from providing any services which are similar to television and radio broadcasting services on the basis that existing broadcasting licensees must be protected from new entrants due to the costs of the upgrade to digital broadcasting in terms of both the cost of producing content in digital format and the infrastructure costs of digital transmission. Instead, datacasting licensees will be able to provide Internet-like services via terrestrial transmission.

Notwithstanding the provisions in the BSA which regulate objectionable Internet content, up until recently it had not been thought that Internet content providers may have to obtain either radio

or television broadcasting licences for transmitting or making available audio-video content over the Internet, particularly using Internet streaming technology.

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## THE CONTROVERSY

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The Second Reading Speech states that:

*The moratorium in the BSA on new commercial television services applies to services delivered by any technological means including the Internet. However, there is currently some uncertainty whether services such as streamed audio and video obtainable on the Internet are, legally, broadcasting services. This is a generic issue relating to the convergence of broadcasting with other services, and it is therefore proposed to refer the matter to the [Australian Broadcasting Authority] for their detailed consideration over the next twelve months.*

This element of the Second Reading Speech provoked an outcry from the Internet industry which saw such a line of inquiry leading to the regulation of Internet streamed audio and video services in the same manner as datacasting services. The Internet Industry Association of Australia ("IIA") warned that a Government finding which concluded that video streaming over the Internet was illegal under present law, or a policy that made it illegal, would cause investment in broadband infrastructure to stall and drive Internet video content providers offshore.<sup>1</sup>

Ultimately the Minister resiled from the proposed twelve month detailed inquiry and issued the Statement shortly after the enactment of the Digital TV Bill. The Minister said that a non-public review had been completed and the Government had decided that Internet video and audio streaming should not be regarded as a broadcasting service except for such streaming which occurs over the broadcasting services bands (ie. over the radiofrequency spectrum allocated to datacasting licensees and incumbent commercial television licensees). The Minister also stated that the Government would consider whether any further action is necessary to give effect to this position and to clarify any legal uncertainties under the BSA. The subsequent Determination highlights that such clarification was necessary.

Some saw the Second Reading Speech as evidence of the Government being captive

to traditional commercial television interests seeking to stifle competition from all forms of new media.<sup>2</sup> Further, it is thought that such an attempt to restrict locally based Internet radio and television services would be futile given the ready access to streaming services operated outside Australia. The Minister responded to such views in his Statement:

*It was never the Government's intention to consider Internet video and audio streaming outside the broadcasting services bands as broadcasting...and embark on any new policy exercise about the desirability or otherwise of defining streaming as broadcasting.*

This episode highlights the present uncertainty within the Government as to how new forms of media should be regulated. The ambit of the BSA has widened over the past year to encompass Internet content and the delivery of Internet-type services over the radio-frequency spectrum. For the present time, the Government has decided that cable, basic telephony and digital subscriber line ("DSL") delivered Internet radio and television services should not be subject to the same regulation and licensing requirements as broadcasting and datacasting services. In basic terms, DSL technology allows a greater quantity of information to be passed over the existing basic copper telephony network and is of relevance given the limited coverage of broadband networks and the exclusive arrangements that are in place with respect to cable networks.

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## DEFINITION OF BROADCASTING SERVICE AND THE DETERMINATION

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### Broadcasting service

The licensing regime of the BSA only applies to broadcasting services. A *broadcasting service* is relevantly defined as:

*a service that delivers television programs or radio programs to persons having equipment appropriate for receiving that service, whether the delivery uses the radiofrequency spectrum, cable, optical fibre, satellite or other means or a combination of those means, but does not include:*

- (a) *a service (including a teletext service) that provides no more than data, or no more than text (with or without associated still images), or*

(b) a service that makes programs available on demand on a point-to-point basis, including a dial-up service; or

(c) a service, or class of services, that the Minister determines, by notice in the Gazette, not to fall within this definition.<sup>3</sup>

#### The Determination

The Determination, made under paragraph (c) of the definition of broadcasting service<sup>4</sup>, provides that *the following class of services does not fall within that definition:*

*a service that makes available television programs or radio programs using the Internet, other than a service that delivers television programs or radio programs using the broadcasting services bands.*

### INTERNET STREAMING

As noted above, audio-visual content delivered or made available over the Internet has until recently been thought to fall outside the definition of broadcasting service because of the dial-up and point-to-point nature of the Internet. That is, most Internet users dial-up to access a server and receive the content through a dedicated line between the user and the server. Conversely, broadcasting services are point-to-multipoint in nature, with a broadcaster transmitting its service in real time to a multitude of viewers or listeners with television or radio sets. The definition of broadcasting service is technology-neutral to the extent that it encompasses the delivery of services using any means of carriage. However, it excludes certain types of end user-content provider relationships which traditionally were of less mass appeal and usage such as teletext and dial-up services.

#### What is Internet Streaming?

Internet streaming is a method of transferring content so that it can be processed as a steady and continuous stream allowing the end user's browser to start displaying data before an entire file has been transmitted from its source.<sup>5</sup> The end user requires a player which is a program which decompresses and sends video data to the display and audio data to speakers.<sup>6</sup>

Streamed audio and video content can be sent from prerecorded files or distributed as part of a live feed. In live "netcasts", video signals can be converted into a compressed digital signal and transmitted

from a special multicasting Web server which sends the same file to multiple users at the same time.<sup>7</sup> Multicasting is discussed in more detail below.

The quality of the streaming experience depends on the complexity of the content and the type of Internet service used. For example, an end-user with a broadband Internet service provider will receive streamed content much better than an end-user accessing its Internet service provider over the copper telephony network with a standard modem. Also, static talking head content uses less capacity than feature film content and is easier to receive.

Internet radio and television streaming is in a developmental stage, whether it be traditional radio and television stations re-transmitting their services or third parties re-transmitting their services without their consent; or entirely new services.

#### Regulatory Issues

The narrow regulatory question is how does Internet streaming potentially constitute a broadcasting service under the definition prior to the Determination. The broader regulatory and policy question is whether streaming services should be regulated in the same way as traditional broadcasting services or in other ways.

#### The Narrow Regulatory Question

It could possibly be argued that Internet streaming is a not a point-to-point service due to the fact that the content, once accessed, is similar to a traditional broadcast in the sense that all end users receive the transmissions in real time and cannot otherwise control their viewing of the content whether it be at the time the content commences or pausing, forwarding or rewinding the content. As noted above, live streaming may be provided by way of multicasting Web servers. According to one dictionary of Internet technology,<sup>8</sup>

*Today's routers mostly are unicast, [the] future trend is IP [Internet Protocol] multicast: Rather than duplicating data, multicast sends the same information just once to multiple users. When a listener requests a stream, the Internet routers find the closest node that has the signal and replicates it. Multicasting follows a push model of communications. That is, like a radio or television broadcast, those who want to receive a multicast tune their sets to the station they want to receive.*

*In the case of multicasting, the user is simply instructing the computer's network card to listen to a particular IP address for the multicast. The computer originating the multicast does not need to know who has decided to receive it.*

While such services are accessed by dial-up, it is possible to characterise them as a service that makes programs available on a point-to-multi-point basis. It is also possible that the dial-up aspect of Internet service access will become of less relevance, particularly in relation to broadband Internet services. These services which use Internet protocol are "always on" and do not require a dial-in connection through Telstra's local loop.

The Determination has undermined the conceptual integrity of the definition of broadcasting service by not addressing the issue of whether Internet delivered services are better characterised as falling outside the dial-up, point-to-point exclusion. The implication of the Determination is that, but for the express exclusion of Internet delivered television and radio programs which are not delivered using the broadcasting services bands, such services would meet the conceptual criteria of the definition.

For example, a datacasting licensee who functions as an Internet Service Provider and facilitates terrestrial transmission of Internet content to an end-user will have to ensure that such content comes within the datacasting content rules and does not constitute a television or radio program. By contrast, the same end-user could access streamed television and radio programs via wire or cable Internet access which would be prohibited under the datacasting service.

#### The Broader Regulatory and Policy Question

The broader regulatory and policy question was not substantially dealt with in the Statement and Determination, apart from the implication that the Government is concerned with de facto broadcasting over the airwaves but not over wire and cable. The rationale for the moratorium on new free-to-air commercial television licences and the creation of the restrictive datacasting service was to allow incumbent broadcasters to recoup the cost of the upgrade to digital television without advertising revenue being diluted by new entrants.

The general policy rationale of the BSA for regulating some broadcasting services

more than others is the intention that different levels of regulatory control be applied across the range of broadcasting services and Internet services according to the degree of influence that different types of broadcasting services and Internet services are able to exert in shaping community views in Australia.<sup>9</sup>

It appears that the Government is prepared to allow wire and cable delivered Internet radio and video services to develop largely unregulated for the time being. Perhaps this will be revisited when broadband cable and/or DSL services are more widespread and Internet radio and video services become technically more viable and competitive with existing free-to-air and subscription service providers.

## VIDEO ON DEMAND

### Regulation under the BSA?

A related issue which should be discussed in the context of the regulation of audio and video services is whether video-on-demand services ("VOD") are regulated by the BSA. Again, this is an important issue given that the BSA imposes restrictions on the number of licensees of certain broadcasting services and such licences are subject to a range of conditions relating to ownership, Australian content and advertising.

This is particularly relevant to many businesses presently planning to offer video-on-demand services using DSL technology over the local telephony loop. Most video-on-demand DSL business models involve accessing Telstra's unconditioned local loop at local exchanges and installing DSL technology which allows end users using a set-top-box to access video content provided by the VOD business.

Pay TV operators, who hold subscription broadcasting and narrowcasting class licences under the BSA and deliver their services over broadband networks, may conceivably offer VOD services in the future.

A VOD service where an end user is able to start, stop, rewind and forward the video content would not constitute a broadcasting service because it is a service that makes programs available on demand on a point-to-point basis. This is true VOD.

It is important to distinguish between true VOD and near VOD. Near VOD, where multiple streams of a program are delivered to end users at staggered

intervals so that a consumer could watch the start of a program within a reasonable time frame (but without the start/stop/forward/rewind functionality of true VOD), would constitute a broadcasting service because it is being delivered simultaneously to multiple end users. Pay television channels which are delivered continuously on a point to multi-point basis to subscribers' set-top-boxes are broadcasting services and are subject to the BSA.

Whether DSL delivered VOD services become widespread is both a technical and commercial issue which involves a number of factors including the pricing of access to the unconditioned local loop; the cost of DSL and set-top-box technology; and the availability and cost of video content within the established industry windows of theatrical, home video, pay television and free-to-air television release.

In any event, such a service would not be regulated by the BSA.

### Regulation under the Telecommunications Act

The *Telecommunications Act 1997* ("Telco Act") provides for a category of service provider called a *content service provider*.

A *content service* is relevantly defined as:

- a broadcasting service; or
- an on-line information service (for example, a dial-up information service); or
- an on-line entertainment service (for example, a video-on-demand service or an interactive computer game service... (s 15)

A *content service provider* is a person who uses or proposes to use a listed carriage service to supply a content service to the public (s 97(1)). A content service is provided to the public if, and only if, at least one end user of the content service is outside the immediate circle of the supplier of the content service (s 97(2)).

VOD operators are content service providers for the purposes of the Telco Act. A content service provider, as a service provider (s 86), must comply with the service provider rules set out in Schedule 2 of the Telco Act or any rules set out in service provider determinations of the Australian Communications Authority (s 98).

At present, there are no rules or determinations relevant or specific to content service providers. Note that there is presently some uncertainty as to whether VOD operators may be *carriage service providers* under the Telco Act after the recent decision of the Federal Court in *FOXTEL Management Pty Ltd v Seven Cable Television Pty Ltd*.

### General Classification Law

Irrespective of whether VOD is regulated by the BSA or Telco Act, Federal and State censorship classification laws require that films be classified with respect to their sale, exhibition and advertising

## CONCLUSION

The delivery of video and audio content over new delivery platforms is challenging the existing regulatory framework of broadcasting laws. In the past, the radiofrequency spectrum was limited in its ability to carry analog television and radio services. Digital technology has practically reduced spectrum scarcity and increased the efficiency of existing telephony networks to deliver audio-video content.

Notwithstanding this, the Government has sought to limit the number and type of new services that may be offered over the broadcasting spectrum. However, this has not stopped new business models emerging for the delivery of services which are similar to television and radio over the Internet, whether by the existing copper network or broadband.

The recent controversy over Internet streaming is an example of the tensions between, on the one hand, the policy rationale of traditional broadcasting regulation and the rise of new services and, on the other hand, traditional broadcasters and the Internet industry.

1 Quoted in Anne Davies, *Industry fears of ban on streaming soothed*, Sydney Morning Herald, 20 July 2000.

2 For example, see Tom Burton, *Damming the Internet stream*, Sydney Morning Herald, 21 June 2000.

3 Section 6(1) of the BSA.

4 The Determination is cited as *Determination under paragraph (c) of the definition of "broadcasting service" (No. 1 of 2000)*.

5 <http://webopedia.internet.com> - Search "streaming".

6 <http://whatis.techtarget.com> - Search "streaming video".

7 *Ibid*.

8 <http://home.t-online.de>.

9 Section 4(1) of the BSA.

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